Cedar City

10 North Main Street • Cedar City, UT 84720
435-586-2950 • FAX 435-586-4362
to www.cedarcityut.gov

CITY COUNCIL WORK MEETING
NOVEMBER 19, 2025
5:30 P.M.

The City Council meeting will be held in the Council Chambers at the City Office, 10 North Main Street. The City Council Chambers may be an anchor location for participation by electronic means. The agenda will consist of the following items:

I. Call to Order

II. Agenda Order Approval

III. Administration Agenda

- Mayor and Council Business
  - Swear in Youth City Council
- Staff Comments

IV. Public Agenda

- Public Comments

Business Agenda

Public

1. Public hearing to consider modifications to Cedar City Ordinance 26-IV-9 removing the requirement of fencing around private pools when using compliant locking pool covers. Randall McUne
2. Consider waiving a portion of the solid waste bill for Tink Holyoak. Paul Bittmenn

Staff

3. Consider a resolution amending the Consolidated Fee Schedule for Arena fees. Scott Christensen/Ken Nielsen/Randall McUne
4. Cross Hollow Arena donation letter. Scott Christensen/Ken Nielson
5. Consider a resolution approving the concept of placing a sheep herder monument in front of the Cross Hollow Events Center. Paul Bittmenn
6. Consider a resolution to include a Quichapa Canyon Ranch Brand on the outside of the Warmup Barn at the Cross Hollow Events Center. Scott Christensen/Ken Nielson
7. Consider a Specialized Aviation Services Operation (SASO) addendum for Wright Wrench Aviation. Tyler Galetka
8. Consider approval of the 2025 Master Plan for the Cedar City Regional Airport. Tyler Galetka
9. Closed Meeting – Reasonably imminent litigation & property negotiations

Dated this 17th day of November 2025.

Renon Savage

Renon Savage, MMC
Cedar City Recorder

CERTIFICATE OF DELIVERY:

The undersigned duly appointed and acting recorder for the municipality of Cedar City, Utah, hereby certifies that a copy of the foregoing Notice of Agenda was delivered to the Daily News, and each member of the governing body this 17th day of November 2025.

Renon Savage

Renon Savage, MMC
Cedar City Recorder

Cedar City Corporation does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or the provision of services.

If you are planning to attend this public meeting and, due to a disability, need assistance in accessing, understanding or participating in the meeting, please notify the city not later than the day before the meeting and we will try to provide whatever assistance may be required.

CEDAR CITY COUNCIL

AGENDA ITEM – 1

TO: Mayor and City Council

FROM: City Attorney

DATE: November 17, 2025

SUBJECT: Ordinance removing pool fencing requirement with adequate pool cover

DISCUSSION:

The Board of Adjustments recently granted a variance to an applicant seeking to not install a fence around his private swimming pool. He had installed a powered locking pool cover instead. State law allows this as an alternative to fencing, but City ordinance does not. We are bringing this to you to consider aligning City ordinance with state law in this regard.

The Planning Commission gave a positive recommendation to this amendment. The minutes from that meeting are included. Please consider the proposed ordinance.

Webster: Any other questions? Well, I was just going to say, let's, can you, you would be candidate probably for that committee. Can you leave your contact information with Faith over here? When they do organize that. I think that it might be helpful if you were able to do some input there. Thank you, Doctor. Appreciate that. And appreciate that, you know, we have an expert nearby.
Shawn: As I say, I've been doing it for 40 years.
Webster: That's awesome.

Close Public Hearing

Griggs: I failed to address, I can speak to anything you, well, I can try to speak to anything you want, but I did intend to address the idea of a conservation demonstration garden. That's an idea that is in the plan. I spoke to Central Iron County Water Conservancy District. They also have that in their plans, and they have property for it. Just keep that in mind as you move forward. There might be some partnership opportunities there. I did want to bring that up. Well, I think it's a question.
Webster: Thank you for that. I think it's a good thing that the state is crowding us a little bit in that direction and our need is crowding us. Thank you for your comments.

3. PUBLIC HEARING

Ordinance Revision (Recommendation)	Section 26-IV-9 Pertaining to Swimming Pools Adding Safety Covers	Amber Ray

Amber Ray: All right, it has come to our attention that we need to update our ordinance a little bit. Currently the ordinance is what is in black there. We have been asked to add the red part, which says when a pool is equipped with powered safety cover that complies with ASTMF 1346, a fence is not required. Currently we require a safety fence with self-closing, self-latching, things like that. Adding that when there is a powered safety cover that meets the standards that the state has set that they don't need to have the fence enclosure.
Webster: Does anybody have questions for Amber? I would say that I think this came from a Board of Adjustments meeting. Where our language was old enough that what seemed reasonable for a pool didn't exist. I think it kind of grew out of that.
Hitz: I have a question. Does this automatically close if a little kid wanders into that pool area?
Amber: My understanding is that it closes when the pool is not in use and someone can walk on top of it. It's hard enough that you can walk on top of. As far as it is being under, not in working condition or something like that or not closed, that's a whole other issue. That's kind of a personal thing.
Webster: When it came before the Board of Adjustments, the gentleman that was doing it made a presentation about it. Essentially said that exactly what Amber just said that it's rigid and able to hold weight, but much like a gate on a fence. If left open, the fence becomes less of a deterrent.
Hitz: I thought fencing was more of a safety issue, like the NFPA rules that require a certain height than the self-closing gates. So little kids can be protected from that.
Jett: I think Utah state law trumps us here. It either or both, but I'm going to either or, so we don't really have much of a say.
Webster: Yes, Tom, I think you're right. Although I don't know.
Randall: That's correct. That was part of the conversation I think you guys had with the Board of Adjustments. We're just trying to come into compliance with state law. It would be interesting if they came up with some type of safety feature like a self-closing gate. It would do so, hopefully, without somebody in the pool. I don't know if our technology is quite there to be safe. Right now, the state won

does not require anything self-locking. In the sense of these pool covers. It's more based on long as nothing, what was it, four and a half inches, in diameter can't fit through any gaps. Then the weight of about two of me can walk across it.
Jett: Well, for the record, I think the state made a mistake in not requiring fencing around swimming pools. Too many kids in this country drown every year as a result.
Randall: Talk to your state legislator.

Open Public Hearing

Ann Clark: Here's my question. Does the pool have to be closed by law, if not in use? In other words, if somebody says, okay, we're not using it, but I'm going to leave it open, or it's broken. Then are they liable if a little neighborhood child runs through and drowns? Do you know what I mean? By law.
Randall: I know what you mean. I don't think there's a statute that says you are liable if.
Ann: If you leave it open.
Randall: You would likely have somebody with much higher risk of liability. There are always too many factors to predict it here. If the law requires you to install something to keep kids safe and you don't maintain it, don't do what you're supposed to do with it. I'm going to assume your liability is much, much higher than if you've done everything you can.
Ann: Because you can kind of see that. Although when you go back east, they have no fences. You just see swimming pools and things out. I always think, wow, that could be dangerous because anyone can wander into your yard.
Randall: Some of it can vary. We were just talking about it earlier. You go back east; it's a totally different problem with water than we have here. There are open bodies of water all over the place. Everywhere you step, there's a big pool. There's a big lake. Yes. Their soil is what we buy at Home Depot for our gardens. It's a different world than here where kids don't grow up with water everywhere. It would be kind of like having signs for alligators everywhere in the South. You just expect it.
Webster: Any other comments? Thank you, Amber.

Close Public Hearing

Jett motions for Positive Recommendation on modifying the Ordinance Revision 26-4-9, pertaining to Swimming Pool Covers; Davis Seconds; all in favor for a unanimous vote.

4. Discussion Item Only — Ordinance 26-III-21 Pertaining to Use Tables for Commercial Zones

John Webster: Tom, we missed you last week. Sounds like you were not doing well.
Jett: I am feeling a lot better this week. Since I blabbered on for so long as with the water issue, I'd be willing to move this to the next meeting if others agree.
Webster: We did table it from last week until this week. If you have some thoughts?
Jett: No, I think we've all suffered enough listening to my blathering.
Webster: Does anyone have thoughts or comments?
Amber: My only thought is if you think by the next meeting, you'll be ready to have. Something set in stone. I know we've been just discussing it, but, do you want to come back and discuss it when you're ready to, or do you want it to be set for November? I guess it's my thought of.

CEDAR CITY
ORDINANCE 1203-25

AN ORDINANCE AMENDING CEDAR CITY ORDINANCES 26-IV-9 REMOVING THE REQUIREMENT OF FENCING AROUND PRIVATE SWIMMING POOLS WHEN AN ADEQUATE POWERED SAFETY COVER IS INSTALLED.

WHEREAS, the state legislature has granted general welfare power to the City Council, independent, apart from, and in addition to, its specific grants of legislative authority, which enable Cedar City to pass ordinances as are necessary and proper to provide for the safety, promote the prosperity, improve the peace and good order, comfort, and convenience of the city and its inhabitants, and for the protection of property in the city; and

WHEREAS, City ordinance currently requires the installation of a fence around private pools in all circumstances; and

WHEREAS, State law allows the owner of a private pool to not install a fence when a pool cover meeting the requirements of American Society for Testing and Materials (ASTM) F1346; and

WHEREAS, the City Council seeks to bring City ordinance into harmony with State Code; and

WHEREAS, the City Council finds that it is in the best interests of the health, safety, and general welfare of the citizens of Cedar City to change Sections 26-IV-9 to match State Code to avoid confusion and conflicting laws.

NOW THEREFORE, be it ordained by the City Council of the Cedar City, in the State of Utah, as follows:

SECTION 1: **AMENDMENT** "Section 26-IV-9 Swimming Pools" of the Cedar City Municipal Code is hereby *amended* as follows:

AMENDMENT

Section 26-IV-9 Swimming Pools

Swimming pools not completely enclosed within a building having solid walls shall be set back at least five (5) feet from property lines and shall be completely surrounded by a fence or wall having a height of at least four (4) feet. There shall be no openings larger than thirty-six (36) square inches except for gates which shall be equipped with self-closing and self-latching devices.

When a pool is equipped with a powered safety cover that complies with ASTM F1346, a fence is not required.

PASSED AND ADOPTED BY THE CEDAR CITY CITY COUNCIL

____________________________.

	AYE	NAY	ABSENT	ABSTAIN
Phillips	______	______	______	______
Riddle	______	______	______	______
Cox	______	______	______	______
Wilkey	______	______	______	______
Schmidt	______	______	______	______

Presiding Officer

____

Garth O. Green, MAYOR, Cedar City

Attest

____

RENON SAVAGE, RECORDER,
Cedar City

CEDAR CITY COUNCIL
AGENDA ITEMS - 2
DECISION PAPER

TO: Mayor and City Council

FROM: City Manager

DATE: November 17, 2025

SUBJECT: Requested refund on a solid waste Bill.

Thomas Holyoak is requesting a refund on his solid waste bill. He contends that the City has been billing him for four (4) garbage cans every month since May of 2015. He has told staff that he has had two (2) cans, not four (4). The bill for a garbage can is $8 per can per month. So, Mr. Holyoak is seeking a $2,016 refund.

There is a note in Mr. Holyoak's billing account dated 5/13/2015 that reads, "four cans out for trash several times." The City's accounting records for our billing department show the last three (3) years and our accounting records show Mr. Holyoak has been billed for four (4) cans for the last three (3) years. Staff has offered him a refund for the cost of two (2) cans for the last three (3) years (+/-$560.00) based on what we can verify has been billed. Mr. Holyoak has chosen to present the matter to the Council and request a refund for the past ten (10) years (+/-$2.016).

Please hear Mr. Holyoak's request. Also please realize the public hearing for this matter will have to be held with the action meeting due to publication deadlines.

If you have any questions, please call. Thank you.

CEDAR CITY COUNCIL
AGENDA ITEM- 3
DECISION PAPER

TO: Mayor and City Council

FROM: Scott Christensen/Ken Nielson

DATE: November 19, 2025

SUBJECT: Cross Hollow Arena Fees Increase

DISCUSSION:

Starting in January 2026 we are requesting fee increases due to the new addition at the Cross Hollow Arena. Please see the attached fee structure with the requested increases. These increases were approved by the Cross Hollow Arena Committee to move forward for Councils approval.

Thank you for your time and consideration.

Cedar City Cross Hollow Arenas
Fee Schedule (FY 2025-26)

Arenas	Full Day Rental	Ticketed Events
Indoor Only (north, west, east entrance only)	$350/day	$1,000/day
Indoor with Warm-up	$450/day	$1,000/day
Outdoor	$400/day	$1,000/day
Outdoor with Warm-up (if available)	$450/day	$2,000/day
Indoor with Warm-up and Outdoor	$750/day	$2,000/day
Warm-up Only	$300/day	$1000/day
Parking Lot	$400/day	$1,000/day

All Arenas $50/hour (Weekdays) 3-Hour Minimum
Rental includes arena worked and groomed once daily before event begins.
Cleaning/Damage Deposit - $750/event

Stalls / RV Hookups	Fees
Stalls	$25/day
Power RV Hookup	$25/day
Shavings	$10/bag

Arena Lights

*Lights only if arena is rented

Additional Fees and Equipment

Day Use	$5/per day
Additional Demand/Set-Up Fee	Minimum of $50 (TBD in accordance with adopted policy by facilities management. May include extra arena drags, bleachers, etc.)
Tables	$4.00/each per event
Chairs	$.50/each per event
Overnight Horse Tie-Ups	$25.00/per horse
Livestock Yardage Fee	$100/per day (See adopted arena policy for details.)
Parking Lot Trailer Cleanout	$100/per trailer
Concessionaire Usage Fee	May be bought out per event price TBD
Additional Vendor Fee	10% of Gross Sales
Brown Panels	$5.00/panel per event
Heat	$100/day
Tractor/Equipment	$75/hr or $150/day
Livestock Storage	$25/head
Spider Boxes	$25/box $50/box
Rolling of Arena Floor	$300
Rolling of Warm-up floor	$200
Judges Stand	$50/event

Any Event that requires additional arena sand $500 per load

Any Event that requires sand to be moved	$1000 per Event
Any Event that requires equipment (skid steer/grader)	$100 per day
Any Event that requires an additional tractor	$100 per Tractor

Membership Fees

Family Pass	$200/year
Adult Individual Pass (18 years old)	$150/year
Youth Individual Pass (17 years old and younger)	$100/year
Youth Clubs	$150/per club per year
Youth Club Membership	$50/per club member per year

(Membership Dates January 1st-Dec 31st, regardless of purchase date)

Banquet Room

Banquet Room	$200 up to 4 hours/day $350 up to 8 hours/day $450 All Day (8am-11:30pm)/day
Cleaning Deposit	$750/event
Stage rental	$200/day
Tables	$4.00/each per event
Chairs	$.50/each per event

CEDAR CITY RESOLUTION NO. 25-1203

A RESOLUTION OF THE CEDAR CITY COUNCIL AMENDING THE CEDAR CITY FEE SCHEDULE FOR THE CEDAR CITY CROSS HOLLOW ARENAS

WHEREAS, Cedar City maintains a fee schedule showing fees the City charges for various services; and

WHEREAS, the City's expansion to the Cross Hollow Arenas will soon be available for use; and

WHEREAS, with said expansion, amendments to the fee schedule are necessary; and

WHEREAS, the City Council has reviewed the proposed changes to the fee schedule during an open and public meeting and finds that the proposed fee changes are reasonable and necessary.

NOW THEREFORE be it resolved by the City Council of Cedar City, State of Utah, that Cedar City's fee schedule is amended as set forth in exhibit #1.

NOW THEREFORE BE IT FURTHER RESOLVED by the City Council of Cedar City, State of Utah, that this resolution shall become effective immediately upon passage.

NOW THEREFORE BE IT FURTHER RESOLVED by the City Council of Cedar City, State of Utah, that City staff is authorized to make such changes of a non-substantive nature to the City's fee schedule as are reasonably necessary to facilitate the foregoing amendment.

Council Vote:

Phillips -
Riddle -
Cox-
Wilkey -
Schmidt -

Dated this ______ day of December, 2025.

____
GARTH O. GREEN
MAYOR

[SEAL]
ATTEST:

RENON SAVAGE
RECORDER

Exhibit #1

Cedar City Resolution No. 25-1203

Cedar City Cross Hollow Arenas
Fee Schedule (FY ~~2024-25)~~ 2025-26

Arenas	Full Day Rental	Ticketed Events
Indoor Only (north, west, east entrance only)	$350/day ~~(Weekend)~~	$1,000/day
Indoor with Warm-up	$450/day	$1,000/day
Outdoor	~~$350/day (Weekend)~~ $400/day	$1,000/day
Outdoor with Warm-up (if available)	$450/day	$2,000/day
~~Both~~	~~$500/day (Weekend)~~	~~$2,000/day~~
Indoor with Warm-up and Outdoor	$750/day	$2,000/day
Warm-up Only	$300/day	$1000/day
Parking Lot	~~$350/day~~ $400/day	$1,000/day

All Arenas $50/hour (Weekdays) 2-Hour Minimum

Rental includes arena worked and groomed once daily before event begins.

Cleaning/Damage Deposit - ~~$500/per event~~ $750/event

Stalls / RV Hookups	Fees
Stalls	$25/day
Power RV Hookup	$25/day
Shavings	$10/bag

Arena Lights

*Lights only if arena is rented

Additional Fees and Equipment	
Day Use	$5/per day
Additional Demand/Set-Up Fee	Minimum of $50 (TBD in accordance with adopted policy by facilities management. May include extra arena drags, bleachers, etc.)
Tables	$4.00/each per event
Chairs	$.50/each per event
Overnight Horse Tie-Ups	$25.00/per horse
Livestock Yardage Fee	$100/per day (See adopted arena policy for details.)
Parking Lot Trailer Cleanout	$100/per trailer
Concessionaire Usage Fee	May be bought out per event price TBD
Additional Vendor Fee	10% of Gross Sales
Brown Panels	$5.00/panel per event
Heat	$100/day
Tractor/Equipment	$75/hr or $150/day
Livestock Storage	$25/head
Spider Boxes	$25/box $50/box
Rolling of Arena Floor	$300
Rolling of Warm-up floor	$200
Judges Stand	$50/event
Any Event that requires additional arena sand	$500 per load
Any Event that requires sand to be moved	$1000 per Event
Any Event that requires equipment (skid steer/grader)	$100 per day
Any Event that requires an additional tractor	$100 per Tractor

Membership Fees

Family Pass	~~$150/year~~ $200/year ~~(+ up to 4 kids)~~
Adult Individual Pass (18 years old)	~~$100/year~~ $150/year
Youth Individual Pass (17 years old and younger)	~~$75/year~~ $100/year
Youth Clubs	$150/per club per year
Youth Club Membership	~~$30~~ $50/per club member per year

(Membership Dates January 1st-Dec 31st, regardless of purchase date)

Banquet Room

Banquet Room	$200 up to 4 hours/day
	$350 up to 8 hours/day
	$450 All Day (8am-11:30pm)/day
Cleaning Deposit	$750/event
Stage rental	$200/day
Tables	$4.00/each per event
Chairs	$.50/each per event

CEDAR CITY COUNCIL
AGENDA ITEM- 4
DECISION PAPER

TO:	Mayor and City Council
FROM:	Scott Christensen/Ken Nielson
DATE:	November 19, 2025
SUBJECT:	Cross Hollow Arena Donation Letter
DISCUSSION:	We are seeking approval to move forward with a donation letter to help seek funds to finish the addition at the Cross Hollow arena. This letter was approved by the Cross Hollow Arena Committee to be presented to Council. Please see attached donation letter.

Thank you for your time and consideration.

CROSS HOLLOW
ARENAS

August 11, 2025

RE: Diamond Z Arena Addition Project.
Additional funding is needed to complete the project.

To Whom It May Concern:

As you might be aware, a new addition to the Diamond Z Arena is currently under construction at the Cross Hollow Arenas complex. This addition will increase the size of the indoor arena by 22,550 square feet. The amenities will include a new banquet hall/meeting room, restrooms, animal wash bays, and a large warm-up area. This exciting new addition will greatly enhance the functionality of the Diamond Z Arena by providing a dedicated meeting space and a location for animals to be washed and cleaned. The events at this facility are a huge economic driver in Iron County and surrounding areas.

The Cross Hollows Arenas, including the Diamond Z Arena, are an important cultural asset and economic engine for the entire Cedar City community. This project will help to enhance this facility as a premier destination in southwestern Utah. Even though construction is underway, additional funding is needed to fully complete the project. Your support is sincerely requested as we seek to raise the extra funds that are needed. A donation of $5,000 or $10,000 (or more) would be greatly appreciated!

We will allow naming rights on the new banquet room for a donation of $20,000 or more. We are sending this letter to many in the community, so if more than one contributes above the $20,000 mark, we will have a bid off. The banquet room will be named after your business, family legacy, or the name of your choice.

We want to thank the many who have contributed to the expansion thus far. Some very large donations have been made, and those individuals have allowed the naming right to go future contributors as mentioned above. Approximately $2.3 million has been raised from private and public donations including $1 million dollar contribution from the Iron County Restaurant Tax, and $180,000 from the Cedar City Tax payers.

If you have any questions, or would like to make a donation, please contact Scott at: cscott@cedarcityut.gov or #435-590-5871. Thanks for your support!

Sincerely,

Scott Christensen
Cross Hollow Arena Manager
Rusty Aiken
Delynn Barton
Arena committee members

CEDAR CITY COUNCIL
AGENDA ITEMS - 5
DECISION PAPER

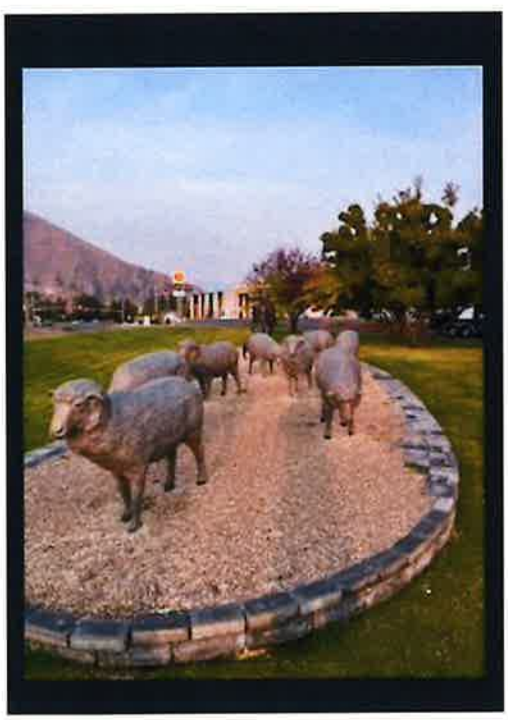
TO: Mayor and City Council

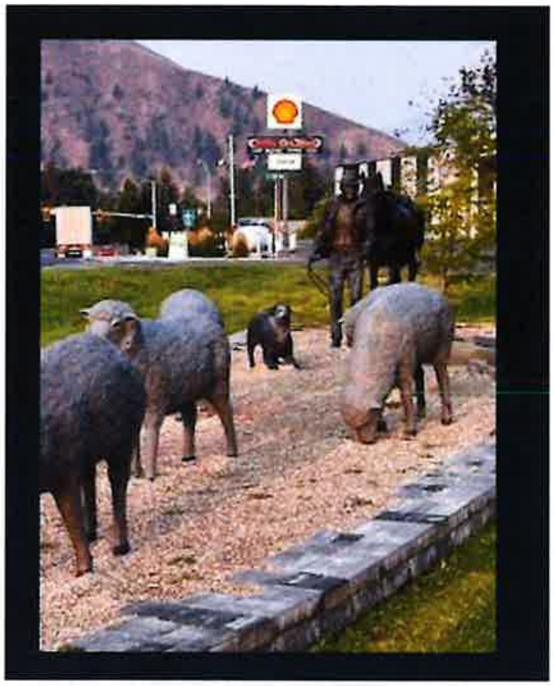
FROM: City Manager

DATE: November 17, 2025

SUBJECT: placement of a sheep herders' monument at the Cross Hollow Event Center.

I was approached by Commissioner Robinson with a request to locate a monument on the Cross Hollow Arena property. Below are some photos that have inspired the request. The proposal is to privately raise all of the money to commission the monument pieces. Once completed it will be placed in the front of the Cross Hollow property. The location may be subject to movement depending on final size and scope of the project. The attached resolution is in conformance with the ordinance recently passed by the City Council. The Council would give permission for the concept and the concept location; the Mayor and staff would work with the proponents to see the project to be completed. Ken Nielson and Scott Christensen are aware of the proposal and support the concept of the proposed monument. If you have any questions, please give me a call. Thank you.






THE GOOD SHEPHERD MONUMENT
WOOF
WOOF
SYDNEY


RANGELAND

CEDAR CITY RESOLUTION NO. 25-1203-1
RESOLUTION AUTHORIZING PLACEMENT OF A MONUMENT TO SHEEP HERDERS AT THE CROSS HOLLOW EVENTS CENTER

WHEREAS, Cedar City Ordinance 27a-17 permits the placement of a monument, historical marker, statute, commemorative plaque or bench, or other similar structure to commemorate or honor an individual or group with historical, cultural, or educational significance to Cedar City, that has contributed significantly to the cultural, political, or social aspects of Cedar City, that is otherwise strongly linked to Cedar City and its history, has provided a significant financial contribution to Cedar City; and

WHEREAS, the raising, ranching, and herding of sheep have a long history in Cedar City and the surrounding area; and

WHEREAS, sheep herders exhibited and continue to exhibit unwavering dedication, braving sometimes harsh weather and enduring isolation to protect their flocks and preserve a vital connection to the land; and

WHEREAS, the sheep industry historically helped drive economic development, shape the cultural landscape, and lead the establishment of important land management policies, many of which still positively affect Cedar City today.

NOW THEREFORE be it resolved by the City Council of Cedar City, Iron County, State of Utah, that, pursuant to the requirements of Cedar City Ordinance 27a-17, the placement of a monument at the Cross Hollow Events Center is authorized, honoring the sheep herding heritage of the Cedar City area, and the Mayor or designee, in consultation with the Leisure Service Department, which will be responsible for maintenance of the monument as long as the monument remains, shall determine the monument's final location, dimensions, materials, design and content. This resolution shall take effect immediately upon passage.

Council Vote:
Phillips -
Riddle -
Cox -
Wilkey -
Schmidt -

Dated this ___ day of December, 2025.

GARTH O. GREEN
MAYOR

[SEAL]

ATTEST:

RENON SAVAGE
RECORDER

CEDAR CITY COUNCIL
AGENDA ITEMS - 6
DECISION PAPER

TO: Mayor and City Council

FROM: City Manager

DATE: November 17, 2025

SUBJECT: Placement of a Brand on the Cross Hollow warm up barn.

Cedar City has been constructing a warmup barn addition to the diamond Z arena. The warmup barn would not have been built without the generous contributions of Jean Lopour, who contributed a substantial sum of money that allowed the City to raise additional funds and build the warmup barn. The proposed resolution would allow placement of the Quichapa Canyon Ranch Brand on the outside of the addition. The scope of the brand would be similar to the existing Diamond Z brand on the arena. Ken Nielson and Scott Christensen are aware of this proposal and fully supportive. Please consider adopting the attached resolution. If you have any questions, please give me a call. Thank you.

CEDAR CITY RESOLUTION NO. 25-1203-2
RESOLUTION AUTHORIZING PLACEMENT OF THE QUICHAPA CANYON RANCH BRAND ON THE CROSS HOLLOW EVENTS CENTER WARMUP BARN

WHEREAS, Cedar City Ordinance 27a-17 permits the placement of a monument, historical marker, statute, commemorative plaque or bench, or other similar structure to commemorate or honor an individual or group with historical, cultural, or educational significance to Cedar City, that has contributed significantly to the cultural, political, or social aspects of Cedar City, that is otherwise strongly linked to Cedar City and its history, has provided a significant financial contribution to Cedar City; and

WHEREAS, Jean Lopour has made significant financial contributions to the expansion of the Cross Hollow Events Center, without which the expansion would not have occurred; and

WHEREAS, although Jean Lopour has not sought recognition for these contributions, the Cedar City Council seeks to recognize these contributions by placing the Quichapa Canyon Ranch brand, owned by the Lopour family, as shown in Exhibit A, on the exterior of the Cross Hollow Events Center Warmup Barn.

NOW THEREFORE be it resolved by the City Council of Cedar City, Iron County, State of Utah, that, pursuant to the requirements of Cedar City Ordinance 27a-17, the placement of the Quichapa Canyon Ranch brand on the Warmup Barn at the Cross Hollow Events Center is authorized, and the Mayor or designee, in consultation with the Leisure Service Department, which will be responsible for maintenance of the structure as long as the structure remains, shall determine the structure's final location, dimensions, materials, design and content. This resolution shall take effect immediately upon passage.

<u>Council Vote</u>:

Phillips -
Riddle -
Cox -
Wilkey -
Schmidt -

Dated this ___ day of December, 2025.

____
GARTH O. GREEN
MAYOR

[SEAL]
ATTEST:

____
RENON SAVAGE
RECORDER

EXHIBIT A

Resolution No. 25-1203-2
Quichapa Canyon Ranch Brand


Quichapa Canyon Ranch
Jean and Joe Lopour

CEDAR CITY COUNCIL

AGENDA ITEM – 7

TO: Mayor and City Council

FROM: Tyler Galetka, Airport Manager

DATE: November 14, 2025

SUBJECT: Specialized Aviation Services Operation (SASO) Addendum– Wright Wrench Aviation

DISCUSSION:

Approve Addendum to Specialized Aviation Services Operation (SASO) agreement with Wright Wrench Aviation:

Wright Wrench Aviation, an aircraft maintenance service provider based on the airport, is desiring to expand their business operations to include aircraft rental and flight instruction from the hangar they currently occupy. Wright Wrench has already purchased an aircraft for the described operations.

Wright Wrench Aviation has an airport board approved sublease of an existing hangar on the airfield and would like to begin these operations with the approval of a SASO addendum. The attached addendum received a positive recommendation from the airport advisory board.

Please consider the approval of this SASO for Wright Wrench Aviation.

SPECILIZED AVIATION SERVICES OPERATOR (SASO) AGREEMENT ADDENDUM

This SASO addendum is entered into and becomes effective on the ____ day of ____________ 20__, between Cedar City Corporation, a municipal corporation and political subdivision of the State of Utah, herein referred to as "CITY", and Wright Wrench Aviation, hereinafter referred to as OPERATOR.

RECITALS

WHEREAS, OPERATOR and CITY entered into a SASO Agreement on ______, 2024 for performing aircraft maintenance services at the CEDAR CITY REGIONAL AIRPORT, Cedar City, Utah.

WHEREAS, OPERATOR desires to include flight training and aircraft rental in addition to the existing services described in the original 2024 agreement and CITY has determined that OPERATOR appears to be qualified in all respects to engage in the operation of aircraft maintenance services at the Cedar City Regional Airport; and;

NOW THEREFORE, PARTIES agree as follows:

1. CITY and OPERATOR will abide by all terms and conditions of the original Agreement dated ____ 2024.

2. OPERATOR shall provide CITY a current list of all aircraft operating under the SASO. If changes are made to the list of current aircraft, OPERATOR shall notify CITY within ten (10) days of any effective change.

CEDAR CITY CORPORATION:
(LESSOR)

Dated this ___ day of ________________, 20___.

By: ________________________________
Garth Green
MAYOR

(SEAL)
ATTEST:

____
RENON SAVAGE
RECORDER

STATE OF UTAH
COUNTY OF IRON

This is to certify that on the ____ day of ________________, 20___, before me, the undersigned, a Notary Public, in and for the State of Utah, duly commissioned and sworn as such, personally appeared Garth Green, known to me to be the Mayor of Cedar City Corporation, and Renon Savage, known to me to be the City Recorder of Cedar City Corporation, and acknowledged to me that she the said Garth Green and she the said Renon Savage executed the foregoing instrument as a free and voluntary act and deed of said corporation, for the uses and purposes therein, and on oath state that they were authorized to execute said instrument, and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year hereinabove written.

____
NOTARY PUBLIC

WRIGHT WRENCH AVIATION:
(LESSEE)

Dated this ___ day of _________________, 20__.

By: ________________________________
Wright Wrench Aviation

STATE OF UTAH)

: Ss.

COUNTY OF IRON)

On this ____ day of _________________________, 20____, personally appeared before me __________________________________ who duly acknowledged to me that he/she/they signed the above and foregoing document.

____
NOTARY PUBLIC

CEDAR CITY COUNCIL

AGENDA ITEM –

TO: Mayor and City Council

FROM: Tyler Galetka, Airport Manager

DATE: November 14, 2025

SUBJECT: Cedar City Regional Airport – 2025 Master Plan Approval

DISCUSSION:

Approve the 2025 Master Plan for the Cedar City Regional Airport:

The Cedar City Regional Airport was awarded an Airport Improvement Program (AIP) grant in 2022 from the Federal Aviation Administration (FAA) to complete a full rewrite of the 2017 Airport Master Plan. The reevaluation of the Airport Master Plan is a critical step for the future of the airport, with many unforeseen changes included in the new plan. The Master Plan is the identity of the airport and identifies future growth and needs with the current information that is available.

This Master Plan project was completed by Ardurra Group, Inc., the airport's contracted planning engineers. The most significant changes included in the 2025 Master Plan identify changes in the airport fleet mix of aircraft utilizing the airport, the introduction of the Utah Army National Guard, the need for an Air Traffic Control Tower (ATCT), and the future infrastructure needs to accommodate the airport's growth. With the approval of the 2025 Master Plan, the City and the FAA are more equipped to identify expectations, projects, and funding for infrastructure as we move forward.

Please consider the approval of the 2025 Master Plan for the Cedar City Regional Airport.

EXECUTIVE SUMMARY

1

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ARDURRA

CHAPTER ONE

EXECUTIVE SUMMARY

An airport master plan is the process of establishing an airport's blueprint for long-term development. It is a comprehensive study of the airport to determine an effective plan for future airport development. It ensures the airport will be able to continue to meet the needs of its customers and that future development is consistent with local, state, and national goals. Airports should update their long-term planning documents every five to ten years so the airport can identify and respond to updated design requirements, changes in the economy, industry changes, and other significant changes affecting local aviation conditions.

The purpose of the Cedar City Regional Airport 2025 Airport Master Plan is to evaluate the airport's current capabilities, forecast future aviation demand, and plan for the timely development of new or improved facilities that may be required. The ultimate goal of this planning document is to provide guidance for the overall maintenance, development, and operation of the airport. It is intended to provide a strategy to accommodate future airport demand in a safe, cost-effective, operationally efficient, and flexible manner..

This airport master plan was completed by Ardurra on behalf of the airport sponsor, the Cedar City Corporation. It was prepared in accordance with all applicable rules, standards, and regulations outlined in Federal Aviation Administration (**FAA**) advisory circulars, including Advisory Circular 150/5300-13B, *Airport Design*, and Advisory Circular 150/5070-6B, *Airport Master Plans*, and orders.

1.1. Overview and Findings

The 2025 Airport Master Plan was started in June of 2022. The main findings from this planning effort were based on the planning process and public involvement, and are summarized as follows:

- The forecast approved by the FAA for this planning period (2022–2042) indicates that total operations are expected to increase from 120,996 for 2022 to 153,639 by 2042, and based aircraft are expected to increase from 100 for 2022 to 136 by 2042.
- The existing and future critical aircraft were determined to have an aircraft approach category (**AAC**) of C and an airplane design group (**ADG**) of III. The existing critical aircraft is best represented by the Avro RJ87, and the future critical aircraft is best represented by the Embraer E-175.
- Airport design elements (i.e., runway, taxiway, safety areas, and separations) meet or exceed FAA design standards.
- Consideration was given to the future of the crosswind runway because it is not eligible for federal funding. The recommendation included in this airport master plan is to convert Runway 8/26 into a taxiway. This will allow for more hangar development, increased airport circulation, and improved access to the west side of the airport.
- A full parallel taxiway is planned as an ultimate development project for increased access to the west side of the airport. The build-out will use a phased approach with the full parallel taxiway shown on the airport layout plan (**ALP**).
- The airport master plan identified the need for an airport traffic control tower (**ATCT**) and several possible locations are identified on the airport layout plan.
- There is a need for a mix of large corporate hangars and small general aviation hangars, and this was identified as a priority. A proposed layout was developed as part of the planning process and is included in the updated airport layout plan.

1.2. Public Involvement

The project team developed a community involvement plan that included several opportunities for community members to engage in the planning process and provide feedback on important elements of the airport master plan. As shown in **Table 1.1**, this included holding both traditional, in-person, meetings and virtual meetings to keep the community informed throughout the project and allow as much public involvement as possible. The project team also formed a community advisory committee (**CAC**) and a technical advisory committee (**TAC**) to solicit feedback from informed stakeholders. These committees provided the project team with valuable insight into the needs of the local aviation community throughout the planning process. In addition to the series of public presentations and workshops, the project team also provided the Cedar City Council with regular updates. Project information was also posted online at a website dedicated to the airport master plan process. The site was regularly updated with plan documents and schedules, open house announcements, and included a portal where the public could ask questions or submit comments.

Table 1.1: **Public Meeting Involvement**

Meeting Type	Date
Community/Technical Advisory Committee Meeting #1	October 10, 2022
Public Meeting #1	October 11, 2022
Community/Technical Advisory Committee Meeting #2	February 16, 2023
Public Meeting #2	March 16, 2023
Community/Technical Advisory Committee Meeting #3	April 10, 2024
Public Meeting #3	April 10, 2024
Community/Technical Advisory Committee Meeting #4	March 4, 2025
Public Meeting #4	March 4, 2025

1.3. Proposed Development Summary

The major development projects proposed for the 20-year planning period are outlined in detail in **Chapter 10, Implementation**. The improvements proposed for the 20-year planning period are estimated to cost a total of $60.9 million with $4.1 million expected to be funded locally. The short-term development projects expected to take place within one to five years are listed in **Table 1.2**, medium-term development projects expected to take place within six to 10 years are listed in **Table 1.3**, and long-term development projects expected to take place within 11–20 years are listed in **Table 1.4**. These proposed development projects are also shown in **Figure 1.1**.

Table 1.2: **Proposed Short-Term Development**

Project ID	Project Description	Total
S-1	Reconstruct Parallel Taxiway A (A4–Runway 8/26)	$7,400,000
S-2	Install LED Lighting on Taxiway A (A4–Runway 8/26)	$1,100,000
S-3	Runway 8/26 Pavement Preservation	$200,000
S-4	Seal Runway 2/20	$700,000
S-5	Seal Taxiway Connectors A1–A4	$106,000
S-6	Taxiway A Reconstruction (Runway 8/26–A21)	$5,500,000
S-7	Taxiway A Reconstruction: Install LED Lighting	$480,000
S-8	Construct Taxiway Connector A2	$1,800,000
S-9	Taxiway C Reconstruction: RWY 20–RWY 8/26 (Ph I: Design)	$600,000
S-10	Taxiway C Reconstruction: Install LED lighting (Ph I: Design)	$106,000
S-11	Seal Taxiway C	$270,000
S-12	Seal Terminal, General Aviation, and FBO Aprons	$450,000
	Total	**$18,712,000**

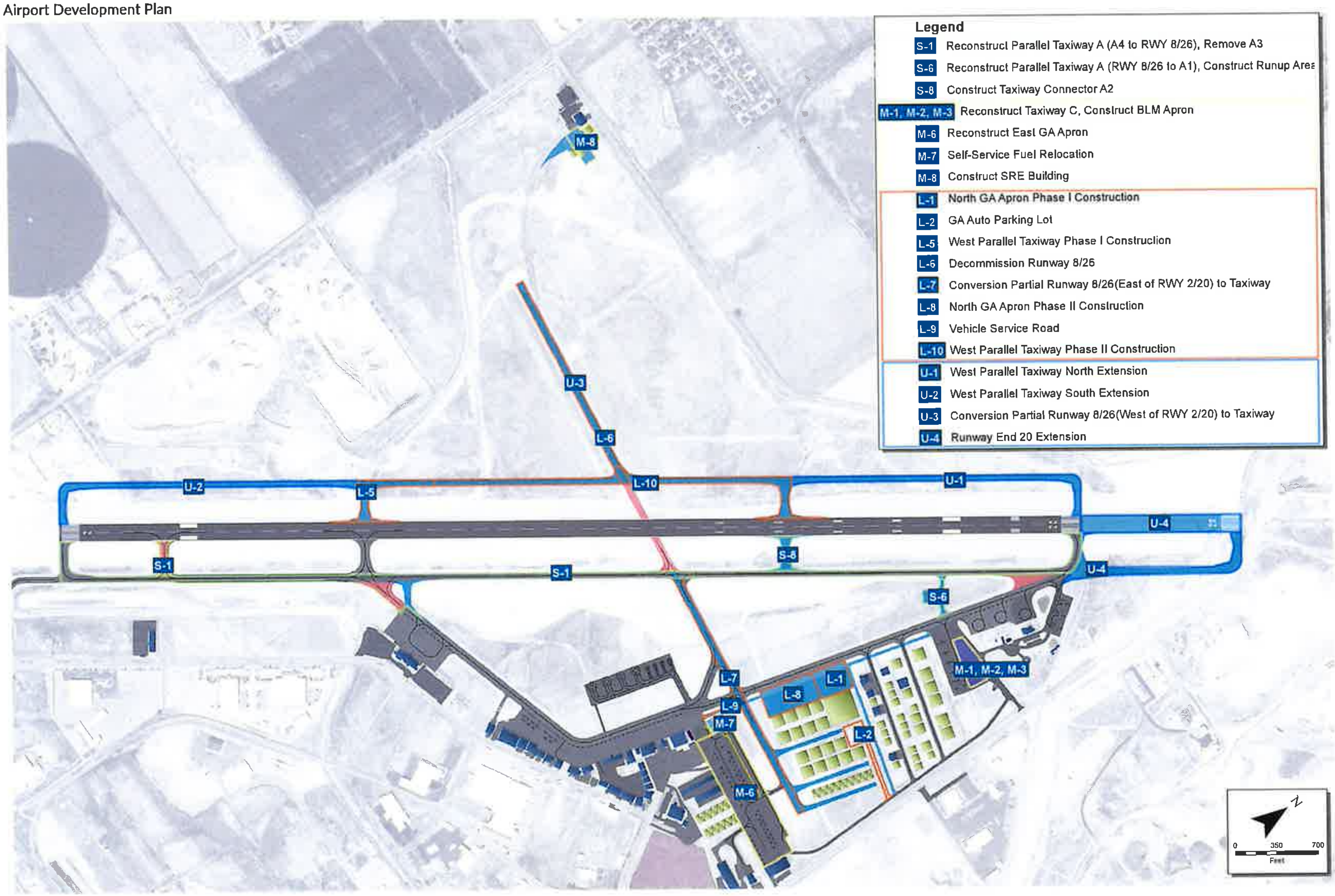
Table 1.3: **Proposed Medium-Term Development**

Project ID	Project Description	Total
M-1	Taxiway C Reconstruction (Phase II: Construction)	$4,050,000
M-2	Taxiway C: Install LED Lighting (Phase II: Construction)	$900,000
M-3	BLM Apron Expansion (Phase II: Construction)	$950,000
M-4	Runway 2/20 Pavement Maintenance	$800,000
M-5	Taxiway A Pavement Maintenance	$400,000
M-6	Reconstruct East General Aviation Apron	$9,600,000
M-7	Self-Service Fuel Relocation	$1,050,000
M-8	Construct a Four-Bay Snow Removal Equipment Building	$4,220,000
	Total	**$21,970,000**

Table 1.4: **Proposed Long-Term Development**

Project ID	Project Description	Total
L-1	North GA Apron (Phase 1: Design and Construction)	$2,380,000
L-2	General Aviation Parking Lot	$900,000
L-3	Airport Master Plan	$1,000,000
L-4	Environmental Compliance (RWY 8/26 Decommissioning)	$50,000
L-5	West Parallel Taxiway (Phase I: Design and Construction)	$3,010,000
L-6	Runway 8/26 Decommissioning and ALP Update	$700,000
L-7	Partial Conversion of Runway 8/26 to a Taxiway	$610,000
L-8	North General Aviation Apron (Phase II: Design)	$2,160,000
L-9	Vehicle Service Road	$1,180,000
L-10	West Parallel Taxiway (Phase II: Design and Construction)	$8,290,000
	Total	**$20,280,000**

Airport Development Plan



Source: Ardurra.

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2

INTRODUCTION

FIGURES

CHAPTER TWO

INTRODUCTION

An airport master plan is the process of establishing an airport's blueprint for long-term development. It is a comprehensive study of the airport to determine an effective plan for future airport development. It helps to ensure the airport will be able to continue to meet the needs of its customers and that development is consistent with local, state, and national planning goals. This includes identifying potential environmental and socioeconomic impacts of airport development projects. An airport master plan is an important step in helping the airport be financially and socially responsible and operate as efficiently as possible.

Airports should update their long-term planning documents every five to ten years in order to identify and respond to emerging national, statewide, and local trends expected to affect the airport. The last master plan for Cedar City Regional Airport (**CDC**) was completed in 2017 and had a base year of 2015. This airport master plan study is being undertaken to evaluate and document the airport's current capabilities and facilities, identify its role in both the national and state aviation systems, and develop a forecast of aviation demand in order to plan for the timely development of improved or new facilities that may be required to meet that demand. This airport master plan is intended to be a proactive document that also provides guidance for funding future development projects.

2.1. Federal Aviation Administration Role in Airport Master Plans

Federal Aviation Administration (**FAA**) Advisory Circular 150/5070-6B, *Airport Master Plans*, provides guidance for the preparation of airport master plans. The intent of this guidance is to provide planning requirements for airports ranging in size and function from small general aviation to large commercial service facilities. This guidance also allows for each master plan to be customized to meet the specific needs of the airport and the surrounding community.

While the FAA does review all elements of an airport master plan to ensure that sound planning techniques have been applied, it only approves the forecast and the airport layout plan. FAA approval is required for these elements because the agency uses them to help determine the airport's eligibility for grant funding of proposed development. Additionally, the FAA Denver Airports District Office (**ADO**) project manager will interact with the planning team throughout the master planning process and will provide the planning team with additional direction and guidance as needed.[1]

2.1.1. National Plan of Integrated Airport Systems

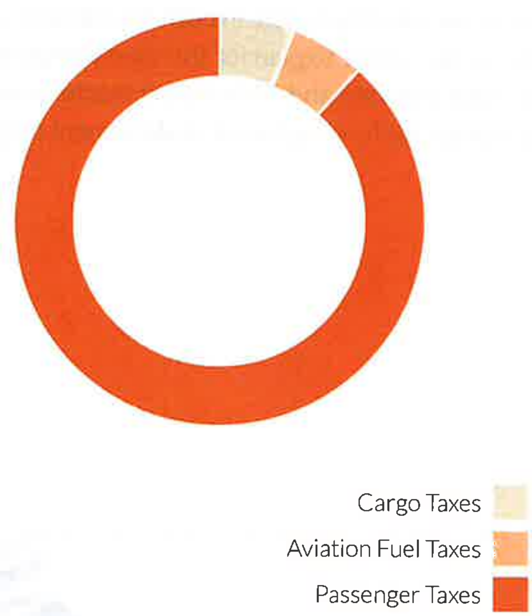
The National Plan of Integrated Airport Systems (**NPIAS**) identifies the nearly 3,300 public-use airports included in the national airport system, the roles they currently serve, and the amounts and types of airport development eligible for federal funding under the Airport Improvement Program.[2] The National Plan of Integrated Airport Systems and the airport's role in the national aviation system are discussed in Chapter 3.

2.1.2. Airport Improvement Program

The Airport Improvement Program (**AIP**) is administered by the FAA to provide grants to public agencies for the planning and development of public-use airports included in the NPIAS. For primary, nonhub commercial service airports, like CDC, these grants typically cover between 90-95% of eligible costs for planning and development projects. However, due to the economic status of the region, the FAA contributes 95% of eligible costs for the airport. To be eligible, projects must be related to enhancing airport safety, capacity, security, or environmental concerns. These typically include airfield construction and rehabilitation, airfield lighting and signage, navigational aids, and land acquisition as well as planning and environmental studies. Certain professional services that are necessary for eligible projects, such as planning, surveying, and design, can also be eligible.[3]

The AIP is funded by the Airport and Airway Trust Fund (**AATF**). As shown in Figure 2.1, the AATF is supported by taxes on ticket sales, taxes on air cargo and airmail, and taxes on aircraft fuel.[4] The majority of the cost to prepare this 2025 Airport Master Plan has been funded by an AIP grant.

Figure 2.1: **Airport and Airway Trust Fund**



Source: FAA, Airport & Airway Trust Fund (AATF).

a. Grant Assurances and Obligations

Airport sponsors that accept AIP funds must also agree to certain obligations and conditions referred to as grant assurances. These assurances require the airport to maintain and operate its facilities safely and efficiently. This includes having an up-to-date and approved airport layout plan on file with the FAA.[5] These obligations and grant assurances are discussed in more detail in **Chapter 11, Planning for Compliance**.

2.1.3. FAA Design Standards

The FAA uses the advisory circular (**AC**) system to provide guidance to the aviation community regarding acceptable methods, procedures, and practices for complying with airport design standards, recommendations, and requirements as well as any other FAA rules and regulations. This system allows airport planners and engineers to identify design criteria for nearly every aspect of an airport.[6] Several advisory circulars are used and referenced throughout this airport master plan. However, FAA AC 150/5070-6B, *Airport Master Plans*, and AC 150/5300-13B, *Airport Design*, are two of the most relevant. FAA design standards are discussed in more detail in **Chapter 6, Requirements**.

a. Critical Aircraft

A key determination of any airport master plan is the identification of the critical aircraft. The critical aircraft is the most demanding aircraft, or a family grouping of aircraft, with at least 500 annual operations. Identification of the critical aircraft is important because it is used to establish the FAA design standards that will be used for airfield facilities. These standards are based on the physical requirements of the critical aircraft and are used to determine several aspects of airport design such as runway and taxiway dimensions. For airports such as CDC where the infrastructure must support a wide range of aircraft and operations, it is wise to identify separate critical aircraft for the different areas of operations.[7] The critical aircraft is discussed in **Chapter 5, Forecast of Aviation Demand**.

2.2. Purpose of Airport Master Plans

The purpose of an airport master plan is to provide airport personnel with a long-term strategy for maintaining its important role within the national, state, and regional transportation systems. To serve as an effective planning guide, it should determine future aviation demand, identify and prioritize future development needed to maintain the safe and efficient operation of the airport, and provide justification for these projects. It should also include a realistic schedule for project implementation as well as a capital improvement program (**CIP**) that identifies potential federal, state, and local sources for funding.[8]

2.3. Objectives of Airport Master Plans

In general, an airport master plan should meet the following objectives:

- Understand the issues, opportunities, and constraints of the airport.
- Consider the impact of aviation trends.
- Identify the capacity of existing airport infrastructure.
- Determine the need for airport improvements.
- Obtain stakeholder and public input.
- Estimate project costs and funding sources.
- Develop a schedule for project implementation.[9]

2.4. Elements of Airport Master Plans

While the elements of an airport master plan are guided by the FAA, they vary in detail and complexity depending on the size, function, and issues of each airport. As shown in Figure 2.2, these elements build upon each other throughout the planning process.

Figure 2.2: **Airport Master Plan Process**

Research

- Develop Scope of Work
- Inventory
- Aviation Forecast
- Identify Critical Aircraft
- Forecast Approval

Requirements

- Facility Requirements
- Develop Alternatives
- Airport Layout Plans

Implementation

- Cost Estimates
- Capital Improvement Plan
- Implementation Plan
- Financial Analysis
- Final Documents

Source: Ardurra.

2.4.1. 2025 Airport Master Plan Elements

The 2025 Airport Master Plan includes the following elements:

Airport History and Overview

Provides an overview of the airport's location and history as well as the economy and demographics of the surrounding area.

Inventory

Identifies the airspace surrounding the airport as well as the existing instrument approach procedures. It also documents the condition of all airport facilities and pavements.

Forecast

Identifies existing aviation activity and provides a forecast of the anticipated aviation demand at the airport for the next two decades.

Facility Requirements

Describes design and safety standards relating to the condition of runways, taxiways, and other facilities.

Development Alternatives

Identifies and evaluates potential alternatives for meeting the needs of the airport and its users.

Environmental Overview

Presents environmental factors the airport will need to take into consideration as part of proposed projects.

Airport Layout Plan

A set of technical drawings that depict airport facilities and recommended improvements. It includes all of the airport's major components (e.g., runways, taxiways, and aprons) and all applicable FAA design standards.

Implementation Plan and Financial Feasibility Analysis

Provides a proposed schedule for each of the projects recommended in the master plan and includes a capital improvement plan that identifies potential sources of funding.

Planning For Compliance

Discusses the obligations and grant assurances the airport must comply with when accepting FAA-administered grant assistance.

Sustainability and Recycling

Discusses sustainability requirements and recommendations for recycling and solid waste management.

2.4.2. Public Involvement

Every airport master plan should include a public involvement program that offers a level of public involvement that corresponds to the complexity of the airport and the amount of community interest. Effective public involvement connects numerous stakeholders, such as aircraft owners, hangar tenants, and local business owners, with public officials, airport planners, and government agencies. Public input is highly encouraged throughout the planning process. However, public involvement has its greatest impact during the early stages of the planning process when planners are better able to respond to concerns and incorporate feedback received from the community. A public involvement program typically includes several methods for the planning team to keep the community informed as well as receive comments and suggestions throughout the master planning process.

An extensive public involvement program was developed and implemented for the 2025 Airport Master Plan. This program included the following aspects:

Committees

These typically include forming a technical advisory committee (**TAC**) and a community advisory committee (**CAC**). Committee members typically have a high level of technical competency associated with some aspect of aviation or airport operations and are stakeholders in the airport's operation. The community advisory committee provides the aviation planning team with valuable feedback and insight into the needs of the local aviation community and keeps the team informed of local issues.

Public Information Meetings

Public meetings or open houses with interactive information stations staffed by members of the planning team can be a very effective method of engaging the public and stakeholders in soliciting feedback on development options. The formality of these meetings can vary depending on the complexity of the study as well as the needs of the community.

Public Awareness Campaign

An effective public awareness campaign is an essential part of an effective public involvement program. It helps generate stakeholder involvement and maintaining stakeholder interest throughout the planning process as well as keeping the community informed. Aspects of a public awareness campaign can include fliers, fact sheets, press releases, newspaper ads, and general information packets. Additionally, websites with interactive or self-guided presentations as well as electronic copies of the airport master plan are becoming an increasingly popular part of public awareness campaigns.

Additional details regarding the public involvement program that was implemented for this airport master plan are included in **Appendix A, Community Engagement Summary**.

Endnotes

1 U.S. Department of Transportation. Federal Aviation Administration. "Advisory Circular 50/5070-6B, Airport Master Plans." January 27, 2015. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5070-6B_with_chg_1&2.pdf.

2 U.S. Department of Transportation. Federal Aviation Administration. "National Plan of Integrated Airport Systems (NPIAS)." December 7, 2022. https://www.faa.gov/airports/planning_capacity/npias.

3 U.S. Department of Transportation. Federal Aviation Administration. "Overview: What is AIP & What is Eligible?" August 2, 2022. https://www.faa.gov/airports/aip/overview.

4 U.S. Department of Transportation. Federal Aviation Administration. "Airport & Airway Trust Fund (AATF)" Accessed January 10, 2023. https://www.faa.gov/about/budget/aatf.

5 U.S. Department of Transportation. Federal Aviation Administration. "Assurances, Airport Sponsors." May 2022. https://www.faa.gov/sites/faa.gov/files/airports/new_england/airport_compliance/assurances-airport-sponsors-2022-05.pdf.

6 U.S. Department of Transportation. Federal Aviation Administration. "Order 1320.46D, FAA Advisory Circular System." April 7, 2015. https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1320.46D.pdf.

7 U.S. Department of Transportation. Federal Aviation Administration. "Advisory Circular150/5000-17, Critical Aircraft and Regular Use Determination."June 20, 2017. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5000-17-Critical-Aircraft.pdf.

8 U.S. Department of Transportation. Federal Aviation Administration. "Advisory Circular 50/5070-6B, Airport Master Plans." January 27, 2015. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5070-6B_with_chg_1&2.pdf.

9 Ibid.

AIRPORT OVERVIEW AND SOCIOECONOMIC INFORMATION

3

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CHAPTER THREE

AIRPORT OVERVIEW

An important goal of this airport master plan is to consider the airport's history and its current role in our local community in order to determine how it can best contribute to the success of the region. Examining the community's characteristics and developing an understanding of how the community is expected to grow and change will help the airport continue to meet the needs of the people it serves. This chapter provides a general description of the airport and the surrounding area. It includes a brief history of the airport and describes its role in both the national and state aviation systems. It also includes socioeconomic data for the local area and discusses the airport's economic impact. This overview helps to illustrate the nature of the community and the market the airport serves as well as its role in the community, region, and state.

3.1. Introduction

Cedar City Regional Airport (**CDC**) is a public use facility located approximately three miles northwest of Cedar City, Utah. It is owned and operated by the Cedar City Corporation which is considered by the FAA to be the airport sponsor.[1] The airport supports a wide variety of aviation needs including scheduled commercial service and air cargo flights, air taxi and charter service, and general aviation operations. The airport is home to the Color Country Interagency Fire Center (**CCIFC**) which is an interagency dispatch center in cooperation between the U.S. Bureau of Land Management (**BLM**), U.S. Forest Service (**USFS**), National Park Service (**NPS**), Bureau of Indian Affairs, and the Utah Division of Forestry, Fire and State Lands (**FFSL**). The CCIFC base is capable of accommodating single engine air tankers (**SEAT**), large air tankers (**LAT**), and firefighting helicopters.[2]

3.1.1. Regional Setting

As shown in Figure 3.1, the airport is located in Iron County which is in southwestern Utah. It is approximately 250 miles south of Salt Lake City, 170 miles north of Las Vegas, and about 20 miles north of the Mojave Desert. The region attracts many tourists due to its close proximity to high-profile outdoor destinations such as Arches National Park, Bryce Canyon National Park, Canyonlands National Park, Capitol Reef National Park, and Zion National Park. Aside from the world-famous national parks, the region offers many other variegated cliffs, canyons, domes, and sand dunes. The regional terrain ranges from hot, relatively low areas around Cedar City to the forested mountains of the Dixie National Forest which reach more than 10,000 feet high and is characterized by the many shades of color and beautiful forms of the exposed rocks.[3]

3.1.2. Iron County

Iron County is bordered by Beaver County to the north, Garfield County to the east, Kane County to the southeast, Washington County to the south, and the Nevada state line along its western edge. According to the U.S. Census Bureau, the county is 3,296.34 square miles which makes it the 11th largest county in Utah.[4] In addition to Cedar City, other cities and towns in the county include Brian Head, Enoch, Kanarraville, Paragonah, and the county seat, Parowan, along with several other unincorporated communities and census-designated places.[5] The major roadways that traverse the county are Interstate Highway 15 (I-15), Route 14, Route 56, and Route 130 (Main Street).

3.1.3. Cedar City

Cedar City encompasses 35.86 square miles and has an estimated population of 37,206 which makes it the largest community in Iron County.[6] Its elevation is 5,800 feet above sea level, and it lies in a semi-arid part of the state with 10,000-foot mountains to the east and a vast desert area to the west. Cedar City has become known as "Festival City USA" because it is home to several festivals such as the Utah Shakespeare Festival, the Red Rock Film Festival, Simon Fest, the Utah Summer Games, and several other major events, fairs, and festivals. The city is also home to Southern Utah University (SUU). As a result, Cedar City has become a center of tourism, commercial development, education, and the arts in southwestern Utah.[7]

3.2. Regional Environment

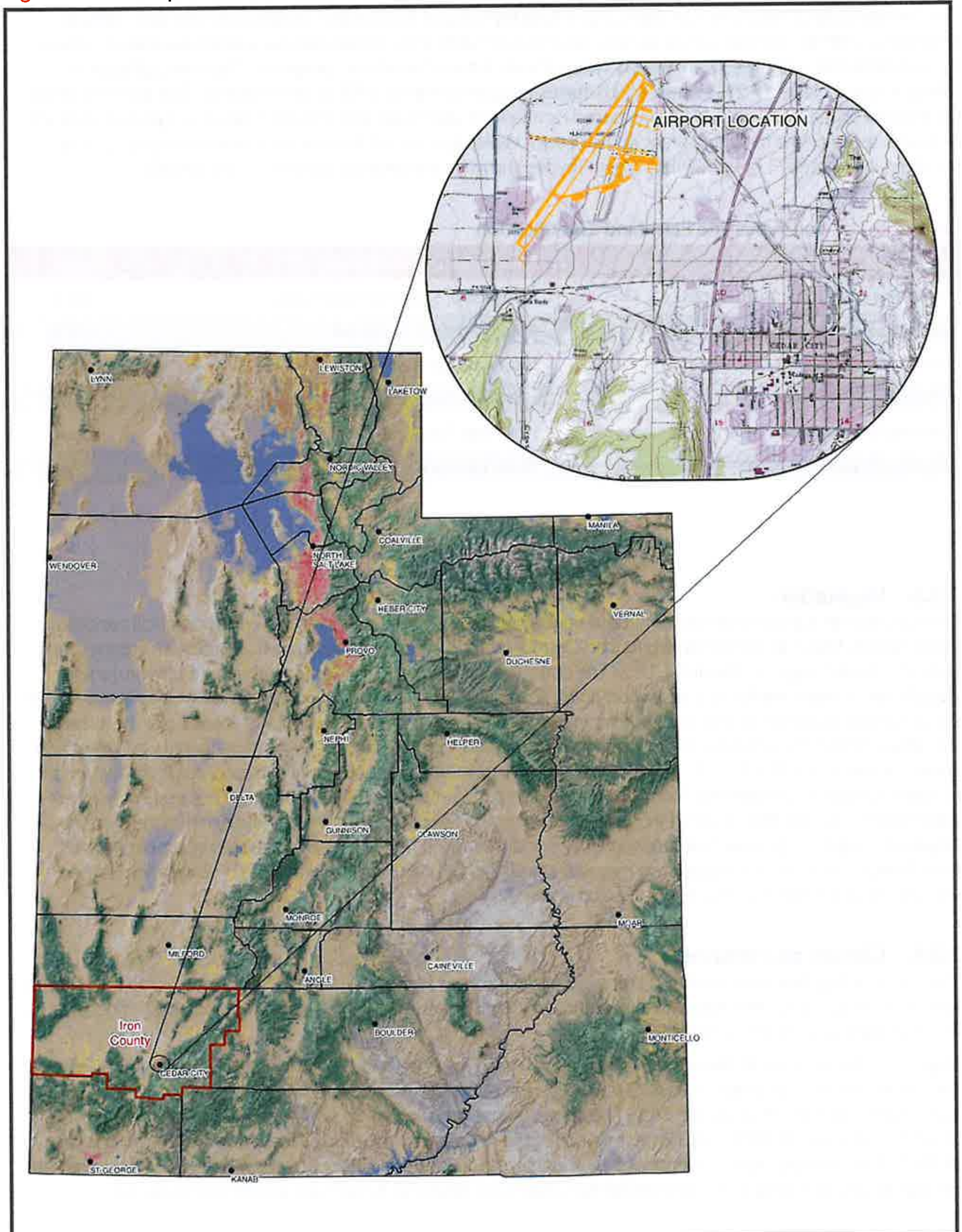
3.2.1. Geology

The airport is located within the Cedar Valley which is a structural depression bordered by the Black Mountains to the north, the Markagunt Plateau to the east, Parowan Valley to the northeast, and low-lying mountains and hills to the west. The valley floor is 170 square miles with elevations ranging from 11,307 feet at Brian Head to less than 5,400 feet at Mud Springs Wash. The Cedar Valley drainage basin exists in the structural transition zone between the Basin and Range and Colorado Plateau provinces. During the past 200 million years, the region has been affected by several periods of volcanism and tectonic deformation. The exposed geology of the area includes sandstones, siltstones, mudstones, volcanic deposits, alluvial-fan deposits, and other materials. The two principal geologic resources in the Cedar Valley drainage basin are iron ore and coal. Quaternary alluvium and volcanic deposits more than 1,000 feet thick lie under the valley floor. This alluvial fill is the principal aquifer in the basin. The aquifer, which is composed primarily of sand, gravel, clay, and silt, includes many high-permeability beds. The area's perennial streams and springs are the major sources of recharge in the valley.[8]

a. Affect on Aviation

Although the natural geology and landscape of Utah drive its economy, they also present a challenge to aviation. High-altitude airports, like CDC, that are surrounded by rising, extreme terrain are an impediment to aviation operations. Under these circumstances, airports require longer runways, frequent wintertime snow removal operations, and potential limits to instrument approaches resulting from reduced radar coverage due to the challenging terrain or other obstructions.[9]

Figure 3.1: Airport Location and Vicinity Map



Source: Ardurra

3.2.2. Soil

The United States Department of Agriculture (**USDA**) Natural Resources Conservation Service (**NRCS**) provides an online tool that can be used to identify soil types and related data for a selected area of interest. According to this resource, there are six types of soils located on airport property. The main soil type is Medburn sandy loam, 0–2% slopes, which makes up approximately 74% of the property. This soil type is not considered prime farmland but is considered farmland of statewide importance. The other types of soils are not considered prime farmland or, as in the case of Wales loam and Calcross loam, are considered prime farmland if irrigated.[10] Table 3.1 lists the soil types shown in the web soil survey for the airport.

Table 3.1: Soil Types and Farmland Classification

Soil Type	Farmland Classification	Acres
Medburn sandy loam, 0–2% slopes	Farmland of Statewide Importance	662.5
Wales loam, 0–2% slopes	Prime Farmland if Irrigated	74.3
Wales loam, flooded, 0–2% slopes	Not Prime Farmland	65.2
Pitts-Dumps complex	Not Prime Farmland	53.2
Annabella very gravelly loam, 2–15% slopes	Not Prime Farmland	22.4
Calcross loam, 0-2% slopes	Prime Farmland if Irrigated	15.8

3.2.3. Vegetation

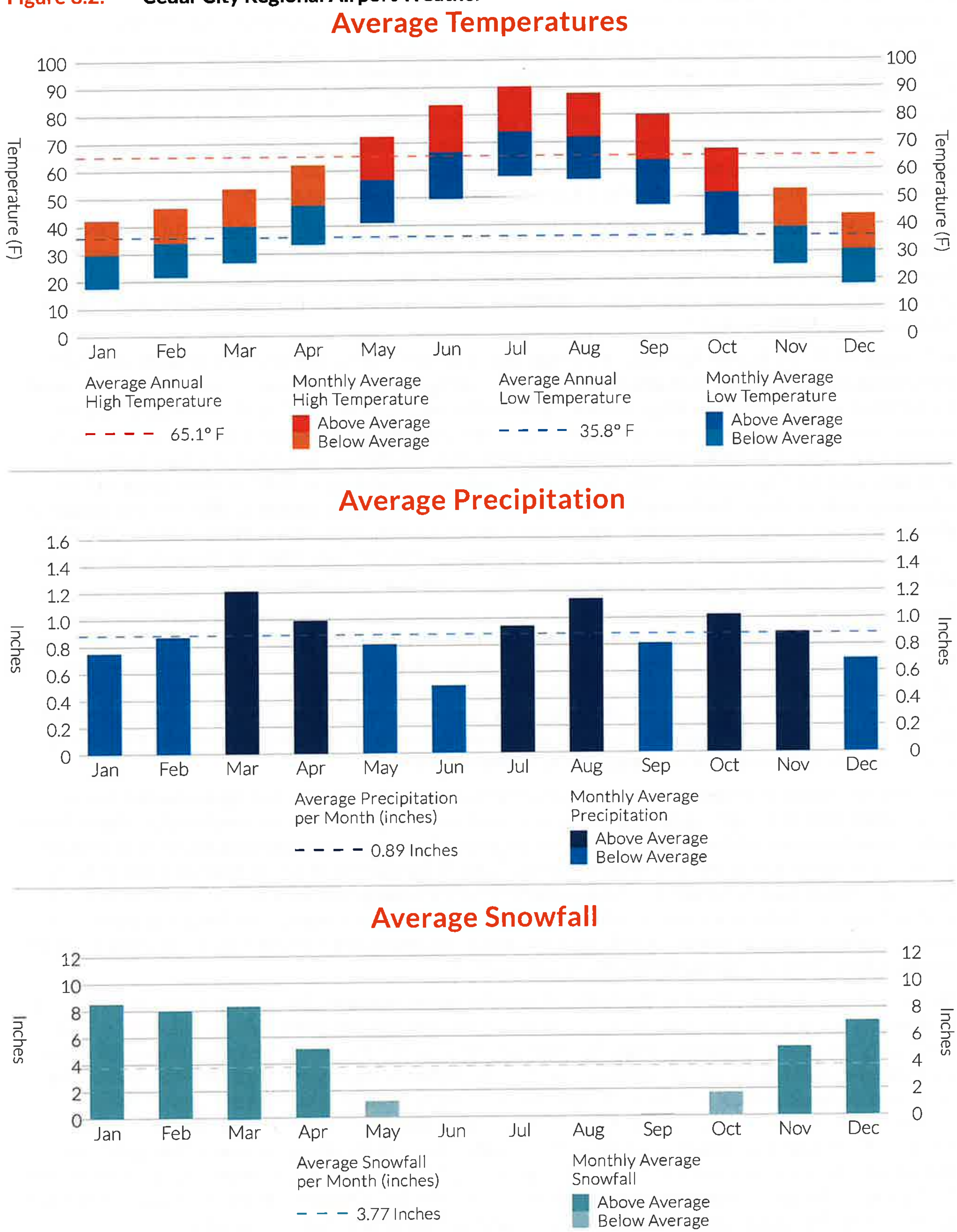
Iron County has a great diversity of natural vegetation due to the broad range of environmental conditions in the region. Major ecosystems within Iron County include grasslands, sagebrush, sagebrush steppe, and upland forested regions. About 43.1% of the county is forested; the majority of which are pinyon-juniper woodlands or montane forests and woodlands. Pinyon-juniper woodlands occur at a lower tree line between shrub-steppe ecosystems and montane forests. The montane forest and woodland areas occur between the upper limit of the pinyon-juniper woodlands and the upper tree line. The montane forest and woodland areas are covered with white fir (*Abies concolor*), curlleaf mountain-mahogany (*Cercocarpus ledifolius*), Utah juniper (*Juniperus osteosperma*), Rocky Mountain juniper (*Juniperus scopulorum*), Engelmann spruce (*Picea engelmannii*), two-needle pinyon (*Pinus edulis*), limber pine (*Pinus flexilis*), Great Basin bristlecone pine (*Pinus longaeva*), singleleaf pinyon (*Pinus monophylla*), ponderosa pine (*Pinus ponderosa*), quaking aspen (*Populus tremuloides*), Douglas-fir (*Pseudotsuga menziesii*), and Gambel oak (*Quercus gambelii*).[11] Vegetation in the vicinity of the airport is primarily shrubs and grasses.

3.2.4. Climate and Weather

The Cedar Valley has a dry, semiarid steppe climate which provides limited and frequently unreliable annual rainfall. It is typical for the region to experience large variations in daily temperatures which can fluctuate as much as 40° F during the summer.[12]

In general, the weather at the airport is very cold, snowy, and partly cloudy during the winter while summers are mostly hot, dry, and mostly clear. On average, the temperature typically varies between 18° F to 90° F and is rarely below 4° F or above 96°F. The coldest month of the year is January which has an average low of 18° F and a high of 42° F. The hottest month of the year is July which has an average high of 90°F and low of 58°F. The area receives an average of 10.6 inches of rain and 45.1 inches of snow per year.[13] The average temperatures, precipitation, and snowfall for Cedar City Regional Airport are shown in Figure 3.2.

Figure 3.2: Cedar City Regional Airport Weather



Source: Western Regional Climate Center, Cedar City Regional Airport.

3.3. History of the Airport

On September 27, 1920, the first airplane came to southern Utah as a concession at a fair in Cedar City where the pilot offered flights for a dollar a ride. However, it wasn't until 1929 that the aeronautics branch of the U.S. Department of Commerce began building an airport approximately three miles northwest of Cedar City with airport engineer P.S. McLain supervising its construction. The opening day celebration took place May 18, 1929, and it was attended by hundreds of townspeople and visitors. The celebration featured a parade, musical numbers, and speakers who hailed the event as an important step in the development of the region that would improve tourism and help stabilize agriculture.[14] However, the airport remained off limits to the local aviation community until May 1932 when it became a municipal airport.[15]

When the city took the airport over from the U.S. Department of Commerce, it then leased it to Grand Canyon Airlines which made its first flight during June of 1932.[16] The city also began making a series of improvements to the airfield beginning the following year.[17] Additional improvements were made in 1934 as the result of a Civil Works Administration (**CWA**) project, and in 1935 as the result of a Works Progress Administration (**WPA**) project.[18]

In October 1939, the Branch Agricultural College, now Southern Utah University, filed an application with the Civil Aeronautics Authority (**CAA**) to begin a pilot training course at the airport.[19] This proposal received tremendous support, and the college received approval for two training units.[20] It also prompted the city to make additional airport improvements so it would meet the standards necessary for the training course, and the local Lions Club began raising money for construction of a hangar to house the planes to be used in student pilot training courses.[21] The hangar, which was completed August 1940 as a joint project of the city and local civics clubs, also housed a mechanic shop.[22] This allowed the college to offer the only complete aircraft mechanics course in the state.[23] When pilot training courses began that summer, more people than could be accommodated reported and applied for admittance.[24] In October 1940, 28 students—two women and 26 men—completed the course and received a Pilot's Certificate of Competency.[25]

The airport was formally dedicated as the Cedar City Municipal Airport September 14, 1941, which was just prior to beginning the biggest improvement project to date; a $287,000 project funded by a Civil Aeronautics Authority (**CAA**).[26] This grant allowed the city to level and grade the airfield, add fencing, place boundary lights, install an enormous beacon, and construct two concrete mile-long runways. (The airport beacon was installed on the north end of Leigh Hill which has since been known as Beacon Hill.)[27] As part of this project, the city purchased approximately 800 acres of additional land required to enlarge the airfield, and the city and state aeronautics commission made $25,000 in improvements.[28]

After the United States entered World War II, the improved airfield and training program made it possible for a Civilian Pilot Training Program (**CPTP**) to be housed at the airport. Students completed preflight classes and received ten hours of flying instruction at the airport with many of the students going on to be enlisted in the U. S. Army Air Corps and U.S. Navy Air Corps.[29] Due to the success of this program, the 316th Army Air Force College Training Detachment was established at the college, and on March 5, 1943, the first 300 preflight aviation students arrived at Cedar City. [30]This led the state and city to fund the construction of a new 15-plane hangar with the office and classroom space needed for the training.[31] By the time the program closed in June 1944, 2,276 cadets had been trained here.[32]

Flying increased dramatically after World War II, and the airport manager, Royce Knight, petitioned the city to allow him to run a lunch counter, dining room, and dance floor to cater to the flying public and the local community. He used a remodeled hangar for these amenities until 1951 when the modern municipal airport administration building was constructed as a joint project between the city and the CAA. The new building, which was designed by local architect, L. Robert Gardner, housed offices and counter space for Western Airlines which provided air service into Cedar City. It also housed the Civil Aeronautics Administration offices and equipment, an airport manager's office, freight rooms, and a dining room with huge glass panels that allowed diners to look out at the runways (Figure 3.3). Activity at the airport grew steadily between the 1950s and 1970s which required repeated improvements. This included extending the runways in 1964 and again in 1975. The airport continued to grow into Utah's second largest municipal airport.[33]

Figure 3.3: **Airport Administration Building, circa 1951**

Source: Sherratt Library, Southern Utah University, Special Collections, Homer Jones Photograph Collection.

The first airline to offer commercial service after the war was Western Airlines. It was followed in January of 1958 by Bonanza Air Lines which later became Air West and eventually Hughes Airwest. In 1972, SkyWest Airlines, which began as a small commuter airline, offered service from St. George to Salt Lake City with a stop in Cedar City. About the time Air West discontinued service to Cedar City, SkyWest took over commercial service to Iron County. SkyWest extended its service to other western cities and established an affiliation with Delta Airlines in the late 1980s. From Cedar City, SkyWest and Delta provide flights to more than 300 cities. Full certification of the airport in 1997 permitted larger planes to land on a regular basis which further opened up the area for tourism and development.[34]

In October 2005, the airport built a new airport terminal that provides passengers with modern traveling conveniences. A major rehabilitation of the primary runway was completed in 2009, and a new fire station was built in 2011. This dual purpose station provides firefighting capabilities for both the airport and the local community. Additional recent improvements include the 2012 construction of the snow removal equipment (**SRE**) building, the 2014 rehabilitation of the helipad, and the 2015 purchase of additional snow removal equipment.[35]

3.3.1. Recent Aircraft Accident History

The National Transportation Safety Board (**NTSB**) is an independent federal agency that investigates civil aviation accidents and incidents in the United States. The agency makes these records available via the Case Analysis and Reporting Online (**CAROL**) database. As shown in Table 3.2, nine accidents have taken place on or near Cedar City Regional Airport since the previous airport master plan was completed.[36]

A review of these accidents indicates that each occurred under unique circumstances, and they were not associated with a particular trend or condition occurring at the airport.

Table 3.2: Aircraft Accidents, 2016–2022

NTSB #*	Date	Purpose of Flight	Injuries	Fatalities	Phase of Flight
WPR22LA363	9/30/2022	GA, Instructional	0	0	Maneuvering
WPR22LA267	7/25/2022	GA, Instructional	1	0	Maneuvering
WPR22FA164	4/23/2022	GA, Personal	0	4	Cruise
WPR21LA031	**10/29/2020**	**GA, Personal**	**0**	**0**	**Landing**
WPR20LA249	8/2/2020	GA, Personal	0	2	Cruise
GAA19CA125	2/1/2019	GA, Personal	0	0	Landing
GAA17CA217	**4/5/2017**	**GA, Personal**	**1**	**0**	**Takeoff**
GAA16CA488	**9/14/2016**	**GA, Instructional**	**0**	**0**	**Maneuvering**

*Accidents shown in bold occurred on airport property.

Source: NTSB, Case Analysis and Reporting Online (**CAROL**) database.

3.3.2. Recent Airport Development

Table 3.3 summarizes the major capital improvement projects the airport has completed since the 2017 Airport Master Plan was completed.[37]

Table 3.3: Airport Development, 2016–2022

Year	Brief Project Description
2016	Rehabilitate Apron
2016	Rehabilitate Taxiway
2017	Install Perimeter Fencing
2017	Rehabilitate Apron
2017	Rehabilitate Taxiway
2018	Reconstruct Runway
2019	Reconstruct Runway
2020	Install Airport Beacon
2020	Reconstruct Taxiway
2020	Seal Apron Pavement Surface and Joints
2021	Acquire Snow Removal Equipment
2022	Seal Apron Pavement Surface and Joints

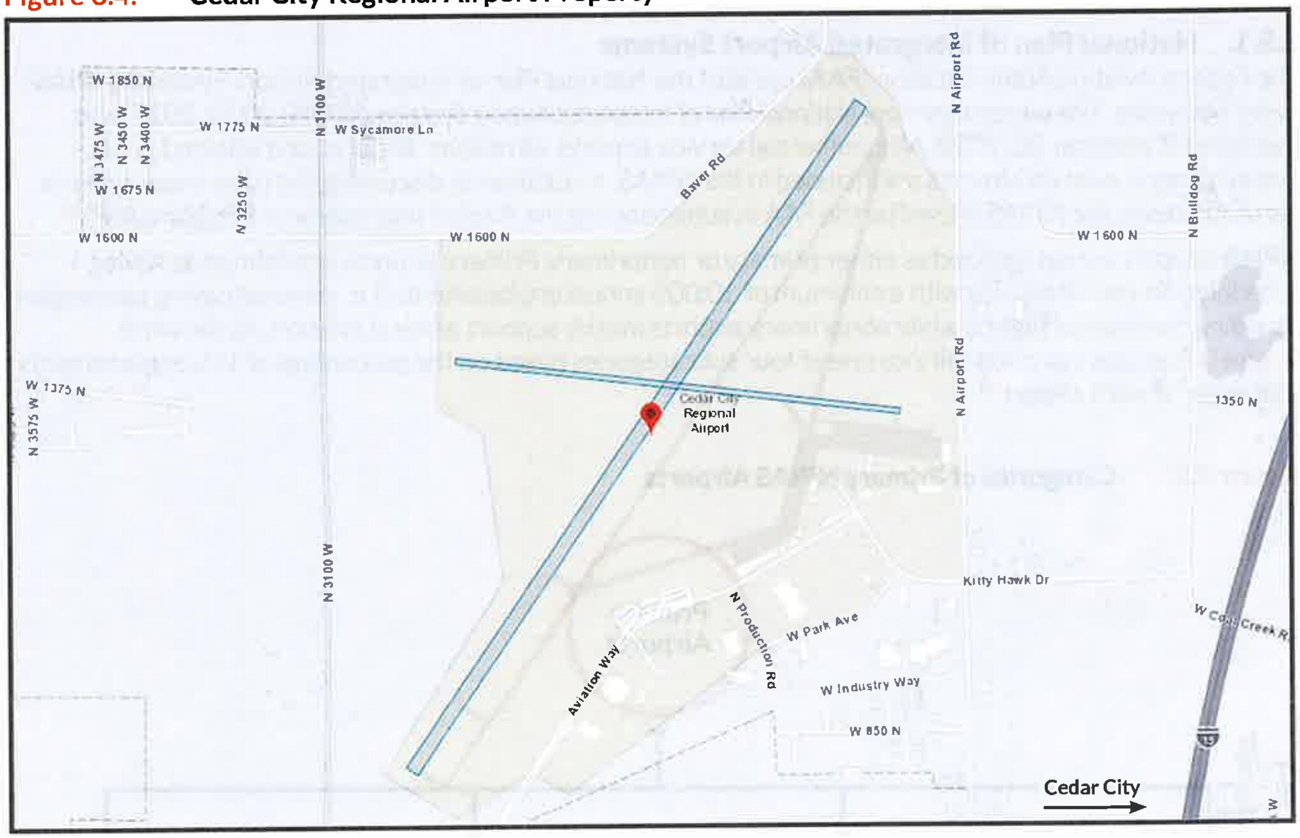
Source: FAA, Airport Improvement Program (AIP) Grant Histories.

3.4. The Airport Today

3.4.1. Airport Property

The airport property totals approximately 1,040 acres (Figure 3.4). The airport elevation (i.e., the highest point on any runway) is approximately 5,622.3 feet above mean sea level (**MSL**). The airport reference point (**ARP**), which is the approximate center of all usable runways, is located at 37° 42' 3.492" N and 113° 5' 55.863" W.[38]

Figure 3.4: Cedar City Regional Airport Property



Source: FAA, Airport Data and Information Portal, CDC Facility Map.

3.4.2. Ground Access and Circulation

The airport facilities are all accessed via Aviation Way which is easily accessed from several surface streets as well as I-15, Route 14, and Route 56 which also provides access to downtown Cedar City.

3.4.3. Airport Administration

The Cedar City Regional Airport is a public facility that is owned and operated by the Cedar City Corporation. The city is governed by a mayor and five city council members. The mayor, with the advice and consent of the city council, is responsible for appointing members of the Cedar City Airport Board. The board is responsible for the operation and development of the airport. There are eight members of the board who each serve for a term of four years. The airport manager is responsible for the daily operations of the airport.[39]

3.4.4. Federal Oversight

Federal regulatory oversight is fulfilled by the FAA's Northwest Mountain Region through the Denver Airports District Office (**ADO**).

3.5. Airport System Planning

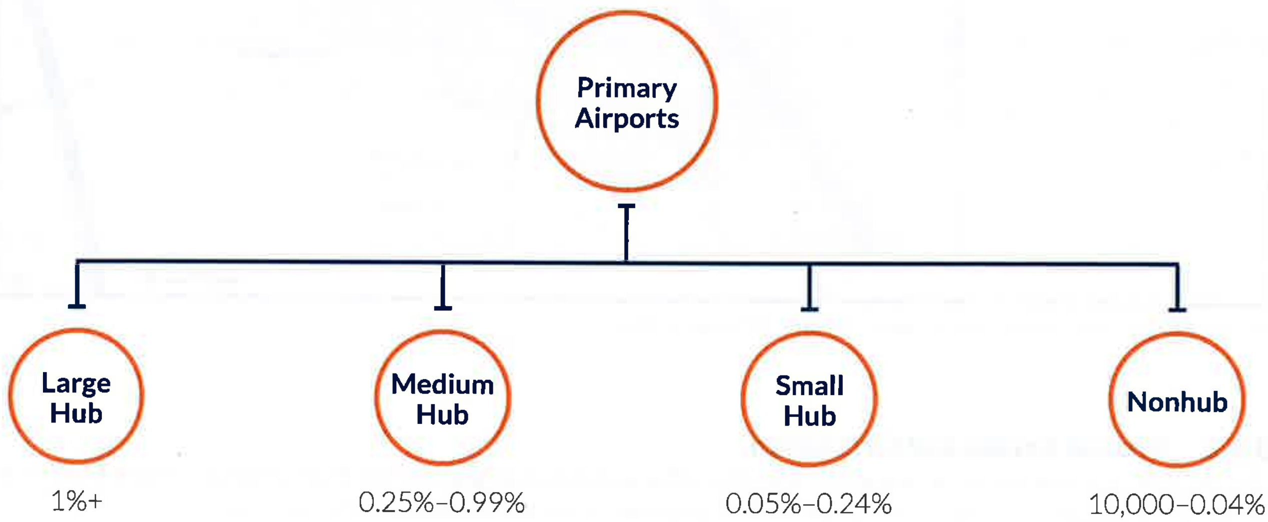
Airport planning takes place at the national, state, and local levels. These plans work together to provide the public with a safe, efficient, and integrated airport system.

3.5.1. National Plan of Integrated Airport Systems

The Federal Aviation Administration (**FAA**) updates the National Plan of Integrated Airport Systems (**NPIAS**) every two years. The current version, *National Plan of Integrated Airport Systems (NPIAS) 2023–2027*, was published September 30, 2022. All commercial service airports, all reliever airports, and selected public-owned general aviation airports are included in the NPIAS. In addition to discussing the roles these airports currently serve, the NPIAS is used by the FAA in administering the Airport Improvement Program (**AIP**).[40]

NPIAS airports are categorized as either primary or nonprimary. Primary airports are defined as having scheduled air carrier service with a minimum of 10,000 annual enplanements (i.e., revenue paying passengers boarding commercial flights) while nonprimary airports mostly support general aviation. As shown in Figure 3.5, primary airports fall into one of four subcategories based on the percentage of U.S. enplanements that occur at each airport.[41]

Figure 3.5: Categories of Primary NPIAS Airports

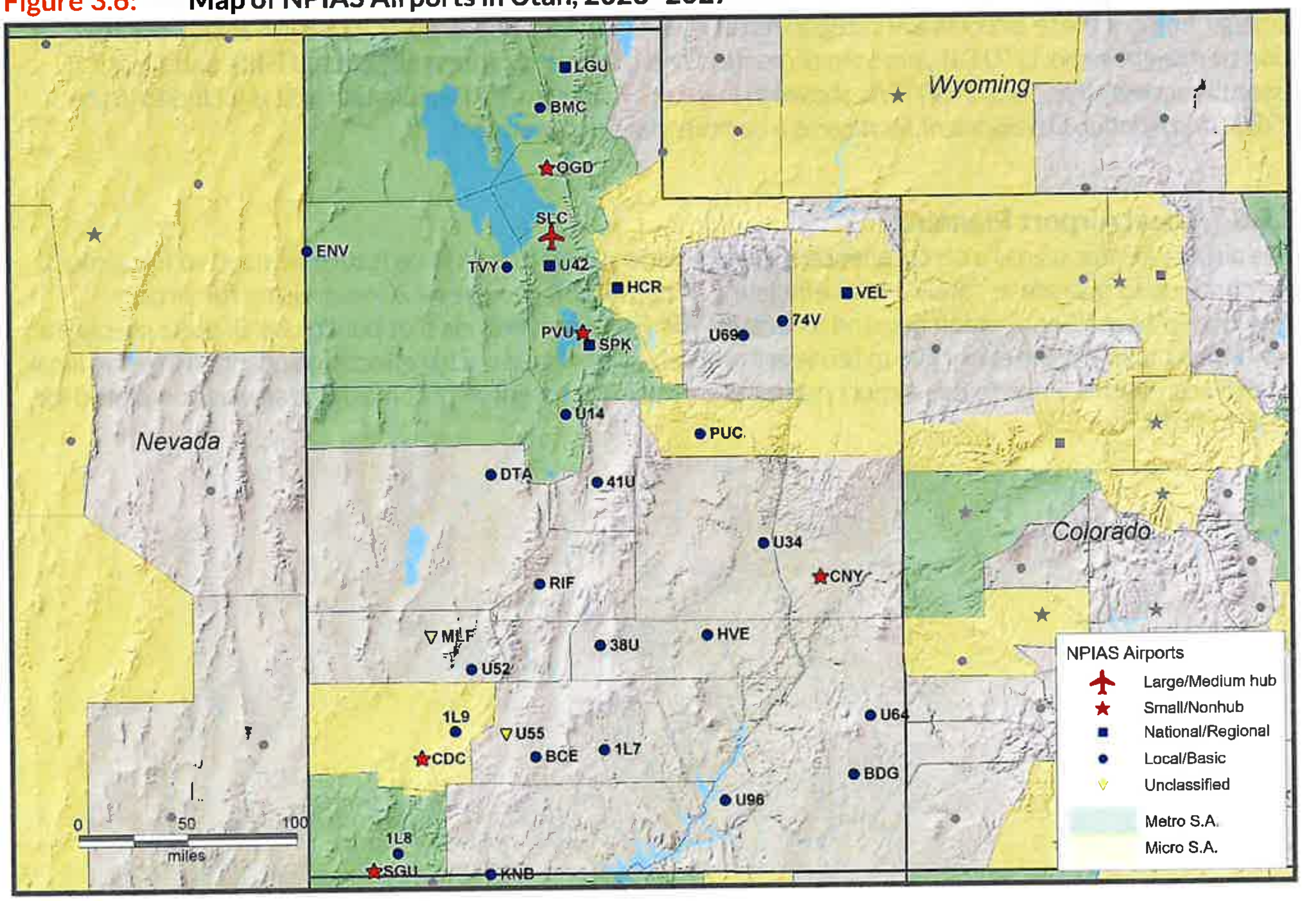


Source: FAA, National Plan of Integrated Airport Systems (2023-2027)

a. NPIAS Airports in Utah

According to the 2023–2027 NPIAS, there are 35 NPIAS airports in Utah. This includes six primary and 29 nonprimary airports. As shown in Figure 3.6, Cedar City Regional Airport is included in the NPIAS and is classified as a primary, nonhub, commercial service airport. The other primary airports include Canyonlands Regional (**CNY**), Ogden-Hinckley (**OGD**), Provo Municipal (**PVU**), Salt Lake City International (**SLC**), and St. George Regional (**SGU**). Salt Lake City International is a large hub airport and the others are nonhub airports.

Figure 3.6: Map of NPIAS Airports in Utah, 2023–2027



Source: FAA, National Plan of Integrated Airport Systems (2023-2027).

3.5.2. Utah Aviation Development Strategy

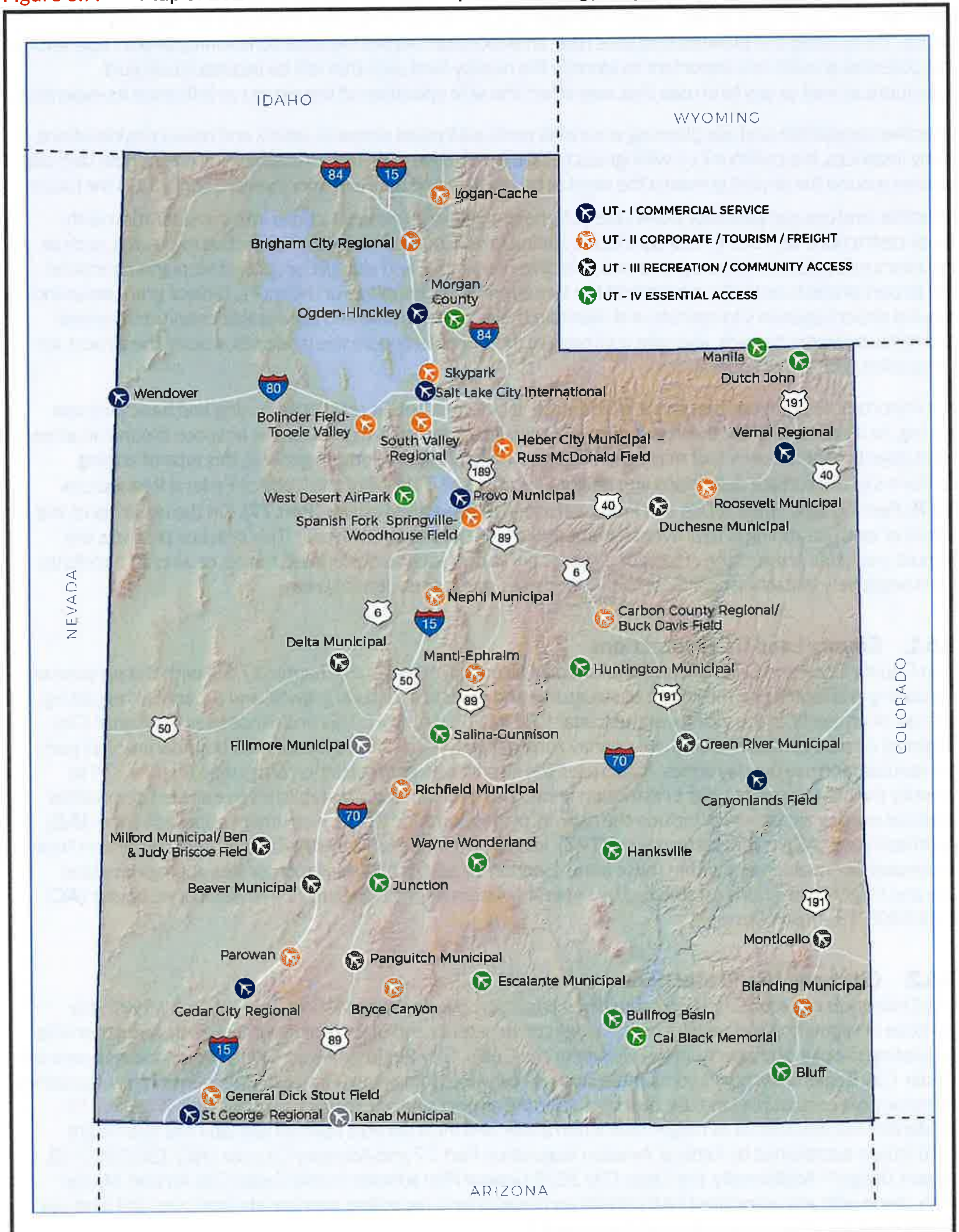
The Utah Department of Transportation (**UDOT**) Division of Aeronautics is responsible for developing the Utah Aviation Development Strategy which is updated every two years. The current version, *2020 Utah Aviation Development Strategy*, was published June 2021. This statewide aviation system plan collectively assesses the conditions and needs of a variety of Utah airports and identifies the system's ability to meet current and future aviation demand. The plan aids the aeronautics division in developing and planning for the state's airport system as a whole and provides input for federal planning documents.[42]

There are 46 airports (44 public and two private airports) included in the *2020 Utah Aviation Development Strategy*. Eight of these airports are categorized as commercial service airports (**UT-I**), 16 are corporate/tourism/freight airports (**UT-II**), nine are recreation and community access airports (**UT-III**), and 13 are essential access airports (**UT-IV**).[43] As shown in Figure 3.7, Cedar City Regional Airport is included in the *2020 Utah Aviation Development Strategy* as a commercial service airport.

3.5.3. Local Airport Planning

This airport master plan is a comprehensive, airport-wide study to determine future demand so the airport can continue to operate as safely and as efficiently as possible. It provides a 20-year vision for airport development based on aviation demand forecasts. The FAA recommends that public-use airports prepare a new airport master plan every five to ten years or as often as necessary to reflect significant changes in local aviation conditions. Prior to this airport master plan, the most recent airport master plan was completed for CDC in 2017.

Figure 3.7: Map of 2020 Utah Aviation Development Strategy Airports



Source: Jviation, State of Utah, 2020 Utah Aviation Development Strategy.

3.6. Land Use Planning

Land use is the term used to describe how property is currently being used and how it can be used in the future. The existing and planned land uses near an airport can impact the local community, airport operations, and potential growth. It is important to identify the nearby land uses that will be exposed to airport operations as well as any land uses that may affect the safe operation of the airport or influence its expansion.

Effective compatible land use planning around airports addresses airspace, safety, and noise considerations. In many instances, the community's willingness to take a proactive approach in establishing compatible land use policies around the airport prevents the need to be reactive and deal with more severe conflicts in the future.

Effective land use compatibility plans take both height and land use restrictions into consideration with these restrictions also being incorporated as zoning laws. Coupled with other proactive measures, such as voluntary noise abatement programs and selective fee-simple land acquisition, proactive planning around the airport protects both the airport and the surrounding community. Furthermore, federal grant assurances require airport sponsors to operate and maintain the airport in a safe and serviceable condition, prevent and remove airport hazards, and take appropriate measures to ensure the land uses around the airport are compatible with airport operations.

It is important to point out that there is a difference between height restrictive zoning and basic land use zoning. As its name implies, the intent of height restrictive zoning is to protect the airspace around an airport from objects or structures that may pose hazards to aircraft operations. In general, this type of zoning conforms to the surface definitions and height limitations of Title 14 of the Code of Federal Regulations (**CFR**) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace* (**Part 77**). On the other hand, the intent of land use zoning is to prevent incompatible land uses near an airport. This practice protects the airport and helps prevent the effects of airport operations, such as noise, dust, fumes, or aircraft accidents, from negatively impacting nearby sensitive land uses such as residential areas.

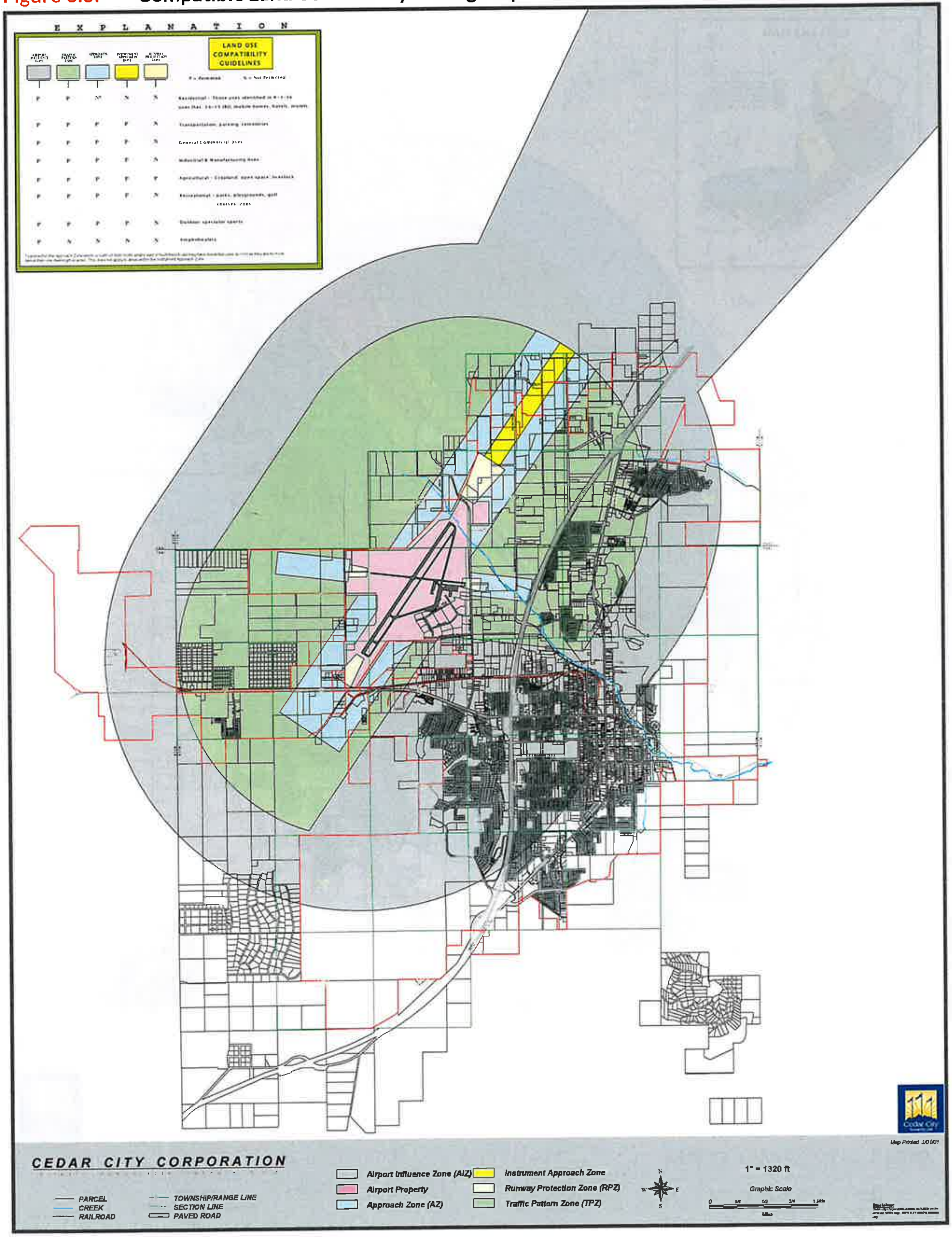
3.6.1. County Land Use Protections

Iron County Code and Ordinances established an airport overlay zone (Chapter 17.58) with the purpose of regulating and restricting the height of structures and objects of natural growth, and otherwise regulating the use of property, in the vicinity of the Cedar City Regional Airport. This ordinance uses the Cedar City Regional Airport compatible land use overlay zoning map (Figure 3.8) to identify the boundaries of airport compatible land use overlay zones. It also uses the airport's height restriction areas map (Figure 3.9) to identify the boundaries of height restriction areas. This ordinance also establishes five airport compatible land use overlay zones, which include the runway protection zone (**RPZ**), instrument approach zone (**IAZ**), approach zone (**AZ**), traffic pattern zone (**TPZ**), and airport influence zone (**AIZ**), to protect the airport from incompatible development within these areas (Section 17.58.050). It also incorporates appropriate land use and height restrictions established by Federal Aviation Regulation Part 77 and Advisory Circular (**AC**) 150/5300-13, *Airport Design*.[44]

3.6.2. City Land Use Protections

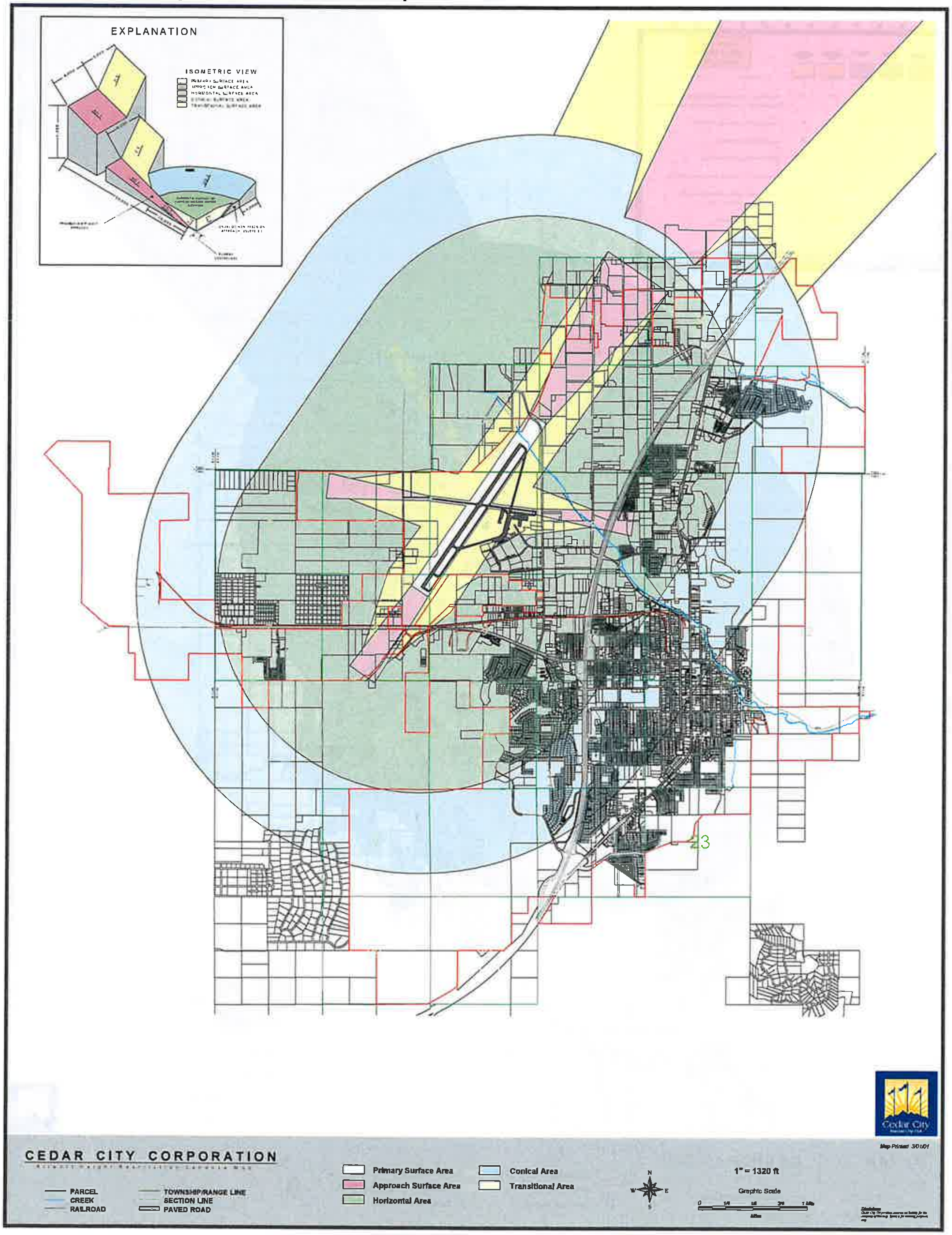
The *Ordinances of Cedar City, Utah* established an airport overlay zone (Article 26, Section XIV) with the purpose of regulating and restricting the height of structures and objects of natural growth, and otherwise regulating the use of property, in the vicinity of the Cedar City Regional Airport. This ordinance also uses the Cedar City Regional Airport's compatible land use overlay zoning map (Figure 3.8) to identify the boundaries of the airport compatible land use overlay zones, the airport's height restriction areas map (Figure 3.9) to identify the boundaries of height restriction areas, and incorporates appropriate land use and height restrictions established by Federal Aviation Regulation Part 77 and Advisory Circular (**AC**) 150/5300-13, *Airport Design*.[45] Additionally, the *Cedar City 2022 General Plan* adheres to the Cedar City Airport Master Plan, along with any associated FAA criteria and restrictions, regarding appropriate land uses and land use restrictions for development around the airport.[46]

Figure 3.8: Compatible Land Use Overlay Zoning Map



Source: Cedar City Regional Airport Master Plan.

Figure 3.9: Height Restriction Areas Map



Source: Cedar City Regional Airport Master Plan.

3.7. Economic Impact

An airport's economic impact is essentially a measure of the financial effect it has on the local economy. These impacts can be direct, indirect, or induced. Direct impacts are typically attributed to on-airport activity such as car rentals, food sales and other concessions, fuel sales, and capital improvements as well as off-airport visitor spending. Indirect impacts are typically the result of interactions between businesses and suppliers of goods and services associated with an airport while induced impacts are typically associated with the respending of income within the community. An airport's total impact is the sum of the direct, indirect, and induced impacts.

To measure the economic impact of the 46 airports included in the *2020 Utah Aviation Development Strategy*, the Utah Division of Aeronautics completed the *2020 Utah Statewide Airport Economic Impact Study*. It is important to note that this report was published December 2020 and does not reflect any impacts from the COVID-19 pandemic.[47] This report presents estimated impacts for the following four categories:

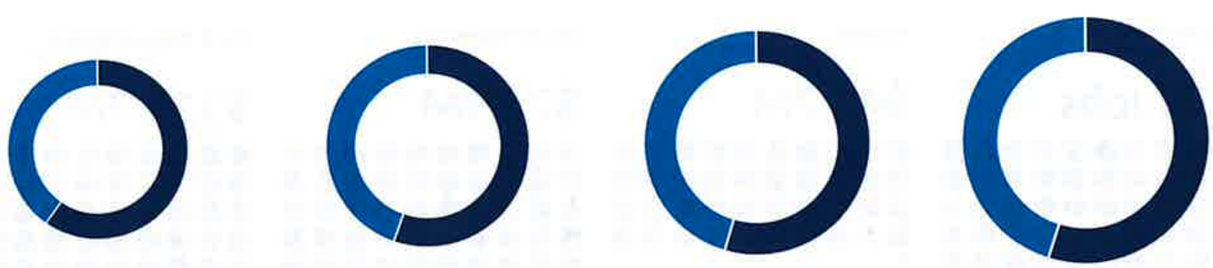
1. **Employment:** The number of people employed at businesses associated with the airport.
2. **Payroll:** Wages, salaries, and benefits received by those employees.
3. **Visitor Spending:** This is the amount of money spent by visitors for goods and services, such as lodging, food, transportation, entertainment, and at retail establishments, during their stay in Utah. This does not include the value of intermediate goods and services used to produce the final product.
4. **Total Economic Impact:** The total amount of any economic activity generated by the operation of the airport and all related activities including the dollar value of intermediate goods and services.

3.7.1. Economic Impact of Utah Airports

Figure 3.10 shows the economic impact of Utah's 46 public airports. According to the report, the total annual economic impact of these airports exceeded $12.7 billion. This includes supporting 135,974 jobs with a total payroll of $4,776,781,500 and $7,950,596,100 in visitor spending.[48]

Figure 3.10: Economic Impact of Utah Airports

Employment	Payroll	Visitor Spending	Total Annual Impact
135,974 Jobs	**$4.8 Billion**	**$8.0 Billion**	**$12.7 Billion**



Employment	Payroll	Visitor Spending	Total Annual Impact
1,188 airport management	$121.2M airport management	$166.9M airport management	$288M airport management
34,139 airport tenants	$1.8B airport tenants	$2.6B airport tenants	$4.4B airport tenants
4,580 capital improvements	$137.9M capital improvements	$582.8M capital improvements	$720.8M capital improvements
1,206 GA visitors	$34.8M GA visitors	$46.7M GA visitors	$81.5M GA visitors
94,861 commercial visitors	$2.7B commercial visitors	$4.5B commercial visitors	$7.2B commercial visitors

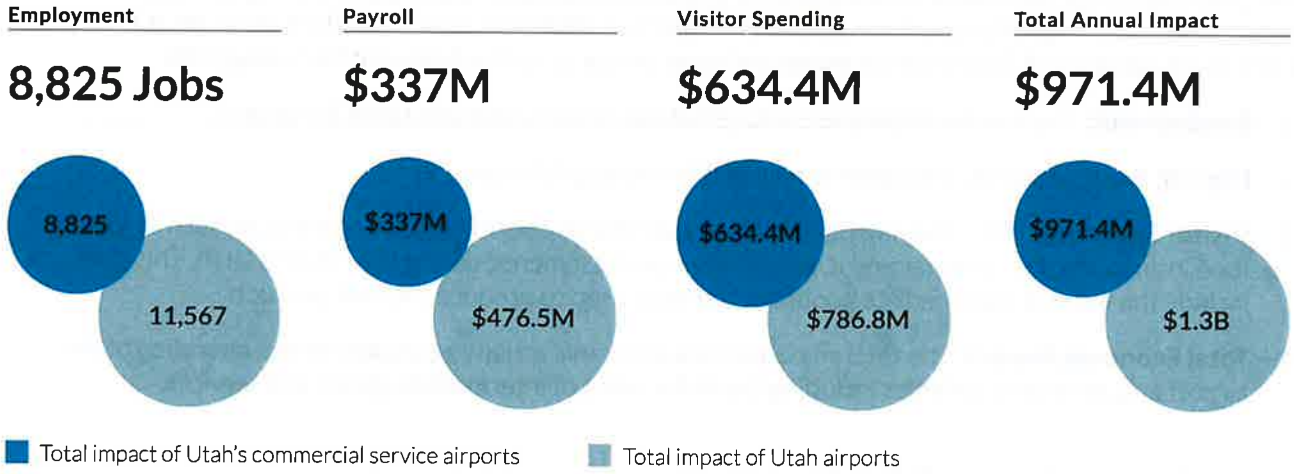
■ Direct ■ Indirect/Induced

Source: State of Utah, UDOT, Airport Economic Impact Study, 2020, Table 6-7.

3.7.2. Economic Impact of Utah Commercial Service Airports

Salt Lake City International Airport (**SLC**) is among the nation's top 20 busiest airports and has—by far—the largest economic impact of all of Utah's airports. As a result, the information presented in this section excludes the economic impact of SLC. Figure 3.11 shows the economic impact of Utah's seven commercial service airports (excluding Salt Lake City International Airport). According to the report, the total economic impact of these airports exceeded $971.4 million. This includes supporting 8,825 jobs with a total payroll of $336,969,600 and $634,443,500 in visitor spending.[49]

Figure 3.11: Economic Impact of Utah Commercial Service Airports

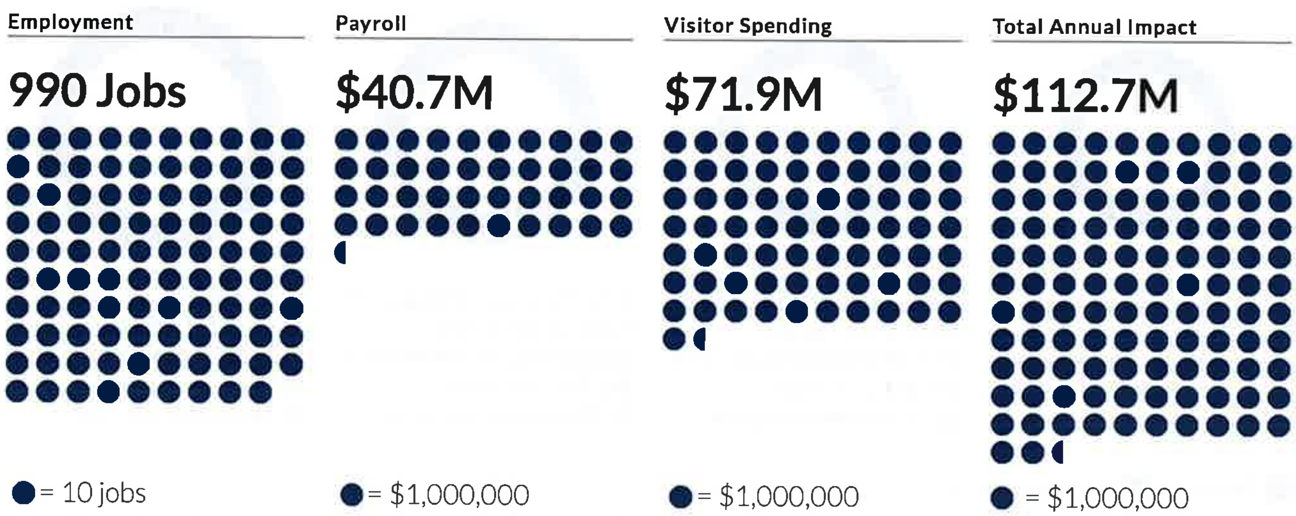


Source: State of Utah, UDOT, Airport Economic Impact Study, 2020, Table 5-1.

3.7.3. Economic Impact of Cedar City Regional Airport

The *2020 Utah Statewide Airport Economic Impact Study* also estimated the total annual economic impact for each airport analyzed in the study. This analysis shows the total economic impact of Cedar City Regional Airport is nearly $112.7 million. This includes supporting 990 jobs with a total payroll of $40,735,100 and $71,930,500 in visitor spending (Figure 3.12).[50]

Figure 3.12: Economic Impact of Cedar City Regional Airport



Source: State of Utah, UDOT, Airport Economic Impact Study, 2020, Table 5-1.

3.8. Socioeconomic and Demographic Data

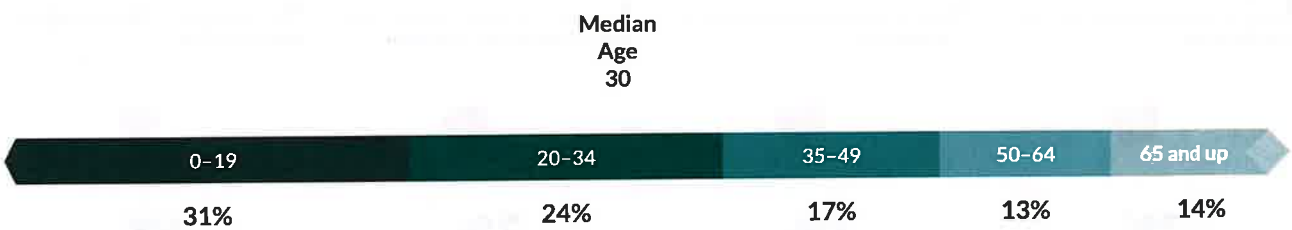
The socioeconomic characteristics of a community may influence demand for air travel within an airport's geographic region. Data about the area's population, employment, and income activity can help identify trends that may impact current and future aviation operations. These trends are especially important to consider when preparing aviation demand forecasts because aviation forecasts are typically tied to the region's population and economic strength. Socioeconomic information is also helpful in making sure the community's long-term needs are taken into consideration as part of the airport planning process.[51]

The footprint for the socioeconomic analysis consists of the Cedar City Metropolitan Statistical Area (**MSA**). An MSA is a census-recognized area with a population of 50,000 or more people and surrounding densely populated areas that have a high degree of economic and social interaction with the core urban area.[52] In this case, the Cedar City MSA includes all of Iron County.[53]

3.8.1. Population Rates

According to Woods & Poole, the population within the Cedar City MSA was estimated to be 61,464 for 2022. The population has grown at a compound annual growth rate (**CAGR**) of 2.75% since 2002 and is projected to grow at a CAGR of 1.56% through 2042. In 2022, the median age of the population in the Cedar City MSA was 30 (Figure 3.13).[54]

Figure 3.13: Population Distribution, 2022



Woods & Poole Economics, Inc., 2022

3.8.2. Per Capita Income

According to Woods & Poole, per capita income (**PCI**) for the Cedar City MSA was estimated to be $36,571 for 2022. Since 2002, PCI has grown at a CAGR of 3.35% and is projected to grow at a CAGR of 4.92% through 2042.[55] Figure 3.14 shows the PCI for the Cedar City MSA in comparison to the PCI for the state of Utah and the United States.

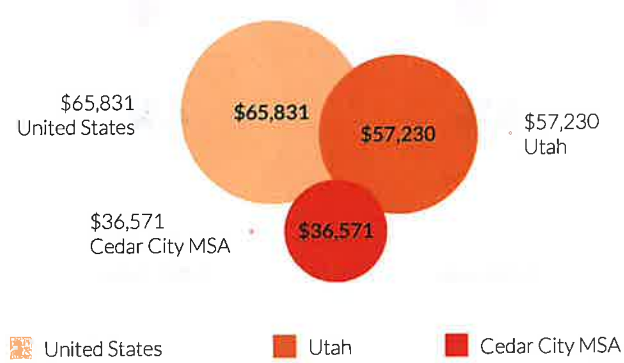
3.8.3. Top Industries by Employment

According to Woods & Poole, the top five industries in which people were employed within the MSA for 2022 were state and local government; retail; food services and accommodation; health care and social assistance; and manufacturing.[56] Figure 3.15 shows the top industries in which people are employed within the Cedar City MSA for 2022.

Figure 3.14: Per Capita Income, 2022

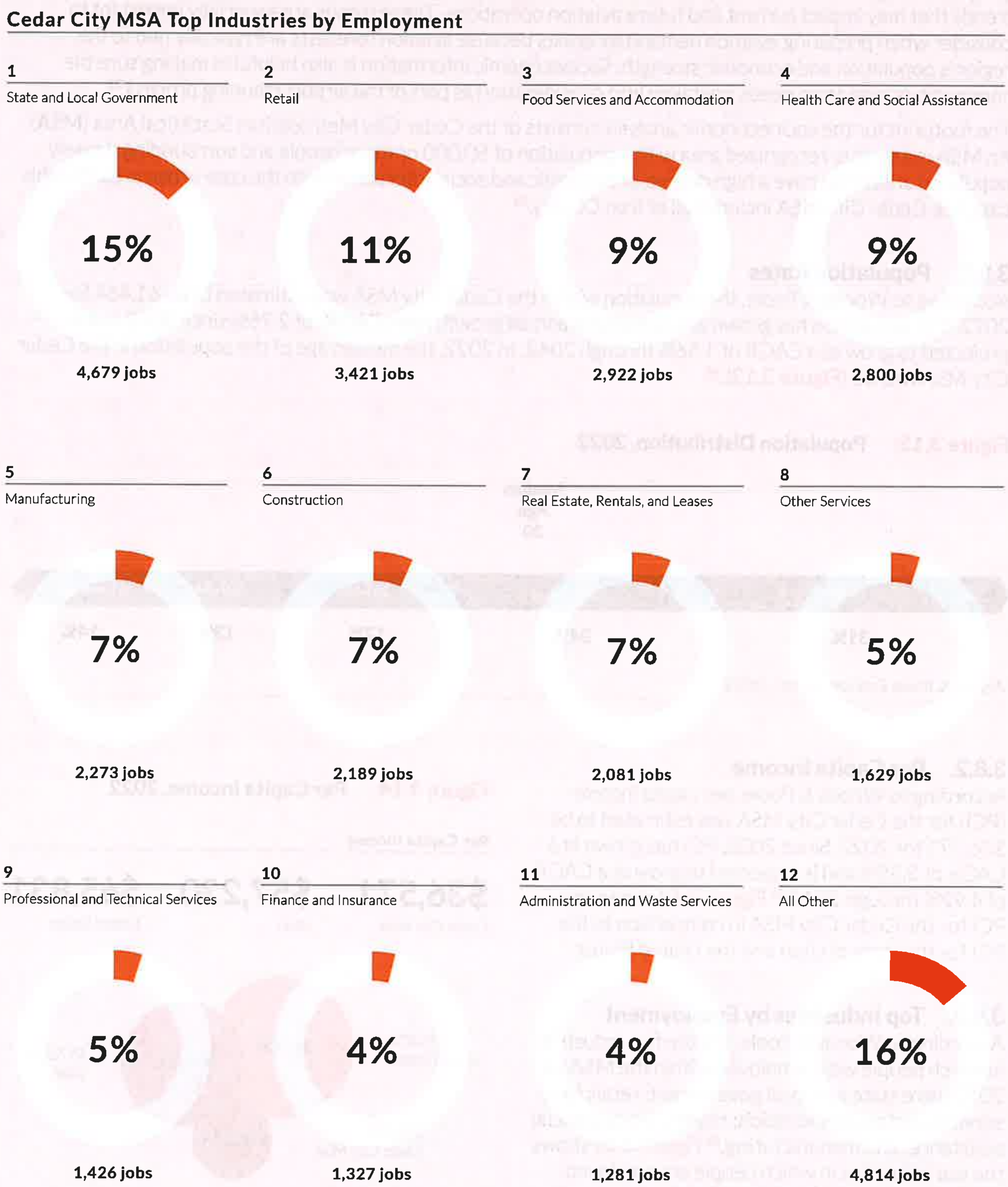
Per Capita Income

$36,571	$57,230	$65,831
Cedar City MSA	Utah	United States



Source: Woods & Poole Economics, Inc., 2022

Figure 3.15: Top Industries by Employment, 2022

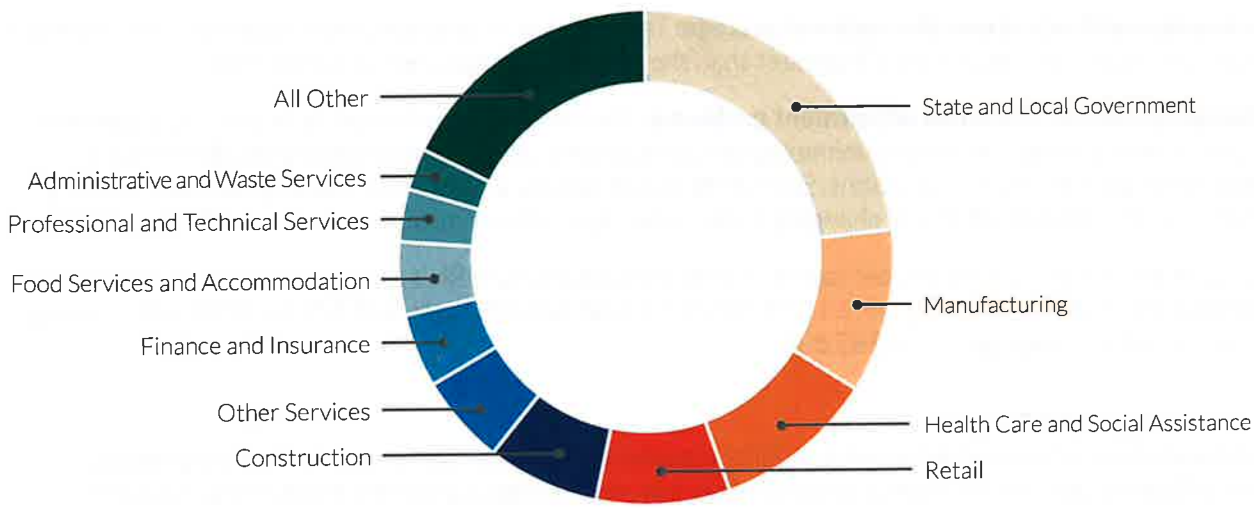


Source: Woods and Poole Economics, Inc.

3.8.4. Top Industries by Earnings

According to Woods & Poole, the top five industries in terms of earnings within the MSA for 2022 were state and local government; manufacturing; health care and social assistance; retail; and construction.[57] Figure 3.16 shows the top industries within the MSA in terms of earnings. (Amounts shown are in 2012 dollars.)

Figure 3.16: Top Industries by Earnings, 2022

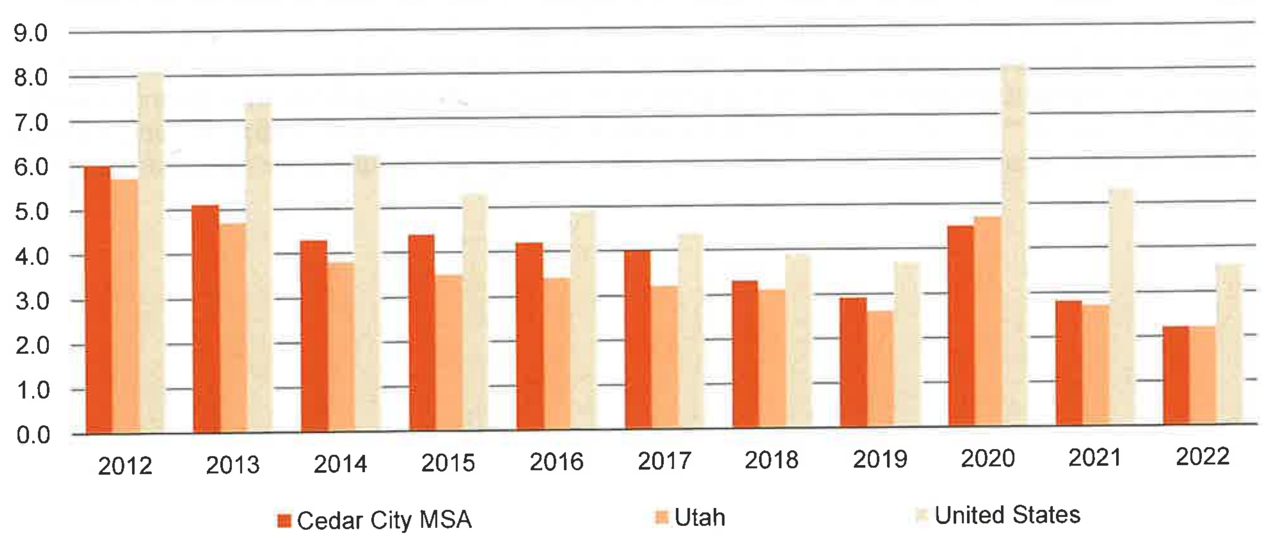


Source: Woods and Poole Economics, Inc.

3.8.5. Unemployment Rate

According to the U.S. Bureau of Labor Statistics (BLS), unemployment within the Cedar City MSA declined from 8.6% for 2011 to 2.2% for 2022. As shown in Figure 3.17, the unemployment rate for the MSA has typically been higher than the statewide rate but lower than the national average.[58]

Figure 3.17: Unemployment Rates, 2012–2022



Source: U.S. Bureau of Labor Statistics, 2023

3.8.6. Economically Distressed Area

An economically distressed area is a county, region, municipality, or other geographic area with high rates of poverty and unemployment or low levels of income. According to the criteria used by the U.S. Department of Commerce Economic Development Administration (**EDA**), an area is considered to be economically distressed if one or more of the following thresholds is met:

- **Low per capita income:** The area has a per capita income of 80% or less of the national average.
- **Unemployment rate above the national average:** The area has an unemployment rate that is, for the most recent 24-month period, at least 1% greater than the national average unemployment rate.
- **Unemployment or economic adjustment problems:** The area has experienced, or is about to experience, a special need arising from severe unemployment or economic adjustment problems resulting from a severe change in economic conditions. Special needs can include a substantial loss of population, military base closures, negative effects of changing trade patterns, or other similar circumstances.[59]

Due to the area's consistently low per capita income, the Cedar City MSA is considered to be an economically distressed area.[60] As shown in Figure 3.14, PCI for the Cedar City MSA was $36,571 for 2022 which is only 55% of the national average PCI of $65,831.

a. Essential Air Service

The FAA Modernization and Reform Act of 2012 established a special rule for economically distressed communities that permits the federal share of allowable project costs (under the Airport Improvement Program) to be increased from 90% to 95%. This special rule applies to airports receiving essential air service (**EAS**) that are located in an area that are considered to be economically distressed areas. The FAA has determined that Cedar City Regional Airport qualifies for this increased federal share for the 2023 fiscal year because of the region's status as an economically distressed area.[61]

3.9. Looking Ahead

The Cedar City MSA has experienced steady economic growth during the past ten years and is expected to continue to see growth in all socioeconomic categories. The local economy also benefits from Southern Utah University (**SUU**). According to data released by the Chronicle of Higher Education, SUU has been one of the fastest growing regional universities in the country this past decade.[62] In general, increased university enrollment tends to result in a significant boost to the local economy through student and visitor spending as well as increased incomes and employment within the region.[63] The airport also directly benefits from the growth in enrollment due to the strength of the aviation program offered by the university. The SUU aviation program features the largest university-owned helicopter training fleet in the world, the highest altitude university flight school in the country, and one of the most up-to-date aviation maintenance training programs in the world.[64] Due to the inherent link between a region's economy and aviation demand, it can be assumed that aviation activity will increase at a pace similar to the growth predicted for the Cedar City MSA.

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AIRSIDE AND LANDSIDE INVENTORY

4

TABLES

FIGURES

CHAPTER FOUR

AIRPORT INVENTORY

One of the first steps in preparing the airport master plan update for Cedar City Regional Airport (**CDC**) is to identify the existing airport facilities and assets. Conducting a detailed inventory is a critical step in the airport master planning process because it helps to establish the current baseline for several elements of the planning process, and this information is used when conducting the analyses discussed in later chapters. This includes determining if the existing facilities are able to accommodate current and forecasted aviation demand and then determining the correct facility requirements.

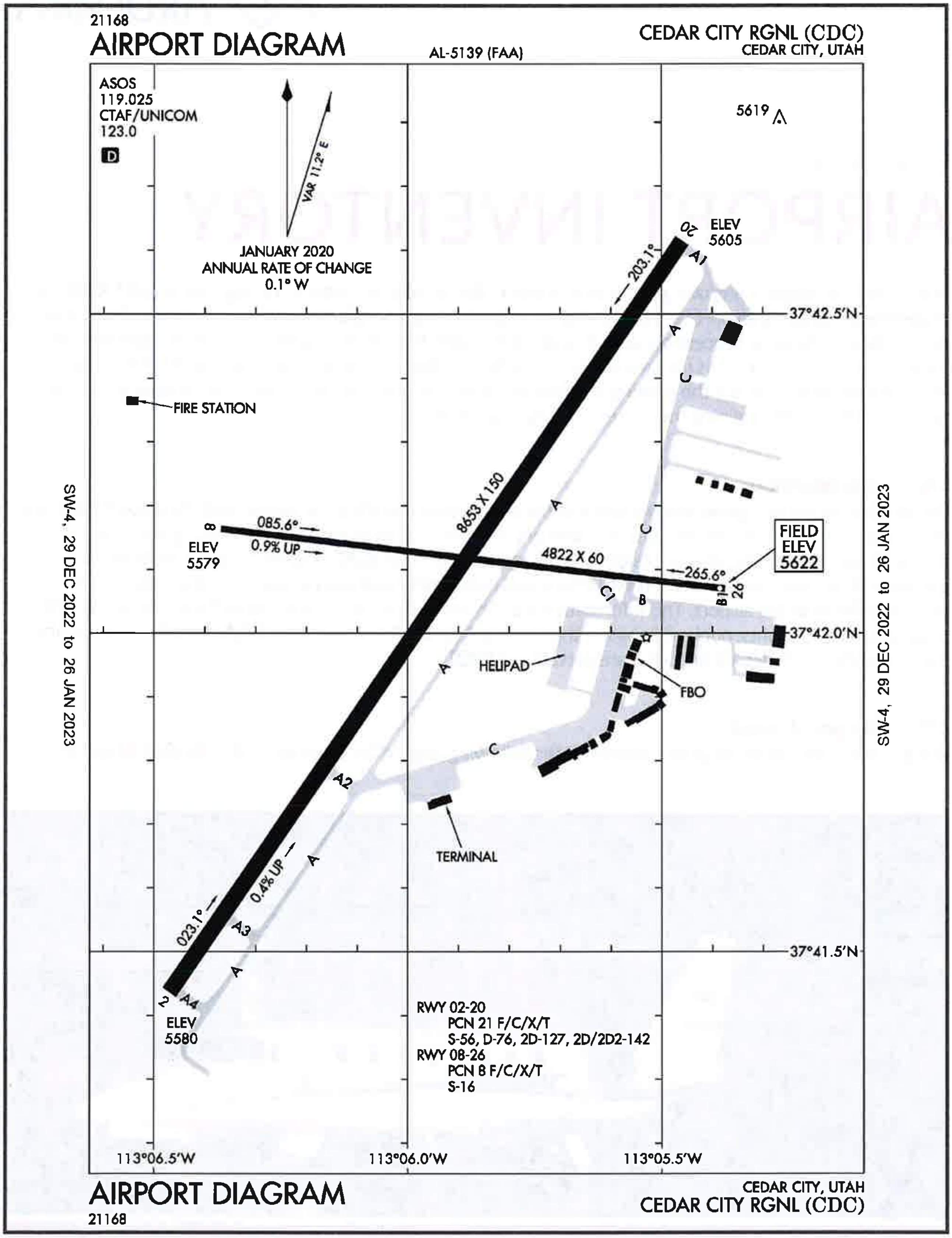
4.1. Introduction

This chapter provides a general description of the airspace surrounding the airport and the airport's aircraft operating procedures. It also includes an inventory and description of the airport's existing facilities and assets. These include airfield and airside facilities, general aviation (**GA**) facilities, support facilities, airport parking, utilities and stormwater infrastructure, and nonaeronautical uses as well as a description of the services offered at the airport. This information was obtained through on-site inspections, interviews with airport staff and tenants, public databases, the Federal Aviation Administration (**FAA**), and the aeronautics division of the Utah Department of Transportation (**UDOT**).

4.2. Airport Layout

The general layout of the airport is shown on the following page in Section Figure 4.1: Airport Diagram.

Figure 4.1: Airport Diagram



Source: FAA, Airport Data and Information Portal, CDC Airport Diagram.

4.3. Airspace

The FAA, which is responsible for the safe and efficient use of national airspace, created the National Airspace System (**NAS**) to "protect persons and property on the ground, and to establish a safe and efficient airspace environment for civil, commercial, and military aviation." The NAS is the network of air navigation facilities, air traffic control facilities, airports, and the related rules, regulations, and procedures, needed to operate the system.[1]

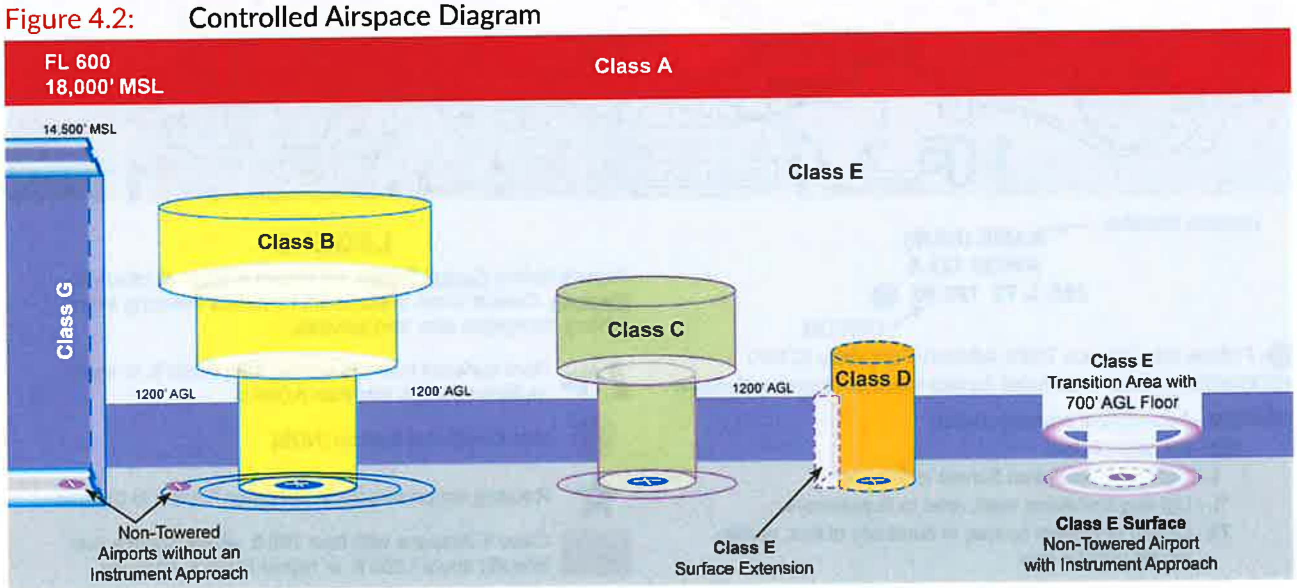
4.3.1. Federal Airspace Classifications

The FAA has established four types of airspace based on the complexity of aircraft movements or density of traffic, nature of the operations conducted, the level of safety required, and national and public interest. The four types of airspace are controlled, uncontrolled, special use, and other.[2]

Controlled Airspace: As shown in Figure 4.2, controlled airspace consists of five classifications of airspace within which air traffic control (**ATC**) service is provided.

- **Class A:** Airspace from 18,000 feet mean sea level (**MSL**) up to and including 60,000 feet MSL. This class of airspace is primarily used by aircraft during the cruise and transitioning phases as they travel from one airport to another. All aircraft in Class A airspace must operate under instrument flight rules (**IFR**).
- **Class B:** Airspace from the surface up to 10,000 feet MSL that surrounds the nation's busiest airports. This airspace has more restrictive operating rules than Class A airspace, and clearance is required for all aircraft to operate in the area.
- **Class C:** Airspace from the surface up to 4,000 feet above the airport elevation (charted in MSL) that surrounds airports with an operational control tower, is serviced by a radar approach control, and meets a minimum number of annual operations or passenger enplanements.
- **Class D:** Airspace from the surface up to 2,500 feet above the airport elevation (charted in MSL) that surrounds smaller airports with an operational control tower but is not serviced by a radar approach control. They do not have to meet a minimum number of annual operations or passenger enplanements.
- **Class E:** Controlled airspace not classified as Class A, B, C, or D. In most areas, this airspace begins at 1,200 feet above ground level (**AGL**) and extends up to 18,000 feet MSL.

Figure 4.2: **Controlled Airspace Diagram**



Source: FAA, *Aeronautical Chart Users' Guide*, 2022

Uncontrolled Airspace: Uncontrolled, or Class G airspace, is the portion of airspace that has not been designated as Class A, B, C, D, or E. In general, Class G airspace extends from the ground surface to the base of Class E airspace. Even though this airspace is uncontrolled, and ATC has no authority or responsibility to control air traffic in Class G airspace, the FAA mandates that visual flight rules (VFR) still apply in this airspace.

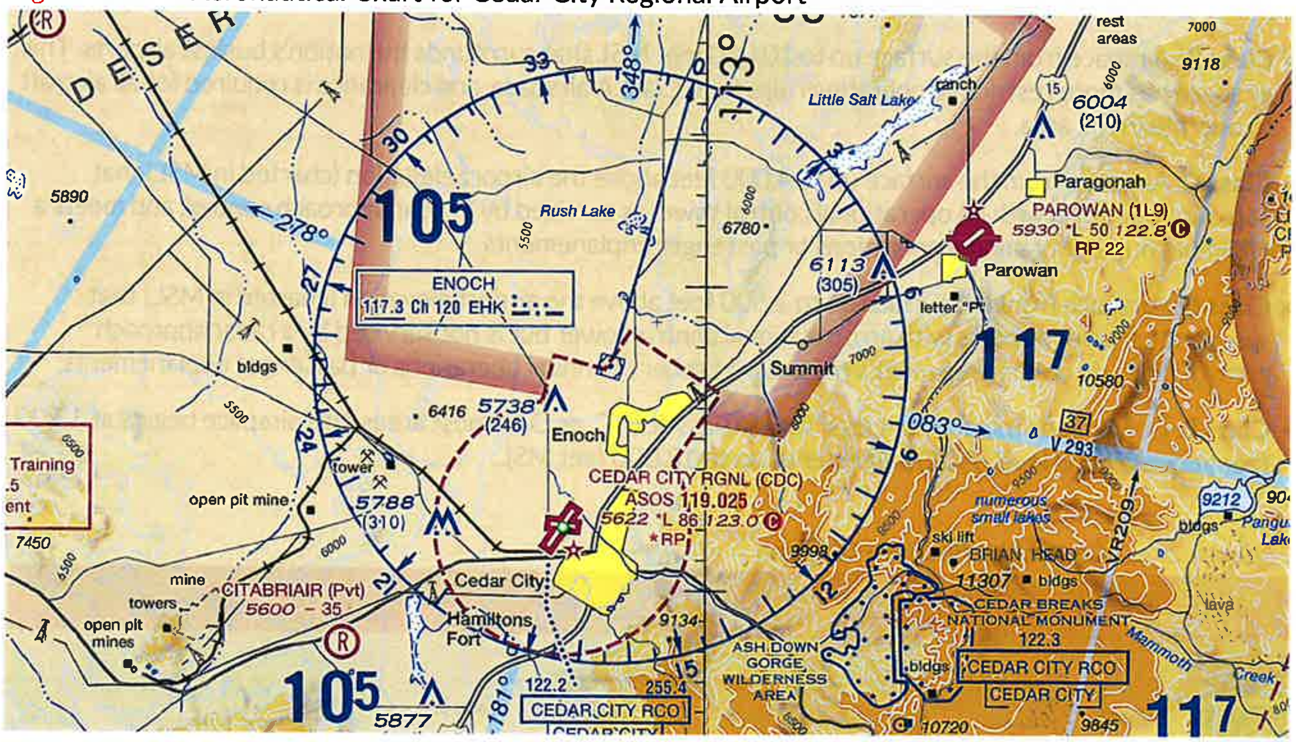
Special Use Airspace: Nonregulatory airspace includes several types of special use areas. Typically, these areas are used for military operations, restricted due to national security, or reserved for similar uses.

Other Airspace: This is a general term that refers to the majority of the remaining airspace and includes areas reserved for local airport advisories, military training routes, temporary flight restrictions, parachute jump aircraft operations, and similar uses.[3]

4.3.2. Airspace at Cedar City Regional Airport

The airport does not have a control tower which means that the airspace immediately surrounding CDC is designated as Class E. This Class E airspace begins at the surface and is depicted in Figure 4.3 by the dashed magenta outline around the airport.

Figure 4.3: Aeronautical Chart for Cedar City Regional Airport



Location Identifier → **NAME (NAM)**
AWOS 123.8
***285* L 72 *122.95* Ⓒ** ← UNICOM

Ⓒ - Follows the Common Traffic Advisory Frequency (CTAF)
ASOS/AWOS **135.42** - Automated Surface Weather Observing Systems

UNICOM - Aeronautical advisory station
285 - Elevation in feet
L - Lighting in operation Sunset to Sunrise
***L** - Lighting limitations exist; refer to Supplement
72 - Length of longest runway in hundreds of feet; usable length may be less

LEGEND

Airports having Control Towers are shown in Blue, all others in Magenta. Consult Chart Supplement for details involving airport lighting, navigation aids, and services.

Hard-surfaced runways greater than 8,069 ft. or some multiple runways less than 8,069 ft.

Non-Directional Beacon (NDB)

Rotating airport beacon in operation Sunset to Sunrise

Class E Airspace with floor 700 ft. above surface that laterally abuts 1,200 ft. or higher Class E Airspace

Source: FAA, Las Vegas Sectional Chart (effective November 3, 2022).

4.4. Instrument Approach Procedures

Instrument approach procedures (**IAP**) are a series of predetermined maneuvers published by the FAA that assist pilots in aligning an aircraft with the runway when flying under IFR. There are two categories of instrument approach procedures; precision and nonprecision approaches. A precision approach is one in which both horizontal and vertical guidance is provided, and a nonprecision approach is one in which only horizontal guidance is provided. An approach with vertical guidance (**APV**) is a type of nonprecision approach in which both horizontal and vertical guidance is provided but does not meet the requirements to be considered a precision approach.[4]

4.4.1. Approach Procedures for Cedar City Regional Airport

As shown in Table 4.1, there is one precision instrument approach and two nonprecision instrument approach procedures published for CDC. These approaches incorporate multiple types of navigational aids and equipment to provide pilots with several options for landing at the airport.

Table 4.1: **Instrument Approach Procedures**

<table>
<tr><th colspan="5">Minimum Altitude* and Minimum Visibility** by Aircraft Approach Category***</th></tr>
<tr><th>Approach</th><th>Category A</th><th>Category B</th><th>Category C</th><th>Category D</th></tr>
<tr><td colspan="5">Runway 2: RNAV (GPS)</td></tr>
<tr><td>LPV</td><td colspan="4">5,867 ft & 7/8 mile</td></tr>
<tr><td>LNAV/VNAV</td><td colspan="4">6,394 ft & 2 1/2 mile</td></tr>
<tr><td>LNAV</td><td colspan="2">6,240 ft & 1 mile</td><td colspan="2">6,240 ft & 1 7/8 mile</td></tr>
<tr><td>CIRCLING</td><td colspan="2">6,240 ft & 1 mile</td><td>6,240 ft & 1 7/8 mile</td><td>6,240 ft & 2 miles</td></tr>
<tr><td colspan="5">Runway 20: RNAV (GPS)</td></tr>
<tr><td>LPV</td><td colspan="4">5,825 ft & 1/2 mile</td></tr>
<tr><td>LNAV/VNAV</td><td colspan="4">6,015 ft & 3/4 mile</td></tr>
<tr><td>LNAV</td><td colspan="2">6,180 ft & 1/2 mile</td><td colspan="2">6,180 ft & 1 1/4 mile</td></tr>
<tr><td>CIRCLING</td><td colspan="2">6,180 ft & 1 mile</td><td>6,180 ft & 1 5/8 mile</td><td>6,180 ft & 2 miles</td></tr>
<tr><td colspan="5">Runway 20: ILS or LOC</td></tr>
<tr><td>S-ILS (higher gradient)</td><td colspan="4">5,825 ft & 1/2 mile</td></tr>
<tr><td>S-ILS (std gradient)</td><td colspan="4">5,882 ft & 1/2 mile</td></tr>
<tr><td>S-LOC 20</td><td>6,440 ft & 1/2 mile</td><td>6,440 ft & 3/4 mile</td><td colspan="2">6,440 ft & 1 7/8 mile</td></tr>
<tr><td>S-LOC (XOJPO mins)</td><td colspan="2">6,100 ft & 1/2 mile</td><td colspan="2">6,100 ft & 1 mile</td></tr>
<tr><td colspan="5">Runway 20: VOR</td></tr>
<tr><td>S-20 Missed</td><td colspan="2">6,020 ft & 1/2 mile</td><td colspan="2">6,020 ft & 3/4 mile</td></tr>
<tr><td>S-20</td><td colspan="2">6,300 ft & 1/2 mile</td><td colspan="2">6,300 ft & 1 1/2 mile</td></tr>
<tr><td>Circling</td><td colspan="2">6,300 ft & 1 mile</td><td>6,300 ft & 2 miles</td><td>6,300 ft & 2 1/4 miles</td></tr>
</table>

*Altitude shown in feet above mean sea level (MSL).

**Visibility shown in statute miles. (One statute mile is equal to 5,280 feet.)

***Aircraft approach categories (AAC) are based on the speed an aircraft travels when configured for landing. (Typically 1.3 times the stall speed.)

- Category A: 0–90 knots
- Category B: 91–120 knots
- Category C: 121–140 knots
- Category D: 141–166 knots

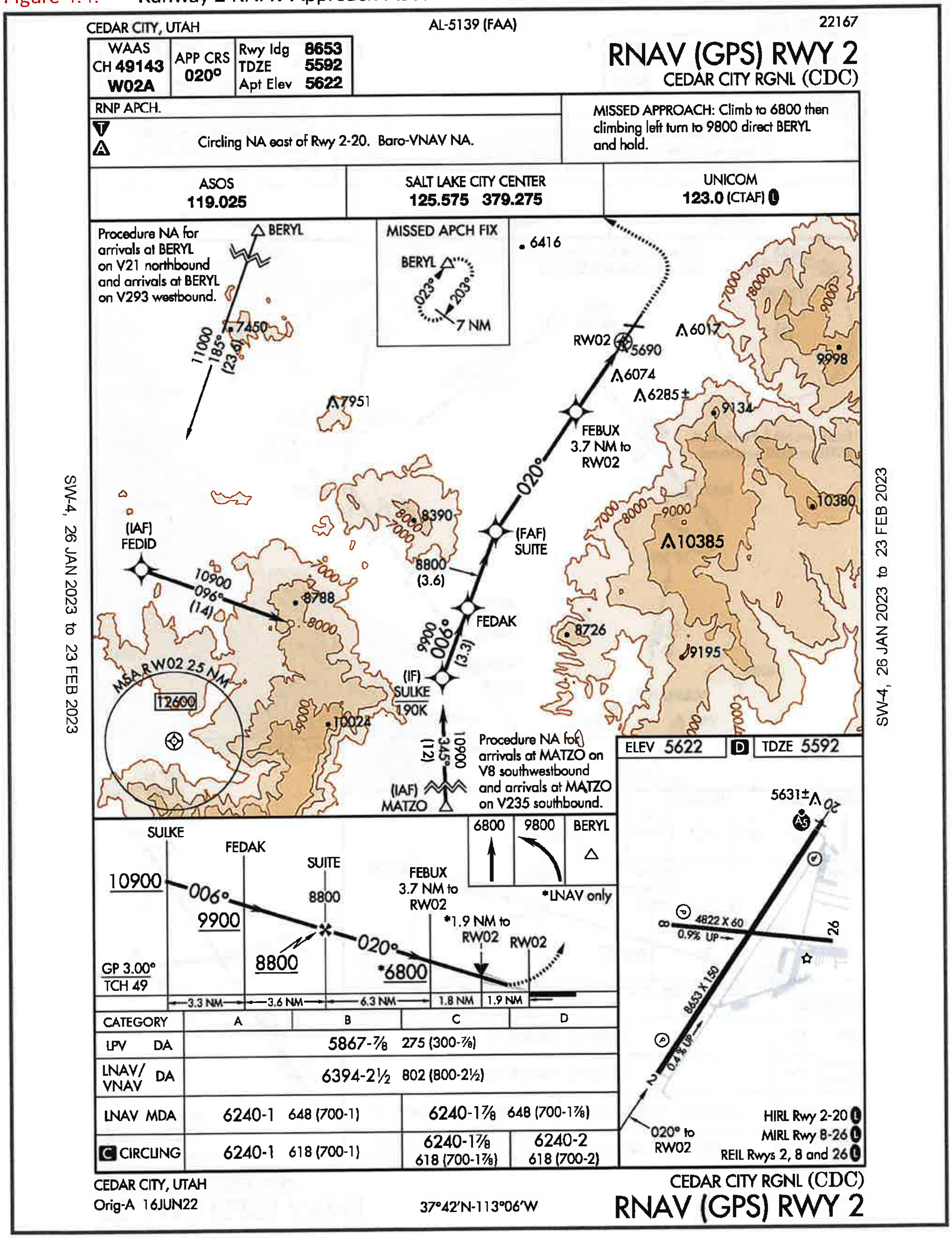
Source: FAA, Instrument Approach Procedure (IAP) Charts for CDC (effective January 26–February 23, 2023)

The minimum altitude, known as the minimum descent altitude (**MDA**) or decision altitude (**DA**), is the lowest altitude a pilot may descend to until visual reference is obtained (i.e., visually identify the runway) when executing a nonprecision approach. If the pilot cannot see the runway at that altitude or from that distance, due to clouds or other visibility restrictions, they cannot complete the approach. The visibility minimums refer to the horizontal distance the pilot must be able to see in order to complete the approach. If the minimum visibility prescribed for the approach is not met, the pilot cannot complete the approach.

The most sophisticated instrument approach procedures available at the airport are the approaches associated with area navigation (**RNAV**) or the instrument landing system (**ILS**). Instrument approaches using RNAV are quite common; especially now that GPS (i.e., global positioning system) is so widely used. The sophistication of RNAV approaches varies based on the capabilities of the system used. For example, localizer performance with vertical guidance (**LPV**) systems typically provide the lowest minimums of all RNAV approaches because the lateral sensitivity increases as the aircraft gets closer to the runway. On the other hand, lateral and vertical navigation (**LNAV/VNAV**) systems do not have increased lateral sensitivity while lateral navigation (**LNAV**) systems only provide lateral guidance.

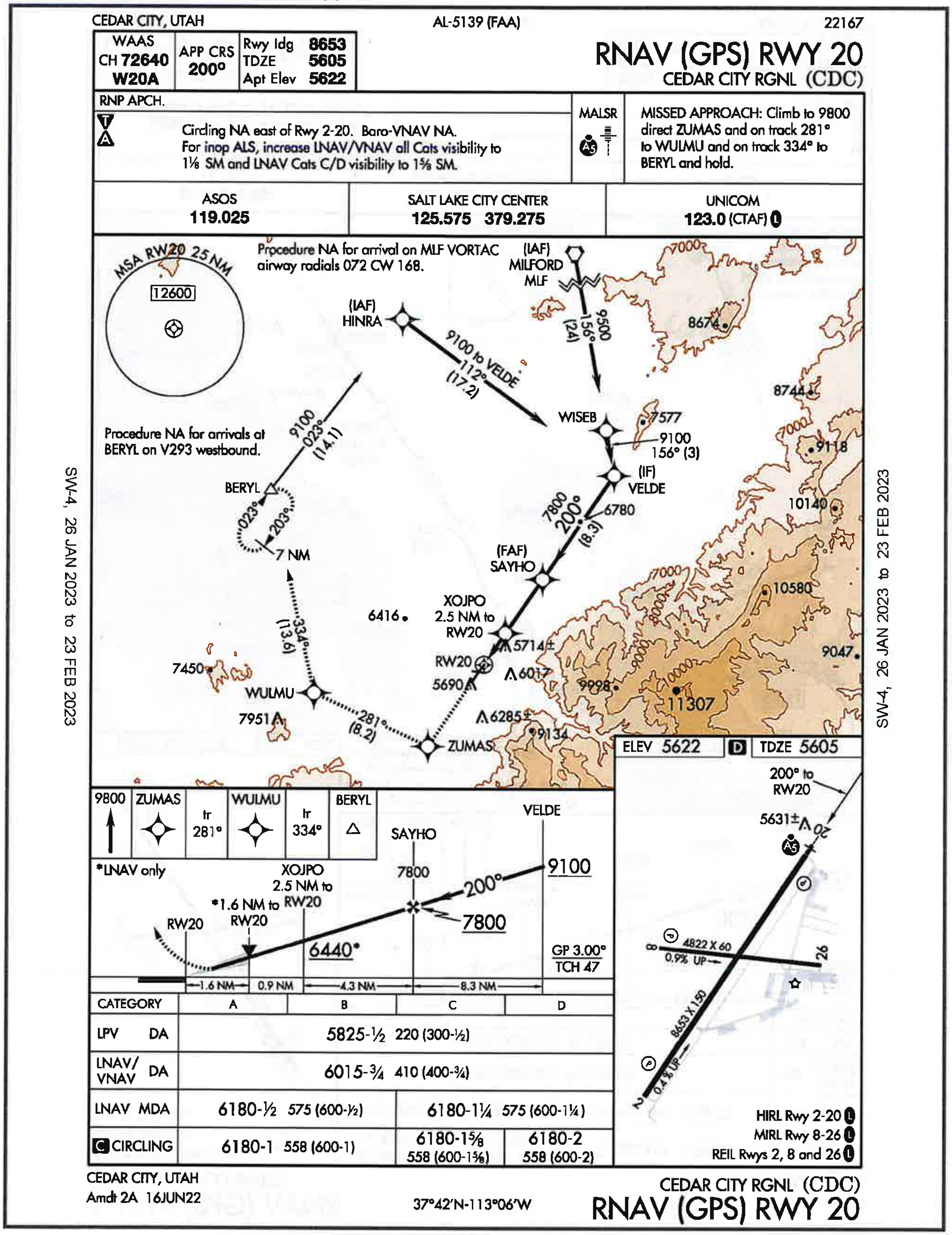
The approach plates, which are the graphical representation of these approach procedures, are shown in Figure 4.4, Figure 4.5, Figure 4.6, and Figure 4.7. The navigational aids (**NAVAIDS**) used for the approach phase are discussed in additional detail in Section 4.5.6. Navigational Aids.

Figure 4.4: Runway 2 RNAV Approach Plate



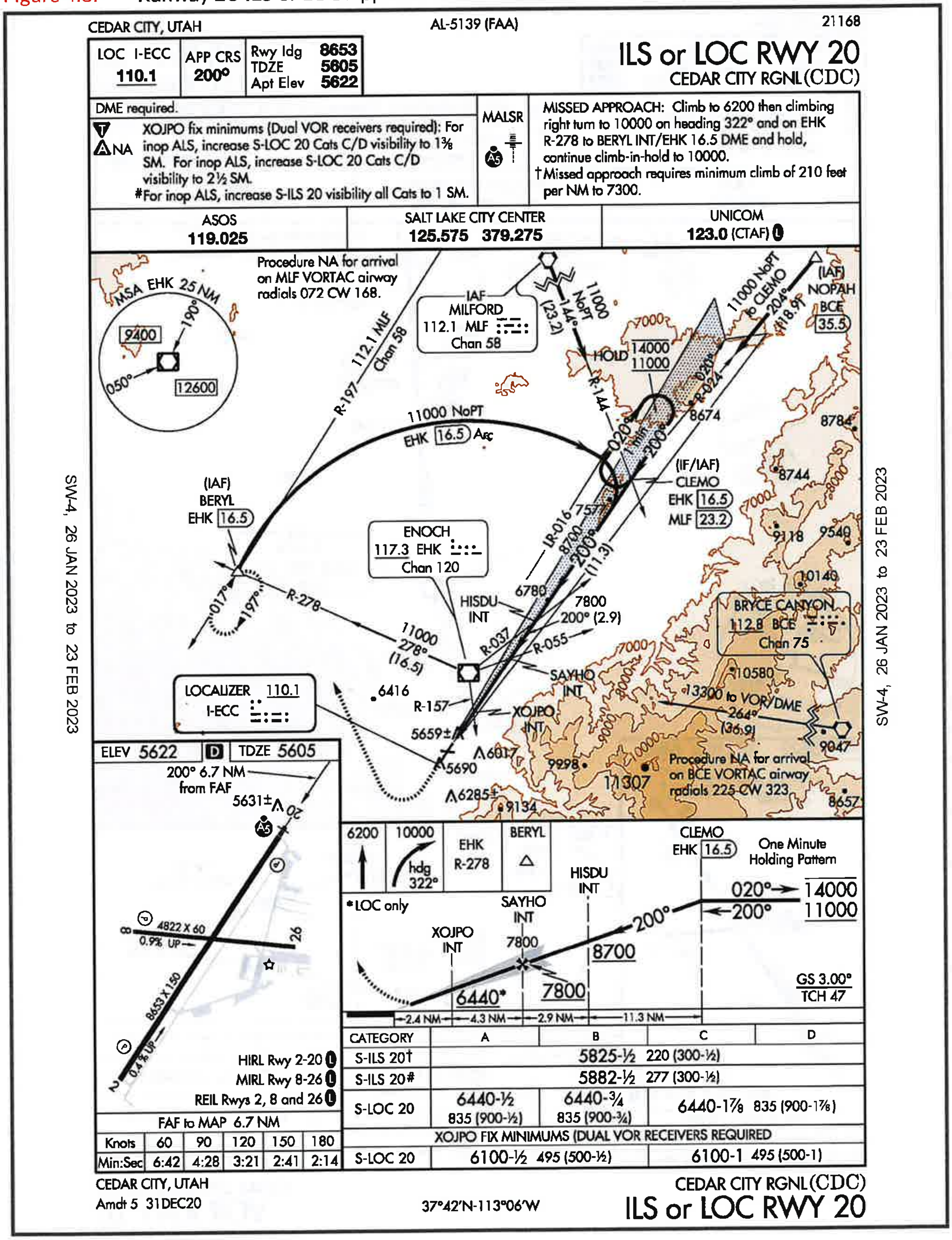
Source: FAA, Airport Data and Information Portal (ADIP)

Figure 4.5: Runway 20 RNAV Approach Plate



Source: FAA, Airport Data and Information Portal (ADIP)

Figure 4.6: Runway 20 ILS or LOC Approach Plate

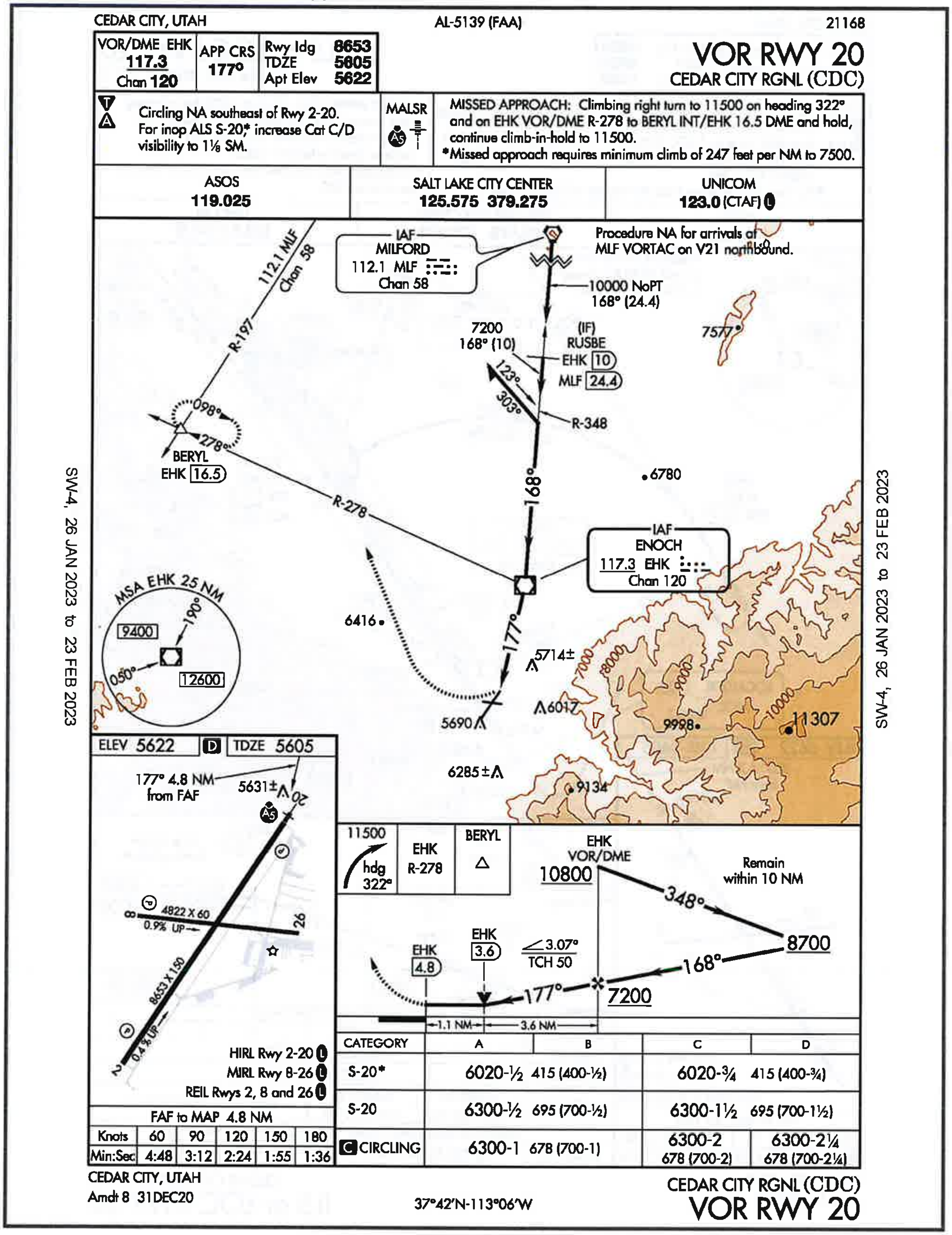


FAF to MAP 6.7 NM					
Knots	60	90	120	150	180
Min:Sec	6:42	4:28	3:21	2:41	2:14

CATEGORY	A	B	C	D
S-ILS 20†	5825-½ 220 (300-½)			
S-ILS 20#	5882-½ 277 (300-½)			
S-LOC 20	6440-½ 835 (900-½)	6440-¾ 835 (900-¾)	6440-1⅞ 835 (900-1⅞)	
XOJPO FIX MINIMUMS (DUAL VOR RECEIVERS REQUIRED)				
S-LOC 20	6100-½ 495 (500-½)		6100-1 495 (500-1)	

Source: FAA, Airport Data and Information Portal (ADIP)

Figure 4.7: Runway 20 VOR Approach Plate



Source: FAA, Airport Data and Information Portal (ADIP)

4.5. Airfield and Airside Facilities

The airfield is the portion of an airport that contains the facilities necessary for aircraft operations. At CDC, this includes the runways, taxiways and taxiway connectors, and other aircraft movement areas as well as the airside facilities that support aircraft operations.

4.5.1. Runways

The airport has two runways; a primary runway, Runway 2/20, and a crosswind runway, Runway 8/26.

a. Runway 2/20

The primary runway, Runway 2/20, is oriented in a northeast-southwest direction. As shown in Figure 4.8, it has a full-length parallel taxiway, Taxiway A, that runs along its east side. The runway is 8,653 feet long and 150 feet wide, and declared distances are all equal to the full runway length.[5]

Runway Lighting Systems and NAVAIDS

The runway is equipped with high-intensity runway lights (**HIRL**) which run along the sides of the runway. Runway 2 is equipped with runway end identifier lights (**REIL**) and precision approach path indicators (**PAPI**). Runway 20 is equipped with a medium intensity approach lighting system with runway alignment indicator lights (**MALSR**) and precision approach path indicators (**PAPI**).[6]

Runway Markings

Runway 2 has nonprecision instrument markings consisting of threshold markers with 12 stripes, designation markings, aiming points, and a centerline stripe. Runway 20 has precision markings consisting of threshold markers with 12 stripes, designation markings, aiming points, touchdown zone markings, side stripes, and a centerline stripe. All runway markings are noted to be in good condition.[7]

Runway Pavement Strength and Gradient

The grooved asphalt surface is in good condition and has a published weight bearing capacity of 56,000 pounds for single wheel landing gear (**S**), 76,000 pounds dual wheel landing gear (**D**), 127,000 for dual tandem landing gear (**2D**), and 142,000 for double dual tandem wheel landing gear (**2D/2D2**). It has a published pavement classification number (**PCN**) of 21/F/C/X/T.[8] This classification indicates the load-carrying capacity of the pavement with F specifying flexible pavement, C denoting the subgrade category is low strength, X indicating the tire pressure (medium, limited to 218 psi), and T indicating the method used to determine the PCN value (technical evaluation). The 2017 airport layout plan indicates it has a gradient of 0.25%.[9]

Figure 4.8: **Runway 2/20**

Source: Google Earth

b. Runway 8/26

The secondary or crosswind runway, Runway 8/26, has an east-west orientation (Figure 4.9). The runway is 4, 822 feet long and 60 feet wide. Declared distances are all equal to the full runway length.[10]

Runway Lighting Systems and NAVAIDS

The runway is equipped with medium intensity runway lights (**MIRL**), which run along the sides of the runway, and both runway ends are equipped with a runway end indicator light system. Runway 8 is equipped with precision approach path indicators.[11]

Runway Markings

Both ends of the runway have visual (i.e. basic) runway markings consisting of designation markings and a centerline stripe. The runway markings are currently in good condition.[12]

Runway Pavement Strength

The runway is paved with asphalt and is in fair condition. It has a published pavement classification number of 8/F/C/X/T. This classification is a relative indication of the load-carrying capacity of the pavement; F is pavement type (flexible), C is the subgrade category (low strength), X indicates tire pressure (medium, limited to 218 psi), and T is the method used to determine the PCN value (technical evaluation). It has a published weight bearing capacity of 16,000 pounds for single wheel landing gear (**S**) configurations.[13]

Runway Pavement Gradient

According to the 2017 airport layout plan, Runway 8/26 has a gradient of 0.89%.[14]

Figure 4.9: Runway 8/26

Source: Google Earth

4.5.2. Taxiways and Taxiway Connectors

Taxiways and taxiway connectors are used by aircraft to get to and from the runway without interfering with takeoffs or landings. Taxiways are designated with a letter or a letter and number combination. As shown in Section Figure 4.1: Airport Diagram, the airport has three taxiways, six connecting taxiways, and an undesignated taxiway connector at the southwest end of Taxiway A that was constructed to provide access to a previous airport tenant. It is equipped with taxiway edge reflectors.

a. Taxiway Alpha

Taxiway Alpha (**A**) is a full-length parallel taxiway for Runway 2/20. It is 8,653 feet long and 50 feet wide. The northeast end of Taxiway A connects directly to Runway 20 via Taxiway Connector A-1, and the southwest end connects to Runway 20 via Taxiway Connector A-4. Taxiway A is equipped with medium intensity taxiway lights (**MITL**).

b. Taxiway Bravo

Taxiway Bravo (**B**) is 35 feet wide and connects the 26 end of Runway 8/26 to the general aviation apron via Taxiway Connector B-1. Taxiway B is equipped with medium intensity taxiway lights.

c. Taxiway Charlie

Taxiway Charlie (**C**) is 75 feet wide. It extends northeast from the intersection of Taxiway A and connector A-2 to provide access to the commercial apron and continues to the GA apron where it then turns to the north. It continues north until it once again connects with Taxiway A. Taxiway C is equipped with medium intensity taxiway lights.

d. Connecting Taxiways

There are six connecting taxiways. All six are equipped with medium intensity taxiway lights. Taxiway connectors A-1, A-2, A-3, and A-4 run perpendicular to Taxiway A and Runway 2/20, B-1 runs perpendicular to Taxiway B and Runway 8/26, and C-1 runs diagonally from Runway 8/26 to Taxiway C.

4.5.3. Airfield Pavements

The aeronautics division of the Utah Department of Transportation (**UDOT**) routinely inspects the condition of airfield pavements at Utah's airports as part of an ongoing Pavement Management Program (**PMP**). These inspections are conducted using criteria from ASTM D-5340, *Standard Test Method for Airport Condition Index Surveys*. This program helps the airport, UDOT, and the FAA to identify and prioritize pavements requiring maintenance, rehabilitation, or replacement as well as planning and budgeting for pavement maintenance and construction projects. This process also assists the Cedar City Corporation, as the airport sponsor, to comply with FAA grant assurance #11 which requires airports that accept federal funds for pavement improvement projects to implement an effective airport pavement maintenance and management program.[15]

The most recent inspection of the airport's airfield pavements was completed May 31, 2016. The inspection report includes the pavement condition index (**PCI**) rating for each section of airfield pavement. PCI uses a rating system to gauge the condition of each pavement surface that indicates the surface's functional performance. Standard PCI values range from 0 (i.e., failed) to 100 (i.e., good). Typically, scores of 71 or more only require preventative maintenance, such as crack sealing, while scores between 51–70 require major rehabilitation. Pavements with a PCI rating of 50 or less require reconstruction.

The airport has 3,663,761 square feet of paved airfield surfaces consisting of aprons, runways, and taxiways. The average PCI rating ranged from 75 to 99 with an overall area-weighted average for all airfield pavements of 88.3. In general, these ratings are considered good to satisfactory which means the majority of the airfield pavements require only routine maintenance. However, a section of the north general aviation apron was determined to have a PCI rating of 49 and will require reconstruction in the near term.

4.5.4. Airfield Signage

An airport's runway and taxiway signage is essential to the safe and efficient use of the airfield for both aircraft and ground vehicles. The airfield is equipped with a variety of signs such as destination signs, direction signs, information signs, location signs, and mandatory instruction signs. These signs provide pilots with visual cues and useful information that is important during takeoff, landing, and taxiing. Airports typically use standard sign types and formats to help avoid confusion for pilots and ground crews (Figure 4.10).[16]

a. Destination Signs

Destination signs have a black inscription on a yellow background. These signs always have an arrow indicating the direction of the taxiing route to a remote location. Destinations commonly shown on these types of signs include runways, aprons, terminals, and fixed base operators.

b. Direction Signs

Direction signs indicate directions of other taxiways leading out of an intersection. These signs may also be used to indicate a taxiway exit from a runway. Direction signs have a black inscription on a yellow background and always contain arrows.

c. Information Signs

Information signs are installed on the airside of an airport and provide information other than mandatory holding positions, taxiway guidance, and runway distance remaining signs. An information sign has a black inscription on a yellow background.

d. Location Signs

Location signs identify the taxiway or runway where an aircraft is located. These signs have yellow lettering with a yellow border on a black background.

e. Mandatory Instruction Signs

These signs have white lettering with a black outline on a red background. They are used to indicate an entrance to a runway or other critical area. At uncontrolled airports (i.e., airports without air traffic control), like CDC, vehicles and aircraft may proceed beyond these signs only after taking appropriate precautions.

Figure 4.10: Airfield Signage

Source: Ardurra

4.5.5. Airfield Lighting

Airfield lighting systems extend an airport's usefulness during nighttime hours or when visibility is reduced due to inclement weather. They help pilots identify the airport from the air and aid pilots and airport staff in maneuvering safely while on the airfield. The airfield lighting systems at CDC are pilot activated using the common traffic advisory frequency (**CTAF**) of 123.0 MHz.

a. Emergency Power

To ensure airfield lighting systems have a constant source of power, the airport maintains a propane generator as a secondary source of power. In the event of a power outage, this generator is used to power the runway and taxiway lights, airport beacon, and the airport-owned NAVAIDS and visual aids.[17]

b. Airport Beacon

Airport beacons are lighted navigation aids that indicate the location of the airport. In the United States, different types of airports, such as land, water, or military are represented by specific color combinations. A white and green (or green only) beacon indicates the facility is a lighted land airport. Airport beacons typically flash at a rate of 24–30 per minute and are mounted on top of towering structures.

The beacon at CDC is a standard green and white beacon positioned atop a standard orange and white striped beacon pole located at the GA apron near the fueling station.

c. Approach Lights

Approach lights help pilots locate the runway as they transition from instrument flight to visual flight. The sophistication and configuration of the approach light system (**ALS**) can vary based on the type of approach required for each runway.

Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights

Runway 20 is equipped with a medium intensity approach lighting system with runway alignment indicator lights (**MALSR**). This system provides visual information regarding runway alignment, height perception, roll guidance, and horizon references. As shown in Figure 4.11, it consists of a series of lights mounted on poles of various heights that extend 2,000 feet from the end of the runway along the runway centerline. The MALSR is owned by the FAA.

Figure 4.11: **Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights**

Source: Ardurra

Runway End Identifier Lights

Runway end identifier lights (**REIL**) provide rapid and positive identification of the approach end of a runway. They are especially helpful if the runway is surrounded by a multitude of other lighting, lacks contrast with the surrounding terrain, or during periods of reduced visibility. These systems typically consist of a pair of synchronized flashing lights placed laterally on each side of the runway threshold facing the approach area. Runway 2 is equipped with a REIL system as well as both ends of Runway 8/26 (**Figure 4.12**).

Figure 4.12: Runway End Identifier Lights

Source: Ardurra

d. Runway Edge Lighting

Runway edge lighting systems improve safety and visibility by defining pavement edges. Runway 2/20 is equipped with high intensity runway lights, and Runway 8/26 is equipped with medium intensity runway lights (**Figure 4.13**). These systems have variable intensity control settings.

Figure 4.13: Runway Edge Lighting

Source: Ardurra

e. Taxiway Lighting Systems and Reflectors

Taxiway lighting systems and reflectors improve safety and visibility by helping to define the edge of taxiway pavements. These systems are essential, especially at night or during periods of reduced visibility, to help maintain safe and efficient access between the runways and aprons. Taxiway edge lights and reflectors are typically blue to help distinguish these lights from other airfield lighting systems. Each of the three taxiways and all six designated taxiway connectors are equipped with medium intensity taxiway lights (Figure 4.14).

Figure 4.14: **Medium Intensity Taxiway Lights**

Source: Ardurra

Taxiway Edge Reflectors

Taxiway edge reflectors are permitted instead of, or to enhance, taxiway edge lights for short sections, curves, and intersections.[18] The undesignated taxiway connector at the southwest end of Taxiway A is equipped with taxiway edge reflectors.

Figure 4.15: **Taxiway Edge Reflectors**

Source: Ardurra

f. Visual Glideslope Indicators

Visual glideslope indicators aid pilots in judging the correct slope as the aircraft approaches the touchdown zone of the runway. The airport is equipped with the type of visual glideslope indicator known as a precision approach path indicator.

Precision Approach Path Indicators

Precision approach path indicators (**PAPI**) aid pilots by providing visual guidance during landing. These systems display a combination of red and white lights which indicate the slope at which the aircraft is descending toward the touchdown point. A pilot on the correct slope for landing will see two white lights and two red lights. Runways 2, 20, and 8 are all equipped with a four-light PAPI located at the left side of the landing runway at the approximate touchdown point. They each have a standard three-degree glide path angle. These systems are owned by the FAA.

Figure 4.16: **Precision Approach Path Indicator**

Source: Ardurra

4.5.6. Navigational Aids

There are several different types of navigation aids (**NAVAIDS**) available for use at airports that can vary widely in function and level of sophistication. These can be simple devices that serve as visual markers, communication equipment that transmits radio signals, or sophisticated systems that provide navigational guidance with a high degree of accuracy. The sophistication and configuration of the systems used at a particular airport varies based on the type of approach required. At CDC, they include both and visual electronic navigational aids.

a. Visual Navigational Aids

Visual navigational aids provide pilots with important visual cues when operating at the airport.

Segmented Circle and Wind Indicator

A segmented circle is used to identify the aerial traffic pattern when flying under visual flight rules (**VFR**). Traffic patterns are established to help pilots avoid obstacles like mountains, towers, or densely populated areas. The legs extending from the circle indicate the direction a pilot should turn when making the final approach to a given runway end.

At CDC, the segmented circle is located to the east of Taxiway A just south of where it intersects with Runway 8/26 (Figure 4.17). The primary wind indicator, which is located in the center of the segmented circle (37° 42' 0.72"N and 113° 5' 45.05"W), is lighted for improved visibility.

As required for compliance with Title 14 CFR Part 91, *General Operating and Flight Rules*, L-shaped indicators are used to show that Runways 20 and 26 have right-hand turns while Runways 2 and 8 have left-hand turns.

Additionally, Title 14 CFR Part 139, *Certification of Airports*, requires commercial service airports to have a supplemental wind indicator located at the end of each runway suitable for air carrier use. Runway 2/20 is the only runway at CDC suitable for use by an air carrier. As such, it has a supplemental wind indicator located at each end.

Figure 4.17: Segmented Circle and Wind Indicator

Source: Ardurra

b. Electronic Navigational Aids

Electronic navigational aids use a combination of ground-based transmission facilities and onboard receiving instruments to help pilots navigate with a high degree of accuracy.

Instrument Landing System

An instrument landing system (**ILS**) is a ground-based electronic NAVAID that enables pilots to execute a precision instrument approach procedure. Runway 2/20 is equipped with an ILS that consists of a localizer (**LOC**) and glideslope (**GS**) that supports the ILS or localizer approach to Runway 20 (Figure 4.6).

The localizer provides horizontal (i.e., left/right) guidance along the extended runway centerline, and the glideslope provides vertical (i.e., up/down) guidance to the runway touchdown point at the typical three-degree glide path angle.

The localizer, which is located just beyond the approach end of Runway 2, is powered through a neighboring electrical vault. The glideslope, which is located just to the west of Runway 20 near the touchdown point, is also powered through a neighboring electrical vault (Figure 4.18). This system is owned by the FAA.

Figure 4.18: Glideslope

Source: Ardurra

Very High Frequency Omnidirectional Range with Distance Measuring Equipment

A very high frequency omnidirectional range (**VOR**) is a ground-based NAVAID that is widely used within the National Airspace System (**NAS**). It is aligned with magnetic north and transmits azimuth information for high and low altitude routes and airport approaches. When the VOR is located alongside distance measuring equipment (**DME**), it is referred to as a VOR-DME. Together, they transmit both azimuth and distance information to aircraft. There is a federally-owned VOR-DME located approximately six miles north of the airfield which has the identifier EHK. This VOR-DME supports the VOR approach to Runway 20 (Figure 4.7).

4.5.7. Weather Reporting Equipment

a. Automated Surface Observing System

An automated surface observing system (**ASOS**) is a weather sensing station designed to assist pilots and flight planners by automatically providing up-to-date meteorological observations. These systems, which can have a variety of sensors, typically measure wind direction and speed, cloud ceiling height, visibility, air temperature, precipitation, dew point, barometric pressure, and humidity. The weather reports can be accessed via telephone, online, radio, or local computer terminal.

The ASOS is at CDC located at the north end of Runway 20 (Figure 4.19). People can receive these weather reports via radio at 119.025 or by calling (435) 867-0278. This system is owned by the National Oceanic and Atmospheric Administration (**NOAA**).

Figure 4.19: **Automated Surface Observing System**

Source: Ardurra

4.6. Landside and Landside Facilities

The landside is the portion of an airport that contains the facilities used for processing passengers and cargo as well as ground transportation. At CDC, this includes the commercial service apron, passenger terminal building, general aviation facilities, and air cargo facilities as well as additional support facilities and equipment.

4.6.1. Commercial Service Terminal Complex

The commercial service terminal complex is located just to the south of Taxiway C near where it intersects with Taxiway Connector A-2. The major elements of the terminal complex include the commercial service apron, the passenger terminal building, and the terminal parking lots.

a. Commercial Service Terminal Apron

The terminal apron, which is constructed of asphalt and concrete, is approximately 125,000 square feet. The apron has a hardstand parking location for a single regional jet aircraft next to the commercial terminal building. It is marked with a red line that indicates the security identification display area (**SIDA**) boundary. Ground service equipment is stored near the terminal building at the edge of the commercial apron.

b. Passenger Terminal Building

The passenger terminal building was constructed in 2005 and is approximately 15,000 square feet. The two-story building houses the airport administration offices; baggage claim area; check-in, ticketing, and baggage screening area; rental car counters; security screening area; and a waiting area. There is one passenger gate that allows walk-on ramp access when boarding and disembarking aircraft (Figure 4.20).

Figure 4.20: **Passenger Terminal Building**

Source: Ardurra

Airport Administration Offices

The airport administration offices are located on the second floor. This includes office space used by the Transportation Security Administration (**TSA**).

Baggage Claim Area

The baggage claim area is located on the first floor in the south wing (Figure 4.21).

Figure 4.21: **Baggage Claim Area**

Source: Ardurra

Check-In, Ticketing, and Baggage Screening Area

The passenger check-in, airline ticketing, and baggage screening area is located on the first floor in the north wing (Figure 4.22). As of December 2022, there is one airline operating at CDC. Delta Connection, which is operated by SkyWest Airlines, offers daily nonstop service to Salt Lake City.

Figure 4.22: **Ticketing and Baggage Screening**

Source: Ardurra

Rental Car Counters

The rental car counters are located on the first floor in the south wing of the terminal building. The are three rental car agencies at CDC which include Enterprise, Avis, and Budget (Figure 4.23).

Figure 4.23: Rental Car Counters

Source: Ardurra

Security Screening Area

The Transportation Security Administration (**TSA**) screening area is also on the first floor (Figure 4.24). Passengers are retained in a secure waiting area after they have completed the TSA screening process.

Figure 4.24: Security Screening Area

Source: Ardurra

Passenger Waiting Area

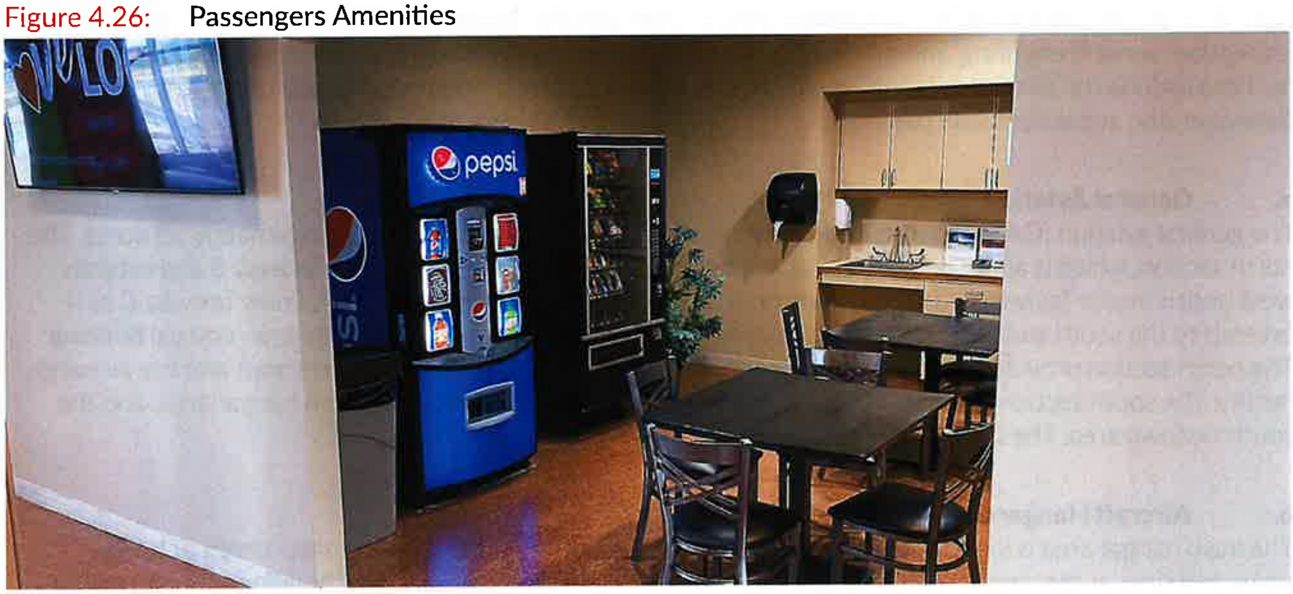
The passenger waiting area is also located on the first floor in the center of the terminal building.

Figure 4.25: Passenger Waiting Area

Source: Ardurra

Passenger amenities in the waiting area include vending machines, free Wi-Fi, and electronic charging stations (Figure 4.26).

Figure 4.26: Passengers Amenities



Source: Ardurra

c. Airport Parking
The airport offers free parking to both short-term and long-term passengers. There are approximately 204 spaces available in the two parking areas located alongside the terminal building with additional space available in an adjacent unpaved parking area. These parking areas, which are also used by the car rental companies and airport employees, are accessed via Aviation Way (Figure 4.27).

Figure 4.27: Terminal Parking

Source: Ardurra

4.6.2. General Aviation Facilities
General aviation includes all flights that are not scheduled commercial service or military operations. It typically includes charter flights, privately owned aircraft used for business or personal travel, flight training, recreation, aerial firefighting, and medical transport or other types of emergency services. At CDC, these facilities include the general aviation apron, aircraft hangars, aircraft tiedowns, helicopter parking, the fixed base operator, and automobile parking.

a. General Aviation Apron
The general aviation (**GA**) apron has been paved with asphalt and encompasses approximately 15 acres. The north section, which is approximately 8.5 acres, begins just beyond the east end of Taxiway B and extends west until it meets Taxiway C. The south section, which is approximately 6.5 acres, follows Taxiway C as it extends to the south and ends just before Taxiway C reaches the access road to the snow removal building. The north section provides access to the self-serve fueling station, the north tiedown area, and the air cargo facility. The south section provides access to the fixed base operator (**FBO**), the main hangar area, and the south tiedown area. The GA apron is used by both local and itinerant traffic.

b. Aircraft Hangars
The main hangar area is located at the south end of the GA apron. There is a wide assortment of hangar types and sizes at the airport which range in size from a large 20,000-square-foot building to small nested T-hangars (Figure 4.28). This includes a row of T- hangars with nine individual spaces owned by the airport. Nearly all of the hangars at the airport are currently occupied by local organizations, businesses, or privately owned aircraft. Several of these airport tenants are discussed later in Section Section 4.8. Airport Tenants.

Figure 4.28: Main Hangar Area

Source: Ardurra

c. Aircraft Tiedowns

There are a total of 76 aircraft tiedowns located on the GA apron; 58 tiedowns are located at the north tiedown area and 18 tiedowns are located at the south tiedown area.

d. Helicopter Parking

There is a helicopter parking area just west of the general aviation apron which is accessed via Taxiway C. It is marked with four parking spots for large helicopters and four spots for small helicopters (Figure 4.29).

Figure 4.29: Helicopter Parking

Source: Ardurra

e. Fixed Base Operator

A fixed base operator (**FBO**) is a business that operates at an airport and provides services to airport users. Typically, these services are related to the operation and maintenance of aircraft but they can also extend to services and amenities like flight instruction, charters, rentals, pilots lounges, conference rooms, and car rentals. The FBO building at CDC is located at the GA apron near the end of Kitty Hawk Drive (Figure 4.30).

GateOne, which acquired Sphere One Aviation in 2016, is the sole FBO at CDC.[19] The company provides a full range of services including aircraft maintenance, aircraft parking (hangar, ramp, or tiedowns), aircraft rental, aviation fuel, on-site catering service, flight training, oxygen service, passenger terminal and lounge, pilot lounge, rental cars, courtesy transportation, and more (Figure 4.30).[20]

Figure 4.30: **Fixed Base Operator**

Source: Ardurra

f. Automobile Parking

There is a small paved parking lot located at the FBO building which is accessed via Kitty Hawk Drive. The lot, which was repainted and restriped in 2022, has 106 parking spaces. This parking lot is outside the security fence, and the airfield is accessed from a vehicle security gate or a locked pedestrian gate as well as through the FBO building. Additional parking is available at a small paved parking lot (approximately 4,000 square feet) located at the main hangar area, and another small parking lot (approximately 5,000 square feet) is located next to the snow removal equipment building. Both lots are accessed via Aviation Way. When needed, additional space is available for airport tenants in several unmarked areas adjacent to the various hangars and buildings.

4.6.3. Air Cargo Facilities

The airport is serviced by two dedicated air cargo operators; FedEx and Alpine Air Express. Both use a FedEx-owned cargo hangar for cargo handling. The cargo hangar is approximately 5,100 square feet and is located on the east side of the airfield located near the north section of the GA apron. It is currently being used as a cargo sort building, to load and unload cargo, and as temporary storage for equipment used to move heavy cargo and large pallets.

4.7. Support Facilities

An airport's support facilities help the airport to run smoothly and efficiently. At CDC, these facilities include infrastructure and equipment used for aircraft fuel storage; aircraft rescue and fire fighting; a flight service station; snow removal and ice control facilities; and security fencing and access gates.

4.7.1. Aircraft Fuel Facilities

Fuel services at CDC are provided by the FBO which also owns and operates all of the fuel tanks, trucks, and equipment. There is a self-serve fueling station that dispenses 100LL aviation gasoline (**avgas**) located at the north GA apron next to the airport beacon (Figure 4.31). The company also operates four, full-service, 5,000-gallon, fuel trucks where Jet A and 100LL avgas can be purchased.

Figure 4.31: **Fueling Station**

Source: Ardurra

The fuel storage tanks are located near the interagency fire center. There are three 10,000-gallon above-ground fuel storage tanks. One is used to store 100LL avgas and two are used to store Jet-A fuel. There are two 12,000-gallon above-ground fuel storage tanks. One is used to store 100LL avgas, and one is used to store Jet-A fuel. There is also a 500-gallon tank where 100LL avgas can be purchased via self service.

4.7.2. Aircraft Rescue and Fire Fighting

According to Title 14 Code of Federal Regulations (**CFR**) 139.315, an airport's aircraft rescue and fire fighting (**ARFF**) index is determined based on the length of the longest passenger aircraft serving the airport. If the aircraft makes, on average, five or more daily departures from the airport, this aircraft is used to determine the ARFF index for the airport. If the aircraft makes less than five average daily departures, the airport's ARFF index will be the next lower ARFF index with Index A being the minimum designated ARFF index for a commercial service airport.

Air carrier aircraft are grouped into the following five categories used to determine the AARF index:

- Index A includes aircraft less than 90 feet in length.[21]
- Index B includes aircraft at least 90 feet but less than 126 feet in length.
- Index C includes aircraft at least 126 feet but less than 159 feet in length.
- Index D includes aircraft at least 159 feet but less than 200 feet in length.
- Index E includes aircraft at least 200 feet in length.

a. Aircraft Rescue and Fire Fighting Index and Equipment

Cedar City Regional Airport is currently classified as an Index A airport. To meet Index A requirements, the airport must have a vehicle capable of carrying a minimum of either:

- 500 pounds of sodium-based dry chemical, halon 1211, or clean agent; or
- 450 pounds of potassium-based dry chemical and water with a commensurate quantity of aqueous film foaming foam (**AFFF**) to total 100 gallons of simultaneous dry chemical and AFFF application.[22]

The airport uses an Oshkosh Striker 1500 fire engine as the primary ARFF response vehicle. The Striker is equipped to carry 1,500 gallons of water, 500 pounds of dry chemical, and 210 gallons of AFFF. This truck is also equipped with three portable fire extinguishers: 20-pound BC, 30-pound D METL/X, and 25-pound Halotron (Figure 4.32). Table 4.2 summarizes the ARFF equipment available at the airport.

Figure 4.32: Aircraft Rescue and Fire Fighting Truck

Source: Ardurra

Table 4.2: Aircraft Rescue and Fire Fighting Equipment

Year	Make	Equipment Type
2007	Oshkosh	Striker 1500 ARFF Vehicle
1994	E-ONE	1500-GPM Pumper Truck with 750-gallon Water Tank (Engine 12)
1995	Freightliner	Tender Truck with 4000-Gallon Water Tank (Tender 11)
1985		75-foot Aerial Truck with 1500-GPM Pump, 250-Gallon Water Tank (Ladder 31)
2014	Pierce	1500-GPM Pumper Truck with 1000-Gallon Water Tank (Engine 11)
2000	Pierce	1500-GPM Pumper Truck with 1000-Gallon Water Tank (Engine 21)
2005	Pierce	1500-GPM Pumper Truck with 1000-Gallon Water Tank (Engine 31)
2014	Pierce	2000-GPM Aerial Truck with 300-Gallon Water Tank (Ladder 11)
2006	Pierce	Hazardous Material and Heavy Rescue Truck (Rescue 12)
2017	Chevrolet	4X4 Quick Response Light Rescue Truck (Rescue 11)

Source: Cedar City Regional Airport, 2019 Airport Certification Manual

b. Cedar City Fire Station #3

The ARFF equipment is housed at Cedar City Fire Station #3. This station is located at 3013 W 1600 N which is just northwest of the airport near the intersection of W 1600 N and N 3100 W (Figure 4.33). There are two additional buildings used as a training facility. There is an access road from the station to the west end of Runway 8/26 which allows for quick access to the airfield.

Figure 4.33: Cedar City Fire Station #3

Source: Ardurra

4.7.3. Flight Service Station

Flight service stations (**FSS**) are air traffic facilities that provide pilots with weather and aeronautical information through pilot briefings, flight planning, inflight advisory services, weather cameras, search and rescue initiation, aircraft emergency response, and notices to air missions (**NOTAMs**). The Cedar City Flight Service Station is located on Kitty Hawk Drive near the FBO building.

Figure 4.34: Flight Service Station

Source: Ardurra

4.7.4. Snow Removal and Ice Control

The snow removal equipment (**SRE**) building is 4,961 square feet, is located just west of the commercial apron, and is accessed via Taxiway C. All SRE is stored and maintained in the SRE building. No chemicals are used on the runways for snow and ice control. Table 4.3 lists the SRE available at the airport.

Table 4.3: Snow Removal Equipment

Year	Make and Model	Equipment Type
2021	MB3	18-foot Front Mount Power Sweeper
2016	MB3	18-foot Front Mount Power Sweeper
2005	New Holland TV145	Tractor with 14-foot Plow, Snow Bucket, Snow Thrower, and Spreader
1991	Chevy 3500	8-foot V-Blade Plow
1990	Ford 9000	Dump Truck with 20-foot Wausau Plow
1983	Oshkosh	9-foot Snow Blower

Source: Cedar City Regional Airport, Snow and Ice Control Plan

a. Priority Snow Removal Areas

Priority snow removal areas have been identified as part of the airport's Snow and Ice Control Plan. These include Runway 2/20, Taxiway A, connectors A1, A2, and A4, Taxiway C (from Taxiway A to terminal apron), terminal apron, ARFF access road, and Runway 8/26 (from fire station to Runway 2/20). Areas that are noted in the plan as second priority are Runway 8/26, Taxiway C, connector C1, the vehicle access gate at Kitty Hawk Drive, the vehicle access gate at the north GA apron, and the GA apron. The areas listed as third priority include Taxiway B, connectors B1 and A3, the helipad, and the fuel farm access road.[23]

b. Aircraft Deicing

The aircraft deicing area is located at the commercial service apron. The deicing system, which is owned and operated by SkyWest Airlines, uses a truck with a lift and bucket to apply propylene glycol (Figure 4.35). The FBO provides limited deicing services for GA aircraft.

Figure 4.35: Deicing Truck

Source: Ardurra

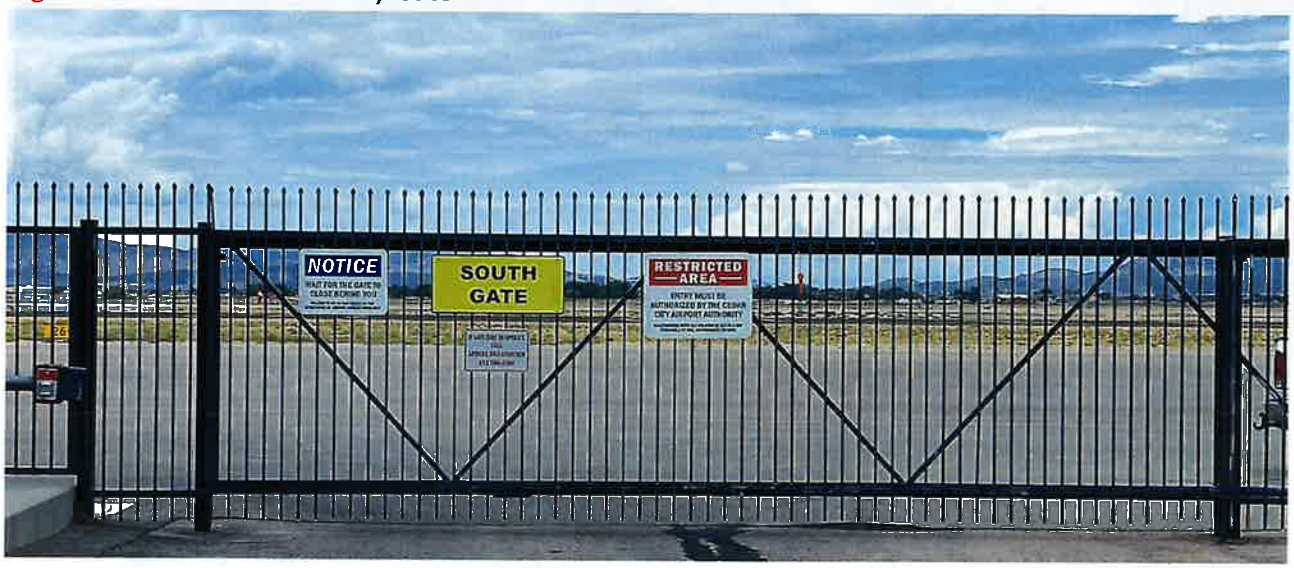
4.7.5. Security Fencing and Access Gates

An eight-foot-tall wrought iron fence surrounds the commercial terminal building and most of the adjacent parking lot. An eight-foot-tall chain-link security fence runs along the remainder of the airport property. In 2017, additional fencing was added as a barrier to help reduce the number of prairie dogs on airport property. All fencing is maintained by airport staff (Figure 4.36). There are 18 vehicle access gates operated by keypads (Figure 4.37). One is a dedicated ARFF access gate, and one is a dedicated SRE gate. There are multiple pedestrian gates located around the commercial terminal building and tenant hangars.

Figure 4.36: Security Fence

Source: Ardurra

Figure 4.37: Vehicle Security Gate



Source: Ardurra

4.8. Airport Tenants

A variety of tenants own, lease, or operate facilities at the airport.

4.8.1. Color Country Interagency Fire Center

The airport is home to the Color Country Interagency Fire Center (**CCIFC**). This interagency dispatch center is a cooperative effort between the U.S. Bureau of Land Management (**BLM**), U.S. Forest Service (**USFS**), National Park Service (**NPS**), Bureau of Indian Affairs, and the Utah Division of Forestry, Fire and State Lands (**FFSL**).[24] CCIFC is responsible for dispatching and coordination of approximately 400 wildfires and incidents per year for approximately 16.5 million acres located in southern Utah and northern Arizona. Currently, 15 units are dispatched through the Color Country Interagency Fire Center.

The CCIFC base is located at the northeast end of Taxiway C near where it intersects with Taxiway A. The organization occupies a 6,595-square-foot building which includes housing for on-duty pilots and staff. The CCIFC operates the apron immediately adjacent to this building. The apron is approximately 2.5 acres, includes three dedicated wash pads capable of servicing large firefighting aircraft (e.g., Boeing 747, MD-88, C-10, P-2 Neptune, BAe-146, and Shorts Sherpa C-23), and is capable of accommodating up to seven AT-802 single engine air tankers (**SEAT**).

The CCIFC also operates five storage tanks used for slurry, which are located just to the east of the apron, and a retention pond located just north of the apron.[1] There is also a helicopter parking area with three helicopter parking positions and one helipad.

4.8.2. Utah National Guard

The Utah National Guard trains at the airport with a fleet of fixed wing aircraft and helicopters. The organization is in the process of signing a ten-year lease on a large box hangar recently constructed by the FBO. Additionally, the Utah National Guard is looking to construct an army aviation facility and readiness center adjacent to the airport to enhance its domestic aviation response capabilities.[25]

4.8.3. Southern Utah University

Southern Utah University (**SUU**) currently occupies six buildings located at the airport. This includes the large maintenance hangar next to the snow removal building, the two adjacent hangars, and two buildings located at the north end of the main hangar area. SUU's flight school trains both fixed wing and rotor pilots and currently offers the only FAA certified aerobatic helicopter in the country.[26]

4.8.4. Civil Air Patrol

The Civil Air Patrol (**CAP**) is a federally chartered non-profit corporation. Its mission is to support America's communities with emergency response, diverse aviation and ground services, youth development, and promotion of air, space, and cyber power through aerospace education. CAP flies a wide range of operational missions including search and rescue and disaster response operations. They also execute aerial target missions to maintain combat readiness of air defense assets, conduct special-use airspace surveys, and fly orientation flights for teachers, Air Force Reserve Officer Training Corps (**ROTC**), and Air Force Junior Reserve Officer Training Corps (**JROTC**) cadets.[27] The Cedar Mustangs Squadron Civil Air Patrol occupies a large, 3,268-square-foot hangar located next to the small parking lot at the main hangar area.

1. Slurry is a mixture of water and fertilizer designed to protect trees and other flammable materials. The mixture clings to these materials and insulates them from the approaching fire while the fertilizer helps the damaged areas regrow in the wake of the blaze.

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FORECAST OF AVIATION ACTIVITY

5

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CHAPTER FIVE

FORECAST

The forecast is a critical component of the airport master planning process. It is used to help understand and anticipate the aviation activity that is expected to occur at the airport during the 20-year planning period of 2022–2042. It also provides the basis for guiding airport development needed to meet future demand.

5.1. Introduction

An effective forecast should be realistic, based on current data, and developed using appropriate methods. Developing a forecast for an airport master plan involves considering a variety of factors that can vary in complexity—such as the size and location of the airport, the type of aircraft using the airport, and activity levels. However, every forecast is developed using the same series of basic steps. As outlined in FAA Advisory Circular (**AC**) 150/5070-6B, *Airport Master Plans*, these steps include identifying existing aviation activity; reviewing historical activity levels and previous forecasts; examining industry trends and regional socioeconomic data; selecting the appropriate forecast method; and then applying the methodology and evaluating the results.

The forecast developed for this airport master plan includes projections for a short-term planning horizon of five years, a medium-term planning horizon of ten years, and a long-term planning horizon of 20 years. Each of these projections uses 2022 as the base year when applying the selected forecasting methodology.

5.2. Existing Aviation Activity and Forecast Summary

It is important to first identify existing aviation activity to make sure the forecast includes all relevant activities likely to affect airport facilities. This typically includes aircraft operations (i.e., takeoffs and landings), enplanements (i.e., revenue paying passengers boarding commercial flights), and the critical aircraft. For commercial service airports with significant general aviation (**GA**) activity, like CDC, it also includes the number and type of aircraft based at the airport.

5.2.1. Aircraft Operations

Every landing, takeoff, or touch-and-go procedure conducted at an airport is counted as one operation. They are separated into three main categories—commercial service, general aviation, and military operations. These operations are then classified as either itinerant or local. In general, local operations are flights that originate and terminate at the same airport while itinerant operations are flights that originate and terminate at different airports. Each type of operation is forecasted separately in order to account for the different national or local trends and socioeconomic factors that are expected to affect each category.

a. Commercial Service

It is important to note that commercial operations are not handled the same way in every forecast. For example, air carrier, commuter, and air taxi operations are all considered to be commercial service in the FAA's Terminal Area Forecast (**TAF**). However, for this forecast, only air carrier and commuter flights are considered to be commercial service operations because they are both scheduled while air taxi operations are considered to be general aviation because they are not scheduled. Commercial service operations are expected to remain at an estimated 1,248 flights per year throughout the entire 20-year planning period.

b. General Aviation

General aviation includes all operations that are not scheduled commercial service or military operations. This typically includes privately owned aircraft used for business or personal travel, flight training, recreation, aerial firefighting, and medical transport or other types of emergency services. At CDC, a significant portion of the GA operations are conducted as part of the Southern Utah University (**SUU**) training program, and—to a lesser extent—air cargo and aerial firefighting operations.

Itinerant GA operations are expected to increase from 12,418 for 2022 to 25,351 for 2042 with a compound annual growth rate (**CAGR**) of 3.63%. Local GA operations, excluding SUU, are expected to increase from 8,279 for 2022 to 16,901 for 2042 with a CAGR of 3.63%. Overall, GA operations—excluding SUU—are expected to increase from 20,697 for 2022 to 42,252 for 2042 with a CAGR of 3.63%.

Southern Utah University

The university's flight school offers both fixed wing and rotor pilot training at CDC. While these operations are counted as GA operations, they were forecasted separately in order to avoid skewing the forecast for total GA operations. Local GA operations for SUU are expected to increase from 98,499 in 2022 to 109,588 in 2042 with a CAGR of 0.53%.

Air Cargo

An individual forecast was not developed for air cargo operations because they are counted as GA operations. However, the air cargo fleet mix was analyzed in order to anticipate any potential changes to the fleet used for cargo operations. FedEx and Alpine Air Express are the two dedicated cargo operators at CDC. FedEx uses its fleet of Cessna Caravan 208 aircraft for the majority of the smaller markets the company serves, including CDC, and Alpine Air Express operates a fleet of Beech 99 and Beech 1900 aircraft. There are no indications that the air cargo fleet used at CDC will change during the 20-year planning period.[1]

It is important to note that cargo volumes at CDC have significantly increased this past decade. Since 2012, cargo volumes have increased at a CAGR of 5.7%. This trend is expected to continue due to the nationwide increase in e-commerce activity as well as the positive economic outlook for the region.

Aerial Firefighting
While the airport is home to the Color Country Interagency Fire Center (**CCIFC**), an individual forecast was not developed specifically for aerial firefighting operations because these are also counted as GA operations. Additionally, future activity levels are difficult to predict because these aircraft are only activated to support firefighting missions and can vary significantly from year to year depending on the severity of the fire season.

c. Military
Unless there is specific knowledge of an upcoming change, military operations are typically forecast to continue at current levels because the Department of Defense provides limited details regarding future activity levels. As a result, itinerant military operations are projected to remain at 550 annual operations, and local military operations are projected to remain at 0 for the 20-year planning period. While the Utah Army National Guard is currently in the process of establishing a long-term presence at CDC, the forecast for military operations was not adjusted based on this information because it is unknown how it will affect future activity levels.

5.2.2. Passenger Enplanements
The passenger enplanements forecast is particularly important because it will help determine future requirements for airport facilities necessary for accommodating passengers such as the size of the terminal building and parking facilities. A variety of factors and trends must be taken into consideration in order to develop an effective forecast for passenger enplanements. This includes regional socioeconomic conditions as well as the airline and aviation industry trends expected to affect the airport. Overall, passenger enplanements are expected to increase from 11,452 for 2022 to 29,473 for 2042 with a CAGR of 4.84%.

5.2.3. Based Aircraft
A based aircraft is any operational and airworthy aircraft that is based at the airport for the majority of the year.[2] The type, size, and number of aircraft based at an airport are important factors to consider when analyzing airport capacity, facility requirements, and planning future development. This is because the forecast of based aircraft can indicate the need for new hangar space as well as new or expanded services. Overall, based aircraft are expected to increase from 100 for 2022 to 136 for 2042 with a CAGR of 1.55%.

5.2.4. Critical Aircraft
The critical aircraft is the most demanding type of aircraft, or group of aircraft with similar characteristics, that regularly use the airport. (Regular use is defined as a minimum of 500 annual operations; excluding touch-and-go operations).[3] The critical aircraft is often referred to as the design aircraft because is used to determine the correct design standards for many areas of the airport.

a. Existing Critical Aircraft
The existing critical aircraft is the Avro RJ87. This aircraft, which has an aircraft approach category (**AAC**) of C and aircraft design group (**ADG**) of III, is representative of several aircraft with similar characteristics that regularly use the airport. This includes the McDonnell Douglas MD-87 used for aerial firefighting operations as well as the Airbus A320 used by SUU athletics. As a result, the primary runway and taxiway system will be required to meet AAC C and ADG III design specifications.

b. Future Critical Aircraft
Based on the projected fleet mix and the commercial service operations forecast, the future critical aircraft will ultimately be the Embraer E-175 as airlines continue to transition to more fuel-efficient aircraft. The Embraer also has an AAC of C and ADG of III.

c. Forecast Summary

Table 5.1 summarizes the forecast of aircraft operations, passenger enplanements, and based aircraft that has been developed for this airport master plan. However, it is important to understand that actual activity may differ from these forecasts because aviation activity can be affected by a wide range of unforeseen developments at the local, regional, and national levels. A copy of the FAA approval of this airport master plan forecast is included as Appendix B, FAA Forecast Approval.

Table 5.1: Forecast Summary

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2022	2027	2032	2042	5-Year	10-Year	20-Year
Operations							
Commercial Service	**1,250**	**1,248**	**1,248**	**1,248**	**-0.03%**	**-0.02%**	**-0.01%**
Air Taxi	1,182	1,419	1,725	2,413	3.72%	3.85%	3.63%
Itinerant GA	11,236	13,486	16,396	22,938	3.72%	3.85%	3.63%
Total Itinerant GA	**12,418**	**14,905**	**18,121**	**25,351**	**3.72%**	**3.85%**	**3.63%**
SUU	98,499	100,893	103,529	109,588	0.48%	0.50%	0.53%
Local GA (ex. SUU)	8,279	9,936	12,081	16,901	3.72%	3.85%	3.63%
Total Local GA	**106,778**	**110,829**	**115,610**	**126,489**	**0.75%**	**0.80%**	**0.85%**
Total GA Operations	**119,196**	**125,734**	**133,731**	**151,840**	**1.07%**	**1.16%**	**1.22%**
Itinerant Military	550	550	550	550	0.00%	0.00%	0.00%
Local Military	0	0	0	0	0.00%	0.00%	0.00%
Total Military	**550**	**550**	**550**	**550**	**0.00%**	**0.00%**	**0.00%**
Total Operations	**120,996**	**127,532**	**135,529**	**153,639**	**1.06%**	**1.14%**	**1.20%**
Passengers							
Total Enplanements	**11,452**	**14,388**	**18,232**	**29,473**	**4.67%**	**4.76%**	**4.84%**
Based Aircraft							
Total Based Aircraft	**100**	**108**	**117**	**136**	**1.55%**	**1.58%**	**1.55%**

Source: DOT, T-100; FAA, TAF; Ardurra

5.3. Historical Aviation Activity

It is important to assemble the airport's historical aviation activity and identify past trends before preparing the forecast. Understanding the airport's usage patterns and historical demand for aviation services is used to help analyze the accuracy of previous forecasts and evaluate the current forecast. **Table 5.2** summarizes historical activity levels for aircraft operations, passenger enplanements, and based aircraft for 2012–2021.

Table 5.2: Historical Aviation Activity, 2012–2021

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Operations										
Commercial Service	**1,688**	**1,368**	**1,306**	**1,254**	**1,250**	**1,256**	**1,244**	**1,521**	**828**	**1,254**
Itinerant GA	11,977	20,713	20,775	8,242	8,631	12,393	12,466	11,237	23,982	23,723
Local GA	16,150	26,102	26,102	47,450	69,550	59,154	63,214	60,214	94,191	94,856
Total GA	**28,127**	**46,815**	**46,877**	**55,692**	**78,181**	**71,547**	**75,680**	**71,451**	**118,173**	**118,579**
Itinerant Military	250	250	250	250	450	300	300	420	550	550
Local Military	0	0	0	0	0	0	0	0	0	0
Total Military	**250**	**250**	**250**	**250**	**450**	**300**	**300**	**420**	**550**	**550**
Total Operations	**30,065**	**48,433**	**48,433**	**57,196**	**79,881**	**73,103**	**77,224**	**73,392**	**119,551**	**120,383**
Passengers										
Total Enplanements	**14,630**	**14,089**	**13,131**	**13,330**	**13,601**	**14,422**	**14,727**	**23,135**	**5,883**	**11,999**
Based Aircraft										
Total Based Aircraft	**67**	**70**	**70**	**91**	**84**	**91**	**75**	**78**	**102**	**102**

CAGR	Operations	Passengers	Based Aircraft
2012-2022	14.94%	-2.42%	4.09%

Source: DOT, T-100; FAA, TAF.

5.3.1. Aircraft Operations

As shown in **Table 5.2**, total aircraft operations have increased steadily since 2012. Overall, aircraft operations at CDC have increased at a CAGR of 14.94% for 2012–2022. The following summarizes historical activity levels for commercial service, GA, and military aircraft operations at CDC.

a. Commercial Service Operations

Commercial service operations have fluctuated from a high of 1,688 for 2012 to a low of 828 for 2020 and have decreased at a CAGR of -2.96% for 2012–2022.

b. General Aviation Operations

General aviation operations make up the majority of the operations flown at CDC, and they have increased steadily since 2012. For 2012 to 2022, itinerant GA operations increased at a CAGR of 0.36% and local GA operations at a CAGR of 20.79%. Overall, GA operations have increased at a CAGR of 15.54%.

c. Military Operations

Itinerant military operations increased at a CAGR of 8.20% for 2012–2022, and local military operations have remained at zero. It is typical to see these types of variances in military operations as the Department of Defense alters its operational requirements.

5.3.2. Passenger Enplanements

While commercial service operations have returned to pre-COVID levels due to the EAS contract, passenger enplanements at CDC have not fully returned to pre-pandemic levels. Passenger activity levels have fluctuated between a high of 23,135 for 2019 to a low of 5,883 for 2020. Overall, passenger enplanements have decreased at a CAGR of -2.42% for 2012–2022.

5.3.3. Based Aircraft

The number of based aircraft at the airport has increased at a CAGR of 4.09% for 2012–2022.

5.4. Review of Previous Forecasts

When preparing a forecast of aviation demand, it is important to examine other forecasts prepared for the airport. In this case, it includes reviewing the forecast prepared for the previous airport master plan, the Terminal Area Forecast (**TAF**) prepared by the FAA, and the forecast prepared for the *2020 Utah Aviation Development Strategy*. These forecasts should be examined in terms of the assumptions made at the time as well as the actual projections. Analyzing the accuracy of previous forecasts can help identify past trends and changes in the aviation industry that have affected the airport's usage patterns.

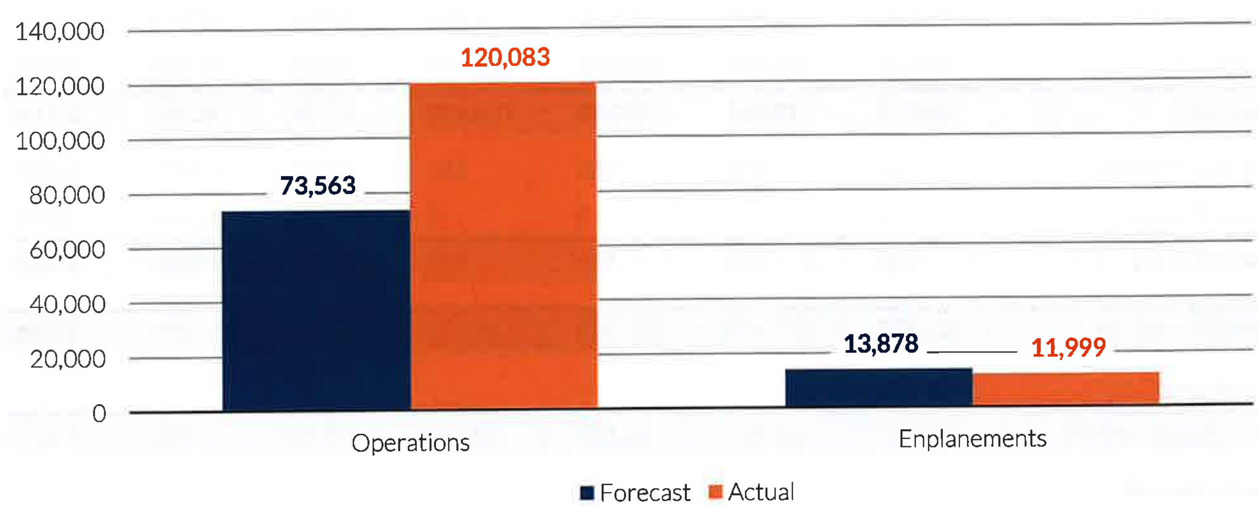
5.4.1. 2017 Airport Master Plan Forecast

The previous airport master plan for Cedar City Regional Airport was completed December 2017. The 2017 Airport Master Plan forecast, which used 2015 as the base year, expected there to be approximately 13,878 enplanements for 2021. Additionally, this forecast showed 1,248 commercial service operations, 72,267 general aviation operations, and 48 military operations for a total of 73,563 operations forecasted for 2021.

According to the U.S. Department of Transportation Air Carrier Statistics database (**T-100**), there were 11,999 enplanements and 1,254 commercial service operations, and, according to the TAF, there were 118,579 general aviation operations, and 250 military operations for a total reported 11,999 enplanements and 120,083 operations for 2021.

Overall, the previous airport master plan forecast expected total aircraft operations and enplanements to both increase at a CAGR of 0.75% for 2015–2021. **Figure 5.1** shows the total operations and enplanement activity levels forecast for 2021 alongside historical activity levels for 2021.

Figure 5.1: Review of 2017 Airport Master Plan Forecast



Source: GDA Engineers, 2017 Airport Master Plan; FAA, TAF; DOT, T-100

5.4.2. Terminal Area Forecast

The Terminal Area Forecast (**TAF**) is the FAA's official forecast of aviation activity for all U.S. airports included in the National Plan of Integrated Airport Systems (**NPIAS**). This forecast is published annually, and the current edition is *Terminal Area Forecast, Fiscal Years 2021–2045*. It includes historical and forecast data for aircraft operations as well as passenger enplanements and based aircraft. This forecast is developed based on local and national economic conditions as well as other conditions affecting the aviation industry.[4]

The FAA's TAF for Cedar City Regional Airport provides an important point of comparison when evaluating the forecast developed for this airport master plan and is discussed throughout this chapter. Unlike the previous master plan, it is assumed the current TAF is counting flight school operations accurately. Additionally, it is assumed the majority of SkyWest operations are being counted as commuter operations because it typically uses aircraft with 60 or fewer seats for service at CDC. As shown in **Table 5.3**, both commercial and military operations are expected to remain at current levels, and GA operations are forecast to increase at a CAGR of 0.71% for 2022–2042. Passenger enplanements are expected to remain at current activity levels, and only a slight increase is forecast for based aircraft.

Table 5.3: Terminal Area Forecast, 2022–2042

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2022	2027	2032	2042	5-Year	10-Year	20-Year
Operations							
Commercial Service	**1,304**	**1,304**	**1,304**	**1,304**	**0.00%**	**0.00%**	**0.00%**
Itinerant GA	23,840	24,695	25,588	27,498	0.71%	0.71%	0.72%
Local GA	95,521	98,934	102,458	109,920	0.70%	0.70%	0.70%
Total GA	**118,523**	**122,761**	**127,148**	**136,460**	**0.71%**	**0.70%**	**0.71%**
Itinerant Military	550	550	550	550	0.00%	0.00%	0.00%
Local Military	0	0	0	0	0.00%	0.00%	0.00%
Total Military	**550**	**550**	**550**	**550**	**0.00%**	**0.00%**	**0.00%**
Total Operations	**121,215**	**125,483**	**129,900**	**139,272**	**0.69%**	**0.69%**	**0.70%**
Passengers							
Total Enplanements	**10,600**	**10,600**	**10,600**	**10,600**	**0.00%**	**0.00%**	**0.00%**
Based Aircraft							
Total Based Aircraft	**102**	**104**	**104**	**104**	**0.39%**	**0.19%**	**0.10%**

Source: FAA, *Terminal Area Forecast, Fiscal Years 2021–2045*

5.4.3. 2020 Utah Aviation Development Strategy Forecast

As previously discussed in Section 3.5.2. Utah Aviation Development Strategy, the Utah Department of Transportation (**UDOT**) Division of Aeronautics prepares a statewide forecast as part of its statewide aviation development strategy. The current edition, *2020 Utah Aviation Development Strategy*, was published June 2021 and uses 2018 as the base year with a ten-year planning horizon ending in 2028. This forecast essentially mirrors the TAF for each of the Utah NPIAS airports.[5]

As shown in **Table 5.4**, this forecast combines air carrier, commuter, and air taxi operations into one category and counts them all as commercial service operations. This makes activity levels for commercial service operations appear to be much higher than reported in either the TAF or this forecast. Additionally, it does not include a forecast for military operations. Like the TAF, commercial service operations are expected to remain at current activity levels, and GA operations are forecast to increase at a CAGR of 0.70% for 2018–2028. Passenger enplanements are expected to remain at current activity levels, and only a slight increase is forecast for based aircraft.

Table 5.4: Utah Aviation Development Strategy Forecast, 2018–2028

	Base Year	Forecast Years		Compound Annual Growth Rate	
	2018	2023	2028	5-Year	10-Year
Operations					
Total Commercial Service	3,772	3,772	3,772	0.00%	0.00%
Total General Aviation	69,824	72,325	74,886	0.71%	0.70%
Passengers					
Total Enplanements	15,626	15,626	15,626	0.00%	0.00%
Based Aircraft					
Total Based Aircraft	75	77	78	0.53%	0.39%

Source: Jviation, *2020 Utah Aviation Development Strategy*

5.5. Factors Affecting Aviation Activity

This section identifies the national, statewide, and local forecasts, trends, and other factors expected to affect aviation activity. It also identifies the geographic area served by the airport and the regional characteristics that influence aviation demand.

5.5.1. FAA Aerospace Forecast, Fiscal Years 2022–2042

Local aviation trends generally follow national trends. Therefore, it is necessary to analyze the industry from a broad perspective and then apply local socioeconomic factors to refine the forecast. The FAA publishes an annual update of the agency's national aviation forecast. While this forecast is prepared to meet the budget and planning needs of the FAA, it is also widely used by state and local authorities, the aviation industry, and the general public. It is developed using statistical models to explain and incorporate emerging trends for each segment of the aviation industry including commercial airlines, cargo operations, GA, unmanned aircraft systems, and commercial space travel. The following discussion is summarized from the current edition, *FAA Aerospace Forecast, Fiscal Years 2022–2042*.

The U.S. airline industry, which has a long history of volatility, has experienced steady and significant growth since the end of the Great Recession in 2009. The recession required the airlines to refine their business models and minimize losses by lowering operating costs, eliminating unprofitable routes, and grounding older, less fuel-efficient aircraft. The results of these efforts were impressive, and 2019 marked the eleventh consecutive year of profitability for the industry. However, this was brought to a rapid end in 2020 by the COVID-19 pandemic. While passenger airline activity and profitability tumbled almost overnight, cargo activity was boosted by consumer spending. By the middle of 2021, conditions and the outlook had brightened considerably due to the introduction of vaccines. Recovery has been extremely uneven across markets and population segments, driven by COVID-19 case counts, vaccinations, governmental restrictions, and the degree of pent-up demand. While domestic leisure traffic has led the recovery, domestic business travel is expected to gain momentum in 2022. Additionally, many of the business modifications necessitated by the downturn will shape the industry long after the recovery is complete. In particular, airlines will be smaller having retired aircraft and encouraged voluntary employee separations while fleets will continue to become younger and more fuel-efficient as airlines retire the oldest and the least efficient aircraft.

This year's forecast is driven, at least in the near term, by the pace of recovery from impacts to the U.S. and global economies as well as the aviation industry as a result of the COVID-19 pandemic. Additionally, the domestic forecast is based on economic assumptions from IHS Markit's ten-year and 30-year U. S. Macro Baseline forecasts. According to these forecasts, real gross domestic product (**GDP**) for the U. S. is forecast to grow at 2.3% for 2022–2042.[6]

a. FAA Aerospace Forecast for Commercial Service

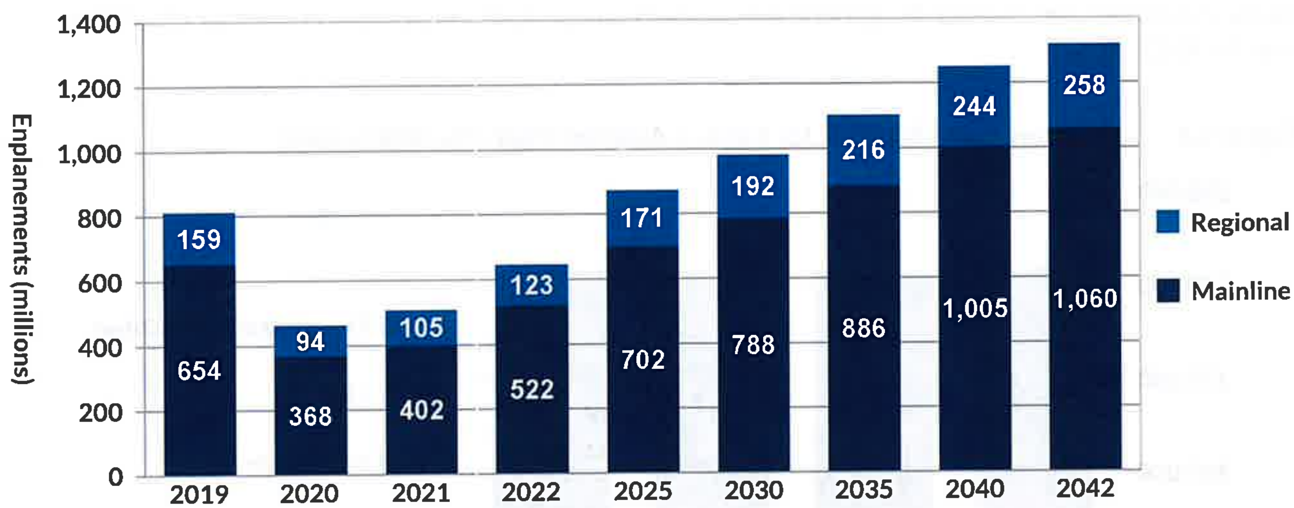
The FAA Aerospace Forecast expects calls for both commercial service operations and passenger enplanements to return to pre-COVID levels by 2023. However, the commercial air carrier industry is expected to be focused on recovering from the devastating consequences of the COVID-19 pandemic for several years. The following points are also of particular interest:

- **Commercial Operations:** Air carrier operations are expected to increase at an average rate of 3.4% per year for 2022–2042 while air taxi and commuter operations are expected to increase at an average rate of 0.1%. Large and medium hubs are expected to see much faster increases than small and non-hub airports.
- **Regional Fleet:** The regional carrier fleet is expected to increase at an annual rate of 0.4% for 2022–2042. This includes a 1.0% increase for jet aircraft and a 3.1% decrease for non-jet aircraft as the carriers remove 50-seat aircraft and small turboprop and piston aircraft while adding 70–90-seat jets.
- **Seat Capacity:** Seat capacity is expected to increase an average of 3.7% annually for 2022–2042.

- **Load Factors:** Load factors are expected to increase from 83.2% for 2022 to 85.1% for 2042. Load factors are expected to return to pre-COVID levels by 2025.

- **Enplanements:** Passenger growth is expected to average 4.7% per year for the next 20 years (**Figure 5.2**). However, this average includes double-digit growth for 2022 and 2023 as activity levels continue to recover followed by an average growth rate of 2.6% through the end of the planning period.[7]

Figure 5.2: FAA Aerospace Forecast for Passenger Enplanements, 2022–2042



Source: FAA Aerospace Forecast, 2021-2041

b. FAA Aerospace Forecast for General Aviation

The FAA Aerospace Forecast includes projections for fleet mix and hours flown for GA aircraft. This includes fixed wing piston, fixed wing turbine, rotorcraft, and light sport aircraft (**LSA**) as well as experimental and other types of aircraft. The agency uses estimates of fleet size and activity levels based on the results of its annual General Aviation and Part 135 Activity Survey as baseline figures. It also includes forecasts of new aircraft deliveries using data from the General Aviation Manufacturers Association (**GAMA**), together with assumptions for retirement rates, to generate growth rates for fleet size by aircraft category. The forecast is then further refined based on discussions with industry experts. It is important to note that these forecasts are for active aircraft, not total aircraft, with active aircraft defined as one that has been flown at least one hour per year.

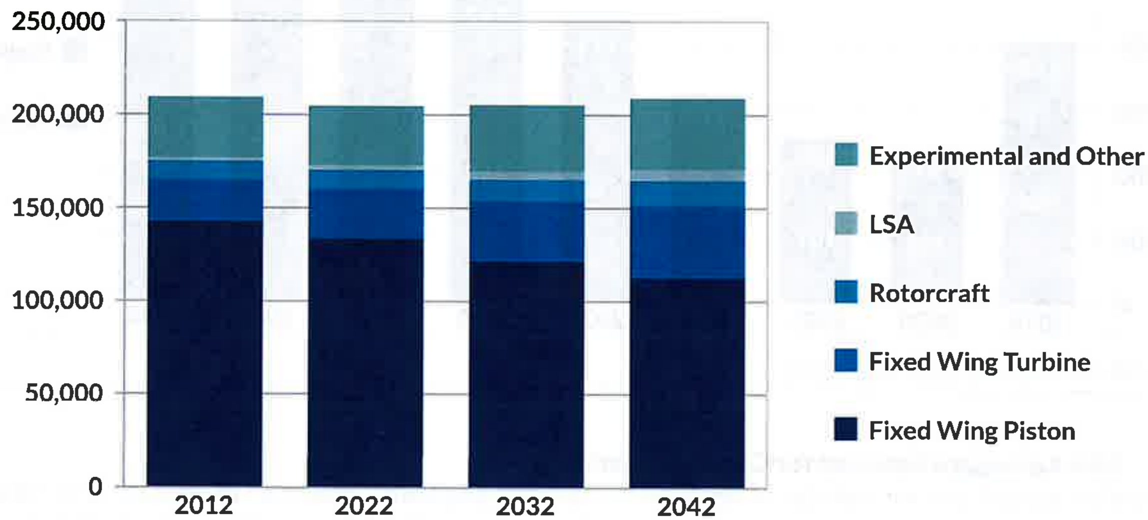
Overall, the forecast for the GA sector is promising. This is largely because it was not as affected by the COVID-19 pandemic as the airlines. Growth at the higher end of the market is expected to continue to offset retirements of mostly piston-powered aircraft which is at the traditional low end of the market. GA operations accounted for 57% of total U.S. operations for 2021. This share has been increasing since the pandemic and is up from 51% for 2019. General aviation operations are forecast to increase an average of 0.6% per year for 2022–2042.[8]

FAA Aerospace Forecast for General Aviation Fleet Mix

The results of the FAA's most recent General Aviation and Part 135 Activity Survey show an estimated 204,140 active aircraft for 2020. This was a decline of 3.2% from 2019 as decreases of fixed wing piston aircraft, rotorcraft, and light sport aircraft (**LSA**) as well as experimental and other types of aircraft outpaced increases of fixed wing turbine aircraft. Overall, deliveries of general aviation aircraft for 2021 were 7.4% higher than deliveries for 2020. However, this was 5.7% lower than deliveries for 2019.

As shown in **Figure 5.3**, fixed wing piston aircraft are forecast to decrease 0.8%, fixed wing turbine aircraft are forecast to increase 1.9%, rotorcraft are forecast to increase 1.5%, light sport aircraft are forecast to increase 3.4%, experimental aircraft are forecast to increase 1.0%, and other types of aircraft are forecast to increase 0.7% per year. Overall, the general aviation fleet is expected to increase at an average of 0.1% per year for 2022–2042.[9]

Figure 5.3: FAA Aerospace Forecast for General Aviation Fleet Mix, 2022–2042



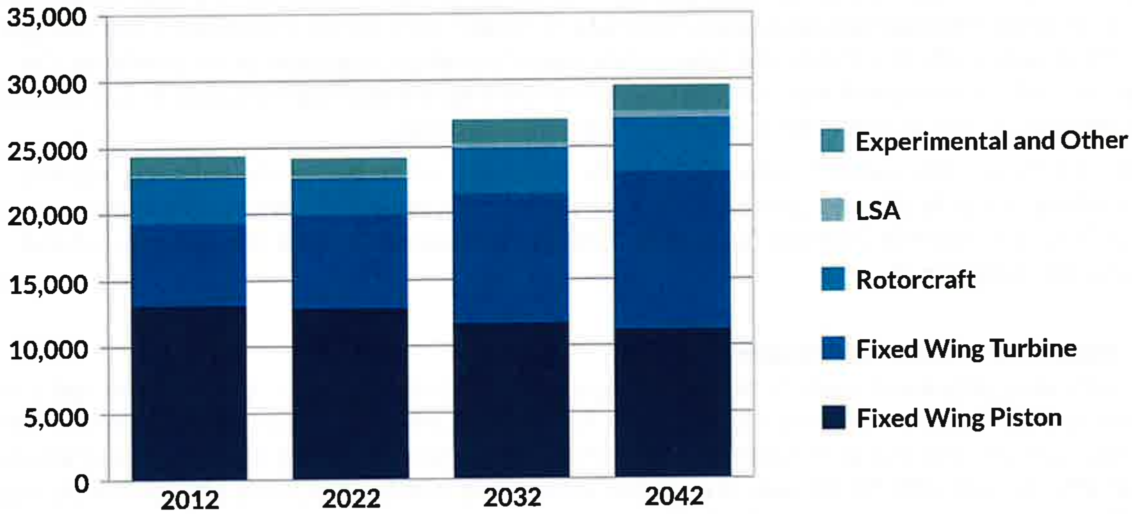
Source: FAA Aerospace Forecast, 2021-2041

FAA Aerospace Forecast for General Aviation Hours Flown

Although only a marginal increase is expected for the total general aviation fleet, the number of general aviation hours flown is forecast to increase an average of 1.0% per year for 2022–2042 with total hours flown increasing from 22.5 million hours for 2020 to 29.6 million hours for 2042. This increase is partly due to an anticipated increase in hours flown for newer aircraft. However, the majority of this increase is expected to result from a significant increase in hours flown for jet aircraft due to the increasing size of the business jet fleet.

As shown in **Figure 5.4**, hours flown for fixed wing piston aircraft are forecast to decrease 0.7%, fixed wing turbine aircraft are forecast to increase 2.6%, rotorcraft are forecast to increase 2.1%, light sport aircraft are forecast to increase 3.8%, experimental aircraft are forecast to increase 1.9%, and other types of aircraft are forecast to increase 1.3% per year. Overall, total general aviation hours flown are expected to increase at an average of 1.0% per year for 2022–2042.[10]

Figure 5.4: FAA Aerospace Forecast for General Aviation Hours Flown, 2022–2042



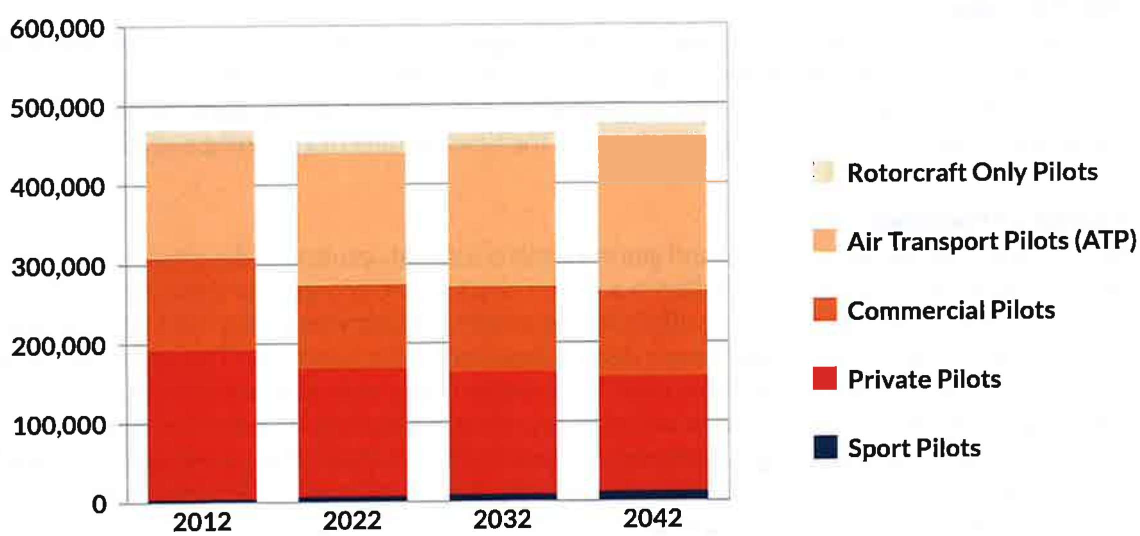
Source: FAA Aerospace Forecast, 2021-2041

National Forecast for Active Pilots by Certificate Type

According to the FAA Aerospace Forecast, there were 720,605 active pilots certificated by the FAA at the end of 2021. This includes 250,197 student pilots, 306,474 general aviation pilots, and 163,934 air transport pilots (**ATP**).

As shown in **Figure 5.5**, the FAA has forecasted a decrease of 6.7% for recreational pilots and a 0.5% decrease for private pilots for 2022–2042. It also projects a 2.7% increase for sport pilots, a 0.1% increase for commercial pilots, a 0.8% increase for air transport pilot certifications, a 1.3% increase for rotorcraft pilots, and a 0.8% increase for glider pilots. Overall, the number of active general aviation pilots is projected to decrease at an average rate of -0.03% per year for 2021–2042.[11]

Figure 5.5: FAA Aerospace Forecast for Active Pilots by Certificate Type, 2022–2042



~~Source: FAA Aerospace Forecast, 2021-2041~~

5.5.2. National Aviation Industry Trends

It is important to take national trends relating to commercial service, general aviation, and air cargo into consideration when developing local aviation forecasts. However, the COVID-19 pandemic has disrupted many of the previous industry trends and new trends began to emerge as a result of the pandemic. For example, low-cost carriers benefited from the strength of the leisure travel segment, cuts in business travel impacted legacy carriers, and all airlines benefited from low fuel prices.

While demand for commercial air travel at CDC will be somewhat influenced by the following industry trends, it will be primarily affected by the status of the contract SkyWest Airlines has to provide commercial service at CDC as part of the Essential Air Service (**EAS**) program as well as local demand and regional socioeconomic conditions.[12]

a. Fleet Simplification and Modernization

Fleet simplification allows airlines to benefit from higher pilot productivity, lower training costs, reduced maintenance expenses, and increased fuel efficiency. For decades, the regional carriers have been shifting to larger, more fuel-efficient jets with higher seat capacities. This trend in replacing smaller regional jets with more fuel-efficient jets with 70–90 seats is expected to continue, and, by 2030, only a handful of 50-seat regional jets are expected to remain in the fleet.

Mainline carriers (i.e., airlines that fly aircraft with 90 or more seats) have also been increasing the number of seats per aircraft. However, unlike the regionals, this is a newer trend that has been accelerating. As of 2021, the number of seats per aircraft increased nearly 13% for mainline carriers this past decade. Additionally, network carriers—Alaska Airlines, American Airlines, Delta Air Lines, and United Air Lines—are expected to move forward with plans to significantly reduce the number of small regional jets in their fleets.[13]

Fleet Simplification and Modernization's Affect on Cedar City Regional Airport

SkyWest Airlines operates flights on behalf of Delta Air Lines, as Delta Connection, and currently provides nonstop service from Cedar City Regional Airport (**CDC**) to Salt Lake City International Airport (**SLC**). The airline currently uses its fleet of 50-seat Bombardier CRJ-200 aircraft for this route. In recent years, the company has been decreasing its fleet of Bombardier CRJ-200 aircraft in favor of the 76-seat Embraer E-175 aircraft. Between January 2019 and December 2022, SkyWest decreased its fleet of Bombardier CRJ-200 aircraft by 26% while also increasing its fleet of Embraer E-175 aircraft by 62%. The company also plans to invest more than $800 million in new Embraer E-175 aircraft in the coming years.[14] This trend will likely result in the airline shifting to using the Embraer E-175 aircraft when providing service to CDC in the coming years which will then result in increased capacity.

b. Pilot Shortage

The commercial airline industry has experienced a pilot shortage this past decade. This shortage was made worse for regional carriers as airlines began to recover from the pandemic with mainline carriers recruiting from the ranks of the regionals. While there is a surge of pilots currently in training, pilot shortages for regional carriers are likely to persist through 2023 due to the time required for training and recruitment.[15]

c. COVID-19 Pandemic

The COVID-19 pandemic caused a national and global health crisis that resulted in the issuance of stay-at-home orders and other restrictions that resulted in a severe shock to the economy and was especially tough for the airline industry. Unlike previous crises affecting the aviation industry, including 9/11 and the Great Recession, both aviation demand and supply were deeply impacted by the pandemic. The airline industry was still experiencing reduced demand at the end of 2022—more than a year after vaccines first became available. While domestic leisure travel has led the recovery, domestic business travel continues to lag behind 2019 levels. As of 2021, passenger enplanements were still 37% lower than pre-pandemic levels.[16] At CDC, flights have since returned to normal levels due to the area's status as an EAS community. However, enplanements have not yet returned to pre-pandemic levels.

5.5.3. Local Factors With Potential to Affect Aviation Activity

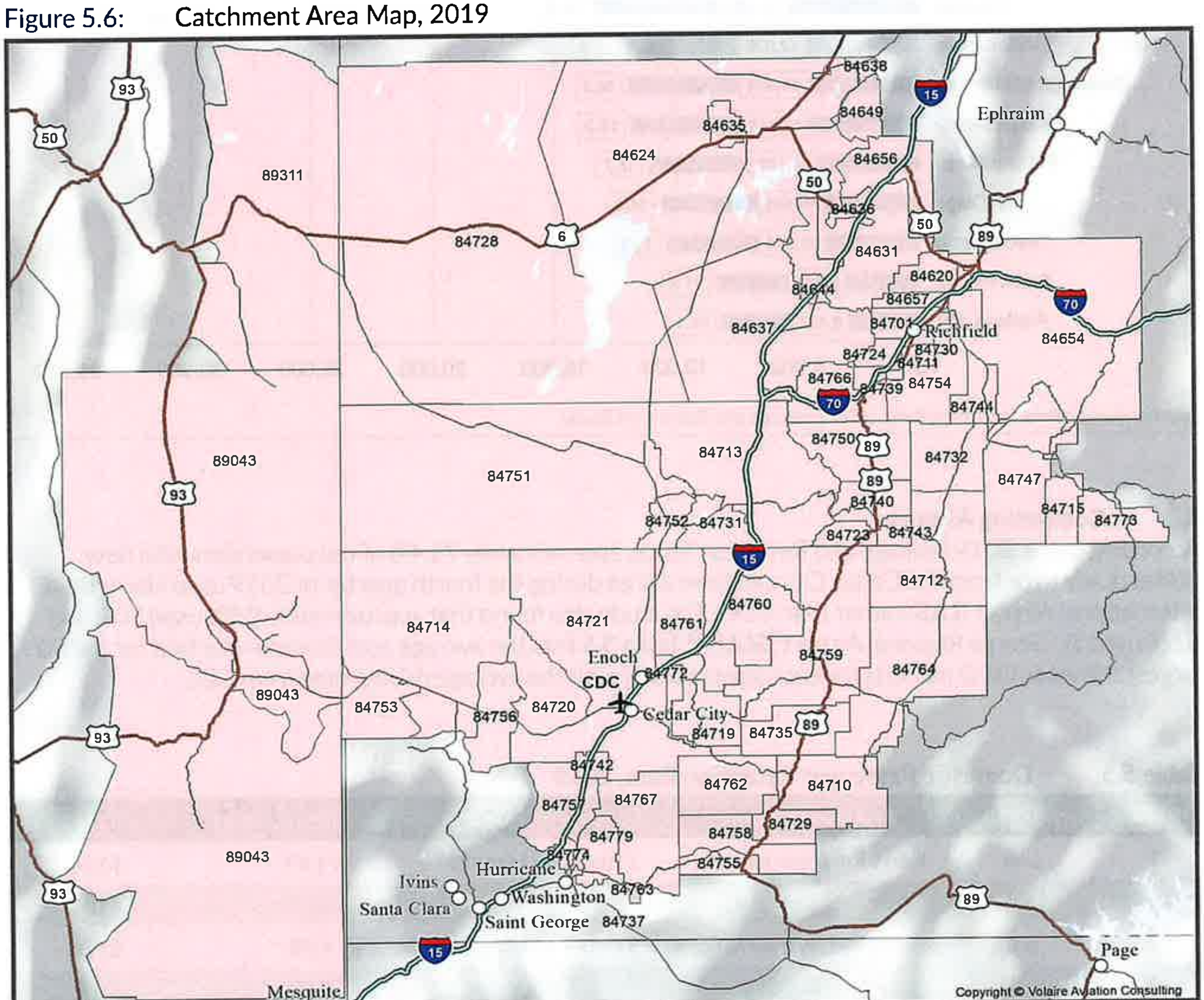
A forecast should also examine local trends and regional socioeconomic conditions, such as local population and income growth, ticket prices, competition, and airport convenience, as these can significantly affect local aviation activity.

a. Catchment Area

An airport catchment area is the geographic area from which the airport can reasonably expect to draw commercial service passengers. It is defined by several factors such as geographical access and proximity to competing airports. According to the 2019 Leakage and Retention Study conducted for CDC, the airport's catchment area covers 33 zip codes in southwestern Utah and four zip codes in Nevada (**Figure 5.6**). The population of this area was estimated to be 75,406 for 2019 with approximately 60.8% of the population (45,818) located within the Cedar City Metropolitan Statistical Area (**MSA**) (i.e., Iron County).

Based on the number of tickets sold within the catchment area for the fourth quarter of 2019, the total market size was estimated to be 398,656 origin and destination (**O & D**) passengers with approximately 61% traveling to or from Cedar City. The number of tickets purchased during the one-year period of the study translates to demand of 546.1 passengers per day each way (**PDEW**) within CDC's catchment area.[17]

Figure 5.6: Catchment Area Map, 2019



Source: Volaire Aviation Consulting, 2019 Leakage and Retention Study.

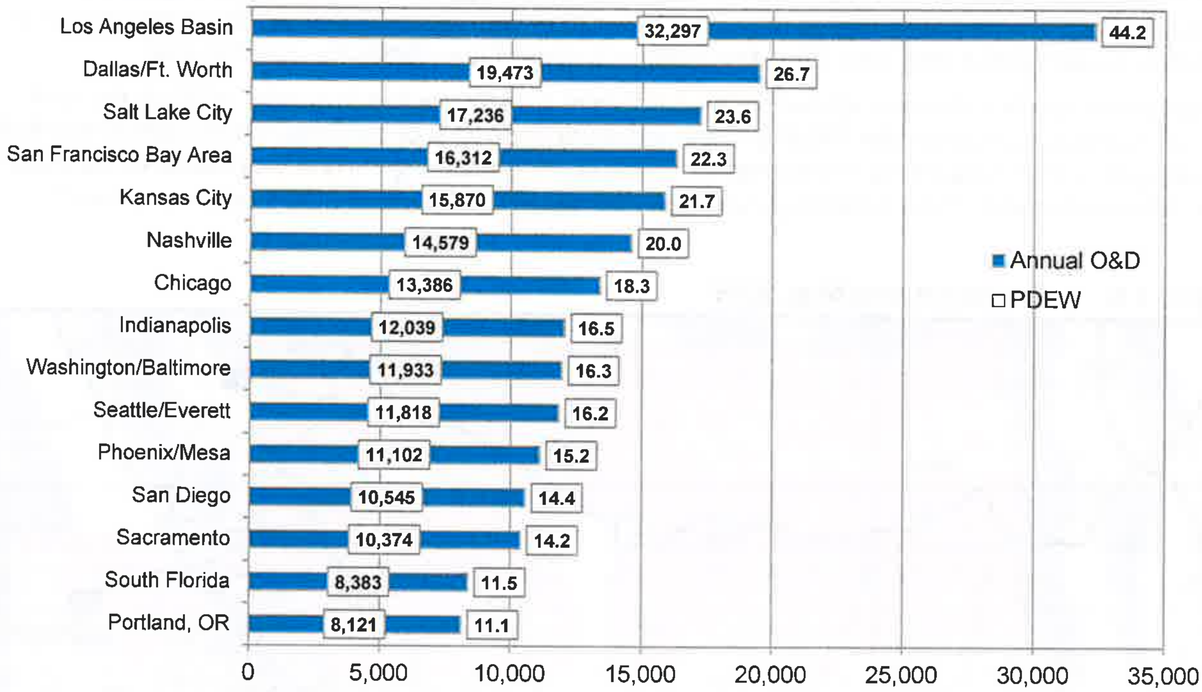
b. Scheduled Nonstop Service As of January 2023

SkyWest Airlines currently provides regularly scheduled service on behalf of Delta Air Lines (as Delta Connection) for CDC with an average of 12 weekly flights to Salt Lake City International Airport (**SLC**).

c. Top Origin and Destination Markets for Cedar City Regional Airport

As shown in **Figure 5.7**, the top five O & D markets for passengers traveling to or from CDC's catchment area are the Los Angeles Basin, Dallas/Ft. Worth, Salt Lake City, the San Francisco Bay Area, and Kansas City.

Figure 5.7: Largest Origin and Destination Markets, 2019



Source: Volaire Aviation Consulting, 2019 Leakage and Retention Study.

d. Competing Airports

According to the 2019 Leakage and Retention Study, approximately 71.4% of the passengers who flew domestically to or from the Cedar City catchment area during the fourth quarter of 2019 used Harry Reid International Airport (**LAS**) rather than CDC. The study also found that approximately 9.9% used SLC, and 6.5% used St. George Regional Airport (**SGU**).[18] **Table 5.5** lists the average cost of a one-way fare for the 50 largest domestic O&D markets for each airport along with the average driving time from CDC.

Table 5.5: Domestic Passenger Retention Rate, 2019

Rank	Airport Code	Airport Name	Drive Time	Share of Passengers	Fare
1	LAS	Harry Reid International	2 Hours 45 Minutes	71.4%	$136
2	CDC	Cedar City Regional	–	12.2%	$181
3	SLC	Salt Lake City International	3 Hours 45 Minutes	9.9%	$178
4	SGU	St. George Regional	1 Hour	6.5%	$168

Source: Volaire Aviation Consulting, *2019 Leakage and Retention Study*.

It is apparent that the majority of passengers traveling to or from the Cedar City catchment area are choosing to drive to LAS due to the wide variety in carrier choice, availability of more desirable flight schedules—most of which are nonstop—to CDC's largest origin or destination (**O&D**) markets and at lower fares. For the fourth quarter of 2019, LAS was serviced by more than ten airlines which offered 155 nonstop routes at an average fare of $438 to international locations and $136 to domestic locations for an overall average cost of $165 for a one-way ticket.

These travel patterns are difficult but not impossible to change. According to airport management, recent adjustments to the schedule have made flight times more convenient for passengers traveling from CDC to SLC which has proven effective in retaining some local passengers. However, with so few flights available, many passengers find connecting flights to be poorly timed which makes connecting in SLC an inconvenient and unattractive option. This has likely caused many potential passengers to choose to drive to a competing airport rather than use CDC. This indicates there is a significant demand for air travel that is not being met with the limited services provided from CDC. The local community recognizes the airport's importance to the region, and airport management is working to attract additional air service to Cedar City Regional Airport.

e. Potential for New Commercial Service

Many low-cost and ultra low-cost carriers have benefited from the strength of the leisure travel segment which has largely returned to pre-pandemic levels.[19] This trend has the potential to interest these carriers in introducing new service at CDC as these types of carriers tend to thrive in smaller markets with relatively low demand indicators due to the price sensitivity of leisure travelers. This would potentially result in the introduction of seasonal nonstop service to new destinations. However, due to the wide variety in carrier fleets as well as potential routes and schedules, the forecast will not reflect this potential as an alternative scenario.

f. Socioeconomic Trends

There is typically a strong connection between socioeconomic trends and aviation demand. Local socioeconomic conditions—particularly population, employment, and income—can have either an upward or downward influence on local aviation activity levels. This is particularly true for GA activity which is largely determined by local population and income levels. Since 2015, the Kem C. Gardner Policy Institute has produced long-term population growth projections for the state of Utah and its counties. However, these projections were not used to help develop the 2025 Airport Master Plan forecast because they did not include projections for every socioeconomic aspect reviewed. The projections prepared by Woods and Poole Economics, Inc., an independent firm specializing in long-term economic and demographic projections, were used instead due to the consistency provided by using a single source of socioeconomic projections. **Table 5.6** summarizes the population, employment, and per capita income growth projected for the MSA.

Table 5.6: Socioeconomic Forecast, 2022–2042

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2022	2027	2032	2042	5-Year	10-Year	20-Year
Population							
	61,464	**66,415**	**71,764**	**83,790**	**1.56%**	**1.56%**	**1.56%**
Employment							
	30,842	**33,988**	**37,371**	**44,734**	**1.96%**	**1.94%**	**1.88%**
Per Capita Income							
	$36,571	**$45,954**	**$58,709**	**$95,619**	**4.67%**	**4.85%**	**4.92%**

Source: Woods and Poole Economics, Inc.

5.6. Forecast Methodologies

There are several acceptable methods for forecasting aviation activity. Selecting the most appropriate method is typically a matter of professional judgment and experience based on the analyst's industry knowledge and assessment of local conditions. Quite often, the most reliable approach for generating a reasonable estimate involves using multiple methods. As stated in FAA AC 150/5070-6B, *Airport Master Plans*, the most common techniques are regression analysis, trend analysis, market share analysis, and smoothing.

5.6.1. Regression Analysis

Regression analysis is a statistical technique used to identify trends in data by measuring the relationship between dependent (e.g., aviation demand) and independent variables (e.g., population and income). This method is most effective when using relatively simple sets of data, a strong statistical correlation is evident, and reliable data is available for the independent variables.

5.6.2. Trend Analysis

Trend analysis uses historical patterns to project future activity. This approach is useful when local conditions are unusual enough to differentiate the study airport from other airports in the region.

5.6.3. Market Share Analysis

This technique assumes a top-down relationship between national, regional, and local forecasts. It involves conducting a historical review of the airport activity and identifying its percentage, or share, of a larger regional, state, or national aviation market. The historical market share is then used to project the future market share based on forecasts developed for the larger geographical area. This type of forecast is useful when the activity has a constant share of a larger market.

5.6.4. Smoothing

Smoothing is a statistical technique used to make predictions based on applying recent trends and conditions to historical data. It is most effective for generating short-term forecasts.

5.6.5. Forecasting Methodology and Approach Used

For airports like CDC that support a wide variety of aviation needs, preparing a forecast of aviation demand can be complex because each type of aviation activity is typically influenced by different local and national trends. It is best to divide the forecast into separate elements in order to use the forecasting method that will best reflect the specific factors expected to affect each element of the forecast. The assumptions and methodologies used to develop each element of the forecast for CDC are discussed in the relevant section.

Forecasts should include a sensitivity analysis to measure potential variations in activity levels should the factors influencing aviation activity change during the 20-year planning period. One method of accommodating uncertainty in a forecast is to include a series of forecast scenarios to examine how potential changes in industry trends or socioeconomic conditions could affect the forecast. By including a range of potential outcomes, airport planners are better able to accommodate changes in aviation activity levels in response to new or changing conditions during the 20-year planning period.

5.7. Sources of Data

The following sources of operations and aircraft data were used, in addition to the TAF, in developing the forecast for this airport master plan.

5.7.1. Traffic Flow Management System Counts

The FAA's Traffic Flow Management System Counts (**TFMSC**) database includes data generated when pilots file flight plans as well as other flights detected, usually via RADAR, within the National Airspace System (**NAS**). This database includes the specific types and models of aircraft that operate under instrument flight rules (**IFR**) and are therefore required to file a flight plan. In general, this includes all commercial operations along with the majority of GA operations conducted by jet aircraft as well as both medium and large propeller aircraft. It typically only captures a small portion of GA activity conducted by small piston aircraft because they typically operate under visual flight rules (**VFR**) and are therefore not required to file a flight plan.[20] Despite this limitation, TFMSC data is helpful in identifying general trends in airport activity. TFMSC data for CDC was used to help establish a historical record of the types and classes of aircraft using the airport for the past decade.

5.7.2. Virtower

Airports like CDC that are without an airport traffic control tower (**ATCT**) are typically unable to track total airport operations. However, the airport sponsor recently invested in Virtower which is an airport operations tracking system that allows the airport to identify and track aviation activities. This includes tracking takeoffs, landings, touch-and-go procedures, and helicopter operations as well as identifying the helipad or runway end used for each operation.[21]

This system uses sensors to detect and record information being transmitted by an aircraft's automatic dependent surveillance-broadcast (**ADS-B**). While the accuracy of this data was verified by comparing it to the aircraft photos captured by the motion-activated cameras, it is only able to track aircraft equipped with an ADS-B transmitter which is not required at CDC. It was assumed that 100% of the commercial service, air taxi, and jet operations are ADS-B equipped because it is a requirement when operating in most controlled airspace. Therefore, a 10% modifier was applied to the Virtower data for GA operations in order to adjust for any operations by unequipped aircraft.

5.7.3. Motion Activated Cameras

Three motion-activated cameras were used to record aircraft operations at CDC for three months in order to verify both TFMSC and Virtower records. These cameras were placed at the intersection of Runway 2 and Taxiway Connector A4, at the intersection of Runway 20 and Taxiway Connector A1, and at the helipad. Photos from two days per week were compared to the Virtower data from the same days which showed that the Virtower system captured 100% of the aircraft operations shown in these photos.

5.7.4. U.S. Department of Transportation Air Carrier Statistics Database

The Air Carrier Statistics database, also known as the T-100, contains domestic and international airline market data as reported by U.S. air carriers on a monthly basis. It reports carrier, origin, destination, and service class data for enplaned passengers as well as freight and mail data for domestic markets. It also includes aircraft type, available capacity, scheduled departures, departures performed, and load factors for domestic non-stop flights. This database is frequently used by the aviation industry, the press, and the legislature to produce reports and analyses on air travel patterns and carrier market shares as well as passenger, freight, and mail cargo flow.[22] The T-100 data for CDC was used to help establish a historical record of the commercial operations and passenger activity levels for the past decade.

5.8. Aircraft Operations

This section presents the forecast for aircraft operations. The projections for commercial service, general aviation, and military operations are each presented separately along with the assumptions and methodologies used to develop each forecast.

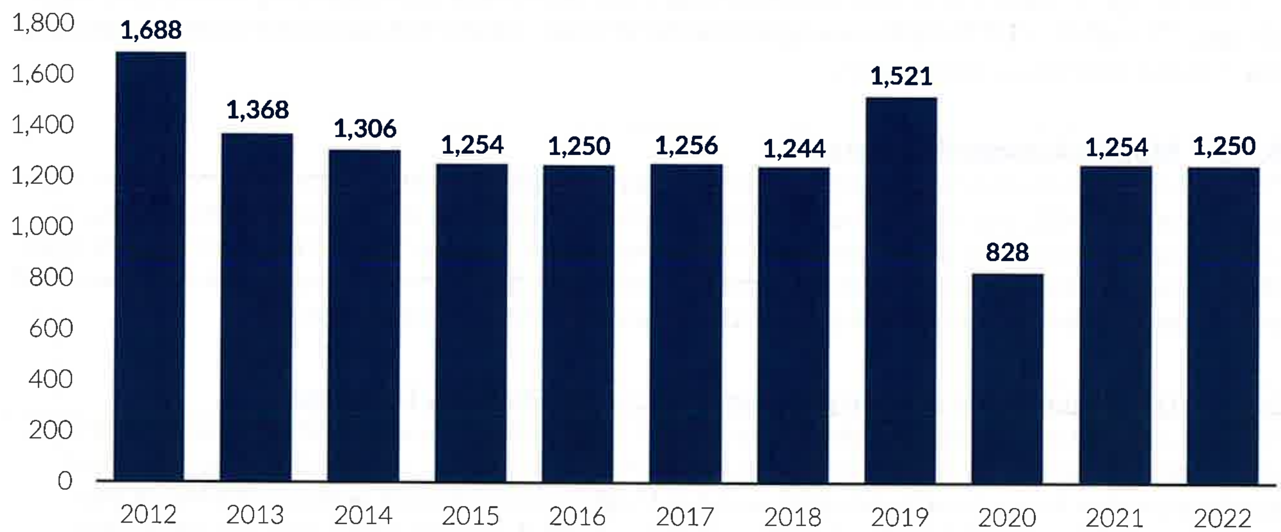
5.8.1. Commercial Service Operations

As previously discussed, commercial service operations are not handled the same way in every forecast. For this forecast, only regularly scheduled passenger flights (i.e., SkyWest Airlines flights) are counted as commercial service operations. The forecast for commercial service operations, along with the passenger enplanements forecast, will help determine future requirements for airport facilities—especially those necessary for accommodating passengers. In general, commercial service operations can be affected by a variety of national and local factors, airline and aviation industry trends, and regional socioeconomic conditions. However, at CDC, the status of the EAS contract will likely have the greatest effect on these operations for the 20-year planning period. As previously discussed, SkyWest Airlines currently has a revolving two-year contract to provide commercial service at CDC as part of the EAS program. The current contract, which covers 2022–2024, is for a minimum of 12 round-trip flights per week to Salt Lake City International Airport (**SLC**) using an aircraft that seats 30–50 passengers.

a. Historical Commercial Service Operations

Figure 5.8 shows historical commercial service operations for 2012–2022 as reported by the U.S. Department of Transportation T-100 database. While commercial service operations have remained relatively consistent this past decade, there was a notable increase in 2019 due to the temporary closure of St. George Regional Airport (**SGU**) and a significant decrease in 2020 due to the COVID-19 pandemic. Overall, commercial service operations have decreased at a CAGR of -2.96% for 2012–2022.

Figure 5.8: Air Carrier Operations, 2012–2022



Source: U.S. Department of Transportation, T-100.

b. Commercial Service Operations Forecast

The forecast for commercial service operations is based on the assumption that the existing EAS contract for 12 weekly round-trip flights will remain in effect throughout the 20-year planning period. As shown in **Table 5.7**, commercial operations are expected to remain at 1,248 for 2022–2024.

Table 5.7: Commercial Service Operations Forecast

Year	TAF	Commercial Operations
2022	1,304	1,250
2027	1,304	1,248
2032	1,304	1,248
2042	1,304	1,248
CAGR	**TAF**	**Commercial Operations**
2022–2042	0.00%	-0.01%

Source: FAA, TAF; Ardurra.

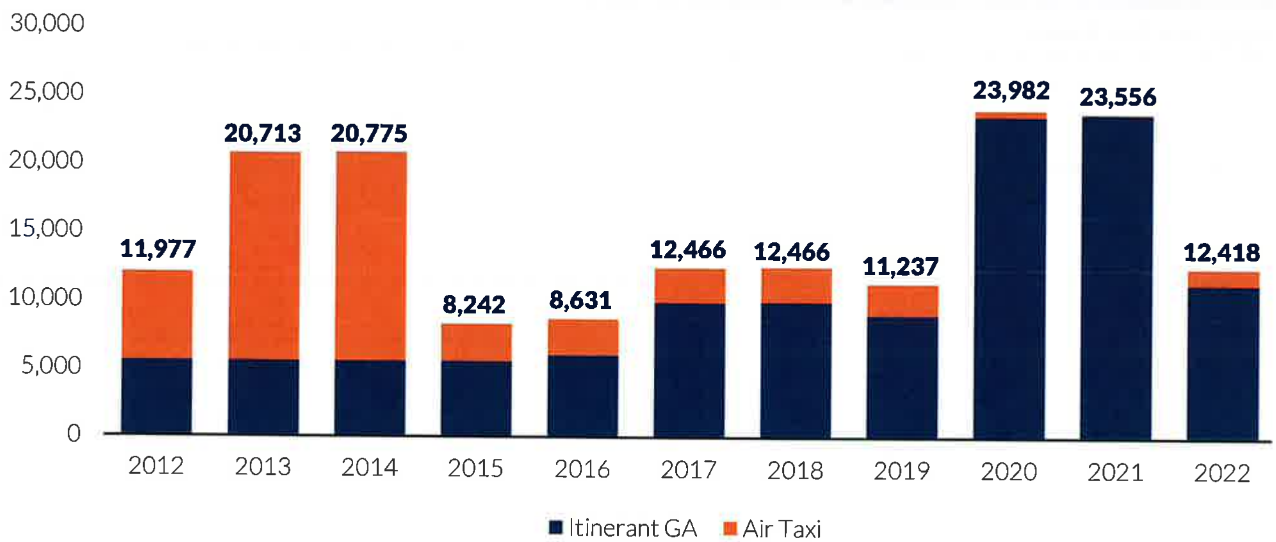
5.8.2. General Aviation Operations

General aviation includes all operations that are not scheduled commercial service or military operations. At CDC, this includes air taxi operations (i.e., charter flights), dedicated air cargo operations, aerial firefighting and other emergency services, pilot training (i.e., SUU operations), and recreational flights. The forecast for general aviation operations, along with the based aircraft forecast, will aid in planning and developing the areas of the airport that cater to GA customers.

a. Historical Itinerant General Aviation Operations

Itinerant operations are all operations that originate or terminate at different airports. **Figure 5.9** shows historical rates of itinerant GA operations and air taxi operations for 2012-2022 as reported by the TAF. It is assumed that there are errors in the way the TAF is reporting air taxi operations which is one of the primary reasons it is incorporated as a separate element in the GA forecast. Overall, itinerant GA operations have increased at a CAGR of 0.36% for 2012-2022.

Figure 5.9: Itinerant General Aviation Operations, 2012-2022



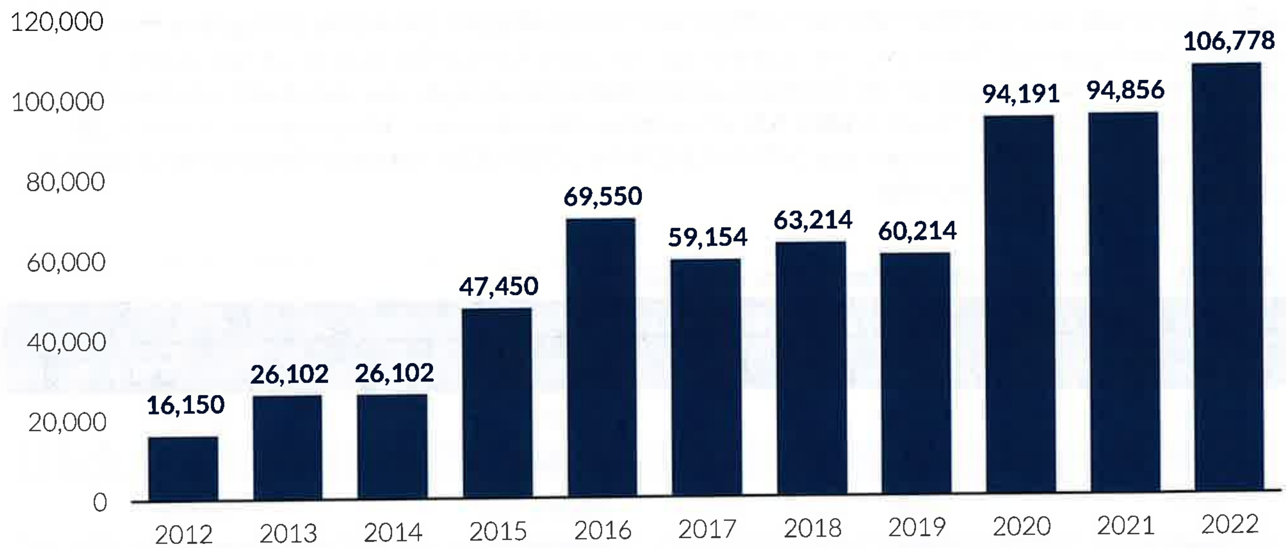
Source: FAA, TAF.

b. Historical Local General Aviation Operations

The FAA defines local GA operations as those operating in the local traffic pattern, within the airport line of sight, are known to be departing for or arriving from the local practice area, or that execute simulated instrument approaches or low passes at the airport. **Figure 5.10** shows historical rates of local GA operations as reported by the TAF. Overall, local GA operations have increased at a CAGR of 20.79% for 2012–2022.

This large increase is assumed to be partially due to how the TAF has historically reported SUU operations. As noted in the 2017 Airport Master Plan, the TAF was not accurately reflecting the flight school operations prior to 2016. In more recent years, the TAF has more accurately reflected these operations, and is assumed future years will be more precise with the addition of the Virtower technology.

Figure 5.10: Local General Aviation Operations, 2012–2022



Source: FAA, TAF.

c. General Aviation Operations Forecast

A regression analysis was used to measure the statistical relationship between the population of the Cedar City MSA and GA operations. This type of analysis identifies the correlation coefficient (i.e. R value) between a dependent variable (i.e. aviation activity) and an independent variable (i.e., population). For an aviation activity forecast, an acceptable R value should be greater than 70%. The regression analysis determined an R value of 93% which indicates a strong statistical correlation with good predictive reliability. This method was used to forecast both itinerant GA operations, including air taxi operations, and local GA operations. However, a different method was used to forecast SUU operations in order to prevent these operations from inflating the overall general aviation forecast.

Virtower and TFMSC data were examined to determine baseline amounts for both itinerant and local GA operations for 2022. This analysis showed that GA operations were approximately 60% itinerant and 40% local operations. It also showed that air taxi operations accounted for approximately 9.5% of itinerant GA operations. It was assumed that these percentages will remain relatively consistent throughout the entire 20-year planning period. Therefore, this ratio was applied to the forecast for overall GA operations to determine the individual forecast for itinerant GA operations, including air taxi operations, and the forecast for local GA operations. As shown in **Table 5.8**, air taxi operations, itinerant GA operations, and local GA operations are expected to increase at a CAGR of 3.63% for 2022–2024 based on the expected growth in population for the Cedar City MSA.

Table 5.8: General Aviation Operations Forecast

Itinerant General Aviation Operations Forecast			
Year	Air Taxi Operations	Itinerant GA Operations	Total Itinerant GA Operations
2022	1,182	11,236	12,418
2027	1,419	13,486	14,905
2032	1,725	16,396	18,121
2042	2,413	22,938	25,351
CAGR	Air Taxi Operations	Itinerant GA Operations	Total GA Operations
2022–2042	3.63%	3.63%	3.63%

Local General Aviation Operations Forecast			
Year	Local GA Operations	SUU Operations	Total Local GA Operations
2022	8,279	98,499	106,778
2027	9,936	100,893	110,829
2032	12,081	103,529	115,610
2042	16,901	109,588	126,489
CAGR	Local GA Operations	SUU Operations	Total Local GA Operations
2022–2042	3.63%	0.53%	0.85%

Source: FAA, TFMSC; CDC, Virtower; Woods and Poole Economics, Inc., Population Forecast; Ardurra.

d. Southern Utah University Operations Forecast

According to the airport's Virtower data, SUU operations accounted for approximately 92% of all local GA operations with a total of 98,499 SUU operations for 2022. Approximately 51% of these were helicopter operations and 49% were fixed wing operations. According to program representatives, these numbers are consistent with the program's averages for the last four years. Growth of these operations is expected to be somewhat limited due to airspace, airport, and SUU fleet constraints. However, some constraints can be overcome to allow for a potential increase in SUU operations.

The forecast for SUU operations was developed based on the FAA's Aerospace Forecast for active pilots by certificate type. As shown in **Table 5.9**, the forecast for SUU operations shows helicopter operations increasing at a CAGR of 1.30%, and fixed wing operations decreasing at a CAGR of -0.4% for the 20-year planning period. Overall, SUU operations are expected to increase at a CAGR of 0.53% for 2022–2024.

As shown in **Table 5.8**, the forecast for SUU operations was combined with the local GA operations forecast to determine the forecast for total local GA operations.

Table 5.9: Southern Utah University Operations Forecast

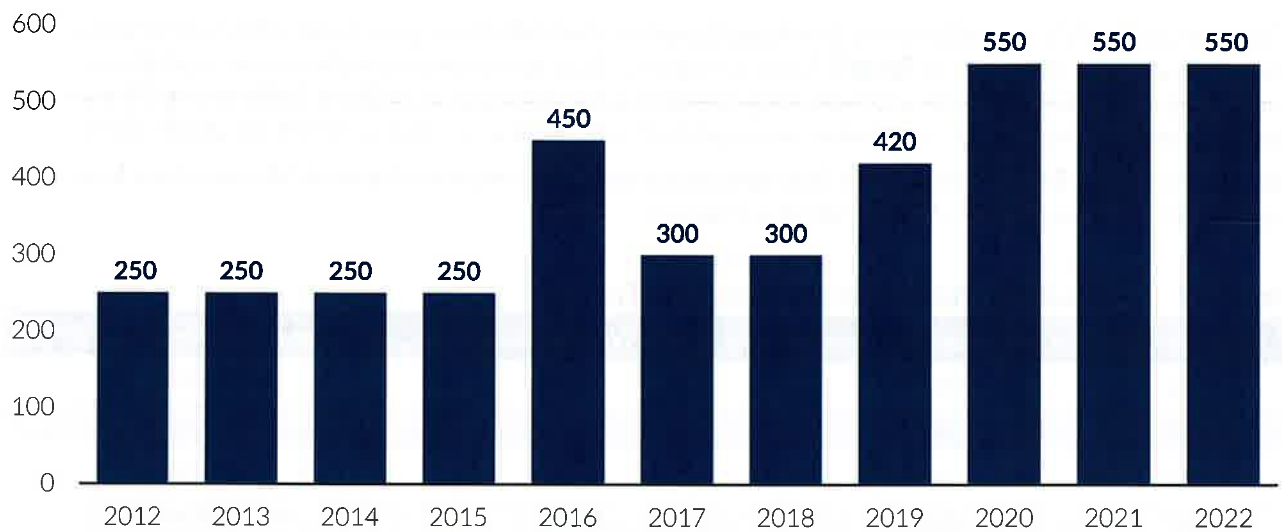
Year	Helicopter Operations	Fixed Wing Operations	Total SUU Operations
2022	50,234	48,265	98,499
2027	53,586	47,307	100,893
2032	57,161	46,368	103,529
2042	65,041	44,547	109,588
CAGR	**Helicopter Operations**	**Fixed Wing Operations**	**Total SUU Operations**
2022-2042	1.30%	-0.40%	0.53%

Source: FAA, Aerospace Forecast, TFMSC; CDC, 2020 Virtower Data; Ardurra.

5.8.3. Military Operations

According to the TAF, itinerant military operations have increased from 250 annual operations for 2012 to 550 annual operations for 2022 while local military operations have remained at zero (**Figure 5.11**). Overall, military operations have increased at a CAGR of 8.2% for 2012–2022.

Figure 5.11: Historical Military Operations, 2012–2022



Source: FAA, TAF,

a. Itinerant Military Operations Forecast

Military operations tend to fluctuate as the Department of Defense changes its operational requirements, and future activity levels can change without notice due to the national security nature of military missions. As a result, military operations are typically forecast at existing levels unless there is specific knowledge of an upcoming change that would affect future activity levels at the airport.

While the Utah Army National Guard is currently in the process of establishing a long-term presence at CDC, these plans have not been finalized at this time. Once plans are finalized, this would likely result in the local military fleet of UH-60 Black Hawks and AH-64 Apache helicopters beginning to conduct local military operations in 2023. However, the number of aircraft and potential activity levels are unknown. Due to this uncertainty, a reasonable forecast could not be determined. Additionally, these operations are unlikely to significantly affect the overall forecast. Therefore, the TAF is the selected forecast for itinerant military operations (**Table 5.10**).

Table 5.10: Itinerant Military Operations Forecast

Year	TAF Forecast	Itinerant Military Forecast
2022	550	550
2027	550	550
2032	550	550
2042	550	550
CAGR	**TAF**	**Itinerant Military Forecast**
2022–2042	0%	0%
Difference From TAF	**TAF**	**Itinerant Military Forecast**
	0%	0%

Source: FAA, TAF.

b. Local Military Operations Forecast

The TAF is also the selected forecast for local military operations. According to the TAF, local military operations are forecast to remain at zero operations for the 20-year planning period.

5.9. Passenger Enplanements

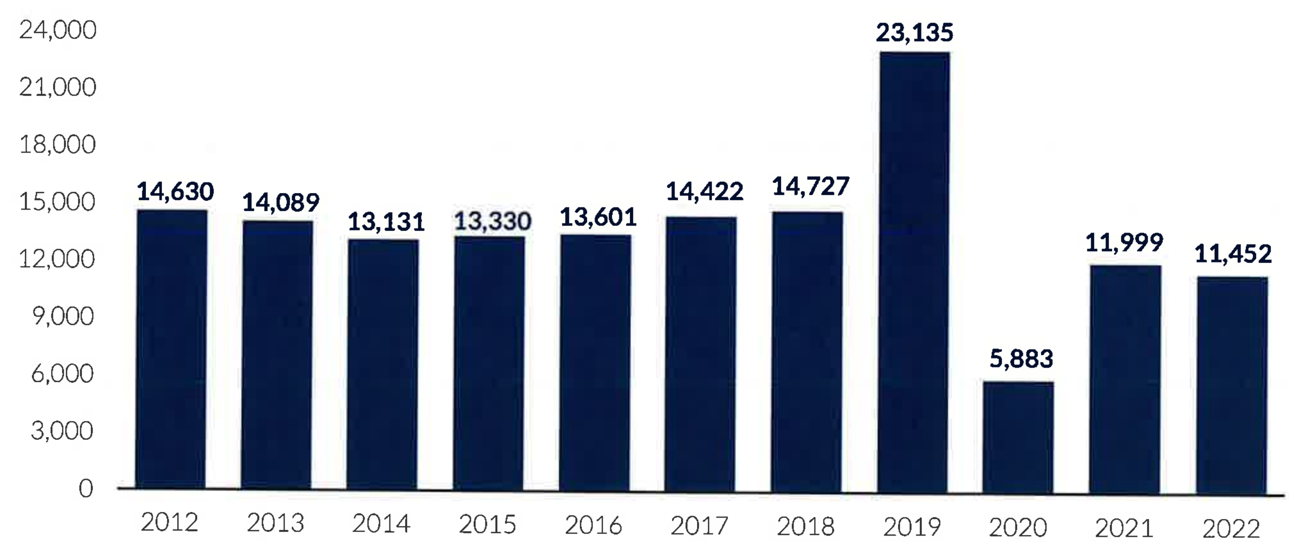
An enplanement is the term used to describe a revenue paying passenger boarding a commercial flight. The forecast for passenger enplanements, along with the forecast for commercial service operations, will help determine future requirements for airport facilities necessary for accommodating passengers. A variety of factors and trends must be taken into consideration in order to develop an effective forecast for passenger enplanements such as regional socioeconomic conditions as well as the airline and aviation industry trends that will affect the airport. This also includes analyzing the passenger load factor (i.e., percentage of seats sold). An airline's load factor is an indicator in determining the success of a particular route and is an important element in route planning. However, according to the terms of the EAS contract, passenger load factor does not necessarily determine commercial service operations as long as there is an average of ten enplanements per flight.

5.9.1. Historical Passenger Enplanements

Figure 5.12 shows historical passenger enplanements for 2012–2022 as reported by the U.S. Department of Transportation T-100 database. This data shows enplanements remained relatively steady until 2019 when they peaked at 23,135 due to the temporary closure of St. George Regional Airport (**SGU**). This was followed by a steep decline as a result of the COVID-19 pandemic. While this shows passenger enplanements have decreased at a CAGR of -2.42% for 2012–2022, it is important to know that this data does not reflect a declining trend in enplanements at CDC because the entire industry has yet to fully recover from the impacts of the COVID pandemic.

A more accurate measure of the enplanement trend for CDC is to adjust the 2019 numbers to correct for the increase resulting from the temporary closure of SGU in order to determine the pre-pandemic growth rate. Without the additional operations, it is assumed that there would have been 15,431 organic enplanements at CDC for 2019. This shows passenger enplanements have increased at a CAGR of 0.76% for 2012–2019.

Figure 5.12: Historical Passenger Enplanements, 2012–2022



Source: USDOT, T-100

5.9.2. Passenger Enplanements Forecast

A series of scenarios were prepared for the forecast of enplaned passengers.

- **Scenario #1:** A forecast based on CDC's historical market share of state enplanements. According to the *2020 Utah Aviation Development Strategy*, CDC's average market share of state enplanements—excluding SLC—was determined to be 6.36% for 2010-2017. This percentage was used to forecast enplanements for CDC based on the enplanements forecast included in *2020 Utah Aviation Development Strategy*. This forecast shows enplanements increasing at a CAGR of 1.49% for 2022–2024.
- **Scenario #2:** A forecast based on the rate of population growth projected for the Cedar City MSA. As shown in **Table 5.6: Socioeconomic Forecast, 2022–2042**, the population is projected to grow at a rate of 1.56% for 2022–2042.
- **Scenario #3:** A forecast based on the increase projected for per capita income within the Cedar City MSA. This forecast shows enplanements increasing at a CAGR of 4.84% for 2022–2024.

As shown in **Table 5.11**, the preferred forecast for passenger enplanements is Scenario #2 which provides a realistic outlook based on the population growth expected for the region as it more closely reflects how local conditions are likely to affect demand for air service.

Table 5.11: Passenger Enplanements Forecast

Year	Market Share	Population	Per Capita Income
2022	11,452	11,452	11,452
2027	12,331	12,374	14,388
2032	13,277	13,369	18,232
2042	15,394	15,608	29,473
CAGR	**Market Share**	**Population**	**Per Capita Income**
2022–2042	1.49%	1.56%	4.84%

Source: U.S. Department of Transportation, T-100; Woods and Poole Economics, Inc., Population Forecast; Ardurra.

5.9.3. Passenger Load Factor Forecast

While the passenger load factor is not directly used to help determine future facility requirements, it can be useful as a pre-indicator of growth—especially in regards to airlines offering additional flights or new service. The load factor forecast was calculated based on the commercial operations and enplanements forecasts and includes an increase in departing seats to reflect the potential increase that would happen if SkyWest transitions its fleet in line with current industry trends. Should this happen, it was assumed SkyWest would begin to transition to the 76-seat Embraer E-175 aircraft at CDC after approximately ten years. As shown in **Table 5.12**, load factors are expected to meet the minimum requirements for the EAS contract.

Table 5.12: Passenger Load Factor Forecast

Year	Enplanements	Departing Flights	Departing Seats	Load Factor
2022	11,452	625	31,250	27%
2027	12,374	624	31,200	28%
2032	13,369	624	43,680	31%
2042	15,608	624	43,680	36%

Source: U.S. Department of Transportation, T-100; Woods and Poole Economics, Inc., Population Forecast; Ardurra.

5.10. Based Aircraft

The FAA defines based aircraft as any operational and airworthy aircraft that is based at the airport for the majority of the year. The forecast for based aircraft is essential for long-term planning and development of GA infrastructure such as aircraft hangars and tiedowns. According to the TAF, the number of based aircraft have increased at a CAGR of 4.09% for 2012–2022 (**Figure 5.13**).

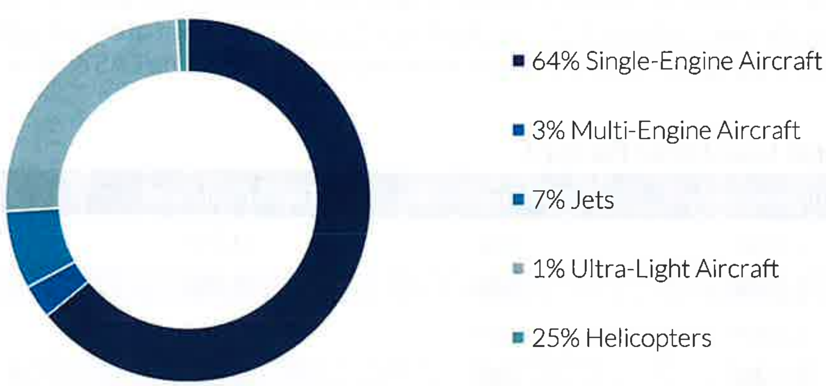
Figure 5.13: Historical Based Aircraft, 2012–2022

Source: FAA, TAF.

5.10.1. Based Aircraft Inventory

The airport provides the FAA with an annual inventory of based aircraft that lists the number of each type of aircraft. This information is used by the FAA when completing the airport master record (FAA Form 5010-1) for CDC. According to the TAF, a total of 102 aircraft were based at the airport for 2022. However, according to the airport master record for CDC, only 100 aircraft were actually based at the airport for 2022. As a result, the information from the airport master record will be used as the baseline for this forecast. As shown in **Figure 5.14**, approximately 64 of these aircraft were single-engine, three were multi-engine, seven were jets, one was an ultralight, and 25 were helicopters.

Figure 5.14: Inventory of Based Aircraft by Type, 2022



Source: FAA, Airport Master Record.

5.10.2. Based Aircraft Forecast

The following scenarios were prepared in order to determine the most suitable forecast for based aircraft:

- **Scenario #1:** The TAF forecast which shows a projected increase of 0.10% for 2022–2042.
- **Scenario #2:** A forecast based on the 1.56% increase in population projected for 2022–2042.
- **Scenario #3:** A forecast based on the 1.88% increase in employment projected for 2022–2042.

As shown in **Table 5.13**, the scenario based on population growth with a CAGR of 1.55% was determined to be the preferred forecast. As the moderate option, this growth rate should allow the airport to take a conservative approach to future development while still meeting future demand.

Table 5.13: Based Aircraft Forecast

Year	TAF Forecast	Population	Employment
2022	102	100	100
2027	104	108	110
2032	104	117	121
2042	104	136	145
CAGR	**TAF**	**Population**	**Employment**
2022-2042	0.10%	1.55%	1.88%
Difference From TAF	**TAF**	**Population**	**Employment**
	0%	30.77%	39.42

Source: FAA, TAF.

5.10.3. Based Aircraft Forecast by Aircraft Type

The fleet mix for based aircraft is expected to remain approximately the same throughout the 20-year planning period. Therefore, as shown in **Table 5.14**, the forecast for based aircraft by aircraft type was determined by applying the current percentages for each type of aircraft currently based at the airport (**Figure 5.14**) to the forecast for based aircraft (**Table 5.13**).

Table 5.14: Based Aircraft Forecast by Aircraft Type

Year	Single-Engine	Multi-Engine	Jet	Ultra-Light	Helicopters	Total
	64%	3%	7%	1%	25%	
2022	64	3	7	1	25	100
2027	69	3	8	1	27	108
2032	75	4	8	1	29	117
2042	87	4	10	1	34	136

Source: Ardurra.

5.11. Fleet Mix

The fleet mix forecast is particularly important because it is used to help identify the critical aircraft which is an essential step in identifying the correct FAA design criteria for the airport. The FAA has developed a coding system that allows airport planners and engineers to identify airport design criteria based on the operational and physical characteristics of the types of aircraft that typically operate at the airport. The aircraft approach category (**AAC**) is designated by a letter and is based on the speed of an aircraft as it approaches a runway when landing. It is generally used to help determine dimensional standards for runway safety areas. The airplane design group (**ADG**) is designated by a Roman numeral and is based on an aircraft's wingspan or tail height; depending on which is most restrictive. ADG is typically used to establish dimensional standards needed for taxiway clearance.[23]

5.11.1. Commercial Service Fleet Mix Forecast

SkyWest Airlines is expected to transition from using its fleet of 50-seat Bombardier CRJ-200 aircraft in favor of the 76-seat Embraer E-175 aircraft at CDC by 2032.

5.11.2. General Aviation Fleet Mix Forecast

As previously discussed in Section 5.7. Sources of Data, the FAA's TFMSC database and the airport's Virtower system records were used to determine the percentage of each type of aircraft currently using the airport. As shown in Table 5.15, the fleet mix forecast was determined by applying the current percentages to the GA operations forecast.

a. General Aviation Fleet Mix Forecast Assumptions

An assumption was made that the percentages for each category would remain relatively consistent throughout the 20-year planning period because there are no indicators to suggest a significant change.

Table 5.15: General Aviation Fleet Mix Forecast

AAC & ADG	Percentage	Base Year	Forecast Years		
		2022	2027	2032	2042
A-I	94.73%	65,328	70,364	76,665	90,894
A-II	1.18%	815	878	956	1,134
B-I	1.38%	950	1,023	1,115	1,322
B-II	1.97%	1,356	1,461	1,591	1,887
B-III	0.01%	9	10	11	13
C-I	0.03%	18	19	21	25
C-II	0.12%	80	86	94	111
C-III	0.54%	371	400	435	516
D-I	0.01%	4	4	5	6
D-II	0.03%	18	19	21	25
D-III	0.02%	13	14	15	18
Total Fixed Wing	**100%**	**68,962**	**74,278**	**80,930**	**90,950**
Helicopter		**50,234**	**51,456**	**52,801**	**55,890**
Total GA		**119,196**	**125,734**	**133,731**	**151,840**

Source: FAA, TFMSC; Cedar City Regional Airport, 2020 Virtower Data; Ardurra.

5.12. Critical Aircraft

The critical aircraft is the most demanding type of aircraft, or group of aircraft with similar characteristics, that makes a minimum of 500 annual operations at the airport; excluding touch-and-go operations. The critical aircraft is often referred to as the design aircraft because it is used to determine design standards for many areas of the airport. In general, once an aircraft reaches 350 operations with a forecasted upward trend, the FAA supports planning for that aircraft design.

5.12.1. Existing Critical Aircraft

The critical aircraft was identified using a grouping of aircraft with similar characteristics. This practice groups aircraft with comparable operational performance (**AAC**), combined with the physical dimensions (**ADG**) to determine the most demanding aircraft design regularly using the airport. It was determined that the most demanding AAC is C, with a total of 469 general aviation operations, and 1,250 commercial service operations, for a total of 1,719 operations by this category in 2022. It was determined that the most demanding ADG is III, with 393 operations in 2022, increasing to 500 by 2032, expedited by the assumed transition of SkyWest to the EMB-175, for an identified critical aircraft being C-III. The Avro RJ87 is the category C-III aircraft that has been selected as the representative critical aircraft (**Figure 5.15**). Of the 1,512 operations made by C-III aircraft for 2022, approximately 206 were by an Avro RJ87 aircraft. Additionally, the Avro RJ87 is used for aerial firefighting missions and is based at the airport from May through July. **Table 5.16** summarizes the specifications for the existing commercial service critical aircraft.

Figure 5.15: Existing Critical Aircraft, Avro RJ87

Source: FAA, Airport Master Record.

Table 5.16: Avro RJ87 Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	C
Airport Design Group (ADG)	III
Taxiway Design Group (TDG)	2A
Approach Speed	126 knots
Wingspan	86.50 feet
Length	93.10 feet
Tail Height	28.60 feet
Cockpit to Main Gear (CMG)	36.50 feet
Outer to Outer Main Gear Width (MGW)	15.50 feet
Maximum Takeoff Weight	93,000 pounds

Source: FAA, Aircraft Characteristics Database.

5.12.2. Future Critical Aircraft

Airport sponsors must consider how ongoing industry trends are likely to affect the fleet mix when identifying a critical aircraft.[24] For example, the current airline industry trend of retiring 50-seat regional jets and replacing them with more efficient aircraft is expected to affect the commercial service fleet at CDC. Based on the projected fleet mix and the commercial service operations forecast, the Embraer E-175 is the category C-III aircraft that has been selected as the representative future critical aircraft (**Figure 5.16**). Should SkyWest transition its fleet in line with current industry trends, the airport would see an increase in E-175 operations during the next decade and this aircraft could potentially be used for the majority of commercial service operations at CDC by 2032. **Table 5.17** summarizes the specifications for the future critical aircraft.

Figure 5.16: Future Critical Aircraft, Embraer E-175

Source: Delta.

Table 5.17: Embraer E-175 Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	C
Airport Design Group (ADG)	III
Taxiway Design Group (TDG)	3
Approach Speed	124 knots
Wingspan	85.33 feet
Length	103.92 feet
Tail Height	32.33 feet
Cockpit to Main Gear (CMG)	41.33 feet
Outer to Outer Main Gear Width (MGW)	20.50 feet
Maximum Takeoff Weight	82,673 pounds

Source: FAA, Aircraft Characteristics Database.

5.13. Aircraft Rescue and Firefighting Index

The airport's Aircraft Rescue and Firefighting (**ARFF**) index should be reviewed as part of the forecasting process to determine if the index will change during the planning period. An airport's ARFF index is determined based on the length of the longest passenger aircraft serving the airport. If this aircraft makes, on average, five or more daily departures from the airport, this aircraft is used to determine the ARFF index for the airport. If the aircraft makes less than five average daily departures, the next lower index group will be the airport's ARFF index. Index A is the minimum designated ARFF index for a commercial service airport.

Passenger aircraft are grouped into the following five categories used to determine the ARFF index:

- **Index A** includes aircraft less than 90 feet in length.
- **Index B** includes aircraft at least 90 feet but less than 126 feet in length.
- **Index C** includes aircraft at least 126 feet but less than 159 feet in length.
- **Index D** includes aircraft at least 159 feet but less than 200 feet in length.
- **Index E** includes aircraft at least 200 feet in length.

The longest passenger aircraft currently serving the airport is a Bombardier CRJ-200. At a length of 87.83 feet, this aircraft is categorized as ARFF Index A. The future commercial service critical aircraft is expected to be an Embraer E-175. At a length of 103.92 feet, this aircraft is categorized as ARFF Index B. However, commercial service departures are not forecast to reach an average of five or more departures per day during the planning period. As a result, the airport's ARFF index is expected to remain Index A throughout the entire 20-year planning period.

5.14. Forecast Evaluation

The FAA requires the forecast for primary, nonhub, commercial service airports like CDC to be within 10% of the TAF for the five-year forecast and within 15% for the ten-year forecast. If a forecast is not within this range, additional justification and coordination with the FAA must occur for approval. **Table 5.18** shows the master plan forecast alongside the TAF forecast for CDC.

Table 5.18: Forecast Evaluation

	Base Year	Forecast Years		
	2022	2027	2032	2042
Operations				
Commercial Service	2,432	2,667	2,973	3,661
GA Operations	118,014	124,315	132,006	149,427
Military	550	550	550	550
Total Master Plan Operations	**120,996**	**127,532**	**135,529**	**153,639**
Total TAF Operations Forecast	**121,215**	**125,483**	**129,900**	**139,272**
Difference	**0%**	**2%**	**4%**	**9%**
Enplanements				
Master Plan Forecast	11,452	12,374	13,369	15,608
TAF Forecast	10,600	10,600	10,600	10,600
Difference	**7%**	**14%**	**26%**	**47%**
Based Aircraft				
Master Plan Forecast	100	108	117	136
TAF Forecast	102	104	104	104
Difference	**-2%**	**4%**	**11%**	**24%**

Source: FAA, TAF; Ardurra.

The 2025 Airport Master Plan forecast is well within the required limits for both GA and military operations as well as based aircraft. However, the master plan forecast for commercial service operations and enplanements is not within the required limits. This is partially due to the TAF not accurately reflecting the commercial service operations and enplanements activity levels reported by the U.S. Department of Transportation in the Air Carrier Statistics database (**T-100**). This difference is shown in **Table 5.19**.

Table 5.19: Terminal Area Forecast and Air Carrier Statistics Comparison

Year	TAF	T-100	Difference
2012	10,600	14,630	-38%
2013	10,600	14,089	-33%
2014	10,600	13,131	-24%
2015	10,600	13,330	-26%
2016	10,600	13,601	-28%
2017	10,600	14,422	-36%
2018	10,600	14,727	-39%
2019	10,600	23,135	-118%
2020	10,600	5,883	45%
2021	10,600	11,999	-13%
2022	10,600	11,452	-8%

Source: DOT, T-100; FAA, TAF; Ardurra.

Additionally, the FAA revised how it defined air carrier operations for the TAF beginning in 2015 which then affected how the TAF reported these operations for CDC. The revised definition meant that commercial service operations using aircraft with less than 60 seats were included in the counts for air taxi and commuter operations. Like enplanements, the TAF shows no growth for commercial operations, which is unrealistic with the current economic climate—especially when growth is expected for every other aviation element. Because of this, the large difference between the TAF and 2025 Airport Master Plan forecast is acceptable and justified through the forecast analysis.

While the forecasts prepared for this airport master plan are considered reasonable for planning purposes, it is important to understand that unforeseen factors and future events, such as economic recessions, could affect the degree to which these forecasts are realized. While this forecast provides the basis for guiding airport development, implementation of any projects should be timed based on current demand.

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FACILITY REQUIREMENTS

6

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FIGURES

TABLES

CHAPTER SIX

REQUIREMENTS

To properly plan for the future of Cedar City Regional Airport (**CDC**), it is necessary to determine if the existing airport facilities can safely and efficiently accommodate current and forecasted levels of activity. Each of the facilities described in Chapter 4, Airside and Landside Inventory, must be analyzed to determine if any improvements are needed to meet new or updated standards developed and adopted by the Federal Aviation Administration (**FAA**) or other regulatory agencies. This analysis will also be used to help determine if any improvements are needed as a result of the sponsor's comprehensive plan or strategic vision statement.

The main goal of this analysis will be to identify if improvements are needed, when they will be needed, and the purpose and need for these improvements. Each facility will be analyzed to determine its ability to safely and efficiently accommodate the forecasted activity levels discussed in **Chapter 5, Forecast of Aviation Activity**. Facilities will also be examined to determine if they meet current FAA design standards, recommendations, requirements, and design considerations. Alternative methods of addressing these potential development projects will be discussed and evaluated in Chapter 7, Development Alternatives.

6.1. Airport Design Standards

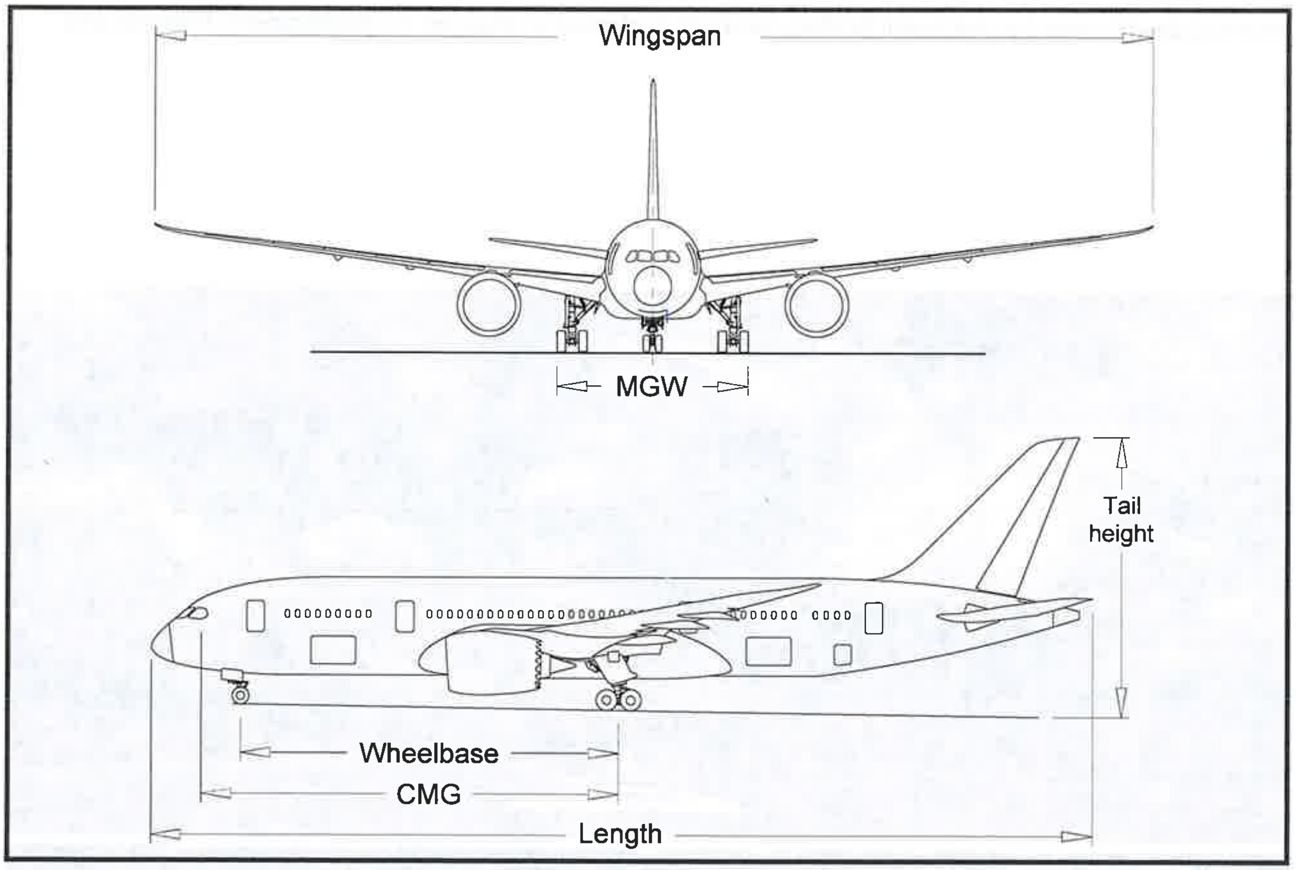
Effective airport design and planning helps to ensure airport facilities are able to meet current and future aviation demand and comply with necessary environmental considerations while maintaining acceptable levels of safety, efficiency, and capacity. The airport design process involves a series of steps to identify aviation demand at an airport and then apply the corresponding FAA standards to each of the airport's facilities. This generally includes the following steps:

1. Identify the size, approach category, airplane design group, and taxiway design group of the critical aircraft.
2. Identify reasonably attainable visibility minimums.
3. Identify the applicable runway design code.
4. Apply the appropriate design standards from FAA Advisory Circular (**AC**) 150/5300-13B, *Airport Design*.[1]

6.1.1. Aircraft Classes, Categories, and Groups

The FAA has developed a coding system that allows airport planners and engineers to identify airport design criteria based on the operational and physical characteristics of the critical aircraft (**Figure 6.1**). As previously discussed in **Section 5.2.4., Critical Aircraft**, the critical aircraft is the most demanding type of aircraft, or group of aircraft with similar characteristics, that regularly use the airport. It can be a single aircraft or a composite of the most demanding characteristics from different aircraft. Incorporating these characteristics as part of the coding system in this way helps airport planners and engineers design the airport to meet both current and future needs while also ensuring the correct design standards are applied.[2]

Figure 6.1: **Key Aircraft Dimensions**



Source: FAA, AC 150/5300-13B, *Airport Design*, Figure A-1.

a. Size, Weight, and Wake Turbulence Classifications

The FAA has established four classifications of aircraft based on maximum certificated takeoff weight (**MTOW**), number of engines, and wake turbulence effect. These classifications, which are summarized in Table 6.1, are typically used for capacity planning.[3]

Table 6.1: Aircraft Size, Weight, and Wake Turbulence Classifications

Category	Maximum Certificated Takeoff Weight	Number of Engines	Wake Turbulence*
A	12,500 pounds or less	Single	Small
B	12,500 pounds or less	Multi	Small
C	12,500 to 300,000 pounds	Multi	Large
D	More than 300,000 pounds	Multi	Heavy

*Wake turbulence is a measure of weight and its capacity to disturb the air.

Source: FAA, AC 150/5060-5, *Airport Capacity and Delay*, Table 1-1.

b. Aircraft Approach Category

The aircraft approach category (**AAC**) is designated by a letter and is based on the speed of an aircraft as it approaches a runway when landing (Table 6.2). It is generally used to help ensure an airport's runway safety areas can safely accommodate the critical aircraft.[4] (Both the aircraft approach category and the aircraft size, weight, and wake turbulence classifications listed in Table 6.1 are designated by a letter so it is important to understand the distinction between the two.)

Table 6.2: Aircraft Approach Categories

Category	Approach Speed
A	Less than 91 knots
B	91 knots or more but less than 121 knots
C	121 knots or more but less than 141 knots
D	141 knots or more but less than 166 knots
E	166 knots or more

Source: FAA, AC 150/5300-13B, *Airport Design*, Table 1-1.

c. Airplane Design Group

The airplane design group (**ADG**) is designated by a Roman numeral and is based on an aircraft's wingspan or tail height; depending on which is most restrictive (Table 6.3). It is typically used to establish dimensional standards needed for adequate clearances.[5]

Table 6.3: Airplane Design Groups

Group	Tail Height	Wingspan
I	<20 feet	<49 feet
II	20 feet – <30 feet	49 feet – <79 feet
III	30 feet – <45 feet	79 feet – <118 feet
IV	45 feet – <60 feet	118 feet – <171 feet
V	60 feet – <66 feet	171 feet – <214 feet
VI	66 feet – <80 feet	214 feet – <262 feet

Source: FAA, AC 150/5300-13B, *Airport Design*, Table 1-2.

d. Representative Aircraft Examples

Figure 6.2 illustrates representative aircraft for several aircraft approach category and airplane design group combinations.

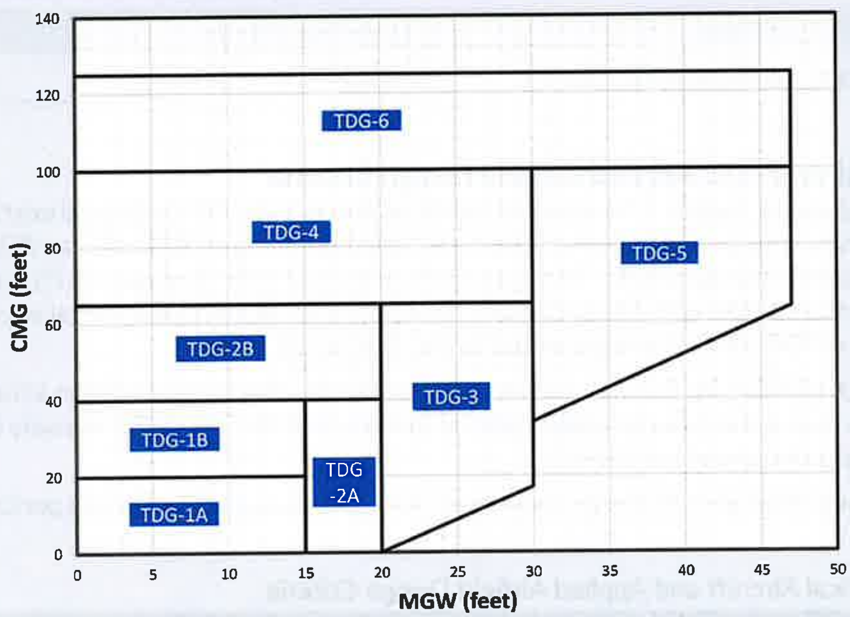
Figure 6.2: Representative Aircraft

Source: Ardurra

e. Taxiway Design Groups

The taxiway design group (**TDG**) is used to establish the correct dimensions for taxiway width. As shown in Figure 6.3, it is based on the dimensions of an aircraft's landing gear. This includes the distance from the cockpit to the main gear (**CMG**), and the main gear width (**MGW**). Each taxiway at an airport can have a different taxiway design group classification based on the size and type of aircraft expected to use that particular taxiway.[6]

Figure 6.3: Taxiway Design Groups



Note: Values in the graph are rounded to the nearest foot. 1 foot = 0.305 meters.

Source: FAA, AC 150/5300-13B, *Airport Design*, Figure 1-1.

f. Runway Design Code

The runway design code (**RDC**) is comprised of three components; AAC, ADG, and RVR, which establish the design characteristics for a particular runway. The RDC is determined by the lowest approach visibility minimums for either runway end. Because this code changes with runway capabilities, runways at an airport can have a different RDC.

A runway's lowest visibility published on an instrument approach procedure is used to determine its runway visual range (**RVR**) value. As shown in Table 6.4, a runway that does not have an instrument approach is classified as a visual runway and does not have an RVR value.[7]

Table 6.4: Visibility Minimums and Runway Visual Range Values

Runway Visual Range Value	Instrument Flight Visibility (statute miles)
VIS	Visual Approach Only
5,000 feet	Not lower than 1 mile
4,000 feet	Lower than 1 mile but not lower than 3/4 mile
2,400 feet	Lower than 3/4 mile but not lower than 1/2 mile
1,600 feet	Lower than 1/2 mile but not lower than 1/4 mile
1,200 feet	Lower than 1/4 mile

Source: FAA, AC 150/5300-13B, *Airport Design*, Table 1-3.

6.1.2. Critical Aircraft and Applied Airfield Design Criteria

As previously discussed in Chapter 5, Forecast of Aviation Demand, the FAA approved existing critical aircraft for the primary runway and taxiways is best described as having an AAC of C, an ADG of III, a TDG of 2A, and is represented by the Avro RJ87. The future critical aircraft is the Embraer E175, which is also a C-III aircraft, with an increased TDG of 3. The secondary runway and taxiways have a critical aircraft categorized as AAC B, ADG I, and TDG 2A that is represented by the Beechcraft BE99.

The lowest approach visibility for Runway 2/20 is 1/2 statute mile. This corresponds to a runway visual range of 2,400 feet which means the runway design code for Runway 2/20 is C-III-2400. Runway 8/26 is a visual runway with a runway design code of B-I-VIS.

Table 6.5, details the critical aircraft design parameters for CDC through the planning period.

Table 6.5: Critical Aircraft and Applied Airfield Design Criteria

Area	Aircraft	AAC	ADG	TDG
Primary Runway and Taxiways (Existing)	Avro RJ87	C	III	2A
Primary Runway and Taxiways (Future)	Embraer E-175	C	III	3
Secondary Runway and Taxiways (Existing and Future)	Beechcraft BE99	B	I	2A

Source:Ardurra.

6.2. Land Use and Airport Protection

Land use is the term used to describe how property is currently being used and how it can be used in the future. The existing and planned land uses near an airport can impact the local community and airport operations. Airport-compatible land uses are defined as those uses that can coexist with an airport without constraining the safe and efficient operation of the airport or exposing people living or working nearby to potential negative environmental or safety impacts.

Effective land use compatibility plans consider both height and land use restrictions and are incorporated via local zoning laws, specifically Section 26-XIV-5 Compatible Land Use Regulations, (A) Airport Compatible Land Use Overlay Zone within the Cedar City zoning code, and Iron County Ordinance, Title 17 – Zoning, Chapter 17.58, Airport Overlay Zoning. These zoning codes protect both the airport and the surrounding community. Furthermore, federal and state grant assurances require airport sponsors to operate and maintain the airport in a safe and serviceable condition, prevent and remove airport hazards, and take appropriate measures to ensure compatible land uses exist around the airport. Federal and state land use requirements will be discussed in Chapter 11, Planning for Compliance.

6.2.1. Airport Airspace

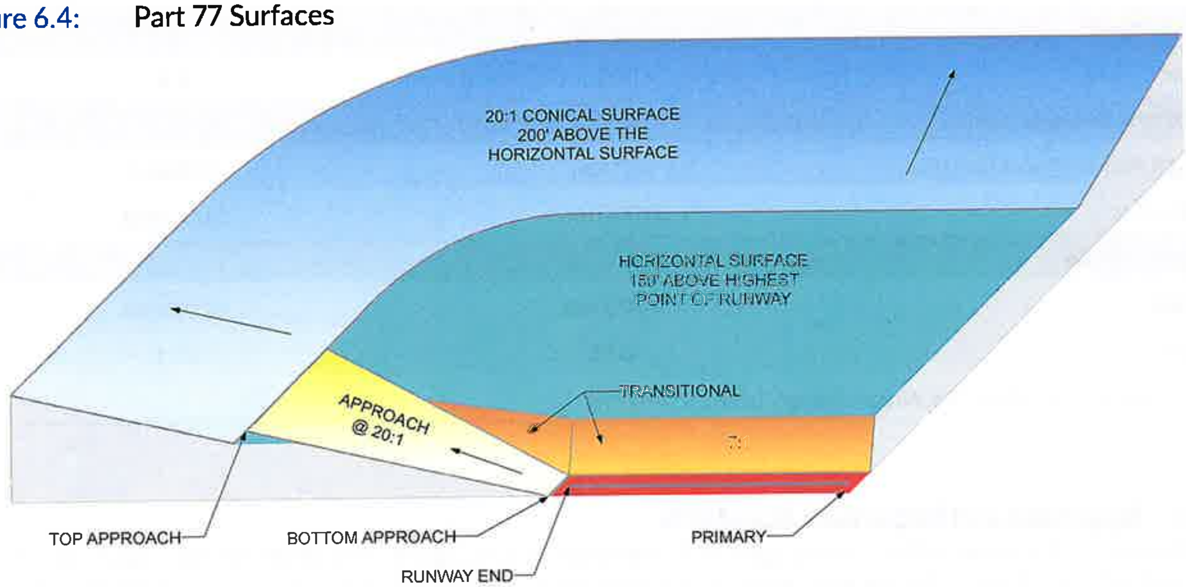
It is important to evaluate the airport's airspace in order to plan for and protect both existing and future approaches. This includes determining if any obstructions are penetrating the imaginary surfaces defined in Code of Federal Regulations (**CFR**) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace* or the approach and departure surfaces defined in FAA AC 150/5300-13B, *Airport Design*.

Part 77: Safe, Efficient Use, and Preservation of the Navigable Airspace

Title 14 of the Code of Federal Regulations Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, establishes standards for determining obstructions to airspace. Part 77 describes imaginary surfaces surrounding airports that are to be protected from natural and man-made obstructions considered to be aeronautical hazards (**Figure 6.4**).

The standards for Part 77 surface dimensions are applied individually to each runway end based on its category (i.e., visual, nonprecision, or precision), and the lowest approach visibility minimums associated with that runway end. The Part 77 surface dimensions for Runway 2/20, and Runway 8/26 are listed in **Table 6.6**.

Figure 6.4: **Part 77 Surfaces**



Source: 14 CFR Part 77; Ardurra.

Recommendation

A Part 77 Analysis was completed and identified several penetrations to the Part 77 surfaces related to natural terrain and vegetation penetrations in the horizontal and conical surfaces. These are typical at many airports and though they penetrate the surface, they do not constitute a hazard to air navigation and thus do not impact flight operations. It is recommended that vegetation-related penetrations be mitigated as practical.

Table 6.6: Part 77 Surface Dimensions

Surface	Runway 2/20		Runway 8/26	
Primary Surface				
Width	1,000 feet		500 feet	
Length Beyond Runway End	200 feet		200 feet	
Approach Surface	**RWY 2**	**RWY 20**	**RWY 8**	**RWY 26**
Inner Width	1,000 feet	1,000 feet	500 feet	500 feet
Outer Width	3,500 feet	16,000 feet	1,500 feet	1,500 feet
Length	10,000 feet	10,000 feet	5,000 feet	5,000 feet
Slope	34:1	50:1	20:1	20:1
Extended Length	N/A	40,000 feet	N/A	N/A
Extended Slope	N/A	40:1	N/A	N/A
Transitional Surface				
Slope	7:1		7:1	
Horizontal Surface				
Height Above Airport Elevation	150 feet		150 feet	
Radius Arc	10,000 feet		5,000 feet	
Conical Surface				
Length	4,000 feet		4,000 feet	
Slope	20:1		20:1	

Source: FAA, AC 150/5300-13B, Airport Design, Table 1-2; Ardurra.

6.2.2. Approach and Departure Standards

The dimensional standards for runway approach and departure surfaces were determined in accordance with FAA AC 150/5300-13B, *Airport Design*. It is important to distinguish that the approach and departure surfaces outlined in this advisory circular (**AC**) differ from those defined in 14 CFR Part 77. Like Part 77 surfaces, these surfaces must be maintained free from natural or man-made penetrations. The approach surface depends on the lowest visibility minimums and type of procedure associated with the runway end and is independent of the approach surface for the opposite end of the runway.

Recommendation

The existing and future approach and departure surfaces are clear of penetrations. Like the Part 77 surfaces, it is recommended that development around the airport continue to be monitored and held to height restrictions identified in the City's height restrictions map.

6.2.3. Runway Protection Zone

A runway protection zone (**RPZ**) is trapezoidal in shape, centered about the extended runway centerline, and located off each runway end. According to AC 150/5190-4B *Land Use Compatibility Planning*, the purpose of an RPZ is to enhance the protection of people and property on the ground by keeping the ground clear of incompatible land uses and activities in the event an aircraft accident occurs beyond the runway end. The RPZ is not intended to protect the airspace associated with a runway. Airspace protection is based on the airspace surfaces previously detailed.

The FAA provides guidance on land use compatibility within an RPZ in both FAA AC 150/5300-13B *Airport Design* and FAA AC 150/5190-4B *Land Use Compatibility Planning*. Both ACs state that although it is ideal to clear incompatible objects from an RPZ, some land uses are permitted providing they do not attract wildlife, are outside of the ROFA, and do not interfere with navigational aids (**NAVAIDS**). Land uses which are permitted without further evaluation are:

1. Farming that meets airport design clearance standards.
2. Irrigation channels that meet FAA standards in AC 150/5200-33C *Hazardous Wildlife Attractants on or Near Airports*, and FAA/USDA manual *Wildlife Hazard Management at Airports*.
3. Airport service roads, as long as they are not public roads and are under direct control of the airport.
4. Underground facilities, as long as they meet other design criteria, such as Runway Safety Area (**RSA**) standards, as applicable.
5. NAVAIDS and aviation facilities, such as equipment for airport facilities considered fixed-by-function in regard to the RPZ.
6. Above-ground fuel tanks associated with backup generators for unstaffed NAVAIDS.

FAA AC 150/5190-4B requires additional FAA coordination in the event the RPZ were to change (either in size or location) or when there is a change to an incompatible land use. Roadway construction, relocation, or improvement is specifically noted as an incompatible land use requiring further coordination.

There are some incompatible land uses within the RPZ for Runways 2, 20, and 26. Airport Road crosses through Runway 20 and 26 RPZs. The RPZ for Runway 2 contains a crossing by N 3100 W, a butcher shop, and a storage unit facility. Due to the now existing regulations to prevent additional incompatible land uses, no mitigation is required for the existing land uses.

Recommendation

To prevent further land use incompatibilities, the city and county have adopted strict land use guidance on compatible land uses within the RPZ. It is recommended that careful coordination continues between the airport and local zoning and planning to ensure continued, proactive, land use protection. Should land within the RPZ become available for airport acquisition, it is recommended the airport take advantage of the opportunity to secure and protect the property.

6.3. Airfield Facilities

An assessment of the airport's airfield facilities was conducted to determine their ability to safely and efficiently accommodate the activity forecasted for the 20-year planning period. This determines if the runways, taxiways, and navigational aids are compliant with FAA design and safety standards. The results of this analysis are also used to help determine if and when improvements are needed to meet specific operational demands.

6.3.1. Airfield Capacity

The purpose of an airfield capacity analysis is to assess the airport's ability to efficiently accommodate its day-to-day and long-term demands without undue delays or compromises to safety. The analysis also assists in determining when improvements would be needed to meet operational demands.

The most widely recognized and accepted method for conducting an airfield capacity analysis is found in FAA AC 150/5060-5, *Airport Capacity and Delay*. The methodology described in the AC is used to determine the annual service volume (**ASV**) and hourly capacity to provide a reasonable estimate of an airport's annual capacity. The ASV is calculated by determining the airport's mix index. This is a mathematical expression representing the percent of weight class (classes noted in Table 6.1) specifically, class C plus three times the percent of Class D aircraft.

This methodology accounts for differences in runway use, fleet mix, and weather conditions encountered during a typical year. For long range planning, pre-determined calculations in the AC may be used if certain assumptions are met. These assumptions and how they apply at CDC are outlined in Table 6.7.

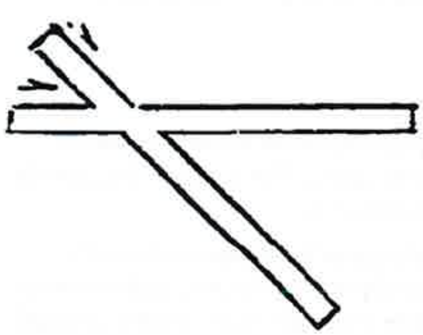
Table 6.7: Assumption Criteria and CDC Status

AC Defined Assumption	Assumption Met At CDC?
Runway Use Configuration – Any runway layout can be approximated by one of the 19 depicted runway-use configurations (in the AC).	Yes
Percent Arrivals – Arrivals equals departures.	Yes
Percent Touch and Go's – The percent of touch and go's is within the ranges in table 2-1 in the AC.	No, this assumption is exceeded.
Taxiways – A full length parallel taxiway, ample runway entrance/exit taxiways, and no taxiway crossing problems.	Yes
Airspace Limitations – There are no airspace limitations which would adversely impact flight operations or otherwise restrict aircraft which could operate at the airport.	Yes
Runway Instrumentation – The airport has at least one runway equipped with an ILS and has the necessary ATC facilities and services to carry out operations in a radar environment.	Yes, Salt Lake City Center

Source: FAA, AC 150/5060-5, Airport Capacity and Delay.

For the first assumption, the runway configuration at CDC best matches sketch number 9 in the AC (Figure 6.5) with a mix index in the 0-20 range, which gives an ASV assumption of 230,000 annual operations.

Figure 6.5: Runway Configuration



Mix Index %(C+3D)	Hourly Capacity Ops/Hr VFR	Hourly Capacity Ops/Hr IFR	Annual Service Volume Ops/Yr
0to 20	98	59	230,000
21 to 50	77	57	200,000
51 to 80	77	56	215,000
81 to 120	76	59	225,000
121 to 180	72	60	265,000

Source: FAA, AC 150/5060-5, Airport Capacity and Delay.

The capacity analysis at CDC is complex due to the number of operations from the flight school, which consist of more than half helicopter operations, in addition to regular operations by cargo, general aviation, military, and commercial service aircraft.

The flight school operations remain within the local airspace and increase the number of hourly touch-and-goes beyond the assumptions outlined in the AC. Additionally, through discussions with personnel at Southern Utah University's (**SUU**) flight training program at CDC, traffic pattern constraints were identified. Due to the limited capacity of a runway pattern (typically six aircraft at once), the airspace is frequently full and restricts the number of training flights that can be conducted. Personnel at SUU stated that this is one of the factors limiting the growth of the flight training program. The assumptions used for calculating the capacity at CDC are provided in Table 6.8.

Table 6.8: Capacity Analysis Assumptions

Criteria	2022	2042
Annual Total	120,996	153,639
Mix Index	3	3
Hourly Total	38	48
Hourly Touch-and-Go Operations	31	35
Percent Touch-and-Go Operations	81%	71%
Hourly Visual Flight Rules	37.76	47.95
Hourly Instrument Flight Rules	0.43	0.55

Source: Ardurra.

The capacity analysis is provided in Table 6.9, which uses operational data from the approved forecast with the applied method and assumptions outlined in the AC.

Table 6.9: Capacity Analysis: Helicopter and Fixed Wing Operations

	2022	2027	2032	2042
Annual Service Volume	230,000	230,000	230,000	230,000
Annual Demand	120,996	127,532	135,529	153,639
Capacity Percentage	53%	55%	59%	67%

Source: Ardurra.

Per FAA Order 5090.5, *Formulation of the NPIAS and ACIP* the activity level to begin planning for capacity improvements is 60% of ASV, with development occurring at 80% of ASV. Table 4-4 within Order 5090.5 identifies that the FAA prefers the development of a parallel runway for capacity improvements. Based on the overall operational numbers, CDC will reach the 60% planning threshold (60% of ASV) by 2032, but it is not expected the airport will reach 80% within this planning period (before 2042).

Unique to CDC is a large number of total operations are helicopters operated by SUU for flight training. Although the majority of the operations currently use the primary runway, there is inherent flexibility with helicopters allowing them to land in alternate locations other than the runway. This capability has the potential to alleviate runway congestion and effectively reduce the percentage of capacity otherwise being occupied by helicopter operations. Table 6.10 represents the capacity analysis as it relates to fixed wing only operations, with capacity considerably lower, forecasted at 39%.

Table 6.10: Capacity Analysis: Fixed Wing Operations

	2022	2042
Annual Service Volume	230,000	230,000
Annual Demand: Fixed Wing	70,762	88,597
Annual Demand: Helicopter	50,234	65,042
Fixed Wing Capacity Percentage	31%	39%

Source: Virtower, CDC Helicopter and Fixed Wing Operations Percentages for 2023.

Recommendation

Runway capacity should continue to be monitored at CDC. As capacity nears the 60% ASV planning threshold the airport should consider planning for alternate landing areas for helicopter operations to extend capacity of the runway. Future planning projects should incorporate a more in-depth analysis of these alternate landing areas which can lead to more efficient airport operations and proactive management of capacity.

6.3.2. Runway Design Standards

FAA AC 150/5300-13B, *Airport Design* was used to determine the design standards, recommendations, design considerations, and requirements for runways. The AC describes features essential for safe and efficient aircraft operations based on the runway design code (**RDC**) of the critical aircraft associated with each runway. This includes dimensions for runway width, and separation distances from fixed or movable objects as well as the safety and object free areas that surround a runway. These areas act as a protective buffer around the airport's operating surfaces.

Runway 2/20

The existing RDC for Runway 2/20 is C-III-2,400 (1/2 mile) and is not forecasted to change over the 20-year planning horizon. See Table 6.11 for the design standards and compliance.

Table 6.11: Runway 2/20 Design Standards

Design Criteria	Existing Conditions C-III-2,400	FAA Standards C-III-2,400
Runway Design		
Runway Width	150 feet	100 feet
Shoulder Width	20 feet (unpaved)	20 feet
Crosswind Component	16 knots	16 knots
Runway Protection		
Runway Safety Area Length Beyond Departure End	1,000 feet	1,000 feet
Runway Safety Area Length Prior to Threshold	600 feet	600 feet
Runway Safety Area Width	500 feet	500 feet
Runway Object Free Area Length Beyond Runway End	1,000 feet	1,000 feet
Runway Object Free Area Length Prior to Threshold	600 feet	600 feet
Runway Object Free Area Width	800 feet	800 feet
Runway Obstacle Free Zone Length	200 feet	200 feet
Runway Obstacle Free Zone Width	400 feet	400 feet
Runway 2 (not less than 3/4 mile)		
Runway Protection Zone Approach Length	1,700 feet	1,700 feet
Runway Protection Zone Approach Inner Width	1,000 feet	1,000 feet
Runway Protection Zone Approach Outer Width	1,510 feet	1,510 feet
Runway 20 (less than 3/4 mile)		
Runway Protection Zone Approach Length	2,500 feet	2,500 feet
Runway Protection Zone Approach Inner Width	1,000 feet	1,000 feet
Runway Protection Zone Approach Outer Width	1,750 feet	1,750 feet
Runway Separation		
Runway Centerline to Holding Position	300 feet	250 feet
Runway Centerline to Parallel Taxiway Centerline	400 feet	400 feet

Source: FAA, AC 150/5300-13B, *Airport Design*; Ardurra.

Runway 8/26

The existing RDC for Runway 8/26 is B-I-VIS and is not forecasted to change over the 20-year planning horizon. See Table 6.12 for the design standards.

Table 6.12: Runway 8/26 Design Standards

Design Criteria	Existing Conditions	FAA Standards
	B-I-VIS	B-I-VIS
Runway Design		
Runway Width	60 feet	60 feet
Shoulder Width	10 feet (unpaved)	10 feet (unpaved)
Crosswind Component	10.5 knots	10.5 knots
Runway Protection		
Runway Safety Area Length Beyond Departure End	240 feet	240 feet
Runway Safety Area Length Prior to Threshold	240 feet	240 feet
Runway Safety Area Width	120 feet	120 feet
Runway Object Free Area Length Beyond Runway End	240 feet	240 feet
Runway Object Free Area Length Prior to Threshold	240 feet	240 feet
Runway Object Free Area Width	400 feet	400 feet
Runway Obstacle Free Zone Length	200 feet	200 feet
Runway Obstacle Free Zone Width	400 feet	400 feet
Runway Protection Zone Approach Length	1,000 feet	1,700 feet
Runway Protection Zone Approach Inner Width	500 feet	1,000 feet
Runway Protection Zone Approach Outer Width	700 feet	1,510 feet
Runway Separation		
Runway Centerline to Holding Position	200 feet	200 feet
Runway Centerline to Parallel Taxiway Centerline	200 feet	200 feet

Source: FAA, AC 150/5300-13B, *Airport Design*; Ardurra.

Recommendation

Both runways meet the design requirements for the associated RDC. Therefore, no design criteria modifications are recommended.

Runway 8/26 is a locally funded runway that is used minimally by SUU and small general aviation users. Through conversations with stakeholders throughout the public engagement process, it was learned that SUU only uses a portion of the runway for helicopter operations. However, those operations only need an area with pavement and don't require a runway. They are conducted under strict operational guidelines aimed at minimizing disruption to the neighboring community and avoiding interference with activities on the primary runway.

Having recently been reconstructed, Runway 8/26 has a projected useful life of 20 years with proper maintenance. Nonetheless, as the pavement ages, the maintenance necessary to uphold its integrity throughout its useful life will become progressively more costly. At some point over the planning horizon, decommissioning Runway 8/26 may become more desirable than locally funding the maintenance for a runway.

Closing Runway 8/26 presents a valuable opportunity to improve operational safety and advance airport development. While some members of the flying community may have reservations about its closure, planning for a future condition where the runway is decommissioned and repurposed as a taxiway holds significant benefits. This transition would qualify the pavement for federal funding as a taxiway, providing crucial financial support. Moreover, repurposing the area will ensure strategic planning and protection for future aeronautical development, and reduce safety issues that stem from the use of the runway when the primary runway is also in use.

6.3.3. Runway Length

FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*, provides the standards and guidelines used to determine the recommended runway length using calculations based on the critical aircraft. For aircraft that weigh more than 60,000 pounds and regional jets, the AC guidance is to use the individual aircraft's operating handbook for the runway length analysis. The existing critical aircraft at CDC is the Avro RJ87, and the future critical aircraft is identified as the E-175, which meets the AC criteria to use the specific aircraft charts to determine the recommended runway length.

Following AC guidance, the runway length was evaluated using the maximum takeoff and landing weights, the elevation of the airport, and the mean daily maximum temperature of the hottest month of the year to obtain the takeoff and landing length. The greater of the two runway lengths is used as the FAA recommendation in accordance with this methodology.

Table 6.13: Runway Length Analysis

Aircraft	Takeoff Distance
Avro RJ87 (Existing)	6,000 feet
E-175 (Future)	10,000 feet

Source: FAA, AC 150/5325-4B, *Runway Length Requirements for Airport Design*; Embraer, *Embraer 175 Airport Planning Manual.*

Recommendation

The existing length of Runway 2/20 is adequate for the current critical aircraft; however, the recommended runway length for the future critical aircraft is 10,000 feet. This length has been shown on previous ALPs and the property is protected for a future extension. It is recommended that it continue to be protected and shown on the ALP as a future runway extension.

Prior to a runway extension implementation, it is recommended a detailed runway length study be undertaken to determine the precise needs of the critical aircraft and commercial operators based on typical range requirements for viable operations at CDC.

Crosswind Runway 8/26 is maintained by the sponsor with B-I safety areas. The runway is not eligible for federal funding. The existing length of 4,822 feet is considered adequate by the sponsor for the types of operations regularly and forecasted to use the runway, and no runway length adjustments are recommended.

6.3.4. Wind Coverage

The FAA advises that the primary runway at an airport be oriented in the direction of the prevailing wind. The most desirable runway orientation is based on the largest wind coverage with the minimum allowable crosswind. By aligning the runway with the predominant wind, there is an increase in operational safety due to the aerodynamic design of an aircraft. A crosswind is a wind that is not parallel with the runway, and wind coverage is the percentage of time a crosswind is below an acceptable speed. The allowable crosswind speeds are defined by the FAA by RDC, and provided in Table 6.14, with the conditions at CDC bolded.

Table 6.14: Allowable Crosswind Component by Runway Design Code

Runway Design Code	Allowable Crosswind Component
A-I and B-I (includes small aircraft)	10.5 knots
A-II and B-II	13.0 knots
A-III, B-III, C-I through C-III, and D-I through D-III	**16.0 knots**
A-IV, B-IV, C-IV through C-VI, and D-IV through D-VI	20.0 knots

Source: FAA, AC 150/5300-13B, *Airport Design*, Table B-1.

Runway 2/20 has an existing and future RDC of C-III, with an allowable crosswind component of 16 knots. A wind analysis was completed to verify the primary runway wind coverage, as shown in Table 6.15 The total wind coverage including both runways is depicted in Table 6.16.

Table 6.15: Wind Coverage Percentages for Runway 2/20

Crosswind Component	All Weather	Instrument Flight Rules	Visual Flight Rules
10.5 knots	97.14%	96.49%	97.19%
13.0 knots	98.48%	98.15%	98.50%
16.0 knots	**99.40%**	**99.33%**	**99.41%**
20.0 knots	99.82%	99.77%	99.82%

Source: FAA, Airport Data and Information Portal.

Table 6.16: Wind Coverage Percentages for Both Runways

Crosswind Component	All Weather	Instrument Flight Rules	Visual Flight Rules
10.5 knots	98.58%	98.59%	98.67%
13.0 knots	99.53%	99.94%	99.55%
16.0 knots	**99.87%**	**99.94%**	**99.88%**
20.0 knots	99.98%	100%	99.98%

Source: FAA, Airport Data and Information Portal.

The primary Runway 2/20 wind coverage is above the FAA minimum threshold of 95% for the critical aircraft's 16 knot requirement. Additionally, the 13 knot and 10.5 knot requirements for smaller aircraft are also above the FAA minimum threshold of 95%. Thus, Runway 2/20 can serve all aircraft types and a crosswind runway is not necessary for wind coverage at CDC.

Because a crosswind runway is not needed, Runway 8/26 is considered a secondary runway and is not eligible for FAA AIP funding based on wind. Because the orientation to the primary is for crosswind operations and it crosses Runway 2/20, Runway 8/26 cannot add any capacity to the airport system. Thus, overall, the runway is not at all eligible for FAA funding and can only be maintained at a local level.

Recommendation

Runway 8/26 is in excellent condition as it was completely reconstructed in 2019. It is recommended that the runway be maintained through locally funded annual pavement maintenance such as crack seals. Airport leadership will need to examine costs versus benefits long-term, and eventually determine if the runway will be decommissioned. This master plan's alternatives analysis examines future uses of the runway pavement and land areas and evaluates the ultimate highest and best use for the land.

6.3.5. Runway Designation

The normal shifting of the magnetic poles can result in the need to renumber, or redesignate, the runway. A review of the geodetic and magnetic headings indicates a redesignation is due for Runway 8/26, which was also identified in the 2018 MPU. Runway 2/20 does not meet the criteria for redesignation in the mid-term planning but is expected to be due for redesignation towards the end of the 20-year planning period.

Recommendation

Runway 8/26 should be redesignated to Runway 9/27, along with airport signage, and chart supplements, should it be decided to be maintained as a runway. Runway 2/20 should be planned to be redesignated to 3/21 around 2042 and should continue to be monitored with subsequent airport master plan projects.

6.3.6. Runway Line of Sight

A runway with a clear line of sight (**LOS**) allows pilots to visually verify the location and actions of other aircraft and vehicles operating along active runways. When runways meet LOS standards, it reduces the potential for accidents. At airports with intersecting runways, like CDC, a Runway Visibility Zone (**RVZ**) is established by connecting the points of each runway's LOS. When runways have a compliant RVZ, the visual field of view between runways enhances pilot situational awareness to avoid conflict with aircraft operating on an intersecting runway.

At airports without airport traffic control towers, any point five feet above the runway centerline must be mutually visible with another point five feet above the centerline of the crossing runway inside the RVZ.

Recommendation

The RVZ and LOS requirements are met for both Runways. The 2018 MPU identified that Runway 2/20 did not meet the individual runway LOS due to a crown near the middle of the runway. This was remedied with the runway reconstruction in 2020.

6.3.7. Runway Gradient

The slope of a runway can affect aircraft performance, pilot perception, and drainage. The FAA has established longitudinal gradient standards based on aircraft approach categories to regulate the percent of slope allowed for the safe operation of aircraft on a runway.

The maximum longitudinal gradient for runways with an aircraft approach category of C is +/- 1.5%, not to exceed +/- 0.80% within the first and last quarter of the runway (2,225 feet). The maximum longitudinal gradient for runways with an aircraft approach category of A or B is 2%.

Runway 2/20 has an overall gradient of 0.25%. The grade for the first quarter of Runway 2 is 0.6% and Runway 20 is 0.2%. Runway 2/20 is well within the runway design grade limitations.

Runway 8/26 overall grade is 0.89%, also well within the runway design grade limitations.

Recommendation

Both runway gradients are within standards and no recommendations are provided at this time.

6.3.8. Taxiway System

FAA AC 150/5300-13B, *Airport Design*, was used to determine the design standards, recommended practices, and design considerations for taxiways and taxilanes. This AC provides guidance to enhance safety and efficiency based on the TDG and ADG of the critical aircraft associated with each taxiway. This includes taxiway dimensions, configuration, and separation standards; taxiway turns and intersection design; and surface gradients. Taxiway design includes standards for safety and object free areas that provide a protective buffer around taxiways and other aircraft movement areas.

The parallel taxiway (Taxiway A) meets or exceeds TDG 3 design standards. Taxiway B was reconstructed as part of the transient apron reconstruction. Due to its location within the Runway 8/26 RSA, the taxiway was undesignated and is no longer a taxiway. Taxiway C south of Runway 8/26, meets TDG 3 design standards. North of Runway 8/26, Taxiway C meets TDG 5 standards to accommodate the large air tankers using the Interagency Fire Center base.

The runway/taxiway intersection of Taxiway C, C1, and Runway 26, was noted on the previous master plan as meeting the FAA recommendation for a "three-node concept." This intersection is indicated by the red circle shown in Figure 6.6. Taxiway C1 is used primarily for helicopter taxiing and provides fleet mix separation from fixed wing operations taxiing on Taxiway C. The area is well known by users and was determined to not be a point of concern for the Airport.

Recommendation
All taxiways at CDC meet or exceed the design requirements. It is recommended that the existing pavement be maintained at TDG 3 standards to accommodate the future condition at the airport.

6.3.9. Navigational Aids

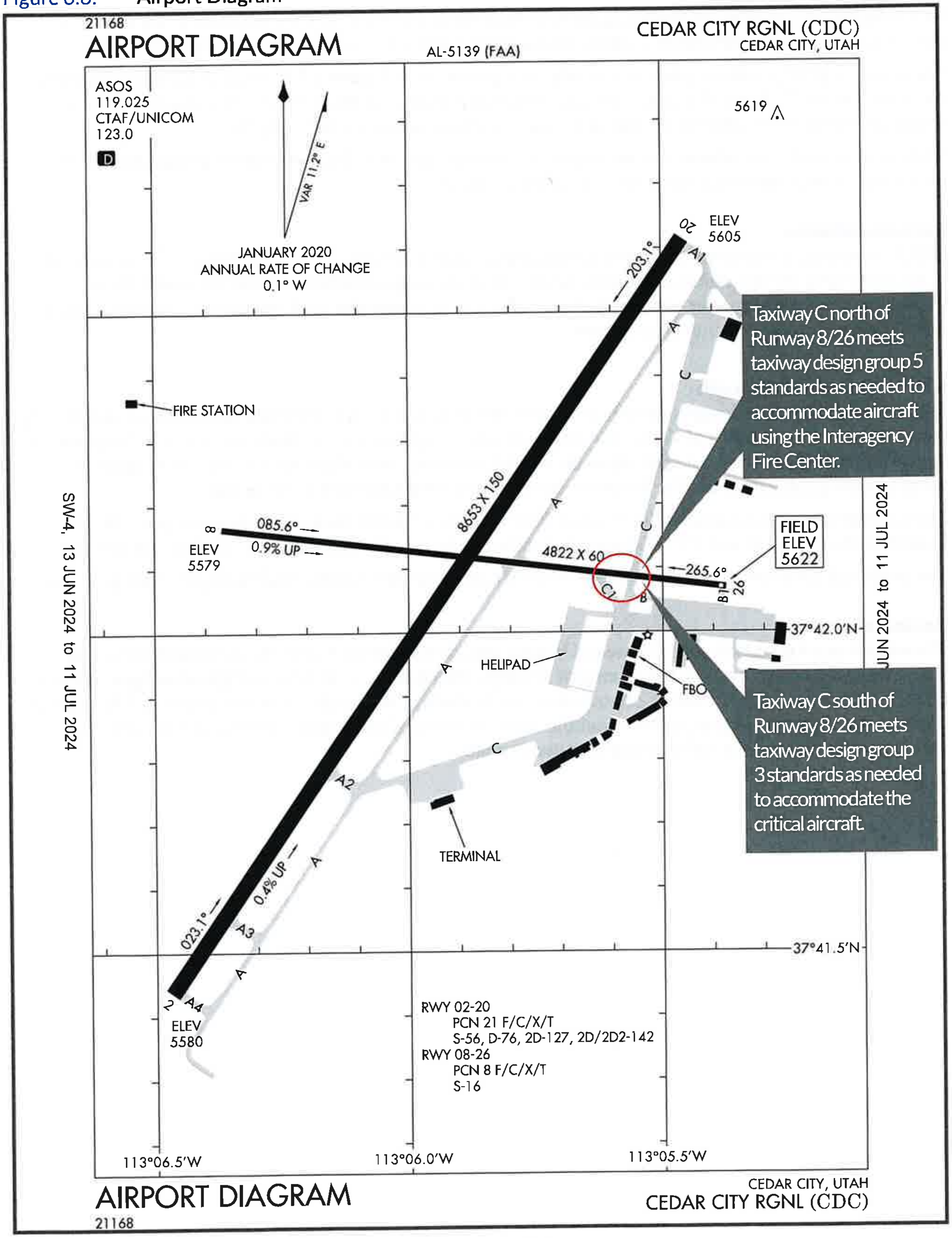
The airport is equipped with Navigational Aids (**NAVAIDS**) which include visual, electronic, and meteorological aids. These provide assistance for aircraft navigating to and maneuvering on the airport. A full list of NAVAIDS and their function is located in Chapter 4, Inventory.

The airport's NAVAIDS are in compliance with FAA standards and are sufficient for the needs of the airport. The 2020 Utah Aviation Development Strategy identifies CDC as being deficient for Runway End Identifier Lights (**REIL**) on Runway 20. However, this runway is equipped with a Medium Intensity Approach Lighting System (**MALSR**), which supersedes a REIL system, and is actually not a deficiency for lighting.

The only NAVAID found requiring enhancement is the airport beacon. Its current height and location adjacent to a large hangar creates visibility issues from the southwest portion of the airport.

Recommendation
It is recommended that the existing NAVAIDS continue to be maintained and upgraded as needed. The rotating beacon was identified as needing to be relocated or heightened to increase its visibility for incoming aircraft, with the recommendation it remains in place and is heightened to meet needs.

Figure 6.6: Airport Diagram



Source: FAA, Airport Diagram for CDC, Effective Date: Jun 13 - Jul 10, 2024.

6.3.10. Airfield Pavements

As previously discussed in Section 4.5.3., Airfield Pavements, the most recent inspection of the airport's airfield pavements was completed in 2016, with a 2022 predicted condition provided by UDOT.

The airport's 2022 predicted pavement condition is presented in Figure 6.7. Runway 2/20 was completely reconstructed in 2020 and Runway 8/26 was completely reconstructed in 2019. The transient apron is shown on the figure as needing reconstruction but was fully reconstructed in 2023.

Several sections of the taxiways and aprons were reconstructed in 2023, with the remaining pavements scheduled for near term reconstruction, as scheduled by UDOT.

Recommendation

UDOT Aeronautics tracks the pavement conditions for Utah's airports and determines priority across the state airports for rehabilitation and maintenance. These projects are scheduled into the state's Airport Capital Improvement Program and updated annually. It is recommended that the airport continue routine maintenance and preservation of pavement.

a. Pavement Strength

The required pavement design strength, or weight-bearing capacity, is an estimate based on average activity levels and is limited in terms of aircraft landing gear type and geometry (i.e., load distribution). The pavement design strength is not the maximum allowable weight. However, operations by aircraft that exceed the weight-bearing capacity should be limited to avoid accelerating pavement deterioration.

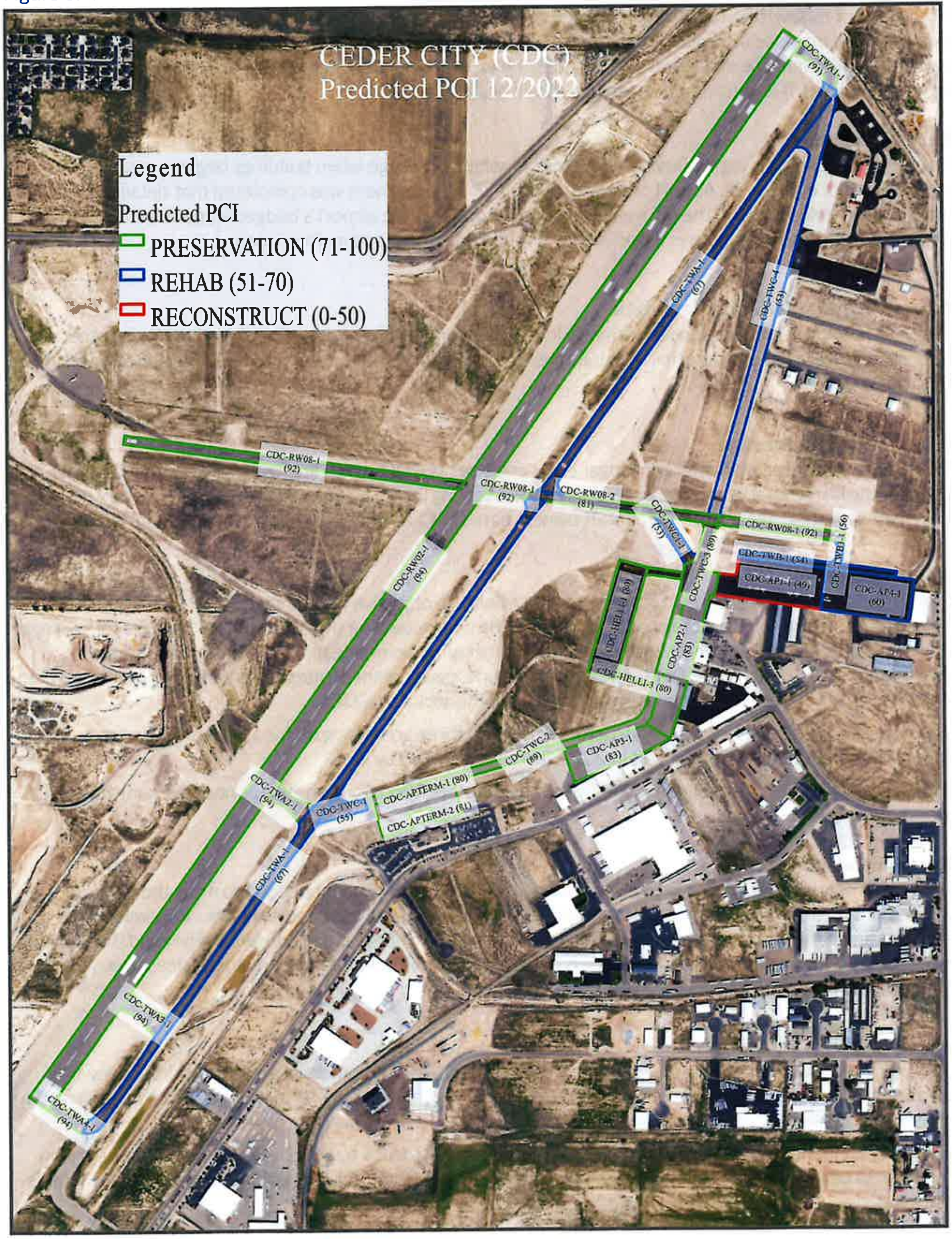
The pavement strength published for Runway 2/20 at CDC is 56,000 pounds single wheel gear, 76,000 pounds dual wheel gear, and 127,000 pounds double tandem, and 142,000 pounds dual double tandem.

The published pavement strength for the crosswind runway 8/26 is 16,000 pounds single wheel gear only.

Recommendation

The weight-bearing capacity of the runways is adequate for the aircraft currently and forecasted to use the runways. The Utah Aviation Development Strategy objective for CDC is for a single wheel gear weight bearing capacity of 60,000 pounds, or equivalent for dual wheel. Although the primary runway falls slightly short on the single wheel gear, it does meet the objective for dual wheel gear. Therefore, there are no recommended improvements for design runway strength.

Figure 6.7: Predicted Pavement Condition Index, 2022



Source: Utah Department of Transportation, Aeronautics Division.

6.4. Commercial Terminal Facilities

At the time of this writing, construction for the commercial service terminal expansion is underway. The expansion will increase the hold room to roughly 2,500 square feet, provide dedicated secure side restrooms, and a pet relief area. The expansion also includes the expansion of the baggage claim area to include a baggage carousel. It is anticipated construction will begin in 2024.

Recommendation

The terminal building is approximately 20 years old, which is the age when buildings begin to require replacement of equipment. As part of this study, a building assessment was completed that details items that may require replacement in the future. It is recommended that the airport's budget account for those items and other maintenance expenses associated with building upkeep and maintenance.

6.5. General Aviation Facilities

The *2020 Utah Aviation Development Strategy* includes several facility and service objectives for commercial airports that were used to determine requirements for each of the general aviation (**GA**) facilities listed in this section.

6.5.1. Aircraft Storage

There are an assortment of different hangar types and sizes at CDC, which are nearly all occupied, and have been for the last several years. The airport maintains a waiting list for hangars as they become available. Given the weather at CDC, the majority of aircraft owners based at CDC prefer to store their aircraft in hangars.

a. Hangars

The Utah Aviation Development Strategy sets the Minimum objective for commercial service airports to have hangar storage for 70% of based aircraft, with the understanding that the need for hangars can increase due to the propensity for severe weather conditions including severe heat in the summer, and snowy conditions in the winter, like at CDC. The Utah Aviation Development Strategy also identified that more than 44% of airports in Utah have a hangar waiting list, and this includes CDC.

The airport currently has 32 hangar structures, of which three are t-hangars for a total of 92 hangars. The forecast identified 100 based aircraft in 2022, increasing to 136 by 2042.

Although CDC meets the minimum objective set by the state, there is a continuous need for hangars at CDC as indicated by the waitlist.

Recommendation

It is recommended that land be preserved to support hangar development needed to meet the needs of the airport. It is further recommended that additional land be preserved to support changes in development patterns and hangar size needs and to ensure areas are preserved for potential demand beyond the planning period. Lastly, it was determined that there is a need to preserve land for larger maintenance, repair, overhaul (**MRO**)/FBO type hangars.

b. Aircraft Tie-Downs

The *2020 Utah Aviation Development Strategy* set the objective for commercial service airport tie-down locations to be 30% of based aircraft plus 75% of daily transient aircraft. The number of tiedowns required to meet this objective is detailed in Table 6.17.

The forecast identified 100 based aircraft in 2022, increasing to 136 by 2042. Transient operations are on average 34 per day in 2022 and expected to increase to 69 by 2042. Table 6.17 details the breakdown of tie-down needs.

Table 6.17: Aircraft Tiedowns Objectives

Year	Based Aircraft	Demand (30%)	Daily Transient Operations	Demand (75%)	Objective
2022	100	30	34	26	56
2027	108	32	41	31	63
2032	117	35	50	38	73
2042	136	41	69	52	93

Source: Ardurra.

Recommendation

There are a total of 76 aircraft tie-downs at CDC. This meets the State's objectives in the near and mid-term planning period. Long range planning should include the preservation of land for a minimum of 17 tie-down spaces.

6.5.2. Auto Parking

The primary GA parking lot is located outside of the FBO and has 106 stalls available to the public at no charge. This lot is the only parking available for the transient apron and serves as parking for the SUU maintenance program. There are an additional two unpaved parking lots with other spots available adjacent to various buildings and hangars. Additionally, the roadside parking is at capacity with cars from the flight program on Aviation Way near the terminal. There is no excess parking near the north hangars. Auto parking is at capacity in every location around the airport.

Recommendation

It is recommended that special consideration should be given to additional parking as development occurs. Potential solutions are identified with the development alternatives analysis in Chapter 7.

6.5.3. Air Cargo Facilities

As discussed in Section 4.6.3, the airport currently has two dedicated air cargo operators, West Air (FedEx feeder) and Alpine Air (UPS feeder), that use a county owned facility for cargo sorting, loading, and unloading. The facility is not used to house the aircraft.

The Air Carrier T-100 Statistics Database shows an average of 630,000 pounds (315 tons) of freight moved per year, over the last five years, peaking in 2019 with 861,407 pounds (431 tons).

Given the local development and the presence of key industrial leaders, there is notable potential for significant growth in air cargo operations throughout the planning period. To effectively prepare for this potential, it would be advantageous for the airport to initiate strategic planning for the location of a more capable cargo apron. The apron should be capable of accommodating larger aircraft and improved handling facilities, ensuring the airport is well-equipped to meet the evolving demands of air cargo operations.

Recommendation

The existing cargo facility is approximately 5,293 square feet, which is sufficient to process the existing and peak level of movement through CDC. Planning should reserve a location of several acres that is able to accommodate a larger cargo processing facility.

6.6. Support Facilities

Support facilities at CDC include fuel storage, aircraft rescue and fire fighting (**ARFF**), and snow removal equipment (**SRE**) facilities.

6.6.1. Fuel

The fuel capacity at CDC is adequate for the existing need and future need. However, the self-service fuel station is located adjacent to the transient apron in a configuration that is not ideal. Although the capacity is sufficient, a relocation of the station would increase safety and clearance for taxiing aircraft, and free desirable land for potential leasing.

Recommendation

It is recommended a new area for the self-service fuel station be preserved. A location is evaluated and determined in the alternatives analysis.

6.6.2. Aircraft Rescue and Fire Fighting

The Airport is required to meet ARFF Index requirements as described by 14 CFR Part 139. The ARFF index was reviewed as part of the forecast in Section 5.13. The airport qualifies as an Index A airport throughout the planning period.

Recommendation

It is recommended the airport continue to work closely with the existing and potential air service operators to know in advance when to prepare for a shift to ARFF Index B. Should the airport exceed more than five flights per day by an Index B aircraft, the airport would need to adjust accordingly, though this is not expected within the planning period.

6.6.3. Snow Removal Equipment

CDC is required to maintain a Snow and Ice Control Plan as described by 14 CFR Part 139. This ensures prompt removal of snow and ice from priority movement areas. The FAA recommendation for commercial airports that provide scheduled air carrier services is at least one high-speed rotary plow with at least two snowplows having equal snow removal capacity.

The *2018 Airport Master Plan* identified that the SRE building was deficient and needs to be replaced and is on the CIP as a long term project due to funding constraints.

Recommendation

The airport has the appropriate vehicles recommended by the FAA, however, much of the equipment is aging and nearing the end of its service life. It is recommended that the equipment be replaced as necessary to ensure the snow and ice control plan can be carried out effectively.

6.6.4. Utilities

Water, sewer, communications, electrical, and natural gas are all available at the airport. There is sufficient capacity to accommodate growth. New development may require additional service connections, relocation, or extensions of these utilities.

Recommendation

There is currently no issue with utility access. It is recommended that access and capacity continue to be monitored as development occurs at the airport. Additionally, it is recommended that airport management begin working with the electric utility company to prepare for increased demand for electricity related to electric vehicles and potentially electric aircraft.

6.7. Airport Traffic Control Tower

Due to the complex fleet mix and operational environment at CDC, the airport would benefit from an airport traffic control tower. An ATCT would enhance safety through aircraft coordination and control.

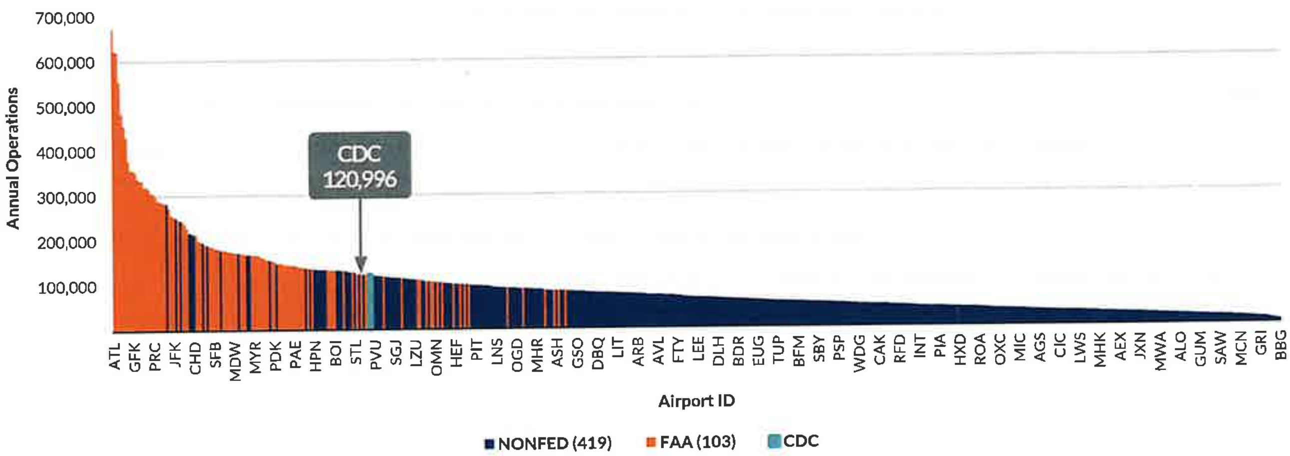
The fleet mix that regularly operates at the airport includes significant use by small and large helicopters, the full range of small, medium, and large general aviation aircraft, and commercial passenger jets. A significant number of operations are from the local flight school, which is a combination of fixed wing and helicopter, with more than half the operations being helicopter training. Additionally, the Utah Army National Guard operates at the airport with large helicopters and is in the process of developing a permanent support facility at CDC. That facility is expected to further increase helicopter activity levels.

The airport is also a major asset for aerial firefighting through the Color County Interagency Fire Center, which is a base for large air tankers, and single engine air tankers. During fire season, these operations compound the mix of operations being conducted at CDC.

At airports without a control tower, the FAA does not regulate traffic flow, runway traffic, pattern entry, or IFR traffic in a visual condition. Although there are industry recommendations for standard operations, there is no regulatory enforcement to these particular phases of flight. Thus, the mix of users, aircraft fleet, and operating rules, has the potential to create a confusing and complex operating environment, which can lead to safety concerns.

A comparison was made using annual operations between CDC and airports with federal and contract ATCTs across the United States. There are approximately 524 airports in the U.S. with ATCTs. With a baseline of 120,996 operations in 2022, CDC ranked 117 on the list in regard to total operations, as shown in Figure 6.8.

Figure 6.8: Operations and Airport Traffic Control Tower Comparison



Source: FAA; Ardurra.

Recommendation

The operational level combined with the highly diverse fleet mix operating at CDC is indicative of the eventual need for ATCT control. It is recommended the airport apply for a federal contract control tower to regulate aircraft movement, improve coordination and efficiency, and provide safety-critical communication for the diversity of fleet and number of operations currently and forecasted to operate at the airport. Locations for an ATCT are assessed in the alternatives chapter to ensure land is preserved for a future facility.

6.8. Cedar City Comprehensive Plan

A comprehensive update to Cedar City's General Plan was adopted by the city council on March 9, 2022. The following statement is identified in the plan as the community's vision for the city: "Cedar City will be known for its safe, friendly atmosphere, educational and cultural opportunities, sustainable and strong neighborhoods, and economic opportunities allowing individuals, families, and businesses to prosper." In the *Cedar City 2022 General Plan*, the city identified the following objectives to support the City's goal of protecting and expanding the viability of the Cedar City Regional Airport.

- Objective 3.1: Continue to use and review the Airport Overlay Zone to regulate airport-adjacent land uses that may restrict current or future air operations due to encroachment on flight safety zones or noise.
- Objective 3.2: Coordinate with State, federal, and industry leaders to secure long-term commitments for quality air service to Cedar City.
- Objective 3.3: Promote Cedar City as an air-served business and tourism destination and as a convenient facility for both general and commercial aviation.
- Objective 3.4: Continue to support improvements at the Cedar City Airport. The lengthening of the existing runway is among these improvements.

6.9. Facility Requirements Summary

The airport meets FAA design standards for the existing and future airport conditions. Table 6.18 presents other assessment findings and recommendations that were determined from this assessment.

Table 6.18: Airport Facilities Assessment Summary

Facility	Conclusion and Recommendations
Runway 2/20	Maintain the ultimate plan for a 10,000′ ultimate runway length
Runway 8/26	Land use planning if/when Runway 8/26 is decommissioned.
Runway Designation	Runway 8/26 designations need to be updated.
Airfield Design	The airfield complies overall with FAA standards. The geometry of taxiway fillets should be updated as needed when reconstructed.
Navigational Aids	Existing NAVAIDS are sufficient and meet State Development Strategy objectives. The rotating airport beacon should eventually be replaced in a location providing better visibility to pilots.
Airport Traffic Control Tower	Land should be preserved for a future ATCT facility.
Vehicle Parking	Additional parking for general aviation businesses is needed.
Fuel Storage	The self-serve fuel facility is not ideally located and should be relocated.
Aircraft Storage	Land should be preserved for additional hangars. Area to accommodate a minimum of 17 tie-downs should also be preserved.
Cargo Apron	Planning should designate a future cargo processing apron due to community development needs.

Endnotes

1 U.S. Department of Transportation. Federal Aviation Administration. "Advisory Circular 150/5300-13B, Airport Design." Page 2-3. March 31, 2022. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5300-13B-Airport-Design.pdf.

2 Ibid.

3 U.S. Department of Transportation. Federal Aviation Administration. "Advisory Circular 150/5060-5, Airport Capacity and Delay." September 23, 1983. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5060_5.pdf.

4 U.S. Department of Transportation. Federal Aviation Administration. "Advisory Circular 150/5300-13B, Airport Design." Page 1-13. March 31, 2022. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5300-13B-Airport-Design.pdf.

5 Ibid.

6 Ibid. Page 1-14.

7 Ibid. Page 1-13.

DEVELOPMENT ALTERNATIVES

7

TABLES

FIGURES

CHAPTER SEVEN

DEVELOPMENT

This chapter brings together many of the previous elements of this airport master plan in order to identify the development options that will best meet the needs of Cedar City Regional Airport (**CDC**), the community, and align with the strategic vision of the airport sponsor. Each of the facilities described in Chapter 4, Airside and Landside Inventory, were analyzed in Chapter 6, Facility Requirements, to determine if any improvements are needed in order to safely and efficiently accommodate the forecasted activity levels discussed in **Chapter 5, Forecast of Aviation Activity,** or to meet new or updated standards developed and adopted by the Federal Aviation Administration (**FAA**) or other regulatory agencies.

The following approach was used to identify and evaluate each of the potential development options:

- Identification of alternative ways to address facility requirements.
- Evaluation of the alternatives, individually and collectively, to develop a thorough understanding of the strengths, weaknesses, and implications of each option.
- Potential alternatives were refined after being presented to the technical advisory committee (**TAC**), community advisory committee (**CAC**), and to the public for discussion and feedback.
- Selection of the preferred alternative by the airport sponsor.

7.1. Introduction

The alternatives analysis evaluates various development options to address the needs of the airport sponsor and users. This chapter brings together many of the previous elements of this airport master plan to aid in determining a development strategy. Previous chapters outlined the existing airport structures and pavements, current and future operational levels, and airport deficiencies. This chapter integrates that background information to formulate a plan for development.

As established in Chapter 6, Facilities Requirements, the airport complies with FAA design standards for the current and future conditions. Therefore, priorities include siting an airport traffic control tower (**ATCT**), infrastructure needed for access to development areas, land use planning, hangar development, and other support infrastructure. Additionally, the alternatives include consideration of how the airport will integrate with the proposed Utah Army National Guard facility on the northwest side of the airport.

Generally, the alternatives analysis begins by identifying development solutions starting with the most restrictive development options to ensure those elements are planned appropriately before moving on to more flexible support facilities. Some elements, such as apron and hangar development, are an extension of the existing land use and do not necessarily require a formal alternatives analysis. A key objective of this chapter is to confirm and refine the proposed land use depicted on the airport layout plan (**ALP**).

Public involvement is an essential component of the airport master planning process. The alternatives described in this chapter were presented to stakeholders, including the technical advisory committee, community advisory committee, and the public, at an open house event. Feedback was gathered through these meetings to help understand what was important to the community which aided in refining alternatives. Ultimately, the sponsor determines the preferred alternatives for airport development.

7.2. Runway Alternatives

Runways are the most critical components of airport infrastructure, serving as the primary surfaces for aircraft takeoff and landing operations. The design must accommodate the current and future need while adhering to regulatory requirements. This section identifies the strategic planning considerations for the airport's runways. It focuses on their capability to support existing traffic and allow future growth. It discusses the potential of runway extensions, the impact of a changing fleet mix, and the importance of preserving areas for aeronautical use.

7.2.1. Runway 2/20

As identified in the facility requirements chapter, Runway 2/20 meets the needs for the existing and future airport condition. Previous planning efforts have preserved the option for an ultimate runway extension to 10,000 feet, which is being retained with this plan. Given the transitioning fleet of commercial airlines, and the potential for expanded service at CDC, protecting for a future runway to accommodate larger aircraft is justified. Additionally, a runway extension would accommodate the U.S. Forest Service (**USFS**) very large air tankers (**VLAT**) which occasionally operate at the airport. Current very large air tanker operations are weight limited due to the pavement strength and length of the runway. While there are no plans to base a very large air tanker at CDC, protecting for a future runway extension remains a strategic consideration.

7.2.2. Runway 8/26

Runway 8/26 is not eligible for federal funding due to the sufficient wind coverage provided by the primary runway. Runway 8/26 was reconstructed in 2019 using local and state funds and continues to be maintained with such funds. The future of the runway remains an ongoing discussion between the city and state. Having recently been reconstructed, Runway 8/26 has a projected useful life of 20 years with proper maintenance from the time it was reconstructed. Nonetheless, as the pavement ages, the maintenance necessary to uphold its integrity throughout its useful life will become progressively more costly. At some point decommissioning Runway 8/26 may become more desirable than locally funding the maintenance.

The current runway configuration at CDC presents operational challenges. The division of eastern hangar development into north and south sections created operation and developmental inefficiencies. During meetings with stakeholders, it was noted that concurrent use of Runway 8/26 while Runway 2/20 is active does occur on occasion and can unexpectedly affect the flow of operations on Runway 2/20. The primary users of Runway 8/26 include Southern Utah University (**SUU**) helicopter students and several tenants with aircraft based near Runway 26. The Southern Utah University helicopter flight department avoids the use of Runway 8/26 as much as possible and indicated their operations would be unaffected by the decommissioning of the runway.

An evaluation was conducted to compare decommissioning the runway versus self-funding its maintenance, as detailed in Table 7.1. The financial impacts and developmental constraints associated with maintaining the runway pose significant challenges to the airport's long-term financial sustainability. Therefore, decommissioning the runway ranks highest in the evaluation. While maintaining Runway 8/26 offers some convenience, this benefit is limited and adds operational complexity for most users. Consequently, the convenience aspect was rated a 3 out of 4.

Overall, decommissioning the runway appears a financially prudent option However, given the current pavement is in good condition, an immediate decision is unnecessary. Should the city decide to no longer support the crosswind runway, it is important the area be maintained as aeronautical use. The development alternatives proposed in this study incorporate a phased approach, assuming the runway will be converted into a taxiway in the mid- to long-term planning period.

Table 7.1: Runway 8/26 Evaluation Matrix

Evaluation Criteria	Decommission Runway	Maintain Runway
Financial Impact	4	1
Development Opportunity	4	1
Ground Operations	4	2
Runway Crossings	4	1
User Convenience	2	3
Total	**18**	**8**

Poor	Fair	Good	Excellent
1	2	3	4

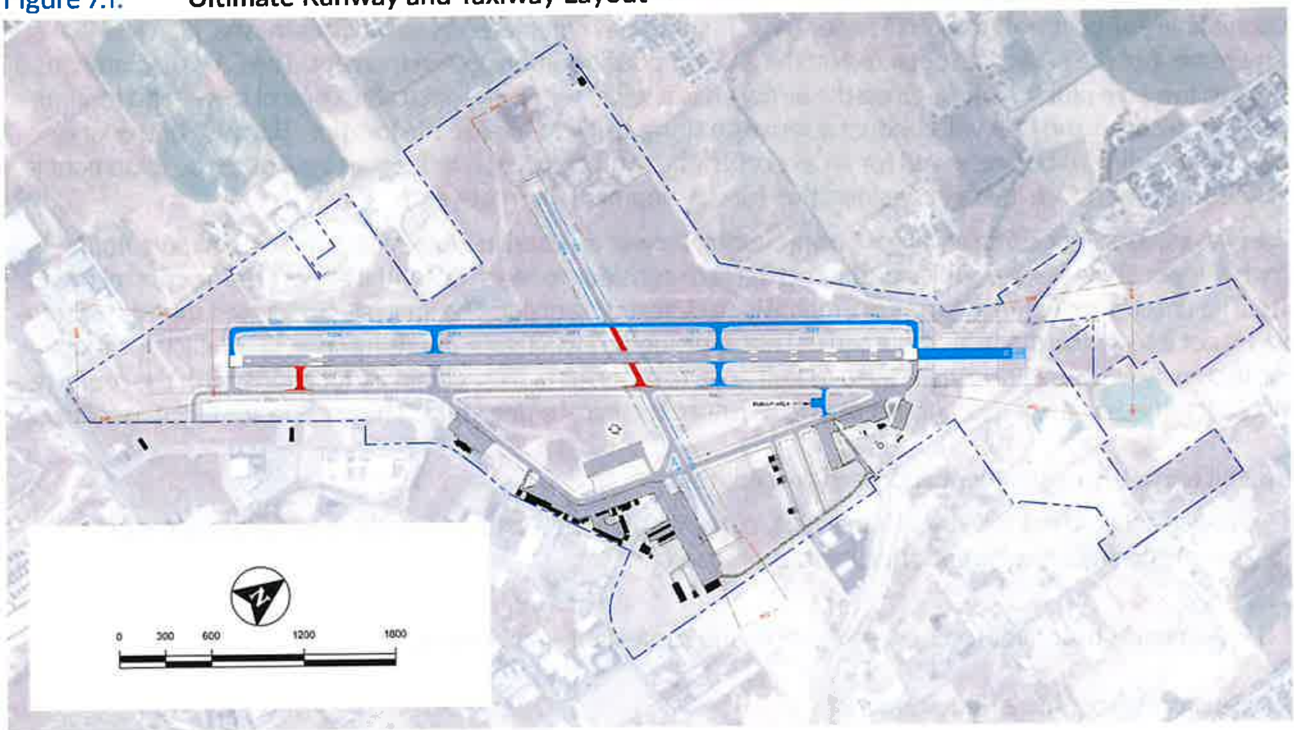
7.3. West Side Taxiway Access

The west side of the airport has been protected for ultimate hangar development in previous planning studies, and that approach is carried forward in this study. Additionally, the Utah National Guard has plans to construct an army aviation support facility off airport property, to the northwest. Although agreements and planning are still underway, the airport needs to plan for the integration of this facility via taxiway access that will integrate with future development of the area.

Because taxiways are regulated by FAA design standards, it is prudent to protect the space needed so development does not encroach on the potential taxiway. Therefore, a full-length parallel taxiway on the west side of Runway 2/20 is included as a development option to preserve the space and provide a conceptual idea of the layout. Ultimately, the buildout of the taxiway will be based on a phased approach, being built in sections as access to the west side of the airport becomes necessary.

Figure 7.1 presents the ultimate runway and taxiway condition of the airport, including the primary runway extension, full parallel taxiway for west side access, and the conversion of the crosswind runway into a taxiway. Design standards dictate the primary runway cannot have a taxiway crossing in the middle third, therefore the proposed taxiway connectors and crossings remain outside of the middle third for the future and ultimate runway length to ensure FAA compliance. Additionally, the layout includes elements being carried forward from the previous airport layout plan including the removal of Taxiway Connector D2, and a run-up area near the Runway 20-end. This layout will be used throughout the rest of the alternatives analysis to ensure the ultimate layout will not be impacted by planned development, and to ensure appropriate access is provided for all development areas of the airport.

Figure 7.1: Ultimate Runway and Taxiway Layout



LEGEND

AIRPORT BOUNDARY	EXISTING PAVEMENT
ROFA — RUNWAY OBJECT FREE AREA	PROPOSED PAVEMENT
ROFZ — RUNWAY OBJECT FREE ZONE	EXISTING BUILDING
TOFA — TAXIWAY OBJECT FREE AREA	PAVEMENT REMOVAL
RPZ — RUNWAY PROTECTION ZONE	
RPZ — FUTURE RPZ	

Source: Ardurra

7.4. Airport Traffic Control Tower Alternatives

A preliminary airport traffic control tower (**ATCT**) siting was completed as part of this master plan and is a requirement of the FAA to be depicted on the ALP for consideration of development. The FAA recommends a three to five acre plot for siting. Once the airport has applied for an airport traffic control tower and funding has been secured, the FAA will conduct a separate siting study to finalize the location. Because of the large footprint needing to be preserved for an airport traffic control tower, it influences how other development is planned, and therefore is a key consideration for development alternatives.

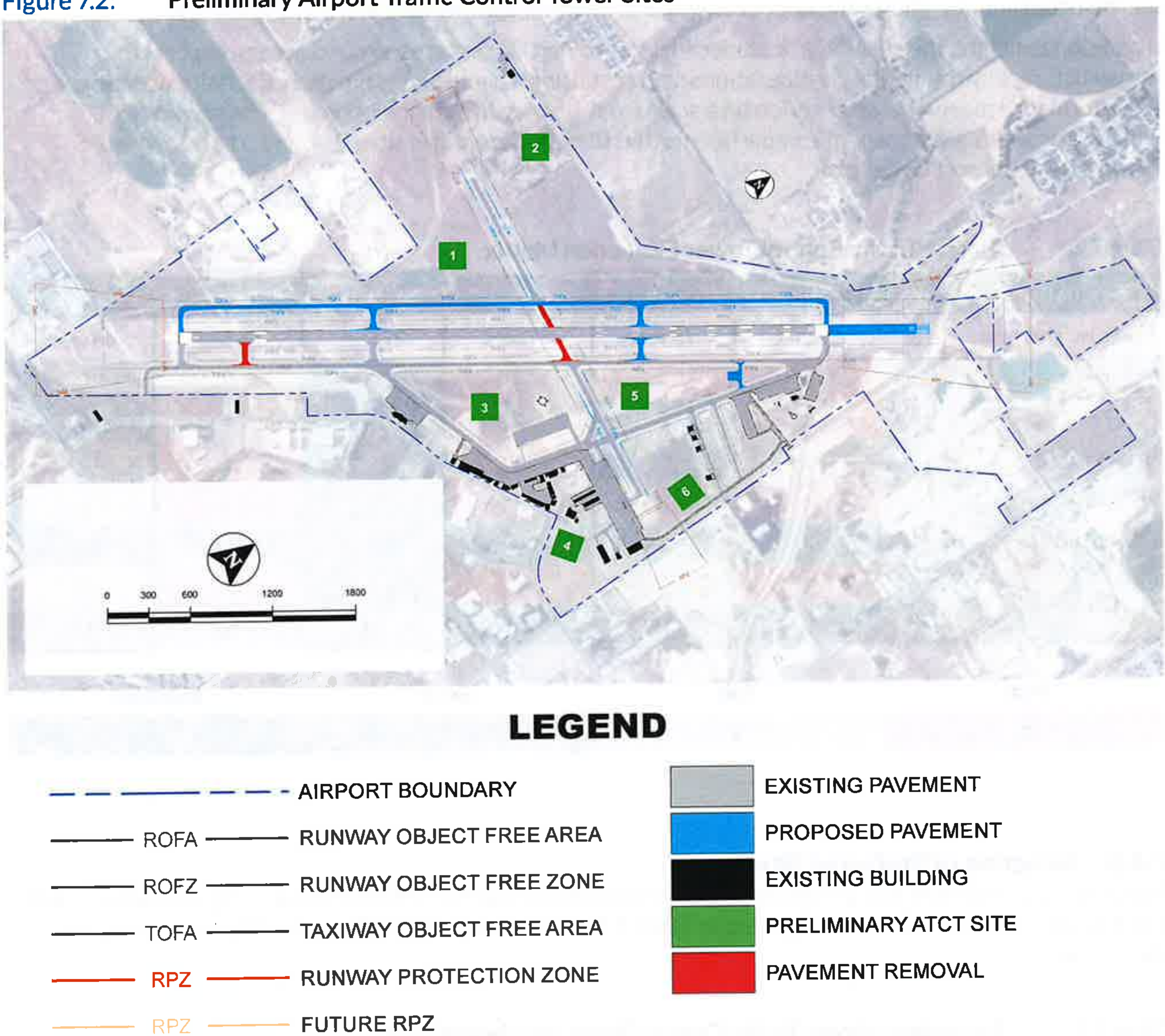
The FAA guidance for siting an airport traffic control tower is found in FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, which outlines criteria to consider for each potential airport traffic control tower site. The criteria are listed in terms of emphasis, in descending order. The analysis performed for this master plan is not a technical siting analysis and did not thoroughly investigate the siting criteria for each location. For this analysis, the criteria were used as guidance to determine six preliminary locations, with the preferred three identified on the airport layout plan for a future technical siting study. The criteria are listed as follows:

1. Limit impacts to instrument approach procedures.
   - The site should not adversely impact any current or planned instrument approach procedures or penetrate any safety areas or protected airspaces.
2. Limit impacts to communication, navigation, and surveillance equipment.
3. Visibility Performance Requirements
   - The tower must have an unobstructed view of all movement areas (e.g., runways, and taxiways).
   - An air traffic controller must be able to detect an object on all surfaces at least 95.5% of the time.
   - The minimum line of sight angle should be equal to or greater than 0.80 degrees.
4. Operational Requirements
   - The tower must be orientated where the primary operational view avoids direct glare or indirect glare off other surfaces. The first choice is to have it facing north or alternately east, or west, or finally south.
   - Visibility of all airport surfaces should be considered.
5. Economic Considerations.
   - Considerations such as tower height, land use planning, utilities and cabling, site access, and security should be considered.

7.4.1. Preliminary Site Selection

Figure 7.2 depicts the location of the preliminary tower locations. The area east of the commercial terminal was discussed as a potential tower location. However, it was determined it could hinder any future terminal expansion. Consequently, stakeholders agreed that location was not a feasible option for a tower and was removed from consideration.

Figure 7.2: Preliminary Airport Traffic Control Tower Sites



Source: Ardurra

7.4.2. Preliminary Site Evaluation

Following the guidance in FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, six preliminary sites were identified and analyzed. Using the FAA's Air Traffic Control Visibility Analysis Tool, a preliminary height evaluation was conducted for each tower site. This height analysis does not consider line of sight for any existing or planned development. Therefore, heights are subject to change with a subsequent technical analysis. As depicted in Table 7.2, the closer the tower is to the runway, the taller it must be to ensure the same level of visibility a shorter tower would have if it were situated further away. This is to maintain an unobstructed line of sight for the entire runway and controlled movement areas at the airport.

In addition to height, the evaluation included impacts to Part 77 surfaces, ground access, impacts to infrastructure, environmental considerations, and cost using a high-level estimation. Each site was ranked on its performance meeting each criterion on a scale from 1 to 4, with 1 being poor and 4 being excellent. Table 7.2 provides a summary of comparison for the sites, and identifies sites 2, 4, and 6 to be carried forward to the airport layout plan.

Table 7.2: Airport Traffic Control Tower Evaluation Matrix

Evaluation Criteria	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6
Tower Height	92 feet	78 feet	67 feet	27 feet	56 feet	46 feet
Minimum Eye Level	1	1	2	4	2	3
Part 77	1	3	2	4	2	4
Ground Access	2	4	1	4	1	2
Infrastructure	1	2	1	3	1	2
Environmental	3	3	3	3	3	3
Cost	1	2	1	3	1	2
Total	9	15	10	21	10	16

Poor	Fair	Good	Excellent
1	2	3	4

7.4.3. Selection of Preferred Sites

A secondary assessment was completed for consideration during the FAA's technical siting assessment, with site 4 being the preferred site, as depicted in Table 7.3. All three locations will be identified on the airport layout plan.

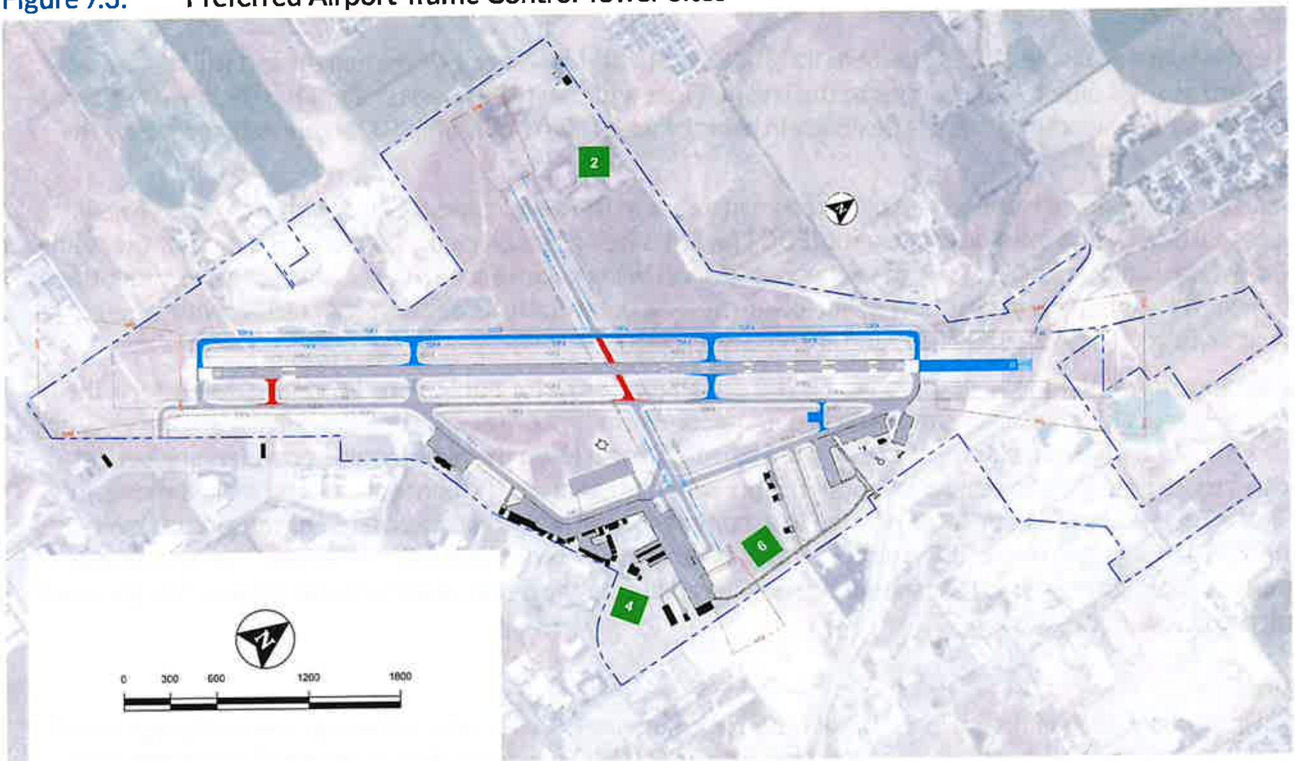
Table 7.3: Secondary Airport Traffic Control Tower Site Assessment

Evaluation Criteria	Site 2	Site 4	Site 6
Impacts to Development	**Poor location regarding primary traffic pattern, very tall height requirement.**	**May be subject to height requirements based on existing facilities. Impacts ultimate hangar development area.**	**May be subject to height requirements based on existing facilities. Impacts prime, near-term hangar development area.**

Poor	Fair	Good	Excellent
1	2	3	4

Figure 7.3 depicts the preferred tower sites that will be identified on the airport layout plan for future technical analysis by the FAA.

Figure 7.3: Preferred Airport Traffic Control Tower Sites



LEGEND

AIRPORT BOUNDARY	EXISTING PAVEMENT
ROFA — RUNWAY OBJECT FREE AREA	PROPOSED PAVEMENT
ROFZ — RUNWAY OBJECT FREE ZONE	EXISTING BUILDING
TOFA — TAXIWAY OBJECT FREE AREA	PREFERRED ATCT SITE
RPZ — RUNWAY PROTECTION ZONE	PAVEMENT REMOVAL
RPZ — FUTURE RPZ	

Source: Ardurra

7.5. Hangar Development

Although the number of hangars at CDC meets the state plan objective, both this master plan and the *2020 Utah Aviation Development Strategy* identify CDC as being deficient due to the hangar waiting list. As identified in the forecast, the number of based aircraft at CDC is expected to increase from 100 in 2022 to 136 by 2042.

There is space available at CDC that has long been protected for hangar development and will be carried forward as such, albeit with changes to the layout. Once a property has been designated for aeronautical use and hangar development, there is flexibility in how the area is built out, which is largely determined by the developer's needs.

Industry and regional trends have indicated an increase in the development of large maintenance, repair, overhaul (**MRO**) and fixed base operator (**FBO**) facilities being established at airports. Because of the prime real estate available at CDC, and the economic growth being experienced, a large area previously identified for general aviation hangars is now being looked at for a potential future FBO/MRO facility with larger hangars to accommodate business and corporate aircraft.

In conjunction with hangar development is the growing concern for public vehicle parking. Therefore, the hangar layouts identify associated vehicle parking for use in those areas. Figure 7.4 depicts an overview of the ultimate hangar development areas, and Figure 7.5 focuses on the near to mid-term planning period with a more detailed conceptual layout of the primary hangar area. The conceptual hangar area shown in Figure 7.5 is expected to be large enough to accommodate all additional forecasted based aircraft over the 20-year planning period if the airport traffic control tower is not located on that site. The following are important design elements that should be considered during the design and implementation of hangars and infrastructure in this area:

Airspace

Full implementation of the buildout is not possible if Runway 8/26 remains active because buildings would penetrate the Part 77 transition surface. The large FBO/MRO hangar is sited to the north to enable near-term development compatible with Runway 8/26. Figure 7.5 shows the 30-foot building restriction line (**BRL**). Buildings inside of the building restriction line closer to Runway 8/26 would need to be progressively shorter to comply with Part 77 requirements.

Vehicle Access

Currently, there is no public access to the future hangar development area. Tenants and users must access a gate (either off Airport Road adjacent to the Bureau of Land Management (**BLM**) apron or within the T-hangar areas) and drive along a vehicle service road (**VSR**) parallel to Airport Road inside the airport's fence. The concept in Figure 7.5 proposes a public road into the area, enabling hangar development with public parking and access on one side of the building.

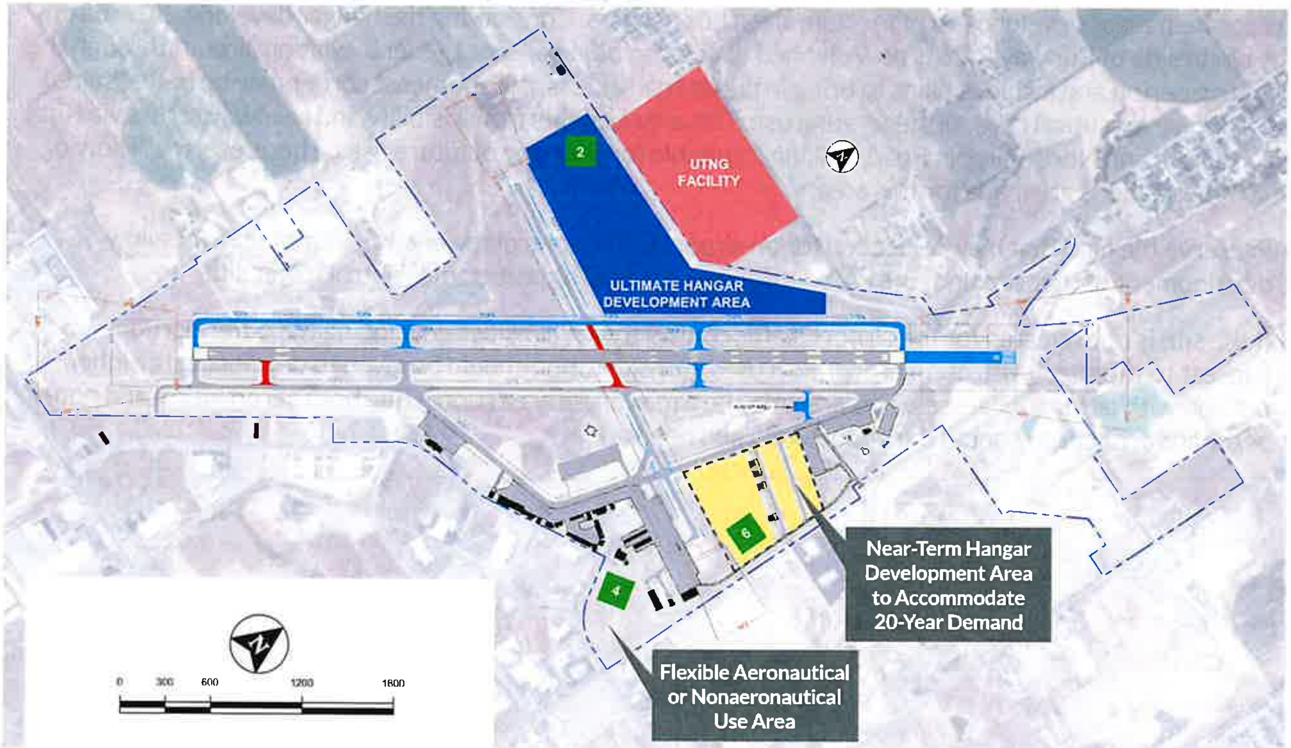
The key to this plan is ensuring fuel trucks have a route between the current FBO and the Bureau of Land Management apron. Currently, they use the vehicle service road parallel to Airport Road. Introducing a public road into the development area would sever this vehicle service road with a security fence, necessitating two electric gates (one on each side) to allow fuel trucks to move efficiently to the Bureau of Land Management apron, as they cannot use public roads. To compensate, the study proposes a vehicle service road parallel to Taxiway C, outside the object-free area, which would be highly advantageous but can only be implemented after Runway 8/26 is decommissioned. Future planning should consider the drainage requirements of the proposed vehicle service road and its impact on existing stormwater retention areas.

There are various ways to configure the hangar development area to accommodate hangars of different sizes and allow public access. The concept developed in this study maximizes the number of hangars by replacing public roadways and parking areas. Depending on demand, this plan can be adjusted to include more public roadways and parking areas.

The southeast corner of land, where airport traffic control tower Site 4 is located, was previously planned for corporate hangar development of medium sized box hangars. Considering the hangar development area on the north side of Runway 8/26 is now planned to accommodate all sized general aviation aircraft through the planning period and includes plans to bring in public road access, the southeast corner may be better suited for a non-aeronautical revenue generating use. This area benefits from visibility and roadway access via Kitty Hawk Drive and North Airport Road, making it suitable for a variety of future uses. Therefore, the following recommendations are made for this area:

- Preserve the land that may be needed for an airport traffic control tower site – do not lease or allow development of that site until the FAA determines the final airport traffic control tower site.
- If the site is not selected for the airport traffic control tower, consider developing the outer portion (closest to the road) with non-aeronautical uses. Consideration should be given to developing the inner portion with aeronautical uses. This area may be a mixed-use area supporting both aeronautical and non-aeronautic functions should the opportunity and need arise.

Figure 7.4: **Ultimate Hangar Development Layout**



LEGEND

AIRPORT BOUNDARY

ROFA — RUNWAY OBJECT FREE AREA

ROFZ — RUNWAY OBJECT FREE ZONE

TOFA — TAXIWAY OBJECT FREE AREA

RPZ — RUNWAY PROTECTION ZONE

RPZ — FUTURE RPZ

EXISTING PAVEMENT

PROPOSED PAVEMENT

EXISTING BUILDING

PROPOSED BUILDING AREA

PREFERRED ATCT SITE

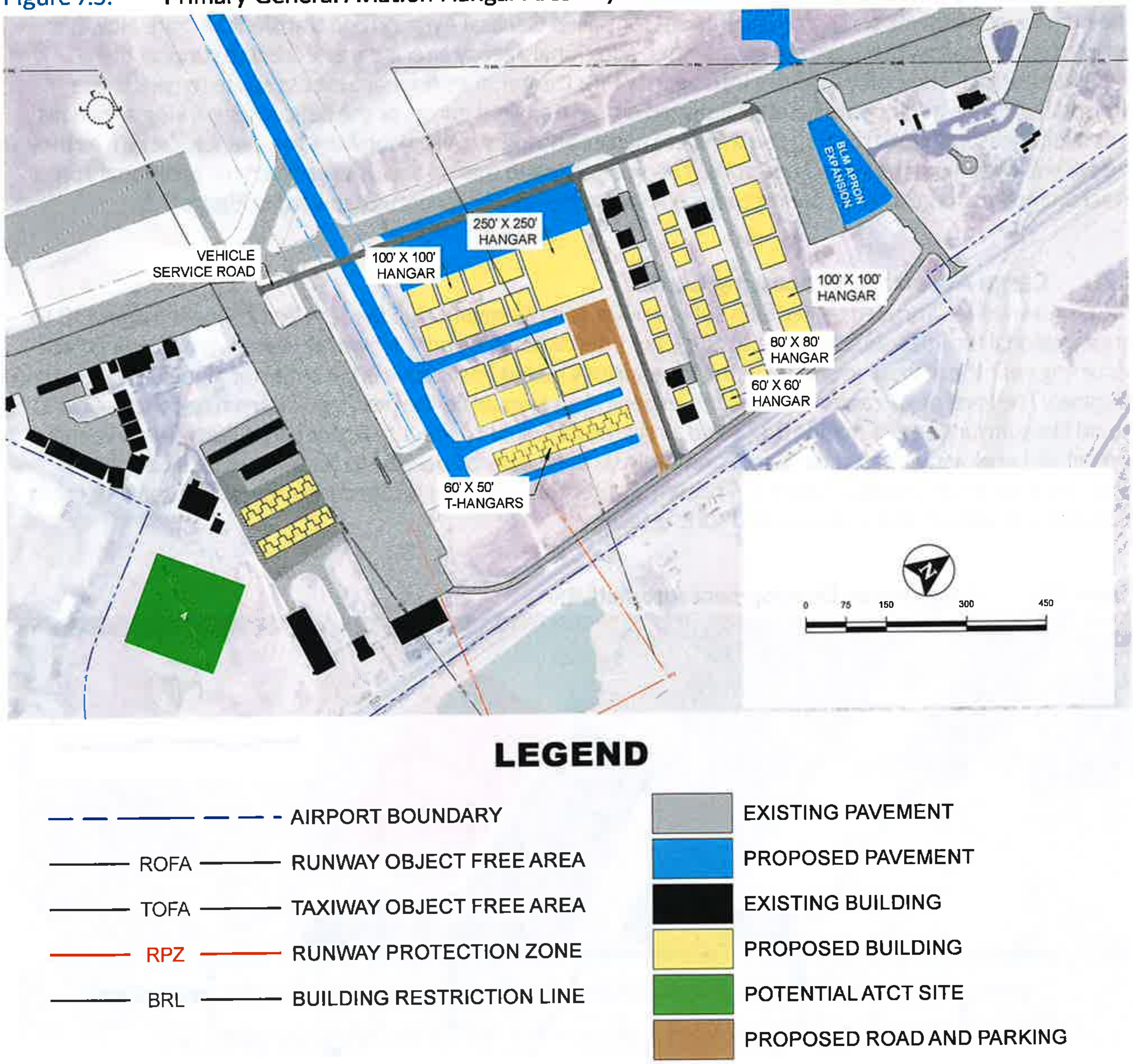
ULTIMATE HANGAR DEVELOPMENT

UTAH NATIONAL GUARD FACILITY

PAVEMENT REMOVAL

Source: Ardurra

Figure 7.5: Primary General Aviation Hangar Area Layout



Source: Ardurra

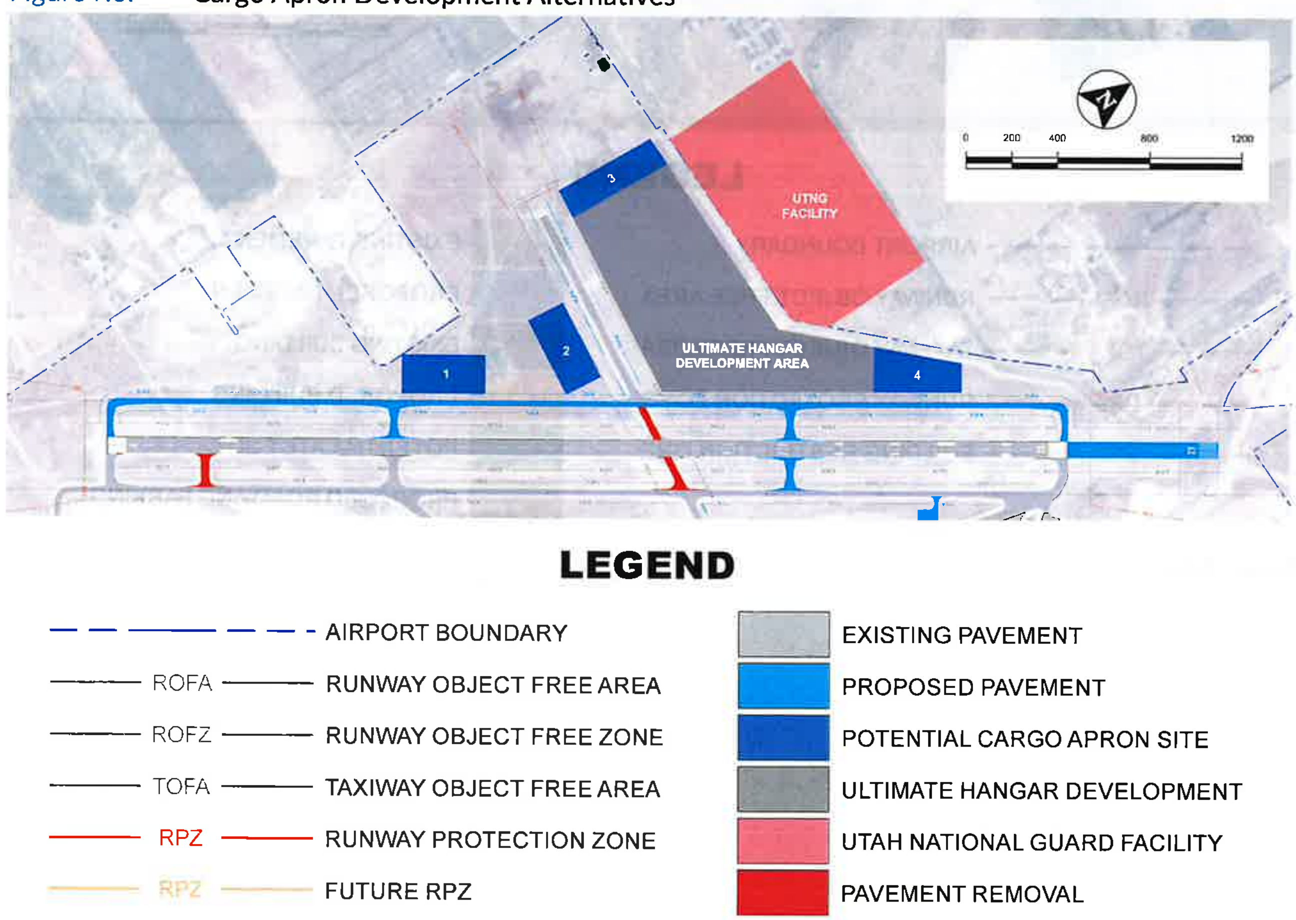
7.6. Aircraft Tiedowns

The number of tiedowns and apron is sufficient for based General Aviation and transient aircraft. However, during the fire season, there are occasions when additional agency aircraft are needed to support the firefighting effort. The Color Country Interagency Fire Center does not have excess space to park these aircraft, therefore, additional aircraft are staged on the transient apron, or the helicopter parking area. This puts a mild seasonal constraint on the transient apron, and logistically incumbers the agency aircraft, as they are parked away from the base. Therefore, it is recommended that an area is preserved for additional apron to accommodate large aircraft parking adjacent to the fire center apron, as depicted in Figure 7.5.

7.7. Cargo Apron and Processing Center

The city-owned facility used by FedEx is sufficient for today's small cargo feeders that connect from CDC to larger regional facilities such as those at Salt Lake International Airport. However, due to new development occurring near the airport, including at the Iron Springs Inland Port, there is potential for significant growth in air cargo. The level of air cargo that could be expected and would be the next step up from regional feeders would likely include use of Boeing 737 sized aircraft that would connect to larger cargo hubs. To serve that level of air cargo activity, an area of approximately six acres may be needed to accommodate a cargo processing apron and facility. Figure 7.6 presents potential sites for a future cargo operating area that could support large aircraft and an associated sorting facility.

Figure 7.6: Cargo Apron Development Alternatives



Source: Ardurra

An evaluation matrix was developed to determine the most suitable location, presented in Table 7.4.

The matrix criteria included taxiway access, for which every location would need some extension for access. Location 1 scored best for this criteria based on the ease at which it could be connected to the existing airfield, as well as be integrated into the ultimate development.

Public road access is a critical component for cargo operations, which will enable large trucks ease of access to and from the apron. Locations 3 and 4 scored the highest on this criterion as they are located directly off the existing road.

Table 7.4: Cargo Apron Evaluation Matrix

Evaluation Criteria	Site 1	Site 2	Site 3	Site 4
Taxiway Access	4	2	1	3
Public Road Access	2	2	4	4
Impact to Existing Infrastructure	4	4	4	3
Implementation Feasibility	4	4	1	3
Total	14	12	10	13

Poor	Fair	Good	Excellent
1	2	3	4

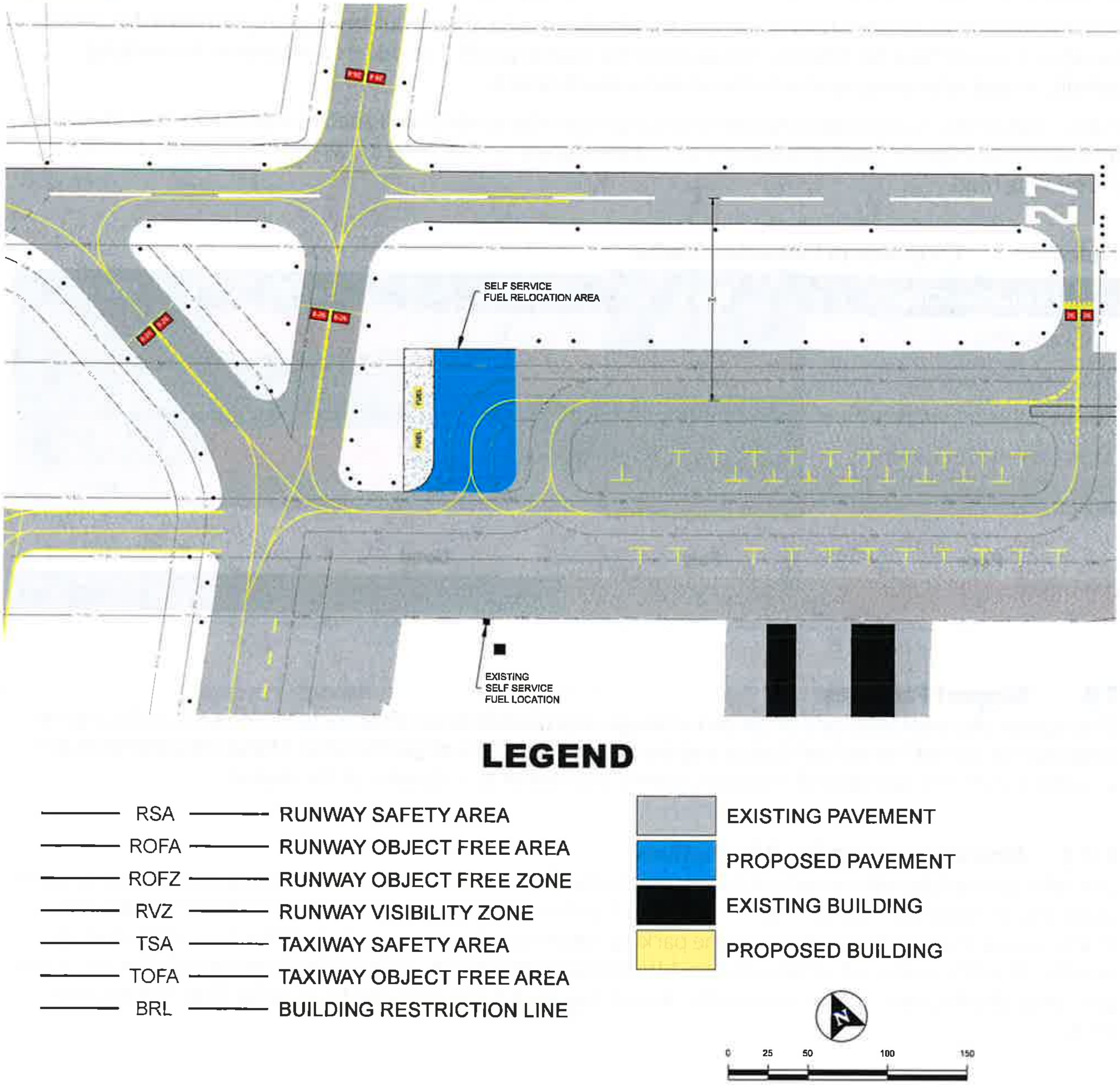
7.8. Support Facilities

This master plan evaluated and proposed strategic improvements to infrastructure elements, including the relocation of the self-serve fuel station and the adjustment of the airport beacon. These enhancements are aimed at optimizing operational efficiency, safety, and overall functionality of the airport.

7.8.1. Aircraft Fuel Facility Alternatives

The relocation of the self-serve fuel station was a recommendation in previous planning efforts and has been confirmed through this master plan. The current location has proven to be inefficient and can hinder the maneuvering of aircraft in and around the parking apron. By relocating the fuel station to a more strategic position, it will be better situated to support the existing operations, and positioned to support the continued growth as development occurs around the airport. Figure 7.7 identifies the location for the relocated fuel tanks.

Figure 7.7: Recommended Self-Service Fuel Station Location



Source: Ardurra

7.8.2. Airport Beacon

In 2018, the airport beacon was replaced with a taller beacon remaining in the same location. However, subsequent development at the airport has obscured the beacon from certain locations around the airport. To address this issue, it is recommended the beacon remain in its current position but be heightened further to ensure visibility from all directions and altitudes within the vicinity of the airport. Maintaining the beacon in its existing location and increasing its height is a cost-effective solution. This approach avoids the need for significant infrastructure changes or the complexities associated with relocating the beacon. Instead, the focus can be on extending the structure to ensure it rises above any obstructions caused by recent development.

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ENVIRONMENTAL OVERVIEW

8

TABLES

FIGURES

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CHAPTER EIGHT

ENVIRONMENTAL

This chapter presents environmental considerations and factors pertinent to the Cedar City Regional Airport (**CDC**) that will assist in long-term planning for the airport. The information used in this chapter was compiled from numerous sources; including multiple federal and Utah state agencies.

8.1. Introduction

The purpose of considering environmental factors in airport master planning is to help the airport sponsor evaluate potential development alternatives and expedite future environmental evaluations. Airport planning provides the basis for a project's purpose and need and aids in completing an environmental evaluation to fulfill requirements set forth by the National Environmental Policy Act (**NEPA**) of 1969.

The NEPA process evaluates the environmental effects of a federal undertaking, including its alternatives. There are three levels of analysis: categorical exclusion (**CATEX**) determination; preparation of an environmental assessment with a finding of no significant impact (**EA/FONSI**); and preparation of an environmental impact statement (**EIS**).

Categorical Exclusion

A project may be categorically excluded from a detailed environmental analysis if it meets certain criteria that a federal agency has previously determined as normally having no significant environmental impact.

Environmental Assessment

At the second level of analysis, a federal agency prepares an environmental assessment to determine if a federal undertaking would significantly affect the environment. If the answer is no, the agency issues a finding of no significant impact, which may include measures to mitigate potentially significant impacts.

Environmental Impact Statement

If the environmental assessment determines that the environmental consequences of a proposed federal undertaking may be significant, an environmental impact statement (**EIS**) is prepared. An environmental impact statement is a more detailed evaluation of the proposed action and alternatives.

8.2. Air Quality

The Clean Air Act (**CAA**) is the primary statute related to air quality. It regulates air pollutant emissions from stationary and mobile sources and authorized the U.S. Environmental Protection Agency (**EPA**) to establish National Ambient Air Quality Standards (**NAAQS**) for six common air pollutants. These pollutants, known as criteria pollutants, include carbon monoxide (**CO**), nitrogen dioxide (**NO_2**), ozone (**O_3**), particulate matter (**PM_{10}** and **$PM_{2.5}$**), sulfur dioxide (**SO_2**), and lead (**Pb**).[1] Areas where the air quality meets or exceeds the national standard for these criteria pollutants are designated as attainment areas. However, if the air quality does not meet the national standard, the EPA designates the area as a nonattainment area. Nonattainment areas are then required to have a state implementation plan (**SIP**) that details the emission reduction strategies to bring nonattainment areas into attainment. After the air quality in that area once again meets the national standard, the EPA designates the area as a maintenance area.

According to the EPA Nonattainment and Maintenance Area Dashboard, the airport is in an area that is in attainment for all criteria pollutants.[2] The Utah Department of Environmental Quality (**DEQ**) is the state agency delegated by the EPA for issuing permits related to air quality.[3] Temporary air quality impacts during construction would be short-term and localized. Emission reduction strategies are recommended to minimize air quality impacts. This includes re-using materials on site, using locally sourced materials to reduce the number of vehicle trips and trip lengths, and using dust control measures during construction.

8.3. Biological Resources

Section 7 of the Endangered Species Act (**ESA**) applies to the actions proposed or performed by federal agencies and sets forth requirements to determine if the proposed actions may impact endangered or threatened species. In accordance with Section 7 of the Endangered Species Act, the FAA must initiate consultation with the U.S. Fish and Wildlife Service (**USFWS**) and National Marine Fisheries Service (**NMFS**) if the FAA determines that an action may affect a threatened or endangered species or designated critical habitat.

8.3.1. Federally-Protected Species and Essential Fish Habitat

The U.S. Fish and Wildlife Service Information for Planning and Consultation (**IPaC**) online database provides information regarding federally designated proposed, candidate, threatened, and endangered species, final critical habitats, species of conservation concern, and service refuges that may occur in an identified area or may be affected by proposed activities.[4]

According to this database, the southwestern willow flycatcher (*Empidonax traillii extimus*) is an endangered species that could potentially occur on or near airport property, and the Utah prairie dog (*Cynomys parvidens*) and Ute ladies'-tresses (*Spiranthes diluvialis*) are threatened species that could potentially occur on or near airport property. This database also identified the monarch butterfly (*Danaus plexippus*) as a candidate species that could potentially occur on or near airport property, and the California condor (*Gymnogyps californianus*) as a non-essential experimental population that could potentially occur on or near airport property. The Information for Planning and Consultation report did not identify any designated critical habitats or wildlife refuge lands at the airport.

In accordance with FAA AC 150/5200-33C, *Hazardous Wildlife Attractants on or near Airports*, and FAA CertAlert No. 98-05, *Grasses Attractive to Hazardous Wildlife*, the airport is actively managed to deter wildlife and control vegetation.[5] The developed areas at the airport have been graded, paved, or contain airport infrastructure while the majority of undeveloped areas contain low-lying grasses and forbs that are regularly mowed. Undeveloped areas around Coal Creek contain various herbaceous vegetation and shrubs that may provide wildlife habitat.

Southwestern Willow Flycatcher
This small bird species is less than six inches from head to tail and nests in dense riparian habitats composed of cottonwood or willow trees and tamarisk shrubs. Saturated soils, standing water, or nearby streams, pools, or isolated, spring-fed wetlands, are a component of nesting habitat.[6] Coal Creek (described in Section 8.15, Water Resources) transects the northern portion of the airport, and its watershed contains various herbaceous vegetation, shrubs, and trees such as pinyon pine, juniper, sagebrush, bitterbrush, and cliffrose.[7] Although not composed of cottonwood or willow trees, Coal Creek may provide the type of riparian habitat required by this species.

Utah Prairie Dog
Prairie dogs are part of the Sciuridae family of rodents. Utah prairie dogs prefer habitats located in swales where moist vegetation is present for long periods of the growing season. They also require well-drained soils for burrow formation.[8] Since Coal Creek is perennial, it provides moist vegetation throughout the year that may be a suitable habitat for the Utah prairie dog.

Ute Ladies'-tresses
Ute ladies'-tresses is a perennial herb that is known to occur in moist meadows and floodplains associated with perennial stream terraces, oxbows, lakeshores, and subirrigated or spring-fed abandoned stream channels and valleys typically at elevations between 4,300 and 6,850 feet.[9] However, this species has been found at elevations ranging from zero to 6,998 feet.[10] At an elevation of 5,622 feet, the airport is within the range where Ute ladies'-tresses occur in Utah. As described in Section 8.15, Water Resources, Coal Creek is a perennial stream that transects the northern portion of the airport. Since the airport contains a perennial stream within the known elevation range for this species, there may be habitat suitable for Ute ladies'-tresses around Coal Creek.

Monarch Butterfly
Consultation with the U.S. Fish and Wildlife Service is not required for candidate species. However, the U.S. Fish and Wildlife Service encourages agencies to take advantage of opportunities to conserve these species.[11] The monarch's habitat requirements include prairies, grasslands, roadsides, and wetlands with high-density milkweed stands. Its diet consists of milkweed leaves during the larval caterpillar phase and nectar from a wide range of blooming native plants as adults.[12] As previously noted, most of the undeveloped areas at the airport contain low-lying grasses and forbs that are mowed regularly in accordance with FAA CertAlert No. 98-05, *Grasses Attractive to Hazardous Wildlife*.[13] This prevents milkweed and other flowering species from propagating. While various vegetation grows along the banks of Coal Creek, there are no documented occurrences of milkweed around Coal Creek. Therefore, the airport does not likely contain habitat suitable for the monarch butterfly.

California Condor
This species roosts on large trees or snags and rocky outcrops or cliffs. Nests are located in caves and ledges of steep rocky terrain or cavities and broken tops of old growth conifers created by fire or wind. Foraging habitat includes open grasslands, oak savanna foothills, and beaches adjacent to coastal mountains.[14] The airport lacks large trees or snags that could provide habitat for this species. Therefore, the California condor is unlikely to occur at the airport.

Essential Fish Habitat

According to the National Marine Fisheries Service Essential Fish Habitat Mapper, Iron County does not contain essential fish habitat protected under the Magnuson-Stevens Fishery Conservation and Management Act.[15]

8.3.2. Migratory Birds

Migratory birds are protected by the Migratory Bird Treaty Act (**MBTA**), and the bald eagle and golden eagle are further protected by the Bald and Golden Eagle Protection Act (**BGEPA**). The Migratory Bird Treaty Act prohibits the taking (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the U.S. Fish and Wildlife Service.[16] The Bald and Golden Eagle Protection Act prohibits the taking of bald or golden eagles, including their parts, nests, or eggs; the Bald and Golden Eagle Protection Act defines take as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."[17] Work that could lead to the take of an avian species protected under the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act should be coordinated with the U.S. Fish and Wildlife Service before any actions are pursued.

The U.S. Fish and Wildlife Service Information for Planning and Consultation report did not identify any migratory birds of conservation concern, bald eagles, or golden eagles within the airport property or its vicinity. While no protected migratory bird species were identified in the Information for Planning and Consultation report, common migratory bird species may occur at the airport or in the vicinity. Undeveloped areas around Coal Creek contain herbaceous vegetation and shrubs that may provide habitat for migratory birds.

8.3.3. Wildlife Hazards

FAA AC 150/5200-33C, *Hazardous Wildlife Attractants on or Near Airports*, recommends a separation distance of 10,000 feet at airports serving turbine-powered aircraft from hazardous wildlife attractants (e.g., wetlands).[18] Hazardous wildlife is defined as "species of wildlife (e.g., birds, mammals, reptiles), including feral and domesticated animals, not under control that may pose a direct hazard to aviation (i.e., strike risk to aircraft) or an indirect hazard such as an attractant to other wildlife that pose a strike hazard or are causing structural damage to airport facilities (e.g., burrowing, nesting, perching)." For all airports, the FAA recommends five statute miles between the farthest edge of the airport's operating area and hazardous wildlife attractants.

The airport may contain wetlands associated with Coal Creek, as described in Section 8.15.1, Wetlands. However, the FAA notes that some wetlands are not as attractive to hazardous wildlife as others, with factors such as size, shape, location, canopy cover, and vegetative composition being considerations. FAA recommends that due to the variation in wildlife attractiveness of a given wetland, they be reviewed on a case-by-case basis to determine the likelihood of increasing the number of hazardous wildlife.[19] Additionally, a review of the FAA's Wildlife Strike Database revealed 12 reported aircraft strikes from July 1990 (earliest available data) to December 2023 at the airport. Only three of the strikes damaged an aircraft.[20] As of December 2023, the airport has not completed a wildlife hazard assessment (**WHA**), nor is one planned.

8.4. Climate

Greenhouse gases are gases that trap heat in the atmosphere and are primarily the result of burning fossil fuels. Greenhouse gases include carbon dioxide (**CO2**), methane (**CH4**), nitrous oxide (**N2O**), and fluorinated gases. The Intergovernmental Panel on Climate Change (**IPCC**) estimates that aviation accounts for 4.1% of greenhouse gas (**GHG**) emissions related to global transportation.[21] Discussion of potential climate impacts should be documented in a separate section of the NEPA document, under a heading labeled Climate. For FAA project level actions, the project study area should reflect the entire geographic area that could be directly or indirectly affected by the proposed project. For airport actions, the project study area should reflect the full extent of aircraft movements. The FAA's *Aviation Emissions and Air Quality Handbook*, Version 3, Update 1, provides more information on defining the project study area.[22]

According to FAA Order 1050.1F, *Desk Reference*, a qualitative or quantitative assessment of greenhouse gas emissions should be performed where the proposed action or alternatives would increase greenhouse gas emissions.[23] However, FAA Order 1050.1F, *Desk Reference*, states there are currently no significance thresholds for aviation greenhouse gas emissions, and it is not currently useful for the NEPA analysis to attempt to link specific climate impacts to the proposed action or alternatives given the small percentage of emissions aviation projects contribute. Additionally, neither Iron County nor the Utah Department of Environmental Quality currently monitor greenhouse gas emissions. As noted in Section 8.2, Air Quality, Iron County is in attainment for all criteria pollutants. While greenhouse gas emissions and criteria pollutants are composed of different types of gases, the combustion of fossil fuels is a common contributor to both.

8.5. Coastal Resources

Cedar City Regional Airport is located in Utah, which is not near a coastal zone, as defined by the Coastal Zone Management Act of 1972, and the airport is not within the Coastal Barrier Resources System, as defined by the U.S. Fish and Wildlife Service.[24] There are no coastal resources or coastal zone management plans associated with the airport.

8.6. Department of Transportation Act, Section 4(f)

Section 4(f) of the Department of Transportation Act states that the secretary of transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge or historic site of national, state, or local significance as determined by the officials having jurisdiction thereof unless there is no feasible and prudent alternative and the project includes all possible planning to minimize harm resulting from the use.[25] Additionally, a property must be a significant resource for Section 4(f) to apply. Any part of a Section 4(f) property is presumed to be significant unless there is a statement of insignificance relative to the entire property by the federal, state, or local official having jurisdiction over the property. Except in unusual circumstances, Section 4(f) only protects historic or archaeological properties that are listed or eligible for inclusion on the National Register of Historic Places (**NRHP**). Any proposed airfield improvements that may directly or indirectly affect eligible resources would be considered a physical or constructive use of Section 4(f) properties, respectively. Avoidance and minimization measures must be considered before mitigation can be pursued.

According to the National Register of Historic Places database, there are no properties listed in the National Register of Historic Places located at the airport.[26] The nearest property listed in the National Register of Historic Places is the George H. Wood House located at 432 N Main Street in Cedar City (Reference #78002662), which is approximately two miles east of the airport. However, a cultural resources survey is recommended to verify the presence or absence of Section 4(f) historic resources at the airport. Additionally, no Section 4(f) recreational properties or waterfowl or wildlife refuges are located within or near the airport. The nearest Section 4(f) recreational properties are Bicentennial Park and Sunbow Park, located approximately 1.5 to 1.75 miles east of the airport. The nearest waterfowl or wildlife refuge, Pahranagat National Wildlife Refuge, is located in Nevada and is approximately 113 miles southwest of the airport.[27]

8.6.1. Land and Water Conservation Fund Act, Section 6(f)

Section 6(f) of the Land and Water Conservation Fund Act establishes a grant program for states and local governments to acquire and develop public outdoor recreation sites and facilities.[28] Section 6(f)(3) states, "No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he/she finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he/she deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location." The closest 6(f) property is Cedar City Canyon Park located 2.75 miles southeast of the airport.[29]

8.7. Farmlands

The Farmland Protection Policy Act (**FPPA**) regulates federal actions with the potential to convert farmland to non-agricultural uses. Farmland includes prime farmland, unique farmland, and farmland of statewide or local importance. Soil information was obtained from the National Cooperative Soil Survey Web Soil Survey and National Cooperative Soil Survey series descriptions.[30] As shown in Table 8.1, soils at the airport are comprised of seven different map units.

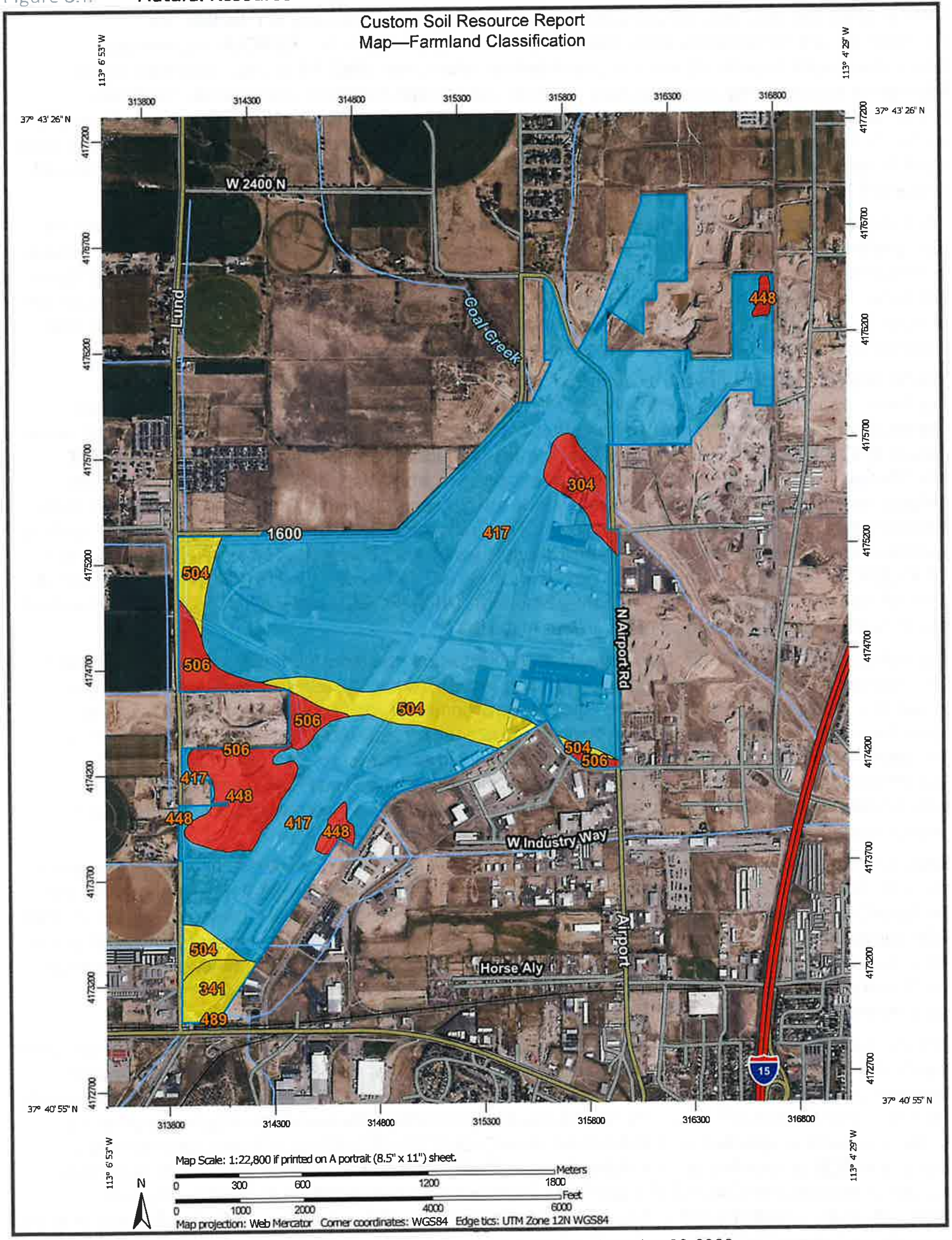
Table 8.1: **Soils at Cedar City Regional Airport**

Map Unit Symbol	Map Unit Name	Farmland Classification	Number of Acres	Percentage of Property
304	Annabella very gravelly loam, 2–15% slopes	Not prime farmland	21.5	2.2%
341	Calcross loam, 0–2% slopes	Prime farmland if irrigated	17.4	17.4%
417	Medburn sandy loam, 0–2% slopes	Farmland of statewide importance	775.9	80.1%
448	Pits-Dumps complex	Not prime farmland	53.3	5.5%
489	Taylorsflat loam, 0–2% slopes	Farmland of statewide importance	0.4	0.0%
504	Wales loam, 0–2% slopes	Prime farmland if irrigated	70.1	7.2%
506	Wales loam, flooded, 0–2% slopes	Not prime farmland	29.6	3.1%

Source: U.S. Department of Agriculture, Natural Resources Conservation Service, November 22, 2023.

According to the Soil Resource Report, approximately 775.9 acres (80.1%) of the airport contains farmland of statewide importance and 87.5 acres (24.6%) of the airport contains prime farmland if irrigated (Figure 8.1). Prior to any actions that may impact farmlands, Farmland Conversion Impact Rating Form AD-1006 may be required to be completed and submitted to the local National Cooperative Soil Survey office or U.S. Department of Agriculture (**USDA**) service center to determine the level of impact to farmlands. A total combined score on Form AD-1006 of between 200 and 260 points results in a significant threshold.

Figure 8.1: **Natural Resources Conservation Service Farmland Classification Map**



Source: U.S. Department of Agriculture, Natural Resources Conservation Service, November 22, 2023.

8.8. Hazardous Materials, Solid Waste, and Pollution Prevention

Federal, state, and local laws, including the Resource Conservation Recovery Act (**RCRA**), the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA**), as amended (also known as the Superfund), and the Utah Administrative Code (**UAC**) R315-260 Hazardous Waste Management System, regulate hazardous materials use, storage, transport, and disposal. The Resource Conservation Recovery Act set up a framework for the proper management of hazardous waste. From this authority, EPA established a comprehensive regulatory program to ensure that hazardous waste is managed safely from "cradle to grave" meaning from the time it is created, while it is transported, treated, and stored, and until it is disposed.[31]

The EPA maintains a list of Superfund Sites called the National Priorities List (**NPL**) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act. These sites have known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. According to the EPA list, there are no superfund sites in Iron County, in which the airport is located.[32] The EPA's My Environment tool was also reviewed to identify any toxic releases to air or land reported at or adjacent to the airport; none were reported.[33]

The NEPAssist Tool identifies the location and details of remediation sites and facilities managed by regulatory programs within the EPA's Waste Management and Remediation Division. The tool did not identify any Brownfields sites or Superfund sites at the airport. The U.S. Forest Service Cedar City Airtanker Base (TRI ID 84720SFRST1635N) located at the airport is identified as a Toxic Release Inventory (**TRI**) site. The last Toxic Release Inventory chemical released was ammonia, which was reported in 2006. No enforcement actions are available and there are no further reports to date. Three Resource Conservation Recovery Act sites were identified at the airport. Two Transportation Security Administration (**TSA**) facilities are listed, one that is classified as a very small quantity generator of hazardous materials (RCRA Handler ID UTR000009514) and the other that has no classification (RCRA Handler ID UTR000007930). Additionally, the FAA Salt Lake Hub Sector Office of Safety Standards (**AFS**) (RCRA Handler ID UT5690590042) is listed as a very small quantity generator of hazardous materials.[34]

According to AC 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program (AIP) Assisted Projects*, as part of the project planning and environmental assessment phases, the project proponent should have an adequate due diligence environmental audit conducted for the presence of hazardous materials and contamination on property needed for a project. Contaminated property must be avoided whenever possible, or its use minimized to avoid excessive project costs for the clean-up and remediation of hazardous materials. These audits include Phase I and Phase II environmental site assessments (**ESA**), which should identify quantities of any hazardous materials located at the proposed project site or in the immediate vicinity of a project site.

Regarding pollution prevention, the CEQ Memorandum *Pollution Prevention and the National Environmental Policy Act* (January 12, 1993) encourages early consideration by federal agencies (for example, during the National Environmental Policy Act scoping process) of opportunities for pollution prevention. In accordance with this guidance, the FAA should, to the extent practicable, include pollution prevention considerations in the proposed action and its alternatives; address pollution prevention in the environmental consequences section; and disclose in the record of decision (**ROD**) the extent to which pollution prevention was considered.[35]

The Iron County Solid Waste Department's main landfill, located at 3127 N Iron Springs Road approximately eight miles from the airport accepts non-hazardous solid waste that may include, municipal solid waste, commercial waste, industrial waste, construction and demolition waste, and special waste as defined in Utah Administrative Code R315-301.[36] The landfill may accept conditionally exempt small quantity generator hazardous waste as specified in Utah Administrative Code R315-303-4(7)(a)(i)(B) and polychlorinated biphenyls (**PCB**) as specified by Utah Administrative Code R315-315-7(2). Hazardous waste as defined by Utah Administrative Code R315 1 and R315 2 and polychlorinated biphenyls as defined by Utah Administrative Code R315-301-2(53) are excluded from this landfill and would need to be disposed of at an appropriate licensed facility.[37]

8.9. Historical, Architectural, Archeological, and Cultural Resources

The National Historic Preservation Act (**NHPA**) established the Advisory Council on Historic Preservation (**ACHP**) and the National Register of Historic Places (**NRHP**) list, administered in Utah by the Utah State Historic Preservation Office (**SHPO**). Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their undertaking on properties on or eligible for inclusion on the National Register of Historic Places.

Any direct or indirect effects to resources eligible for inclusion in the National Register of Historic Places, or contributing resources to a historic district, will require consultation with the Utah State Historic Preservation Office and participating tribes or Tribal Historic Preservation Offices (**THPO**) for Section 106 compliance. Avoidance and minimization measures must be considered before mitigation can be pursued.

According to the most recent records maintained by the National Register of Historic Places, the airport does not contain any properties listed, or eligible for listing on the National Register of Historic Places. However, unidentified or undiscovered historic or archaeological resources may still be present at the airport. A cultural resource survey is recommended to confirm the presence or absence of properties eligible for inclusion in the National Register of Historic Places.

8.10. Land Use

The FAA has not established a significance threshold for land use. The determination that significant impacts exist in the land use impact category is normally dependent on the significance of other impacts, such as noise and Section 4(f) properties.

According to FAA Order 1050.1F, *Desk Reference*, the FAA requires airport operators to ensure that actions are taken to establish and maintain compatible land uses around airports, such as consistency with state and local land use regulations, land use plans, and zoning laws.[38] Airport Improvement Program (**AIP**) funding for airport development may not be approved unless the secretary of transportation receives written assurance that appropriate action, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the vicinity of the airport to activities and purposes compatible with normal airport operations, including takeoff and landing of aircraft.[39]

The airport is located within Cedar City, with land use information provided by the Cedar City Land Use Map. As identified by the map, the airport is located within an airport influence zone with land uses consisting of residential, mixed-use, commercial, light and heavy manufacturing, municipal uses, and open space.[40] The closest residence is approximately 500 feet west of the airport.[41]

8.11. Natural Resources and Energy Supply

Sections 1502.16(e) and (f) of the CEQ regulations require that federal agencies consider energy requirements, natural depletable resource requirements, and the conservation potential of alternatives and mitigation measures listed in NEPA documents. Executive Order 13123, *Greening the Government through Efficient Energy Management*, supports the expansion and use of renewable energy within facilities and activities. It also requires federal agencies to reduce petroleum use, total energy use, associated air emissions, and water consumption in facilities. Though specific significance thresholds for natural resource consumption and energy supply have not been established by the FAA, the proposed action should be examined for the potential to cause demand to exceed available or future supplies of these resources.

General construction could temporarily increase the airport's consumption of natural resources and energy. These resources include a variety of construction materials, electricity, fuel, oil, and water (non-potable water may be used for dust control). The transportation of construction materials and operation of heavy machinery may temporarily increase the airport's fossil fuel consumption. These resources are not rare or in short supply. Likewise, general construction activities could marginally increase demands on water, electricity, and natural gas. However, these demands are insignificant and can be met by existing airport infrastructure.

8.12. Noise and Noise Compatible Land Use

Noise associated with airport activity is of specific importance to the FAA in examining a proposed federal action. Airport development projects that have the potential to change an airport's runway configuration, aircraft operations, aircraft types, or aircraft flight characteristics can change future airport-related noise levels.

Noise is measured by the day-night sound level (**DNL**), the logarithmic average of sound levels in decibels (**dB**), and is based on a 24-hour equivalent sound level (**Leq**). The levels are time-weighted, such that noise events occurring during sensitive time periods (between 10 p.m. and 7 a.m.) are penalized 10 dB (i.e., weighted more heavily than those occurring between 7 a.m. and 10 p.m.). This penalty accounts for the greater sensitivity to noise during nighttime hours and the decrease in background noise levels during these hours. Determining DNL provides a means of measuring and mapping the potential impacts from airport noise relative to the land uses surrounding an airport. The FAA considers a noise impact significant if an action would cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above the DNL 65 dB noise contour when compared to the no action alternative. Noise sensitive areas include indoor locations such as residential, educational, medical, and religious structures or sites as well as outdoor locations such as parks and recreational areas, wilderness areas and wildlife refuges, or cultural and historical sites.

The area surrounding the airport consists of residential, mixed-use, commercial, light and heavy manufacturing, municipal uses, and open space land uses. Noise sensitive land uses near the airport are limited to residential properties. The closest residence is approximately 500 feet west of the airport. A noise contour analysis is recommended to determine the impact noise from proposed development alternatives could have on the surrounding properties.

8.13. Socioeconomics, Environmental Justice, and Children's Health & Safety Risks

8.13.1. Socioeconomics

Socioeconomics is a term used to describe aspects of a project that are social or economic in nature. A socioeconomic analysis evaluates how elements of the human environment such as population, employment, housing, and public services might be affected by the proposed action.

The airport is located in Cedar City, which has a population of 34,426 according to data from the 2021 U.S. Census Bureau American Community Survey. The median age is 25.5 years.[42] In Cedar City, approximately 5% of the population is unemployed and 41% are considered low-income.[43]

Airport operations and ongoing development are not expected to have any significant socioeconomic impact on the residents of Cedar City. If acquisition of real property or displacement of persons is involved, 49 CFR part 24 (implementing the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970), as amended, must be met for federal projects and projects involving federal funding.

8.13.2. Environmental Justice

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, ethnicity, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations,* which was signed into law February 11, 1994, directs federal agencies to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. As shown in Table 8.2, the population of Cedar City is predominantly white (87.1%) with minorities accounting for 12.9% of the population.[44] Airport operations and ongoing development are not expected to disproportionately impact environmental justice or minority populations.

Table 8.2: **Cedar City Race and Ethnicity Data**

Race	Population	Percentage
Total Population	**34,246**	**100%**
One race	**32,406**	**94.6%**
White	29,841	87.1%
Black or African American	388	1.1%
American Indian and Alaska Native	843	2.5%
Asian	451	1.3%
Native Hawaiian and Other Pacific Islander	85	0.2%
Other Race	798	2.3%
Two or more races	**1,840**	**5.4%**

Source: U.S. Census Bureau, 2021: ACS 5-Year Estimates Data Profiles.

8.13.3. Children's Health and Safety Risks

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires agencies to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. According to data from the 2021 U.S. Census Bureau American Community Survey, approximately 28.9% of the population of Cedar City is less than 18 years old.[45] The nearest school to the airport is Iron Springs Elementary School, which is approximately one mile to the southwest. The school serves students in kindergarten through fifth grade. The closest children's healthcare facility is Premier Pediatrics, which is approximately 1.25 miles east of the airport. All schools, daycares, children's health clinics, or similar child-friendly facilities are well outside the airport property boundaries. The FAA has not established a significance threshold related to impacts to children's environmental health and safety. However, airport operations and ongoing development are not anticipated to significantly affect air quality, climate, hazardous materials, noise, water resources, or other environmental resources that could affect children's health and safety. Mitigation measures may be appropriate to reduce or eliminate impacts, such as those used to mitigate other impact categories, such as air and water.

8.14. Visual Effects

Visual effects deal broadly with the extent to which the proposed action or alternatives would either produce light emissions that create annoyance or interfere with activities; or contrast with, or detract from, the visual resources or the visual character of the existing environment. Visual effects can be difficult to define and assess because they involve subjectivity. Proposed aerospace actions do not commonly result in adverse visual effects, but these effects may occur in certain circumstances. For clarity and uniformity, visual effects fall under two categories: light emission effects or visual resources and visual character.[46]

Light emissions include any light that emanates from a light source into the surrounding environment. Examples of sources of light emissions include airfield and apron floodlighting, navigational aids, terminal lighting, parking facility lighting, and roadway lighting. Glare is a type of light emission that occurs when light is reflected off a surface (e.g., window glass, solar panels, and reflective building surfaces).[47]

Visual resources include buildings, sites, traditional cultural properties, and other natural or manmade landscape features that are visually important or have unique characteristics. Visual resources may include structures or objects that obscure or block other landscape features. In addition, visual resources can include the cohesive collection of various individual visual resources that can be viewed at once or in concert from the area surrounding the site of the proposed action or alternatives. In unique circumstances, the nighttime sky may be considered a visual resource.[48]

Visual character refers to the overall visual makeup of the existing environment where the proposed action and alternatives would be located. For example, areas in close proximity to densely populated areas generally have a visual character that could be defined as urban, whereas less developed areas could have a visual character defined by the surrounding landscape features, such as open grass fields, forests, mountains, or deserts.[49]

There are no special purpose laws or requirements for visual effects, and there are no federally required consultation processes, permits, or other approvals related to visual effects. Additional laws protecting resources that may be affected by visual effects include Section 106 of the NHPA, Section 4(f) of the Department of Transportation Act, Wild and Scenic Rivers Act, and Coastal Zone Management Act as well as state and local regulations, policies, and zoning ordinances that apply to visual effects.[50]

Various lighting features currently illuminate airport facilities at the airport, such as the airfield (e.g., runways and taxiways), buildings, access roadways, automobile parking areas, and the apron area for the safe and secure movement of people and vehicles. Structures at the airport include hangars and maintenance buildings. The visual sight of aircraft, aircraft contrails, and aircraft lights at night is consistent with normal airport operations. The land surrounding the airport consists of residential, mixed-use, commercial, light and heavy manufacturing, municipal, and open space uses. The closest residence is approximately 500 feet west of the airport. Although this residence has a direct line of sight to the airport, the lighting and structures associated with the airport are consistent with that of an airport. No known historic properties are located within the airport or the vicinity.

Mitigation measures to minimize visual effects of any new light sources include the use of shielding and baffles, angular adjustment of light fixtures, and application of architecture and landscaping design features to enhance the aesthetics and uniqueness of a proposed project.

The development of airport infrastructure could change the visual character of the area. It is recommended that any development projects be consistent with the style and uses of existing structures at the airport to minimize impacts to the visual resources in the vicinity or visual character of the airport.

8.15. Water Resources

Water resources are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Surface water, groundwater, floodplains, and wetlands do not function as separate and isolated components of the watershed, but rather as a single, integrated natural system. Disruption of any one part of this system can have consequences for the functioning of the entire system. The analysis should include potential disruption of the system as well as potential impacts to the quality of the water resources. Because of the close and integrated relationship of these resources, their analysis is conducted under the all-encompassing impact category of water resources. Wild and Scenic Rivers are included because impacts to these rivers can result from obstructing or altering the free-flowing water of a designated river. This section discusses wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers.

8.15.1. Wetlands

The Clean Water Act (**CWA**) describes wetlands as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.[51] Wetlands generally include swamps, marshes, bogs, and similar areas. Jurisdictional wetlands are federally protected under Section 404 of the CWA, which regulates the discharge of dredged or fill material into Waters of the United States, including wetlands.[52]

According to the National Wetland Inventory (**NWI**), 14 wetland features are within, or partially within, the airport property boundary.[53] As shown in Figure 8.2, these include eight freshwater ponds located in the northern portion of the airport, three located in the southeast portion of the property, and seven riverine wetland segments belonging to three contiguous riverine wetland features that transect the airport in the south and the north of the property.

A riverine wetland in the northern portion of the airport is associated with Coal Creek, which is a perennial stream that flows from south to north across the property. Another riverine wetland is associated with a seasonally flooded irrigation ditch that travels along the northeastern boundary of the airport. Four riverine wetlands in the southern portion of the property correspond with semi-permanently flooded ditches that flow in a south-to-north and east-to-west direction. Two of the ditches carried water historically but were filled several years ago.

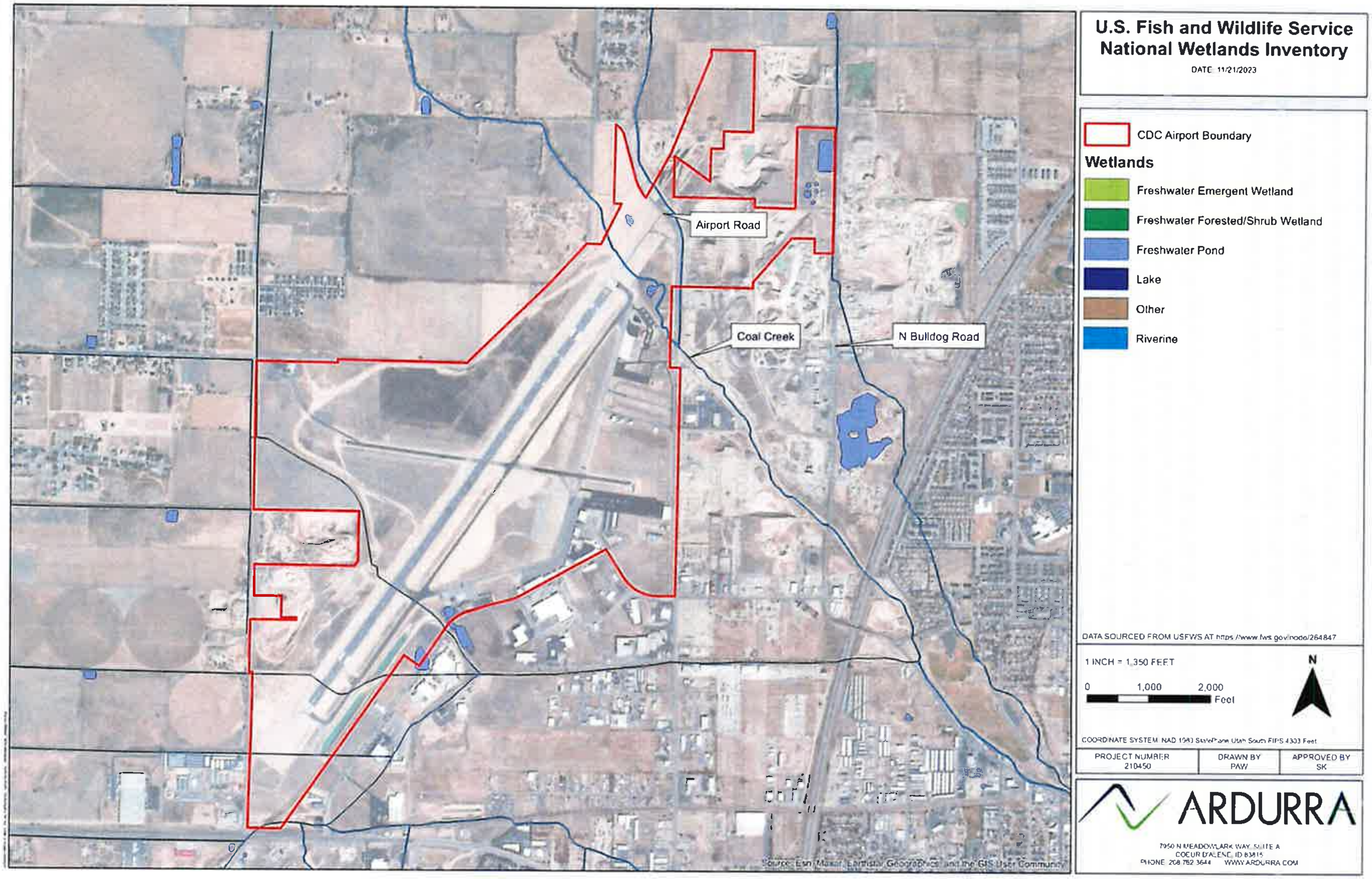
In the northeastern portion of the property, directly adjacent to North Bulldog Road, there are six freshwater pond wetlands identified as being permanently flooded. According to the Iron County Assessor's office, this portion of the airport property is currently leased to Western Rock Products and is not associated with aeronautical uses.[54] Most of the freshwater pond wetlands are associated with manmade circular structures, while one appears to be associated with a drainage sump that is part of the facility.

Two semi-permanently flooded freshwater pond wetlands are located 500 to 1,000 feet north of Runway 2/20. Neither wetland feature has recently contained water according to historic Google Earth imagery. The presence of ponded water can be seen in the imagery as recently as June 1993. One of the freshwater pond wetlands was directly adjacent to Coal Creek before the creek alignment was altered and directed through a culvert. After the culvert was constructed, ponded water in the area of this wetland feature is no longer visible. Ponded water in the other freshwater pond was also present during June 1993 but is no longer visible afterward.

In the southeastern portion of the airport property, there are three semi-permanently flooded freshwater pond wetlands. The outline of these features can be seen in Google Earth imagery as recently as June 1993, although no water was present. The area of these NWI-mapped wetlands is now mostly developed with impervious surfaces and water is not present.

Some of the aforementioned aquatic resources likely contain wetlands along their borders. An aquatic resource delineation will be required to confirm the presence or absence of the aforementioned wetlands and to define their boundaries. Avoidance and minimization measures, U.S. Army Corps of Engineers (**USACE**) Section 404 permitting, and mitigation practices may be required for any impacts to wetlands associated with the airport.

Figure 8.2: National Wetland Inventory Map



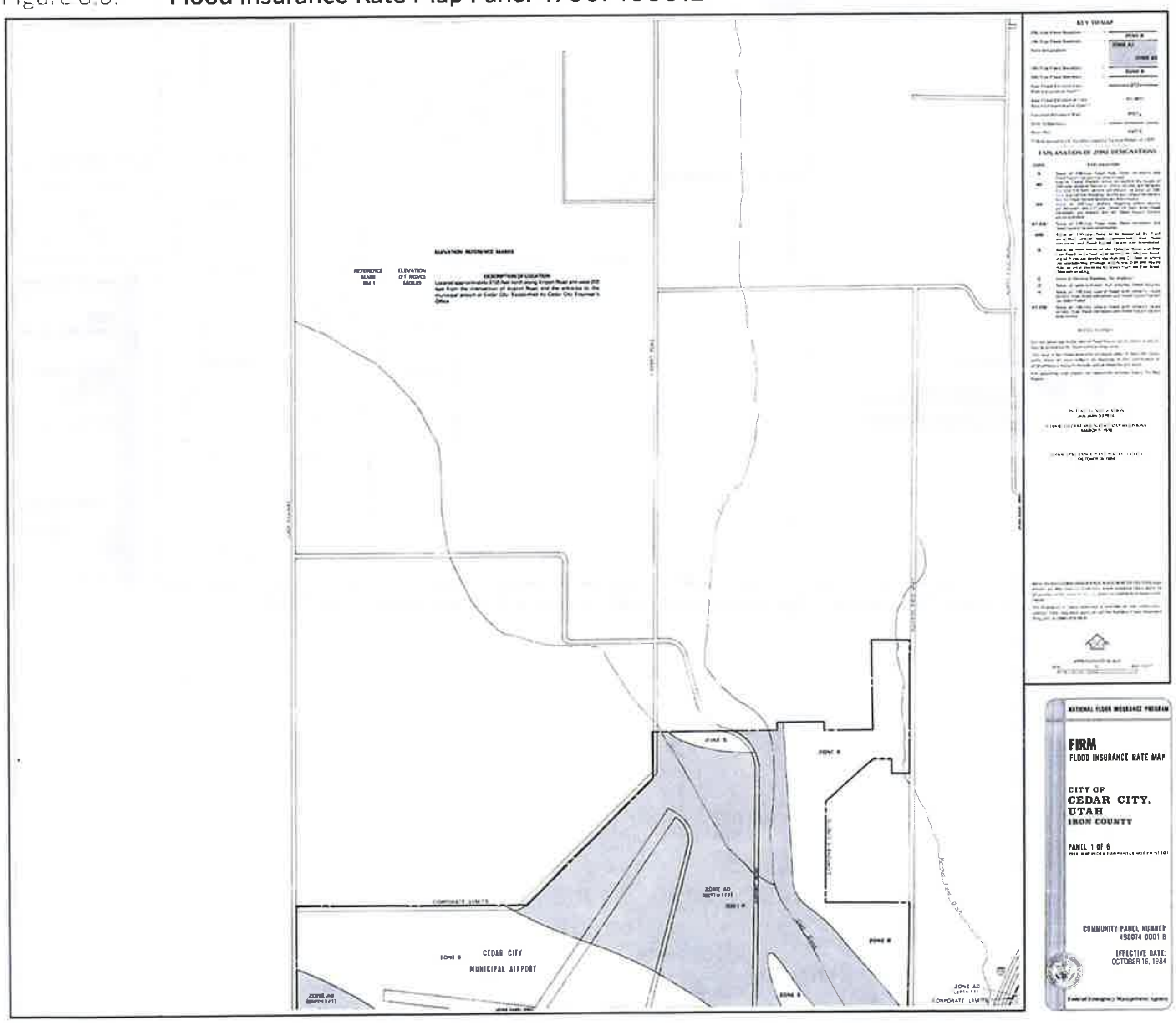
Source: U.S. Fish and Wildlife Service, National Wetlands Inventory, November 21, 2023.

8.15.2. Floodplains

When property in floodplains is proposed for lease, easement, right-of-way, or disposal to non-federal public or private entities, the FAA must, in accordance with Executive Order 11988, *Floodplain Management*, reference in the conveyance those uses that are restricted under identified federal, state, or local floodplain regulations; attach other appropriate restrictions to uses of properties by the grantee or purchaser and any successors, except where prohibited by law; or withhold such properties from conveyance.[55]

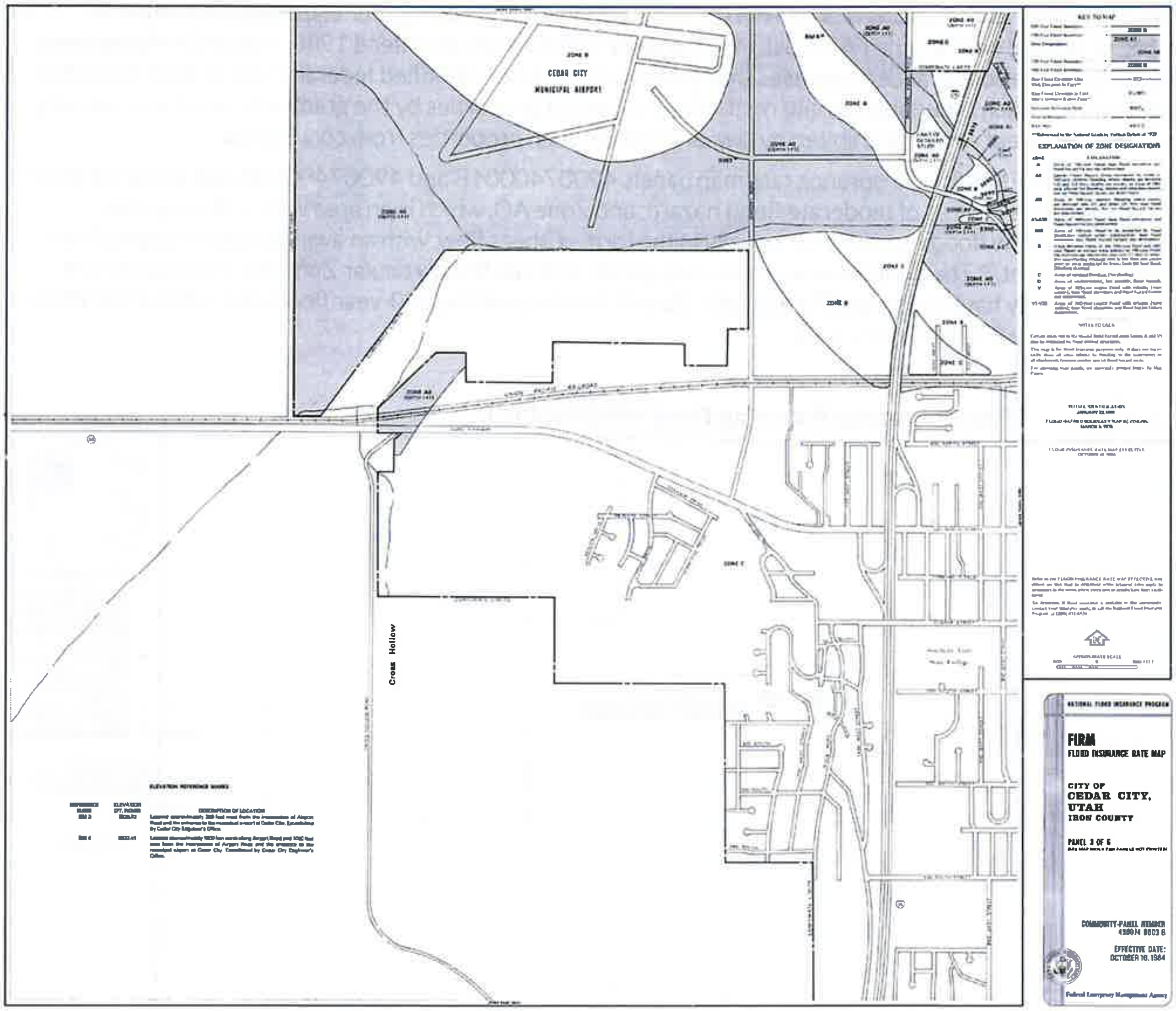
According to FEMA flood insurance rate map panels 4900740001B and 4900740003B, the airport is within Zone B, which is an area of moderate flood hazard; and Zone AO, which is an area with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from one to three feet.[56] The flood insurance rate map panels indicate the particular Zone AO areas within the airport property have a one-foot flood depth. Zone B is outside of the 100-year floodplain, while Zone AO is within it (Figure 8.3 and Figure 8.4).

Figure 8.3: **Flood Insurance Rate Map Panel 4900740001B**



Source: Federal Emergency Management Agency, National Flood Insurance Program, October 16, 1984.

Figure 8.4: **Flood Insurance Rate Map Panel 4900740003B**



Source: Federal Emergency Management Agency, National Flood Insurance Program, October 16, 1984.

8.15.3. Surface Waters

Surface waters include areas where water collects on the surface of the ground, such as streams, rivers, lakes, ponds, estuaries, and oceans. The Clean Water Act established the basic structure for regulating the discharge of pollutants into Waters of the United States, specific sections include Section 303(d), Section 404, and Section 401 (refer to wetland section), and Section 402, which establishes the National Pollutant Discharge Elimination System (**NPDES**) permitting program. Section 303(d) sets forth the process to identify impaired waters and to establish the maximum amount of pollutant allowed in a waterbody, known as the total maximum daily load, necessary to assess current conditions and project impacts. If project activities have the potential to discharge pollutants into Waters of the United States through a point source, an NPDES permit will likely be required.

Surface waters at or in the vicinity of the airport include a creek and several ditches. Coal Creek, which is a perennial stream associated with the NWI riverine wetland in the northern portion of the airport, flows from south to north across the property. The stream forks just prior to entering the airport property, with an approximately 530-foot segment of the south fork of the stream traveling through a culvert. The north fork of the stream flows east of, and directly adjacent to Airport Road. Other surface waters include an intermittently flowing irrigation ditch that travels along the northeastern boundary of the airport. Four ditches corresponding to mapped NWI riverine wetlands transect the southern portion of the property, flowing in a south-to-north and east-to-west direction. The most northern of these ditches travels through a culvert under the airport runway and taxiway. The next two ditches south of the previous ditch are filled and do not contain surface water. The fourth, and most southern ditch flows intermittently and transects a small portion of the most southeastern portion of the property.

A USACE Section 404 permit and Utah Department of Environmental Quality stormwater permit may be required for any direct, or indirect impacts to surface waters. Further, construction activities should use best management practices (**BMP**) to protect surface waters.

8.15.4. Groundwater

Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The term aquifer is used to describe the geologic layers that store or transmit groundwater to wells, springs, and other water sources. The Safe Drinking Water Act prohibits federal agencies from funding actions that would contaminate an EPA-designated sole source aquifer or its recharge area.[57]

According to the EPA, the airport is not located in a sole source aquifer.[58] The nearest sole source aquifer, the Eastern Snake River Plain Aquifer, is more than 280 miles north of the airport.

The Groundwater Monitoring Portal provided by the Utah Geological Survey identified zero groundwater wells at the airport.[59] The two nearest groundwater wells are located north and south of the airport, approximately 1.25 miles and two miles away, respectively. The northern well has a recorded borehole depth of 216 feet, while the southern well has a depth of 590 feet. According to the Natural Resources Conservation Service Web Soil Survey and National Cooperative Soil Survey, the depth of the water table at the airport is more than 80 inches.

8.15.5. Wild and Scenic Rivers

According to the Wild and Scenic Rivers interactive map provided by the National Parks Service (**NPS**), the nearest Wild and Scenic River is Virgin River, located approximately 16 miles south of the airport in Zion National Park.[60]

Endnotes

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AIRPORT LAYOUT PLAN 9

CHAPTER NINE

AIRPORT LAYOUT PLAN

The airport layout plan (**ALP**) is a comprehensive set of drawings depicting the current airport facilities and proposed development projects based on the FAA-approved forecast of aviation activity, facility requirements, and selected development alternatives. According to the Airport and Airway Improvement Act of 1982, it is necessary for airport layout plans to be reviewed and accepted by the FAA and adopted by the sponsor for an airport to receive federal financial assistance. Airports that receive Airport Improvement Program (**AIP**) grant funding are obligated by federal grant assurance requirements to have a current airport layout plan and to follow that plan. According to Advisory Circular (**AC**) 150-5070-6B, *Airport Master Plans*, the primary functions of an airport layout plan are:

- An airport layout plan creates a blueprint for airport development by depicting proposed facility improvements. It provides a guideline the airport sponsor can use to ensure development maintains airport design standards and safety requirements and is consistent with airport and community land use plans.
- The airport layout plan is a public document that serves as a record of aeronautical requirements, both present and future, and as a reference for community deliberations on land use proposals and budget resource planning.
- The approved airport layout plan enables the airport sponsor and the FAA to plan for facility improvements. It also allows the FAA to anticipate budgetary and procedural needs. The approved airport layout plan will also allow the FAA to protect the airspace required for facility or approach procedure improvements.
- The airport layout plan can be a working tool for the airport's development and maintenance staff.

9.1. Airport Layout Plan Drawing Set

This chapter describes each sheet included in the *Cedar City Regional Airport 2025 Airport Layout Plan* and the major changes from the previous airport layout plan. All layout drawings were produced according to the standards included in FAA Advisory Circular 150/5070-6B, *Airport Master Plans*, and Advisory Circular 150/5300-13B, *Airport Design*. The airport layout plan also complies with FAA ARP Standard Operating Procedure No. 2.00, *Standard Procedure for FAA Review and Approval of Airport Layout Plans*. The *Cedar City Regional Airport 2025 Airport Layout Plan*, which has been included in this airport master plan as Appendix E: Airport Layout Plan, includes the following sheets:

- Sheet 1:Title Sheet
- Sheet 2: Airport Data Sheet
- Sheet 3A: Airport Layout Plan—Existing
- Sheet 3B: Airport Layout Plan—Future
- Sheet 4: Airport Airspace
- Sheet 5: Runway 2/20 Profile and Runway 8/26 Profile
- Sheet 6A: Inner Portion of the Approach Surface—Runway Detail 2
- Sheet 6B: Inner Portion of the Approach Surface—Runway Detail 20
- Sheet 6C: Inner Portion of the Approach Surface—Runway 8/26
- Sheet 7: Runway Departure Surface Runway 2/20
- Sheet 8A: Terminal Area—South
- Sheet 8B: Terminal Area—North
- Sheet 9A: Airport Land Use
- Sheet 9B: On-Airport Land Use
- Sheet 10: Photo and Contour
- Sheet 11A: Exhibit 'A'
- Sheet 11B: Exhibit 'A' Tables

9.2. Sheet 1: Title Sheet

The title sheet provides an index of the individual sheets in the airport layout plan and includes other essential elements like location and vicinity maps, title and revision blocks, and signature blocks for the FAA and the sponsor to show the plan has been accepted and approved.

9.3. Sheet 2: Airport Data Sheet

The airport data sheet includes the airport data tables, wind roses, and an abbreviations index. The data tables list critical information about the current and future safety area dimensions for each runway.

9.4. Sheet 3A–3B: Airport Layout Plan

These sheets include a detailed graphical representation of both existing and future airport facilities. They depict the aircraft operating areas (e.g., runways, taxiways, helipads, aprons), required facility identifications, description labels, runway protection zones, runway and taxiway safety areas, runway and taxiway object free areas, runway obstacle free zones, building restriction lines, and navigational aids. Sheet 3B depicts the future and ultimate development projects planned for the airport. All features are shown as complying with FAA design standards corresponding to the critical aircraft.

9.5. Sheet 4: Airport Airspace

The airport airspace drawing depicts the imaginary surfaces defined by 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, and any objects penetrating those surfaces. It also includes an obstruction data table that lists each obstacle and the amount of each penetration.

9.6. Sheet 5: Runway Profile

The runway profile sheet depicts detailed information for the two runways at the airport and includes elevation profiles and runway gradient data. This diagram also shows both the existing and future conditions as well as line-of-sight for each runway.

9.7. 6A–6C: Inner Portion of the Approach Surface

These sheets show 1) a top-down view of the inner approach and departure surfaces for each runway end; 2) a profile drawing that displays the centerline ground profile detail and critical ground profile for the inner approach of each runway end; and 3) any obstructions to the inner approach and departure surfaces.

9.8. Sheet 7: Runway Departure Surface

This drawing depicts the departure surfaces for each runway end. There are no published standard instrument departures for CDC. For runways without a standard instrument departure, the FAA recommends the application of a 40:1 departure surface. Accordingly, this is applied to Runway 2/20.

9.9. Sheet 8A–8B: Terminal Area

These sheets depict the terminal facility and other general aviation areas. This includes the passenger terminal area, vehicle parking areas, general aviation facilities, and the apron used by the U.S. Bureau of Land Management (**BLM**). Apron configurations and aircraft tiedown parking positions are also depicted.

9.10. Sheet 9A–9B: Land Use

The land use drawing sheet 9A depicts the land uses and zoning surrounding the airport. Particular attention is given to the area within the Part 77 imaginary surfaces. Sheet 9B depicts the on-airport land uses within the airport property boundary and defines the land uses that have been deemed aeronautical versus non-aeronautical. These drawings also show the day-night average sound level (**DNL**) 65 decibel noise contour, the runway protection zones, and the airport property boundary.

9.11. Sheet 10: Photo and Contour

This sheet depicts terrain contours for the land around the airport using five-foot and two-foot contour intervals. These contour drawings are used to highlight possible terrain obstructions and penetrations of the approach and departure surfaces. This provides an important visual reference that is helpful when planning construction and earthwork. Both the existing and proposed airport facilities, as well as the airport property boundary and safety areas, are also included for reference.

9.12. Sheet 11A-11B: Exhibit 'A'

Sheet 11A is a drawing that depicts the airport property boundary and the various tracts of land acquired to develop the airport. Sheet 11B contains tables that list the funding source used to acquire each tract of land and if the land has been sold. The Exhibit 'A' Property Map was produced according to the guidance provided in FAA ARP Standard Operating Procedure No. 3.00, *Standard Operating Procedure (SOP) for FAA Review of Exhibit 'A' Airport Property Inventory Maps*. Creation of Exhibit 'A' required a boundary survey and record of survey in compliance with Utah Code. This sheet is stamped by the licensed surveyor who oversaw the work.

9.13. Overview of Airport Layout Plan Changes

The current airport layout plan reflects the following significant changes that have occurred since the previous airport layout plan was completed in 2018.

9.13.1. Decommissioned Runway 8/26

As discussed in Chapter 6, Facility Requirements, Runway 8/26 is not eligible for federal funding because the primary runway provides sufficient wind coverage. As a result, it may soon become more desirable to decommission Runway 8/26 and convert it to a taxiway than it is to use local funds to maintain it. Therefore, converting Runway 8/26 to a taxiway is indicated as a future option on the airport layout plan. This allows for flexibility in its future use based on the evolving needs of the airport and how financially feasible it is to maintain it.

9.13.2. West Parallel Taxiway

The addition of a full parallel taxiway on the west side of Runway 2/20 is depicted on the airport layout plan. This taxiway will likely be constructed in a phased approach that starts off as a partial parallel taxiway and is extended as additional access to the western side of the airport is needed. However, the full length is shown for planning purposes to ensure the land is reserved until it is completed.

9.13.3. West Hangar Development Area and Air Cargo Apron

The west hangar development area is being carried forward from the previous airport layout plan so it will continue to be reserved until needed for future general aviation development. As the east side of the airport is built out, the west side will become the last large area available to be developed for general aviation purposes. A site has also been reserved for an air cargo apron on the west side of the airport to ensure an area large enough available when one is needed.

9.13.4. Corporate and General Aviation Hangar Development

The area north of Runway 8/26 planned for future hangar development has been reconfigured from the plans shown in the previous airport layout plan. The new configuration was designed to allow development of large corporate hangars or a maintenance, repair, overhaul (**MRO**) and fixed base operator (**FBO**) facility with a large apron, landside access, and vehicle parking outside the airport fence. This layout is dependent on Runway 8/26 being decommissioned and converted to a taxiway.

9.13.5. Airport Traffic Control Tower

It was determined, through the planning process and discussions with the sponsor and FAA, that the airport needs an airport traffic control tower (**ATCT**). Therefore, three potential three-acre sites are shown on the airport layout plan to ensure the airport has eligible sites available for consideration by the FAA when it is ready to begin the planning process. Several possible sites were considered during the development alternatives analysis, and these sites were determined to be the best options available.

FINANCIAL ANALYSIS AND IMPLEMENTATION PLAN

10

TABLES

FIGURES

CHAPTER TEN

IMPLEMENTATION

This chapter reviews the capital improvement projects included in the capital improvement plan (**CIP**) for Cedar City Regional Airport (**CDC**). An updated capital improvement plan was developed as part of this airport master plan to serve as a guide for timing the implementation of the recommendations included in this airport master plan. It also provides a planning-level cost estimate for each project to help understand the financial commitment associated with each project. Projects recommended in this airport master plan are depicted on the airport layout plan (**ALP**), making them eligible for Federal Aviation Administration (**FAA**) funding; provided they qualify under the FAA's Airport Improvement Program (**AIP**). Implementation of the proposed projects is at the sponsor's discretion and is contingent on the outcome of any required environmental reviews and funding commitments made at the time of implementation.

10.1. Capital Improvement Plan

Capital projects differ from operations and maintenance (**O&M**) projects in that capital projects often require substantial funding, must be planned several years in advance, and can take a few years to complete. Operations and maintenance projects consist of short-term projects related to routine maintenance as well as the operation and management of the airport. Capital projects are normally large infrastructure improvements and can include construction of runways, runway extensions, taxiways, and aprons. Acquisition of certain types of equipment, such as snow removal equipment or firefighting and rescue trucks as well as construction of associated storage buildings, may also be considered capital projects that are eligible for FAA and state funding assistance.

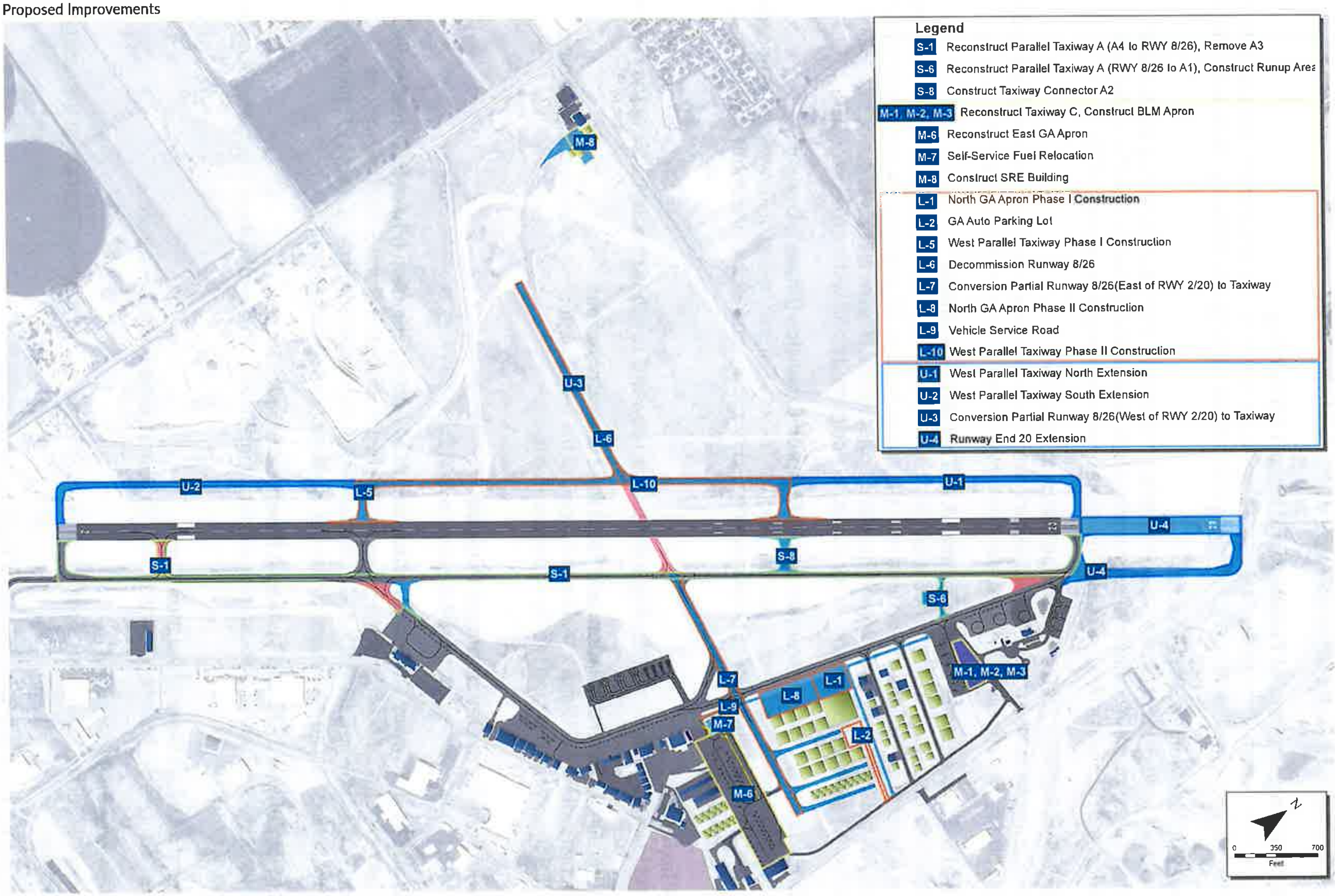
Airport master plans are usually completed every seven to 10 years at commercial service airports and every 10 to fifteen years at general aviation (**GA**) airports. Larger development items are determined to be needed and are justified through these planning efforts. Once a planning effort identifies a necessary project, it is added to the capital improvement plan by the airport sponsor during the annual capital improvement plan review by the state and FAA. Typically, during this review, completed projects are removed, pending projects are refined, and new projects are added. For large projects, depending on the priority of the project, it may take years to program (i.e., secure) the funding. Runways and safety areas are the top priority, and projects related to safety, such as wildlife fencing, are a high priority.

10.1.1. Project Phasing

The phasing of projects included in this capital improvement plan takes into consideration the timing and relationships of the projects. It is also based on priorities to maximize the efficiency of project implementation and funding availability. The plan includes projects listed in the airport's current capital improvement plan (as of 2024). New initiatives identified in this airport master plan were then included in the years beyond the projects already programmed for the next five years. While future demand and funding availability typically drive the implementation of projects, some projects can be undertaken at any point during the planning period. It is crucial for the airport sponsor to plan and program necessary projects well in advance to ensure both federal and local funding is available.

Projects included in the capital improvement plan are grouped based on when projects are expected to take place. Short-term development projects are expected to take place within one to five years, medium-term development projects are expected to take place within six to 10 years, and long-term development projects are expected to take place within 11–20 years. Some projects that are expected to take place beyond the 20-year planning horizon are also discussed because they are significant enough to justify reserving the land now so it remains available until needed. While these ultimate development projects are not included in the capital improvement plan at this time, it is essential they are taken into consideration when planning for the future in order to safeguard the airport's future growth and operational capabilities. These projects are shown in Figure 10.1 along with the corresponding project numbers and a summary of the phasing plan.

Figure 10.1: Proposed Improvements



Source: Ardurra.

10.1.2. Short-Term Development Projects

The following projects are expected to take place within one to five years.

S-1 and S-2: Reconstruct Parallel Taxiway A and Install LED Lighting
These projects involve a full reconstruction of the existing pavement on Taxiway A from Taxiway Connector A4 to Runway 8/26, upgrading to energy-efficient LED taxiway lighting, and removing Taxiway Connector A3.

S-3: Runway 8/26 Pavement Preservation
This project involves the use of pavement preservation treatments, such as crack sealing and surface treatments, to prevent significant damage, minimize costly repairs, and delay the need for expensive rehabilitation and reconstruction projects. (This project was approved in fiscal year 2022.)

S-4 and S-5: Seal Runway 2/20 and Taxiway Connectors A1–A4
These projects involve applying a protective sealant over the entire runway surface to waterproof it, shield it from oxidation, provide chemical resistance, and enhance durability to extend its useful life.

S-6, S-7, and S-8: Reconstruct Parallel Taxiway A and Install LED Lighting
These projects involve reconstruction of the existing pavement on Taxiway A from Runway 8/26 to Taxiway Connector A1, construction of a run-up area near the end of Runway 20, and construction of a new taxiway connector (A2) between Runway 8/26 and Taxiway Connector A1. (This new taxiway connector will be designated as A2 and the taxiway connector currently designated as A2 will then become A3.)

S-9 and S-10: Taxiway C Reconstruction and BLM Apron Expansion (Phase I: Design)
These projects involve designing the reconstruction of Taxiway C from the end of Runway 20 to Runway 8/26 along with the installation of LED taxiway edge lights and an expansion of the apron used by the U.S. Bureau of Land Management (BLM).

S-11: Seal Taxiway C
This project involves routine crack sealing and repair of Taxiway C to extend the useful life of the pavement.

S-12: Seal Terminal, General Aviation, and Fixed Base Operator Aprons
This project includes routine crack sealing and repair of the terminal, general aviation, and fixed base operator (FBO) aprons to extend the life of the pavement.

10.1.3. Medium-Term Development Projects

The following projects are expected to take place within six to 10 years.

M-1, M-2, and M-3: Taxiway C Reconstruction and BLM Apron Expansion (Phase II: Construction)
These projects are a continuation of the projects designed in projects S-9 and S-10. They include reconstruction of Taxiway C from the end of Runway 20 to Runway 8/26, installation of LED taxiway edge lights, and expansion of the apron used by the U.S. Bureau of Land Management.

M-4 and M-5: Runway 2/20 and Taxiway A Pavement Maintenance
These projects involve routine crack sealing and repair of Runway 2/20 and Taxiway A between Runway 8/26 and Taxiway Connector A1.

M-6: Reconstruct East General Aviation Apron
This project involves a complete reconstruction of the east general aviation apron.

M-7: Self-Service Fuel Relocation
The self-service fuel station will be relocated to a safer and more advantageous location on the east general aviation apron.

M-8: Construct a Four-Bay Snow Removal Equipment Building
The aging snow removal equipment building will be replaced with a facility capable of meeting the airport's needs.

10.1.4. Long-Term Development Projects

The following projects are expected to take place within 11–20 years.

L-1: North General Aviation Apron (Phase 1: Design and Construction)

This project involves the design and construction of the infrastructure needed for development of a large maintenance, repair, overhaul (**MRO**) and fixed base operator (**FBO**) facility as well as corporate aircraft hangars. This project is split into two phases; the second phase (L-8) is dependent on Runway 8/26 being decommissioned.

L-2: General Aviation Parking Lot

This project involves the design and construction of a parking lot and vehicle access to the aircraft hangars currently located in this area as well as the areas planned for development as part of projects L-1 and L-8. This project will run concurrently with Phase 1 of the north general aviation apron project L-1.

L-3: Airport Master Plan

It is recommended that airports complete a new airport master plan every seven to 10 years to help the airport plan and respond to changes in aviation activity, the economy, and the aviation industry as well as updated regulations, requirements, and improvements in technology.

L-4: Environmental Compliance for Runway 8/26 Decommissioning and Constructing a Parallel Taxiway

This project involves completing a categorical exclusion (**CATEX**) prior to decommissioning Runway 8/26 and constructing a parallel taxiway on the west side of Runway 2/20.

L-5: West Parallel Taxiway (Phase I: Design and Construction)

This project involves the design and construction of a partial parallel taxiway on the west side of Runway 8/26 to provide access to the area that will be developed for use as a cargo apron. It also includes the design and construction of a new taxiway connector located opposite the taxiway connector that is currently designated as A2. (Taxiway Connector A2 will become A3 upon completion of project S-8.)

L-6: Runway 8/26 Decommissioning and Airport Layout Plan Update

This project involves completing the steps necessary to decommission Runway 8/26. This includes all formal notifications, physical closure, application of required markings, strategic removal of pavement, and all other administrative aspects of a runway closure as well as an airport layout plan update.

L-7: Partial Conversion of Runway 8/26 to a Taxiway

This project involves reallocation of the pavement east of Runway 2/20 that is currently used for Runway 8/26 and converting it to a taxiway.

L-8: North General Aviation Apron (Phase II: Design)

This is the second phase of project L-1 and involves completing the design for the north general aviation apron and the infrastructure needed for development of a large maintenance, repair, overhaul (**MRO**) and FBO facility as well as corporate aircraft hangars.

L-9: Vehicle Service Road

This project involves the design and construction of a vehicle service road (**VSR**) parallel to Taxiway C to provide a safe access route between the FBO, Bureau of Land Management apron, and general aviation hangar areas on the north side of the airport. This will improve safety by providing fuel trucks with an efficient route for making deliveries, ensuring all airport vehicle traffic is kept off of taxiways, and reducing use of vehicle access gates.

L-10: West Parallel Taxiway (Phase II: Design and Construction)

This project is a continuation of project L-5 and involves extending the partial parallel taxiway to enhance access and improve circulation along the west side of Runway 2/20. It includes the design and construction of a partial parallel taxiway to the east of Runway 8/26 and a new taxiway connector located opposite the new Taxiway Connector A-2 that will be constructed as part of project S-8.

10.1.5. Ultimate Development Projects

Ultimate development projects are projects expected to take place beyond the 20-year planning period. Implementation of these projects will depend on how the needs of the airport change and evolve during the coming years.

U-1: West Parallel Taxiway (Phase III: Design and Construction)
This project is a continuation of projects L-5 and L-10 and involves extending the partial parallel taxiway to enhance access and improve circulation along the west side of Runway 2/20. It includes the design and construction of a partial parallel taxiway that extends to the end of Runway 20.

U-2: West Parallel Taxiway (Phase VI: Design and Construction)
This project is a continuation of projects L-5, L-10, and U-1 and involves extending the partial parallel taxiway to enhance access and improve circulation along the west side of Runway 2/20. It includes the design and construction of a partial parallel taxiway that extends to the end of Runway 2.

U-3: Conversion Partial Runway 8/26 (West of Runway 2/20) to Taxiway
This project involves reallocation of the pavement west of Runway 2/20 that is currently used for Runway 8/26 and converting it to a taxiway. This will provide access to the areas on the west side of the airport that will be developed for general aviation use.

U-4: Runway 20 Extension
This project involves extending the end of Runway 20 an additional 1,347 feet for a total runway length of 10,000 feet to accommodate air carrier and very large air tanker (**VLAT**) operations.

10.1.6. Rough Order of Magnitude Cost Estimates

Rough order of magnitude cost estimates for each of the short-term development projects included in the airport's current capital improvement plan are listed in Table 10.1, medium-term development projects are listed in Table 10.2, and long-term development projects are listed in Table 10.3. This includes both ongoing projects from the previous capital improvement plan as well as projects proposed as part of this airport master plan. Ultimate development projects are not included in the capital improvement plan at this time so cost estimates are not included for these projects.

The total cost for each project was estimated based on the current unit cost of materials and estimated gross quantities required for the project. It also includes the estimated cost of construction administration, engineering, and design as well as a 15% contingency. These estimates are in 2024 dollars and are only a general approximation provided for planning purposes. Several factors, including inflation and changes in the price of construction materials, can affect the accuracy of these estimates. The capital improvement plan should be reviewed annually, and these estimates should be updated prior to projects being implemented.

These tables also list the estimated amount the FAA is expected to contribute for each project. For projects eligible for Airport Improvement Program grant funding, the FAA is expected to contribute 95%, and the remaining 5% will be paid by the airport sponsor.

Table 10.1: Short-Term Development Project Costs

Project ID	Project Description	Federal	Local	Total
S-1	Reconstruct Parallel Taxiway A (A4–Runway 8/26)	$7,030,000	$370,000	$7,400,000
S-2	Install LED Lighting on Taxiway A (A4–Runway 8/26)	$1,045,000	$55,000	$1,100,000
S-3	Runway 8/26 Pavement Preservation	$0	$200,000	$200,000
S-4	Seal Runway 2/20	$665,000	$35,000	$700,000
S-5	Seal Taxiway Connectors A1–A4	$100,000	$6,000	$106,000
S-6	Taxiway A Reconstruction (Runway 8/26–A21)	$5,225,000	$275,000	$5,500,000
S-7	Taxiway A Reconstruction: Install LED Lighting	$456,000	$24,000	$480,000
S-8	Construct Taxiway Connector A2	$1,710,000	$90,000	$1,800,000
S-9	Taxiway C Reconstruction: RWY 20–RWY 8/26 (Ph I: Design)	$570,000	$30,000	$600,000
S-10	Taxiway C Reconstruction: Install LED lighting (Ph I: Design)	$100,000	$6,000	$106,000
S-11	Seal Taxiway C	$250,000	$20,000	$270,000
S-12	Seal Terminal, General Aviation, and FBO Aprons	$400,000	$50,000	$450,000
	Total	**$17,551,000**	**$1,161,000**	**$18,712,000**

Table 10.2: Medium-Term Development Project Costs

Project ID	Project Description	Federal	Local	Total
M-1	Taxiway C Reconstruction (Phase II: Construction)	$3,847,500	$202,500	$4,050,000
M-2	Taxiway C: Install LED Lighting (Phase II: Construction)	$855,000	$45,000	$900,000
M-3	BLM Apron Expansion (Phase II: Construction)	$902,500	$47,500	$950,000
M-4	Runway 2/20 Pavement Maintenance	$750,000	$50,000	$800,000
M-5	Taxiway A Pavement Maintenance	$350,000	$50,000	$400,000
M-6	Reconstruct East General Aviation Apron	$9,120,000	$480,000	$9,600,000
M-7	Self-Service Fuel Relocation	$997,500	$52,500	$1,050,000
M-8	Construct a Four-Bay Snow Removal Equipment Building	$4,009,000	$211,000	$4,220,000
	Total	**$20,831,500**	**$1,138,500**	**$21,970,000**

Table 10.3: Long-Term Development Project Costs

Project ID	Project Description	Federal	Local	Total
L-1	North GA Apron (Phase 1: Design and Construction)	$2,261,000	$119,000	$2,380,000
L-2	General Aviation Parking Lot	$0	$900,000	$900,000
L-3	Airport Master Plan	$950,000	$50,000	$1,000,000
L-4	Environmental Compliance (RWY 8/26 Decommissioning)	$47,500	$2,500	$50,000
L-5	West Parallel Taxiway (Phase I: Design and Construction)	$2,859,500	$150,500	$3,010,000
L-6	Runway 8/26 Decommissioning and ALP Update	$665,000	$35,000	$700,000
L-7	Partial Conversion of Runway 8/26 to a Taxiway	$579,500	$30,500	$610,000
L-8	North General Aviation Apron (Phase II: Design)	$2,052,000	$108,000	$2,160,000
L-9	Vehicle Service Road	$1,121,000	$59,000	$1,180,000
L-10	West Parallel Taxiway (Phase II: Design and Construction)	$7,875,500	$414,500	$8,290,000
	Total	**$18,411,000**	**$1,869,000**	**$20,280,000**

10.2. Airport Funding Sources

There are numerous sources of funding for airport projects that include a combination of local, state, and federal funds. The following programs are some of the more common sources used to fund capital improvement projects.

10.2.1. Airport Improvement Program

The Airport Improvement Program (**AIP**) provides grants for eligible planning and development projects at National Plan of Integrated Airport System (**NPIAS**) airports. This program is funded by the Airport and Airway Trust Fund (**AATF**) which is supported by taxes on ticket sales, air cargo and airmail, and aircraft fuel. To be eligible, projects must be related to enhancing airport safety, capacity, security, or environmental concerns. These typically include airfield construction and rehabilitation, airfield lighting and signage, navigational aids, and land acquisition as well as planning and environmental studies. Certain professional services that are necessary for eligible projects, such as planning, surveying, and design can also be eligible. Funds cannot be used for normal airport operating costs, including salaries, mowing equipment, and supplies. Airport Improvement Program grants mostly come in the form of nonprimary entitlements, and CDC currently receives $1,300,000 per year in entitlements.

10.2.2. Airport Infrastructure Grants

The Infrastructure Investment and Jobs Act of 2021 (**IIJA**), also referred to as the bipartisan infrastructure law (**BIL**), provided $25 billion in funding for the National Airspace System. Under the bipartisan infrastructure law, all airports in the National Plan of Integrated Airport Systems (**NPIAS**) received Airport Infrastructure Grant (**AIG**) entitlement funds for five years (fiscal year 2022 through fiscal year 2026). Allocation of these grant funds is based on enplanements from the previous calendar year for primary commercial service airports. The local match for these grants is the same as the sponsor's Airport Improvement Program grant match.

10.2.3. Passenger Facility Charges

Revenue from passenger facility charges is another source of funding for airport infrastructure projects. These are fees that were authorized by the Aviation Safety and Capacity Expansion Act of 1990 to help pay for infrastructure at commercial service airports. The passenger facility charge at CDC is currently set to $4.50 which is the maximum an airport can charge.

10.2.4. Fuel Tax

In Utah, aviation fuel is subject to state tax. At non-international airports like CDC, the tax rate is $0.09 per gallon. The airport where the fuel was purchased receives $0.03 per gallon and the Utah Department of Transportation (**UDOT**) Division of Aeronautics receives $0.06 per gallon for its operating budget. The tax rate is $0.04 per gallon for federally certificated air carriers with the airport receiving $0.03 per gallon and $0.01 per gallon is allocated to the Division of Aeronautics operating budget.

These tax revenues typically generate approximately $17,000 per year for CDC. According to Utah code, this can be used at the discretion of the airport's governing authority for construction and improvement projects, operations and maintenance, and debt service.

10.2.5. Bond Proceeds

Airports can issue bonds to pay for infrastructure projects by using future revenue to secure the necessary funding. This allows airport authorities to borrow money that is later repaid with interest. Like other municipal bonds, airport bonds are generally exempt from federal taxes. This tax-exempt status allows airports to issue bonds at lower interest rates than taxable bonds which reduces the cost to finance a project.

The use of bonds is critical for large projects, but it can impact the availability of revenue from sources like passenger facility charges and airport-generated income that are often used to service this debt.

While bond financing is commonly used by larger airports for substantial infrastructure projects, non-hub airports can also benefit from this funding mechanism. However, its applicability and feasibility can vary. Bonds can be a relevant and beneficial funding source for non-hub airports like CDC, providing an evaluation of revenue capacity and debt service obligations are carefully managed. The decision to issue bonds should be based on a comprehensive assessment of the airport's financial health and funding needs. The airport does not currently have any bond financing.

10.2.6. Utah State Grant and Loan Programs

The Utah Airport Aid Program (**UAAP**) provides discretionary grant funds to public airports in Utah. Eligible participants include any county, city, or public entity designated by Utah Code. These entities can apply for Utah Airport Aid Program funds to support airport improvements and development projects. Utah Airport Aid Program funds are derived from Utah's aviation fuel tax, which is $0.09 per gallon for aviation gasoline and jet fuel at non-international airports like CDC. The Utah Airport Aid Program is a trustee and benefit program that provides matching funds to municipal governments for improvements at public airports to ensure the proper development of a statewide airport system and fair distribution of aviation tax money. Allocations must address high-priority needs and maximize the use of available funds. The Utah Airport Aid Program is administered according to Utah Administrative Code. To participate, airport owners should have a state-approved airport plan and protective zoning in place. If these requirements are not met, the Utah Airport Aid Program can provide funding to help develop or update the necessary plans and zoning.

The Utah Department of Transportation Division of Aeronautics also offers two other programs to assist airports. The Airport Maintenance and Safety Supplies Program provides funding for maintenance items such as lamps, light fixtures, and wind cones, and the Small Projects Program provides funding for emergency or unscheduled improvements costing less than $2,000.

The Utah Governor's Office of Economic Opportunity administers several programs to support rural community development. This includes the Community Development Block Grant Program (**CDBG**) which is a grant available to Utah cities and counties with populations of less than 50,000. This program funds public facility improvements that support business expansion and job creation.

10.2.7. Local Funding

Local funds are typically derived from income generated by the operation of the airport through leases and user fees or contributions made by the sponsoring agency. They are mainly used as matching funds for federal grants or to fund operating and maintenance costs and administration of the airport. The types of projects that are typically funded using local funds include automobile parking areas, private aprons and hangars, fuel-storage facilities, and utilities.

10.2.8. Private Funding

Private funding for airport improvements typically comes from companies or individuals (e.g., FBO, cargo companies) that have a vested interest in investing in airport facilities. Such endeavors may require substantial infrastructure improvements that ultimately benefit the public use portions of the airport but obligate the investor with a large financial commitment. Financial commitments of this magnitude require long-term agreements between the private entity and airport sponsor to make it attractive to investors.

10.2.9. Financial Feasibility Summary

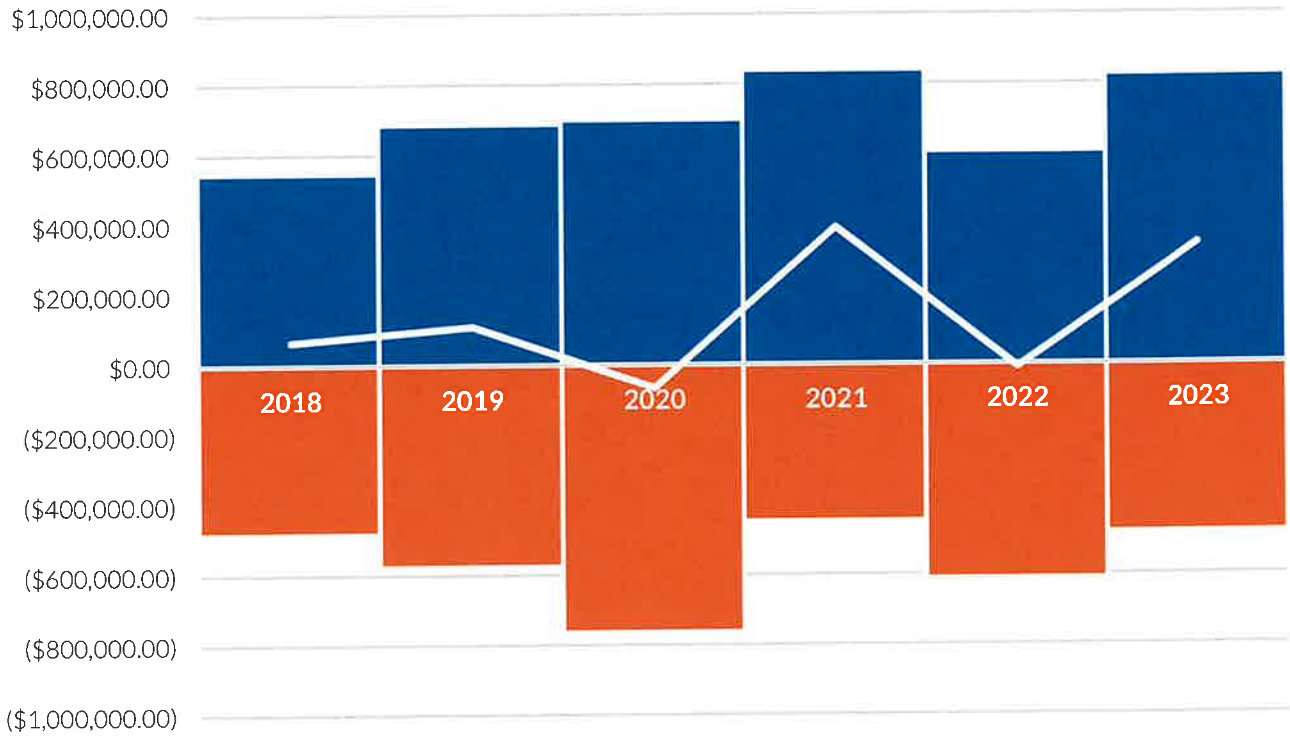
The airport experienced noticeable fluctuations in both revenue and expenses for 2018 to 2023 (Figure 10.2). The airport experienced a notable increase in income for 2021 when it hit a peak of $839,015. This was largely due to higher revenues and controlled expenses for that year. However, the overall trend reflects a mixed financial performance with fluctuations in net income.

The dip in net income for 2020 is likely attributed to the impact of the COVID-19 pandemic which severely disrupted global air travel and airport operations. The pandemic led to reduced passenger volumes, decreased airline operations, and lower overall demand for airport services; all of which contributed to the financial downturn observed for 2020.

These figures indicate that while the airport has had profitable years, it has also faced financial challenges; particularly in maintaining a consistent surplus. This suggests that while the airport has the potential to be financially sustainable, careful management of revenue generation and cost controls will be critical in ensuring its sustained financial health. The evident variability in net income underscores the importance of strategic planning and possibly even exploring additional revenue streams or cost-saving measures to reduce risks in future operations.

This variability in financial performance presents an ongoing challenge in funding capital projects at the airport. However, this is common among small non-hub commercial and general aviation airports. As such, pursuing revenue generation opportunities will be vital for ensuring sustainable revenue streams. This airport master plan identified multiple opportunities to cut costs and increase revenue from land leases. Specifically, decommissioning Runway 8/26 will, in the long term, reduce overall maintenance costs and open prime areas of land for hangar development. Additionally, demand for non-aeronautical developments on property owned by the airport may materialize as Cedar City continues to expand. Overall, CDC is well-positioned to support future airport enhancements.

Figure 10.2: Airport Net Revenue



	2018	2019	2020	2021	2022	2023
Revenues	$547,917	$686,674	$698,742	$839,015	$605,557	$824,538
Expenses	($481,680)	($576,057)	($764,558)	($448,281)	($614,299)	($481,680)
Net Income	**$66,237**	**$110,617**	**($65,816)**	**$390,734**	**($8,742)**	**$342,858**

Source: Airport Records

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PLANNING FOR COMPLIANCE

11

CHAPTER ELEVEN

COMPLIANCE

11.1. Introduction

Airport sponsors that accept federal grants or federal property must also agree to certain obligations known as grant assurances. The Federal Aviation Administration (**FAA**) airport compliance program helps airport sponsors meet these obligations, and FAA Order 5190.6B, *Airport Compliance Manual*, provides guidance in interpreting and implementing these commitments. In general, these grant assurances remain in effect for the useful life of the project but do not last longer than 20 years. An exception is for land acquisition grants. These grant assurances remain in effect for as long as the property is owned and operated as an airport. The duration and applicability of each grant assurance for airport sponsors are summarized in FAA Order 5100.38D, *Airport Improvement Program Handbook*, Table 2-5, Duration and Applicability of Grant Assurance.[1]

Title 14 of the Code of Federal Regulations (**CFR**) Part 139, *Certification of Airports*, establishes standards for airports with (scheduled or unscheduled) commercial passenger service. Part 139 airports are subcategorized as Class I–IV airports based on the size of the air carrier aircraft that operate at the airport. Under Part 139, the size of the aircraft depends on the number of seats the aircraft has. An air carrier with 10 to 30 seats is considered to be small, and an air carrier with more than 30 seats is considered to be large. Cedar City Regional Airport (**CDC**) is a Class I Part 139 airport that has scheduled operations of both large and small aircraft as well as unscheduled operations of large aircraft.

11.2. Sources of Obligations

Each grant agreement and deed of property conveyance includes the obligations an airport sponsor must agree to as a condition of accepting grant funding or property from the federal government. The FAA is responsible for administering the following federal financial assistance programs:

- Grant agreements issued through airport development grant programs such as the Federal Aid to Airports Program (**FAAP**), Airport Development Aid Program (**ADAP**), and Airport Improvement Program (**AIP**).
- Grant agreements and instruments of non-surplus conveyance issued under the 1946 Airport Act, 1970 Airport Act, or the Airport and Airway Improvement Act of 1982 (**AAIA**).
- Surplus property instruments of transfers issued under the provisions of Section 13(g) of the Surplus Property Act of 1944.
- Deeds of conveyance issued under Section 16 of the 1946 Airport Act, Section 23 of the 1970 Airport Act, and Section 516 of the Airport and Airway Improvement Act.
- AP-4 agreements authorized by various acts between 1939 and 1944.
- Exclusive Rights under Section 303 of the Civil Aeronautics Act of 1938 and Section 308(a) of the FAA Act.
- Commitments included in environmental documents prepared in accordance with FAA requirements related to the National Environmental Policy Act of 1969 (**NEPA**) and the Airport and Airway Improvement Act.
- Any written agreements between the sponsor and the FAA. This includes settlement agreements resulting from litigation.

11.3. Federal Grant Assurances

There are 39 Grant Assurances that federally obligated airport sponsors must comply with in the performance of grant agreements for airport development, planning, and noise compatibility programs.[2] The FAA has published *Airport Sponsor and Airport User Rights and Responsibilities* to provide airport sponsors with guidance in understanding and fulfilling these grant assurances by explaining some of the more complex grant assurances (Grant Assurances 5, 22, 23, 24, and 25) in simple terms.[3] The FAA also provides basic guidance for interpreting the various commitments for federal grant funds in FAA Order 5190.6B, *Airport Compliance Manual*, and the FAA's Airport Compliance Program is designed to help ensure airport sponsors are fully informed of their federal obligations and understand how to comply with each grant assurance given the circumstances at a particular airport.

Most violations of grant assurances occur unintentionally rather than in a deliberate attempt to avoid federal obligations because many airport sponsors do not fully understand every requirement or how they apply in a specific circumstance. The Airport Cooperative Research Program (**ACRP**) Report 184, *Understanding FAA Grant Assurance Obligations*, has also been published by the Transportation Research Board (**TRB**) to provide additional guidance in interpreting and meeting these obligations. According to this report, the majority of compliance complaints made against airports were related to the following grant assurances.[4]

11.3.1. Grant Assurance 5: Preserving Rights and Powers

Grant Assurance 5, Preserving Rights and Powers, prohibits an airport sponsor from taking or permitting any action that would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in the grant agreement without FAA approval. It also requires airport sponsors to act promptly to acquire, extinguish, or modify any outstanding rights or claims of rights of others that would interfere with the sponsor's ability to comply with all of its obligations. In other words, airport sponsors can't take any action or enter into any agreement that could prevent it from complying with its grant obligations. This means most real estate transactions require prior FAA approval.

11.3.2. Grant Assurance 19: Operation and Maintenance

Grant Assurance 19, Operation and Maintenance, applies to airports subject to Federal Aid to Airports Program, Airport Development Aid Program, or Airport Improvement Program agreements; surplus property; and conveyances as well as deeds of conveyance issued under Section 16, Section 23, and 516.

Obligation: To preserve, operate, and maintain airport facilities in a safe and serviceable condition for the benefit of the public and in a manner that will eliminate aviation hazards. This applies to all facilities shown on the approved airport layout plan that are dedicated to aviation use and includes facilities conveyed under the Surplus Property Act.

11.3.3. Grant Assurance 20: Hazard Removal and Mitigation

Grant Assurance 20, Hazard Removal and Mitigation, requires airports to prevent, as much as reasonably possible, the growth or establishment of obstructions in the aerial approaches to the airport. The term obstruction refers to natural or man-made objects that penetrate the imaginary surfaces as defined in Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace.

11.3.4. Grant Assurance 21: Compatible Land Use

Grant Assurance 21, Compatible Land Use, requires airports to take appropriate action, to the extent reasonably possible, to restrict the use of lands in the vicinity of the airport to activities and purposes compatible with normal airport operations.

11.3.5. Grant Assurance 22: Economic Nondiscrimination

Grant Assurance 22, Economic Nondiscrimination, requires airports to operate for the use and benefit of the public and to make it available to all types, kinds, and classes of aeronautical activity on fair and reasonable terms and without unjust discrimination.

11.3.6. Grant Assurance 23: Exclusive Rights

Grant Assurance 23, Exclusive Rights, requires airports to operate the airport without granting or permitting any exclusive right to conduct any aeronautical activity at the airport. Aeronautical activity is defined as any activity that involves or is related to the operation of an aircraft or contributes to the safety of such operations (e.g., air taxi and charter operations, aircraft storage, sale of aviation fuel).

11.3.7. Grant Assurance 24: Fee and Rental Structure

Grant Assurance 24, Fee and Rental Structure, requires airports to maintain a fee and rental structure for the facilities and services being provided to airport users that will make the airport as self-sustaining as possible. (Note: Fair and reasonable for aeronautical activities and fair market value for nonaeronautical activities.)

11.3.8. Grant Assurance 25: Airport Revenue

Grant Assurance 25, Airport Revenue, requires airports to use all airport revenues for the capital or operating costs of the airport, the local airport system, or other local facilities that are owned or operated by the owner or operator of the airport and directly relate to the actual air transportation of passengers or property.

a. Special Conditions Affecting Noise Land and Future Aeronautical Use Land

Airports must apply interim revenue derived from noise land or future aeronautical use land to projects eligible for grants under the Airport Improvement Program. This income may not be used for the matching share of any grant.

11.3.9. Grant Assurance 29: Airport Layout Plan

Grant Assurance 29, Airport Layout Plan, requires airports to develop, operate, and maintain the airport in accordance with its most recently approved airport layout plan (**ALP**). Airport land depicted on the latest property map, which is Exhibit A of the airport layout plan, cannot be disposed of or otherwise encumbered without prior FAA approval.

11.3.10. Grant Assurance 31: Disposal of Land

Grant Assurance 31, Disposal of Land, requires airports to obtain FAA approval for the sale or other disposal of property acquired under the Federal Aid to Airports Program, Airport Development Aid Program, or Airport Improvement Program as well as for the use of any net proceeds.

11.3.11. Other Obligations

Grants agreements can also include obligations relating to:

- Use of Government Aircraft
- Land for Federal Facilities
- Standard Accounting Systems
- Reports and Inspections
- Consultation with Users
- Terminal Development Prerequisites
- Construction Inspection and Approval
- Minimum Wage Rates
- Veterans Preference
- Audits, Audit Reports, and Record Keeping Requirement
- Local Approval
- Civil Rights
- Construction Accomplishment
- Planning Projects
- Good Title
- Sponsor Fund Availability

11.4. Complaint Resolution

Under Title 14 of the Code of Federal Regulations 13.1, *Reports of Violations*, any person who knows of a violation of federal aviation laws, regulations, rules, policies, or orders may informally report the violation to the FAA. This includes allowing airport users to make informal complaints to report allegations of grant assurance violations. Individuals seeking to file informal complaints are encouraged to do so in writing. Alleged violations are then investigated by the FAA's Airports District Office or Regional Airports Division.

Title 14 CFR Part 16, *Rules of Practice for Federally-Assisted Airport Enforcement Proceedings*, which is commonly referred to as Part 16, outlines the formal complaint process. To file a formal complaint under Part 16, complainants must be directly and substantially affected by any alleged noncompliance. Part 16 includes regulatory time frames and detailed procedures associated with the process. This includes engaging in a good faith effort to resolve the matter informally as this is the preferred course of action when it comes to addressing violations. The FAA maintains a Part 16 Decision Database that contains copies of all the final determinations of these complaints. For airports facing a formal complaint, it may be helpful to review previous decisions made in similar cases.[5]

11.5. Compatible Land Use

Land use compatibility is attained when property located on and near an airport is used in ways that don't adversely affect flight operations and is itself not adversely affected by airport operations. According to FAA Order 5190.6B, *Airport Compliance Manual*, land use planning and zoning laws are important tools to help protect airport investments from incompatible land uses, protect airport approaches, and ensure land uses on and near airport property are compatible with normal airport operations while also meeting federal obligations relating to Grant Assurance 21.

This includes restricting uses that create or contribute to flight hazards such as tall structures or have features that block the line of sight from the control tower to the airfield, inhibit pilot visibility (e.g., glaring lights or smoke), interfere with navigational guidance systems, or attract birds. Likewise, the development of public facilities (e.g., schools, churches, concert halls) and residential areas should also be avoided near the airport due to noise and safety concerns. This includes airpark developments, which allow aircraft owners to reside and park their aircraft on the same property with immediate access to an airfield, because aircraft owners are entitled to the same protection from airport impacts as any other residents of the community.

A "through-the-fence" agreement is one in which the airport allows owners of property located adjacent to the airport to access the airfield. While the FAA does not support these types of agreements under any circumstances when they are associated with residential use (e.g., airpark developments), exceptions may be granted on a case-by-case basis for off-airport aeronautical businesses providing the sponsor makes sure the agreement does not violate any grant assurances.[6]

11.5.1. Improper and Noncompliant Land Uses

The most common improper and noncompliant land use is when property that has been designated for aeronautical use, or on property not released by the FAA for nonaeronautical use, is used or leased for nonaeronautical uses (i.e., not shown on the airport layout plan). This includes using hangars to store automobiles, using property and buildings for animal control facilities, nonairport vehicle and maintenance equipment storage, aircraft museums, and municipal administrative offices.

Failure to take adequate steps to prevent hazardous wildlife on airport property is another common area of noncompliance. This can stem from allowing incompatible land uses that are hazardous wildlife attractants such as wastewater ponds, municipal flood control channels and drainage basins, sanitary landfills, solid waste transfer stations, electrical power substations, water storage tanks, public parks, or golf courses. Additionally, towers or buildings that penetrate Part 77 surfaces or are located within a runway protection zone, runway object free area, or obstacle free zone are also incompatible land uses.[7]

11.6. Part 139 Certification of Airports

Part 139, Airport Operating Certificates, serves to ensure safety in air transportation. To obtain a certificate, an airport must agree to certain operational and safety standards and provide for such things as firefighting and rescue equipment. These requirements vary depending on the size of the airport and the type of flights available. As a Class I airport, Cedar City Regional Airport is required to comply with all Part 139 requirements. As part of this certification, the airport must also have an FAA-approved Airport Certification Manual (**ACM**), Airport Emergency Plan (**AEP**), Airport Security Plan (**ASP**), and Snow and Ice Control Plan (**SICP**).

Part 139 is subdivided into parts A through D. Subpart D lists the operational requirements that a Part 139 certificate holder must meet. The following information pertains to Subpart D and what an airport must do to maintain its Part 139 certification.

- **§139.301, Records:** Maintain personnel training, inspection, accident and incident, and airport condition records.
- **§139.303, Personnel:** Description of the required training, re-occurring training, familiarization, and lengths to keep records of training.

- **§139.305, Paved areas:** Description when repairs are required for runways, taxiways, loading ramps, and parking areas.
- **§139.307, Unpaved areas:** Description when repairs are required for gravel, turf, and unpaved runways, taxiways, or loading ramps and parking areas.
- **§139.309, Safety areas:** Description of the safety area required to be provided by the airport for each runway and taxiway used for air carrier use.
- **§139.311, Marking, signs, and lighting:** Description of the required marking, signs, and lighting for air carrier operations.
- **§139.313 Snow and ice control:** Description of the minimum required standards for an airport's snow and ice control plan.
- **§139.315, Aircraft rescue and firefighting index determination:** Description of the length and frequency in aircraft to determine the Aircraft Rescue and Firefighting (ARFF) index.
- **§139.317, Aircraft rescue and firefighting equipment and agents:** Description of the minimum equipment and agents needed corresponding to the appropriate Aircraft Rescue and Firefighting index.
- **§139.319, Aircraft rescue and firefighting operational requirements:** Addresses rescue and firefighting capabilities, how to increase an Aircraft Rescue and Firefighting index, procedures for reducing capabilities, required vehicle communication, vehicle markings, vehicle readiness, response requirements, personnel training, hazardous materials guidance, emergency access roads, methods and procedures, and implementation of these requirements.
- **§139.321, Handling and storing of hazardous substances and materials:** Description of protection of persons and property for airports who handle cargo.
- **§139.323, Traffic and wind direction indicators:** Description of required traffic and wind direction indicators.
- **§139.325, Airport emergency plan:** Description of requirements for an airport emergency plan to minimize the possibility and extent of personal injury and property damage on the airport in an emergency.
- **§139.327, Self-inspection program:** Description of the required self-inspection program each airport must follow to maintain their certificate.
- **§139.329, Pedestrians and ground vehicles:** Addresses the required manner to control pedestrians and ground vehicles to prevent incursions, accidents, and incidents.
- **§139.331, Obstructions:** Addresses the requirements for obstructions.
- **§139.333, Protection of navigational aids:** Description of how to protect navigational aids.
- **§139.335, Public protection:** Description of how to protect the public from harm, including airport personnel within and the public outside the fence.
- **§139.337, Wildlife hazard management:** Description of how and when to conduct wildlife hazard assessments.

- **§139.339, Airport condition reporting:** Description of when and how to disseminate airport condition information to air carriers.
- **§139.341, Identifying, marking, and lighting construction and other unserviceable areas:** Addresses how to mark and light construction and unserviceable areas.
- **§139.343, Noncomplying conditions:** Description as to when to limit air carrier operations when noncomplying conditions exist.

To ensure that airports with Part 139 airport operating certificates are meeting these requirements, FAA airport certification safety inspectors conduct certification inspections. These inspections typically occur yearly, but the FAA can also make unannounced inspections. If the FAA finds an airport is not meeting its obligations, it often imposes an administrative action. It can also impose a financial penalty for each day the airport continues to violate a Part 139 requirement. In extreme cases, the FAA might revoke the airport's certificate or limit the areas of an airport where air carriers can land or takeoff.

11.7. Compliance at Cedar City Regional Airport

The following conditions at Cedar City Regional Airport should be closely monitored to ensure the airport is complying with required grant assurances.

11.7.1. Nonaeronautical Use or Disposal of Obligated Airport Property

The FAA must approve the use of airport property for nonaeronautical purposes if that property is subject to grant assurances, and any agreements must preserve the rights and powers of the airport sponsor to comply with its obligations. This means the sponsor will not sell, lease, encumber, or otherwise transfer its title or interest in any property shown on Exhibit A of the airport layout plan without prior approval from the FAA. When airport property that was purchased (with federal funds) for noise compatibility purposes is no longer needed, the sponsor is required to promptly dispose of the property at fair market value (Grant Assurances 5, 19, 29, 31).[8]

The entire airport is currently designated for aeronautical use. However, several parcels have been identified that should be released for non-aeronautical use based on how they are currently being used or because they could serve potential future needs. These parcels are highlighted on the airport layout plan and will require further coordination with the FAA, including a Section 743 screening process, to formally release them from aeronautical use.

11.7.2. Rates and Charges for Nonaeronautical Uses of Airport Property

An airport sponsor must charge fair market value for any nonaeronautical uses of airport property that is subject to grant assurances. However, it may make airport property available for community purposes at less than fair market value on a limited basis as long as the following conditions are met:

- The property is not needed for aeronautical purposes.
- The property is not producing airport revenue for the airport and there are no near-term prospects for producing revenue.
- Use of the property by the community will not impact the aeronautical use of the airport.
- Use of the property by the community will maintain or enhance positive community relations.
- The proposed use is consistent with the airport layout plan.
- The proposed use is consistent with other federal obligations regarding surplus and non-surplus property.[9]

Rates and charges should be reviewed annually to ensure they are current, relevant, and comply with FAA policies. If rates and charges for nonaeronautical uses are below fair market value, the airport must demonstrate a valid community use if the property is not needed for aeronautical purposes. Nonaeronautical uses should also comply with other grant assurances related to land use.

11.8. Summary

According to FAA Order 5190.6B, *Airport Compliance Manual*, the FAA's airport compliance program is contractually based and does not attempt to control or direct the operation of airports. Rather, the program is designed to monitor and enforce obligations agreed to by airport sponsors in exchange for valuable benefits and rights granted by the federal government in return for substantial direct grants of funds and for conveyances of federal property for airport purposes. The airport compliance program is designed to protect the public interest in civil aviation. Grants and property conveyances are made in exchange for binding commitments (i.e., grant assurances) designed to ensure the public interest in civil aviation will be served. The FAA bears the responsibility of seeing that these commitments are met. The FAA considers all federal airport obligations important. However, the most important objective in the FAA's oversight of the compliance program is to ensure and preserve safety at all federally obligated airports.

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12

RECYCLING AND SUSTAINABILITY

TABLES

FIGURES

CHAPTER TWELVE

SUSTAINABILITY

The purpose of this section is to provide a general overview of sustainability and define the Airport Recycling, Reuse, and Waste Reduction Plan for Cedar City Regional Airport (**CDC**). This plan is intended to enhance airport recycling and waste reduction efforts in order to comply with Federal Aviation Administration (**FAA**) requirements.

12.1. Sustainability

12.1.1. Defining Sustainability

The United Nations established the Brundtland Commission to address growing concerns about the deterioration of natural resources. In its 1987 report, the commission defined sustainable development as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

The Airports Council International-North America (**ACI-NA**) took this approach a step further by stating that sustainability means taking *"a holistic approach to managing an airport so as to ensure the integrity of the economic viability, operational efficiency, natural resource conservation, and social responsibility (**EONS**) of the airport."*[1]

12.1.2. The EONS Approach to Airport Sustainability

The airport industry, in particular, has adopted the EONS approach to measuring sustainability (economic vitality, operational efficiency, natural resources, and social responsibility). This approach builds on the concept of emphasizing operational efficiency to include the efficient use of environmental and natural resources without creating a financial burden, compromising the needs of future generations, or disrupting operations. In many cases, this approach benefits the local community and the environment while also saving money and stimulating economic growth.

12.1.3. Reasons for Sustainability

Based on these definitions, airports should evaluate how programs and initiatives impact airport users, the surrounding community, and the natural environment and then identify how best to integrate sustainable practices as part of the airport master planning process.

This process will require each airport to consider its particular circumstances and its role in the community, as it relates to sustainability, to set the groundwork for future planning and implementation. Along with improving the community and the natural environment, sustainability makes good business sense. Airports that have adopted sustainable practices have reported the following tangible benefits:

- Greater use of assets.
- Reduced operating and maintenance costs.
- Improved work environment for employees.
- Reduced energy consumption, waste, and emissions.
- Enhanced community relationships.[2]

12.1.4. How Sustainability Relates to Cedar City Regional Airport

In the *Cedar City 2022 General Plan*, Cedar City recognized that the current landfill, which is managed by Iron County Solid Waste and Landfill, has a limited lifespan and is supportive of the community's interest in putting a stronger emphasis on sustainability as it plans for the future. This includes improved recycling services to reduce demand on the landfill.[3] In an effort to support this commitment to environmental sustainability and resource preservation, the Cedar City Regional Airport has adopted the EONS approach to sustainability.

12.1.5. Legislative Background

The FAA Modernization and Reform Act of 2012 (**FMRA**) amended Title 49 of United States Code (**USC**) to include several changes to the Airport Improvement Program (**AIP**). The two main changes related to recycling, reuse, and waste reduction at airports are as follows:

- FMRA Section 132(b) expanded the definition of airport planning to include *"developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit."*
- FRMA Section 133 added a provision requiring airports that have a master plan, and receive Airport Improvement Program funding, to ensure that the master plan addresses solid waste recycling at the airport. This includes addressing the following issues:
  - The feasibility of solid waste recycling at the airport.
  - Minimizing the generation of solid waste at the airport.
  - Operation and maintenance requirements.
  - Review of waste management contracts.
  - The potential for cost savings or the generation of revenue.

12.1.6. Types of Waste and Landfill Regulations

Landfills and waste are regulated under the Resource Conservation and Recovery Act (**RCRA**). This defines two main types of waste: solid waste (Subtitle D) and hazardous waste (Subtitle C).[4]

Subtitle D landfills are typically permitted by state and local governments to allow for the management of nonhazardous solid waste such as garbage, refuse, and discarded materials resulting from household and community activities or industrial and commercial operations while Subtitle C landfills are specifically designed to handle hazardous waste.

12.2. Types of Airport Waste

In general, solid waste from airports can be divided into the following categories:

- **Municipal Solid Waste:** This consists of everyday items that are used and then discarded. It includes items such as product packaging, furniture, clothing, bottles, and newspapers.

- **Construction and Demolition Waste:** This is any non-hazardous materials generated by excavation, construction, demolition, renovation, or repair of structures, roads, and utilities. Construction and demolition (**C & D**) waste commonly includes concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components. In some instances, construction and demolition waste may be subject to special requirements (e.g., materials containing asbestos).

- **Compostable Waste:** This includes both green waste and food waste. Green waste is also referred to as yard waste and generally consists of trees, shrubs, grass clippings, leaves, weeds, seeds, and similar debris generated by landscaping activities. Food waste is any food that is not consumed and includes food scraps discarded during meal preparation.

- **Deplaned Waste:** This is trash removed from passenger aircraft and can include bottles, cans, newspapers, magazines, plastic cups and utensils, food waste, and paper towels.

12.2.1. Sources and Pathways of Airport Waste

Each activity has its own set of waste streams that must be considered when implementing a sustainability and recycling program. The following waste streams are typically associated with smaller commercial service airports with significant general aviation operations like Cedar City Regional Airport.[5]

- **Aircraft:** Maintenance of aircraft and ground support equipment produces a variety of waste products that can include grease, oil, universal waste (e.g., batteries), wastewater, plastics, and vehicle waste such as tires and fluids (e.g., brake, transmission, coolant).

- **Airfield:** The airfield (e.g., runways, taxiways, infields) generally only produces a few types of waste products. They can include waste produced from aircraft operations, such as rubber from aircraft tires, and green waste from mowing as well as miscellaneous debris from sweeping and plowing.

- **Airport Construction:** Construction activities have the potential to create a large amount of waste. The types of waste products produced typically include concrete, asphalt, building materials, wood, soil, construction equipment waste, miscellaneous debris, and regular trash.

- **Airport Offices and Pilot Lounges:** The types of waste products generated can include paper, toner cartridges, universal waste (e.g., electronics), food, paper, plastics, aluminum cans, and general trash.

- **Cargo Facilities:** Cargo being transported by air is typically loaded and offloaded at the air cargo facility and is often stored temporarily in the warehouse. Waste can include tires, fluids from equipment, universal waste, wooden pallets, plastics, and packing materials.

- **Terminals:** As the heart of any airport complex, the terminal normally has the largest concentration of people, and this usually translates into the biggest concentration of waste. The terminal houses ticket counters, gates, and car rental counters as well as restaurants and restrooms that are frequented by both passengers and people employed at the airport. In addition, the terminal also houses office space and break areas for airline and airport personnel. The types of waste produced at a terminal are just as varied as the types of activities that take place there. Waste products can include food, paper, plastics, bottles and cans, restaurant grease and oil, universal wastes (e.g., batteries and fluorescent bulbs), green waste (e.g., landscaping), general trash, and deplaned waste.

12.3. Airport Recycling, Reuse, and Waste Reduction Plan

12.3.1. Scope

The content and scope of an airport recycling, reuse, and waste reduction plan vary depending on the unique conditions at each airport, and certain tasks may not be needed for airports that already have a plan. Document scope is governed by the extent and accuracy of available information. This includes information on the airport's current recycling program, the types and amounts of airport waste, and factors that influence the scope of the program. Plans for small, low activity airports may also be less detailed. Though certain tasks may not need to be completed to prepare a plan, review and documentation of each of the five elements listed in the FAA Modernization and Reform Act is required for airport master plans and master plan updates (including sustainability master plans).

This plan only addresses municipal solid waste (**MSW**), construction and demolition materials, and other waste materials that can be legally disposed of in a Subtitle D landfill. It does not address hazardous waste or universal waste (e.g., batteries, fluorescent bulbs, pesticides) because these materials are often subject to federal, state, and local laws with specific disposal and recycling requirements.

In this plan, recycling refers to reducing the amount of solid waste disposed of in a landfill through sustainable practices that include source reduction, reusing materials, or converting waste into reusable material (e.g., mulching or composting).

12.3.2. Recycling Feasibility

Available options for recycling in Cedar City and Iron County are somewhat limited because the city's free "binnie" recycling program was discontinued as of January 1, 2020. Current options include the following:

- Robinson Recycling currently accepts several types of metals including steel, iron, aluminum, copper, and brass as well as miscellaneous items such as computer parts and laptops.

- Recyclops is a subscription recycling service that picks up paper, plastic, cardboard, glass, and metal. This service could be used to reduce the amount of waste produced by the terminal and administrative offices that ends up in the local landfill.

- Metals and green waste (e.g., trees, trimmings) can be recycled at the Iron County Solid Waste and Landfill.

12.3.3. Plan to Minimize Solid Waste Generation at the Airport

The *ACI-NA Policy Handbook* provides a waste decision hierarchy that shows—in order of priority—what constitutes the best overall waste management choices (**Figure 12.1**). These include to avoid, to reduce, to reuse, to recycle, and lastly, to dispose—with the ultimate goal of eliminating waste going to landfills.

Figure 12.1: Waste Decision Hierarchy

Source: ACI-NA Policy Handbook, Ardurra.

While effective recycling and waste reduction is a problem faced by every airport, each airport has a unique set of conditions that must be considered as part of its individual recycling and waste reduction program. With this in mind, the FAA compiled a list of ten steps airports can take to design and implement an effective airport recycling and waste reduction program (**Table 12.1**).

Table 12.1: Effective Airport Recycling and Waste Reduction Programs

Step	Description
1	Commitment from Management
2	Program Leadership
3	Waste Identification
4	Waste Collection and Hauler
5	Waste Management Plan Development
6	Education and Outreach
7	Monitor and Refine
8	Performance Monitoring
9	Promote Success
10	Continuous Improvement

Source: FAA, Recycling, Reuse and Waste Reduction at Airports: A Synthesis Document.

Cedar City Regional Airport should explore the following steps to help minimize solid waste generation:

- Establish a commitment from management to support a recycling and waste reduction program.
- Include lease and contract language that supports recycling and waste reduction.
- Provide additional containers and space for recycling.
- Educate airport staff and users about the importance of recycling and waste reduction.

12.3.4. Airport Operations and Maintenance Requirements

The airport's operations and maintenance requirements were examined in relation to sustainability and how waste is handled at the airport.

- **Aircraft:** The amount of aircraft waste correlates with the number of operations at the airport. The person responsible for aircraft and ground support equipment waste varies depending on the vehicle's owner and who performs the maintenance. The FBO is responsible for aircraft maintenance waste. Some waste associated with maintenance is considered hazardous waste and must be handled accordingly.

- **Airfield:** The infields are mowed regularly for habitat management and wildlife hazard mitigation and clippings are left in place. Sweeping of airfield pavements occurs weekly or more often when needed. Debris from sweeping is disposed of in a trash dumpster. When snow is plowed from airfield pavements, some dirt and grit are also removed as part of this process. The snow, along with any accompanying dirt and grit, is pushed, swept, or blown to the infield and the other undeveloped areas of the airport.

- **Airport Construction:** Contractors are required by the airport to be responsible for providing any waste containers needed for airport construction projects and contracting with the appropriate reuse, recycling, or disposal facilities. They are also encouraged to reuse materials when possible.

- **Cargo Facilities:** These facilities are leased and, as per the lease agreement, the tenants are responsible for trash disposal within this area.

- **Fixed Base Operator and Pilot Lounge:** These waste streams are fairly steady throughout the year and typically consist of food, paper, plastic, aluminum cans, and similar trash items. The fixed base operator (FBO) is responsible for maintaining, cleaning, and disposing of waste generated within the FBO building which includes the lounge area.

- **Terminal Building:** In addition to the passenger waiting area, the commercial terminal building houses the airport administrative offices, Transportation Security Administration offices, rental car counters, and the areas used by the airlines for ticketing and baggage claim. These waste streams typically consist of food, paper, plastic, aluminum cans, and similar trash items. Airport staff is responsible for maintaining and cleaning the public areas of the terminal building as well as those used by airport personnel and are responsible for ensuring any waste is disposed of properly. Transportation Security Administration, rental car, or airline staff are responsible for ensuring any waste generated within their respective areas is disposed of properly.

12.3.5. Review of Waste Management Contracts

The Cedar City Street, Storm Drain, and Solid Waste Division is responsible for waste management at the airport. According to the airport's standard lease agreement, airport tenants are required to properly dispose of their waste, and there are five dumpsters located throughout the airport property for this purpose. This trash is taken to the Iron County Solid Waste and Landfill in Cedar City which accepts all waste except hazardous waste (e.g., batteries, pesticides) or liquid waste (e.g., paint, oil). Additionally, the FBO is required to provide adequate and sanitary handling of all trash, waste, and other materials (e.g, used oil, sump fuel, solvents) as needed to comply with the airport's Stormwater Pollution Prevention Plan (**SWPPP**).[6]

12.4. Conclusion

Cedar City Regional Airport has opportunities to enhance sustainability, recycling, and waste reduction at the airport by establishing formal policies and procedures. One opportunity to enhance sustainability, which has been included in the airport layout plan as a future development, is the addition of electric aircraft and vehicle charging stations. Another opportunity is to use locally sourced materials for construction projects and reuse construction and demolition materials as much as possible.

Any program the airport establishes should include a commitment from management to support sustainability, recycling, education, and outreach as well as setting performance targets, monitoring progress, and seeking continuous improvement. The potential benefits of establishing a recycling and waste reduction program include reduced operating costs, prolonged use of limited landfill space, reduced environmental liability, and improved public perception of the airport.

Endnotes

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13

GLOSSARY OF TERMS

CHAPTER THIRTEEN

GLOSSARY

13.1. Common Terms, Abbreviations, Acronyms, and Initialisms

This glossary of was compiled using a variety of sources such as the *Pilot/Controller Glossary*, the *Pilot's Handbook of Aeronautical Knowledge*, and several advisory circulars published by the FAA as well as relevant laws and regulations. It is intended to provide the public with a general understanding of these common aviation terms and is not meant to include the exact technical or legal definition.

A

AAC see aircraft approach category

AAGR average annual growth rate

AATF Airport and Airway Trust Fund

above ground level (AGL) The elevation of a point or surface above the underlying surface.

AC see advisory circular

access road Small airport roads typically used for maintenance, delivery, rescue, and aircraft service vehicles.

ACHP Advisory Council on Historic Preservation

ACIP see Airports Capital Improvement Plan

ACS see American Community Survey

active aircraft An aircraft registered with the FAA that has been flown at least one hour during the year.

ADAP Airport Development Aid Program

ADG see airplane design group

ADO see airports district office

ADS–B see automatic dependent surveillance–broadcast

advisory circular (AC) Publications issued by the FAA to help explain regulations, best practices, or other information useful to the aviation community.

AEDT see Aviation Environmental Design Tool

AGL see above ground level

AIP see Airport Improvement Program

air taxi On-demand, unscheduled flights typically offered for sightseeing purposes or on a chartered basis as well as mail or cargo delivery. (see Part 135)

air traffic control (ATC) A service provided by ground-based personnel to help guide pilots and provide for the safe and orderly flow of aircraft in congested airspace.

air transport pilot (ATP) The type of certification required to fly chartered and commercial flights.

aircraft Any device intended to be used for flight such as an airplane, drone, glider, or helicopter.

aircraft approach category (AAC) A method of grouping aircraft based on the speed they travel when configured for landing. (Typically 1.3 times the stall speed.) The AAC of the critical aircraft is often used to determine design standards. In general, aircraft with slower approach speeds require smaller facilities and those with faster approach speeds require larger facilities.

aircraft operation A landing, takeoff, or touch-and-go procedure conducted on a runway.

aircraft rescue and fire fighting (ARFF) A special category of fire fighting that involves incident response, hazard mitigation, evacuation, and rescue of passengers and crew of an aircraft involved in aviation accidents and incidents.

airfield The portion of an airport that contains the facilities necessary for aircraft operations such as runways and taxiways.

airplane design group (ADG) A method of classifying aircraft based on wingspan and tail height.

Airport and Airway Trust Fund (AATF) A fund created by the Airport and Airway Revenue Act of 1970 to provide a dedicated source of funding for the U.S. aviation system that was independent of the General Fund.

airport beacon A lighted navigation aid indicating the location of the airport. (Also referred to as a rotating beacon.)

airport elevation The highest point of an airport's usable runways. Typically measured in feet above mean sea level (MSL).

Airport Improvement Program (AIP) The program used by the FAA to provide grants for the planning and development of public-use airports included in the National Plan of Integrated Airport Systems (NPIAS).

airport layout plan (ALP) A scaled drawing or set of drawings of both current and planned airport facilities.

airport master plan A comprehensive study of an airport that usually describes the short-term, medium-term, and long-term development plans for meeting future aviation demand.

airport reference point (ARP) The approximate center of all usable runways at an airport.

airport sponsor The entity that is legally and financially responsible for the management and operation of an airport. An airport sponsor is typically a public agency such as a city or county.

airport traffic control tower (ATCT) The facility used by air traffic control personnel to provide air traffic control services to aircraft operating in the vicinity of the airport and to aircraft operating within the airport's movement area.

Airports Capital Improvement Plan (ACIP) The primary planning tool used by the FAA for identifying and prioritizing critical airport development for the National Airspace System. It also serves as the basis for distributing grant funds under the Airport Improvement Program (AIP).

airports district office (ADO) The local office of the FAA that coordinates planning and construction projects.

airside Facilities and areas located at an airport that support aircraft activities (e.g., runways, hangars, NAVAIDS).

ALP see airport layout plan

ALS see approach light system

American Community Survey (ACS) An ongoing survey conducted by the U.S. Census Bureau that includes a variety of socioeconomic data.

annual service volume (ASV) The maximum number of annual operations an airport could reasonably accommodate with an acceptable level of delay.

approach light system (ALS) A type of visual navigation aid that help pilots locate the runway as they transition from instrument flight to visual flight. The sophistication and configuration of the approach light system varies based on the type of runway and approach available.

approach surface An imaginary three dimensional surface, which is longitudinally centered on the extended runway centerline, that begins 200 feet from the approach-end of the runway and extends outward and upward. The slope and size vary based on the type of runway and approach available. (see Part 77)

approach with vertical guidance (APV) An instrument approach based on a navigation system that provides course and glidepath deviation information but does not meet the standards necessary to be a precision approach.

apron An area at an airport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. Also referred to as a ramp.

APV approach with vertical guidance

area navigation (RNAV) A method of navigation that permits aircraft operations on any flight path within the coverage area of ground-based or space-based navigation aids or within the limits of self-contained navigation aids.

ARFF see aircraft rescue and fire fighting

ARP see airport reference point

ARPA American Rescue Plan Act

ASOS see automated surface/weather observing system

ASV see annual service volume

ATC see air traffic control

ATCT airport traffic control tower

ATP see airline transport pilot

automated surface/weather observing system (ASOS/AWOS) Weather reporting system that provides surface weather observations every minute via digitized voice broadcasts and printed reports.

automatic dependent surveillance–broadcast (ADS–B) Equipment on an aircraft that determines its position via satellite navigation or other sensors and periodically broadcasts it so can be tracked by air traffic control.

avgas see aviation gasoline

aviation gasoline (avgas) The type of fuel used in small aircraft within the general aviation community. The two main types are avgas 100 and a low-lead version called avgas 100LL.

AWOS see automated surface/weather observing system

B

based aircraft Operational and airworthy aircraft based at an airport for the majority of the year.

BGEPA Bald and Golden Eagle Protection Act

blast pad A surface adjacent to the end of a runway provided to reduce the erosive effect of jet blast and propeller wash.

BLM U.S. Bureau of Land Management

BLS U.S. Bureau of Labor Statistics

BMP best management practices

building restriction line (BRL) A line on the airport layout plan identifying suitable building area locations at airports.

C

C & D construction and demolition

CAA Clean Air Act

CAC community advisory committee

CAGR see compound annual growth rate

capital improvement plan (CIP) A community planning and fiscal management tool used to coordinate the timing and financing of capital improvement projects for a multi-year period.

CARES Coronavirus Aid, Relief, and Economic Security Act

categorical exclusion (CATEX) Documentation when a proposed action can be categorically excluded from a detailed environmental analysis because it meets certain criteria that a federal agency has previously determined normally has no significant environmental impact. (see NEPA)

CCIFC Color Country Interagency Fire Center

CDC Cedar City Regional Airport

CEQ Council on Environmental Quality

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

CFI certified flight instructor

CFR Code of Federal Regulations

CIP see capital improvement plan

cockpit to main gear (CMG) The distance from the pilot's eye to the main gear turn center.

commercial service airport Publicly owned airports with scheduled passenger service that have at least 2,500 passenger enplanements per calendar year.

common traffic advisory frequency (CTAF) The VHF radio frequency used for air-to-air communications at non-towered airports or at airports when the control tower is not operating.

commuter operations Typically shorter flights provided by small, boutique airlines offered on a limited schedule basis. Commuter airlines operate according to published flight schedules with at least five round trips per week.

compound annual growth rate (CAGR) The average rate of annual growth for a given period.

conical surface An imaginary three dimensional surface that encircles the horizontal surface and extends outward for 4,000 feet and upward at a slope of 20 to 1. (see Part 77)

controlled airspace The area in which some or all aircraft may be subject to air traffic control to promote safe and expeditious flow of air traffic.

critical aircraft The most demanding type of aircraft (or group of aircraft with similar characteristics) that make regular use of the airport. Regular use is defined as 500 annual operations.

crosswind Wind that is not parallel to a runway centerline or to an aircraft's intended flight path.

crosswind component A wind component that is at a right angle to the longitudinal axis of the runway or the flight path of the aircraft.

crosswind runway An additional runway built parallel to the direction of the prevailing crosswinds to make it safer for small aircraft to land when strong crosswinds made landing on the primary runway difficult.

CRRSAA Coronavirus Response and Relief Supplemental Appropriation Act

CTAF see common traffic advisory frequency

CWA Clean Water Act

D

DA decision altitude (see minimum descent altitude)

day-night average sound level (DNL) The standard metric used to reflect a person's cumulative exposure to sound for an average 24-hour period based on an airport's annual aircraft operations. To account for a higher sensitivity to noise exposure at night, DNL calculations add a penalty of ten decibels for flights occurring between 10 p.m. and 7 a.m.

DBE disadvantaged business enterprise

decibel (dB) Sound is measured in units called decibels. The higher the decibel level, the louder the noise.

DEQ Department of Environmental Quality

distance measuring equipment (DME) An electronic navigation system that indicates the number of nautical miles between an aircraft and a ground station or waypoint.

DNL day-night equivalent sound level

DOT Department of Transportation

DW dual wheel landing gear (see landing gear)

E

EAS see Essential Air Service

effective runway gradient The difference between the highest and lowest elevations of the runway centerline divided by the runway length.

elevation see airport elevation

environmental assessment (EA) Determines whether or not a federal action has the potential to cause significant environmental effects. (see NEPA)

environmental impact statement (EIS) Determines if a major federal action will significantly affect the quality of the human environment. The regulatory requirements for an EIS are more detailed and rigorous than the requirements for an EA. (see NEPA)

EPA Environmental Protection Agency

ESA Endangered Species Act

Essential Air Service (EAS) A program overseen by the U.S. Department of Transportation (USDOT) that provides subsidies to airlines that serve small communities that otherwise would not receive scheduled air service.

F

FAA see Federal Aviation Administration

FAAP Federal-Aid Airport Program

FAR Federal Aviation Regulation

FBO see fixed base operator

FCT federal contract tower

Federal Aviation Administration (FAA) The branch of the U.S. Department of Transportation responsible for the development of airports and the National Airspace System.

FEMA Federal Emergency Management Agency

Finding of No Significant Impact (FONSI) A public decision document that briefly describes why the project will not have any significant environmental effect and will not require the preparation of an environmental impact statement. (see NEPA)

FIRM flood insurance rate map

fixed base operator (FBO) A business that operates at an airport and provides a wide range of services. These services are typically aimed at general aviation customers and can include aircraft fueling, parking, servicing, charter flights, aircraft rentals, maintenance, hangar rentals, flight instruction, pilot lounge, conference room facilities, car rental arrangements, and more.

fleet mix The types of aircraft that frequent an airport and that need to be considered when planning airport facilities.

flight plan Information relating to the intended flight of an aircraft that is filed electronically, orally, or in writing with air traffic control.

flight service stations (FSS) Air traffic facilities that provide pilots with weather and aeronautical information.

FONSI see Finding of No Significant Impact

FPPA Farmland Protection Policy Act

FSS see flight service station

FY fiscal year

G

GA see general aviation

GAMA General Aviation Manufacturers Association

GDP gross domestic product

general aviation (GA) The segment of aviation that encompasses all aspects of civil aviation except certified air carriers and other commercial operators such as airfreight carriers.

general aviation airport A public airport that has less than 2,500 passenger enplanements per calendar year. These airports typically support personal and business aircraft, medical flights, aerial fire fighting, law enforcement, disaster relief, provide access to remote communities, and more.

geographic information system (GIS) A computer system for developing maps connected to all types of data and are used to manage, analyze, and visualize that data in relation to its location. At airports, these types of smart maps are often used to help manage airport infrastructure such as runway pavements, signage, or utilities.

GHG greenhouse gas

GIS see geographic information system

glideslope (GS) Part of the instrument landing system that provides vertical guidance to aircraft by projecting a radio beam upward at an angle of approximately three degrees from the approach end of a runway.

global positioning system (GPS) A navigation system that uses satellites rather than ground-based transmitters to determine location information.

ground support equipment (GSE) Vehicles and equipment used to service aircraft between flights. This can include services such as refueling, loading luggage and freight, transporting passengers, refreshing lavatories, and deicing.

GS see glideslope

GSE see ground support equipment

H

hangar A building used to store aircraft.

HIRL high-intensity runway lights (see runway edge lighting system)

horizontal surface An imaginary surface located 150 feet above the established airport elevation that encircles the primary surface. The size of the horizontal surface is based on the type of runway and approach available. (see Part 77)

I

IA-OFA inner-approach object free area (see object free area)

IAP see instrument approach procedure

IFR see instrument flight rules

IFR conditions When weather conditions have significantly reduced visibility making it unsafe to pilot an aircraft under flight visual flight rules.

IIJA Infrastructure Investment and Jobs Act (Also known as the bipartisan infrastructure law or BIL.)

ILS see instrument landing system

IMC see instrument meteorological conditions

Information for Planning and Consultation (IPaC) A digital project planning tool that provides information to help determine whether a project will affect federally-listed species, habitat that has been designated as critical, or other sensitive resources managed by the U.S. Fish and Wildlife Service.

instrument approach procedure (IAP) A series of predetermined maneuvers pilots use to align their aircraft with the runway when flying under IFR in low visibility conditions.

instrument flight rules (IFR) Rules and regulations established by the Federal Aviation Administration to govern flight using electronic navigation during conditions in which flight by visual reference is not safe.

instrument landing system (ILS) An electronic system used by pilots when conducting a precision instrument approach procedure that provides both horizontal and vertical guidance to a specific runway. The system is often comprised of multiple components with guidance information provided by a localizer or glideslope, distance information provided by a marker beacon or distance measuring equipment, and visual information provided by approach lights, touchdown and centerline lights, or runway lights.

instrument meteorological conditions (IMC) Weather conditions that require pilots to fly under instrument flight rules rather than visual flight rules.

IPaC see Information for Planning and Consultation

itinerant operations Flights that originate or terminate at different airports.

IT-OFZ inner-transitional obstacle free zone (see obstacle free zone)

K

KIAS knots of indicated airspeed

knot A unit of speed equal to one nautical mile per hour.

L

landing gear Any part of an aircraft used for landing. Typical landing gear configurations include single wheel (SW), dual wheel (DW), triple wheel (TW), and quadruple wheel (QW) configurations which can also be repeated in tandem.

large aircraft Any aircraft with a maximum takeoff weight (MTOW) of more than 12,500 pounds.

LAT large air tanker

lateral navigation (LNAV) Azimuth (i.e., directional) navigation without vertical navigation.

light sport aircraft (LSA) A small, lightweight aircraft that is relatively simple to fly with a maximum gross takeoff weight of 1,320 pounds and a maximum of two seats.

LIRL low-intensity runway lights (see runway edge lighting system)

LNAV see lateral navigation

LOC see localizer

local operations Flights taking place within the local traffic pattern, the airport line of sight, the local practice area, or those that execute simulated instrument approaches or low passes at the airport.

localizer (LOC) A navigational aid that is one component of instrument landing systems. It transmits signals that aircraft interpret and display on the cockpit indicator to guide the pilot until the runway is in sight.

localizer performance with vertical guidance (LPV) A type of approach that takes advantage of the refined accuracy of wide area augmentation system (WAAS) lateral and vertical guidance.

LSA see light sport aircraft

M

main gear width (MGW) The distance from outer edge to outer edge of the widest set of main gear tires.

MALSR medium-intensity approach lighting system with runway alignment indicator lights

markings Paint applied to runways, taxiways, holding positions, and other airport surfaces to help pilots and operators of ground support equipment while maneuvering within the movement area.

master plan see airport master plan

maximum takeoff weight (MTOW) The maximum weight for an aircraft at which the pilot is allowed to attempt to take off due to structural or other limits.

MBTA Migratory Bird Treaty Act

MDA see minimum descent altitude

mean sea level (MSL) The average height of the surface of the sea for all stages of tide.

MGW see main gear width

minimum descent altitude (MDA) The minimum altitude a pilot is authorized to descend to on a non-precision approach.

MIRL medium-intensity runway lights (see runway edge lighting system)

MITL medium-intensity taxiway lights

movement area The runways, taxiways, and other areas of an airport used by aircraft for taxiing, takeoff, and landing that are under the control of an air traffic control tower. It does not include non-movement areas such as those used for loading, refueling, parking, or maintenance.

MRO maintenance, repair, overhaul

MSA metropolitan statistical area

MSL see mean sea level

MSW municipal solid waste

MTOW see maximum takeoff weight

N

NAAQS national ambient air quality standards

National Airspace System (NAS) The common network of U.S. airspace. It consists of air navigation facilities, equipment and services, airports or landing areas; aeronautical charts and technical information; and rules, regulations, and procedures.

National Environmental Policy Act (NEPA) Federal legislation requiring federal agencies to assess and document the environmental effects of their proposed actions prior to making decisions. Depending on the severity of the impact, these documents are referred to as a categorical exclusion, an environmental assessment, or an environmental impact statement.

National Plan of Integrated Airport Systems (NPIAS) An inventory of all existing and proposed commercial service airports, reliever airports, and selected public-owned general aviation airports. In addition to discussing the roles these airports currently serve, the NPIAS is used by the FAA in administering the Airport Improvement Program (AIP). It is updated by the FAA every two years.

nautical mile (NM) The most common measurement used for distance in aviation. A nautical mile is slightly longer than a land-measured mile (i.e., statute mile) and is equal to approximately 1.151 statute miles or 6,076 feet.

nautical mile per hour The most common measurement for aircraft speed. One knot is approximately 1.151 miles per hour.

NAVAID see navigational aid

navigable airspace The airspace at or above minimum altitudes of flight that includes the airspace needed to ensure safety in the takeoff and landing of aircraft.

navigational aid (NAVAID) Any facility used for the purpose of guiding or controlling flight such as lighting systems; signaling, radio direction-finding, or other electronic communication devices; or any other facility with a similar purpose.

NEPA see National Environmental Policy Act

NHPA National Historic Preservation Act

NOAA National Oceanic and Atmospheric Administration

noise contour A map showing how noise exposure can vary over extended areas. They are useful for identifying areas exposed to significant aircraft noise surrounding an airport.

nonprecision approach A standard instrument approach procedure in which only horizontal guidance is provided.

notice to air missions (NOTAM) A notice containing information essential to pilots or other personnel concerned with flight operations that is not known far enough in advance to be publicized by other means.

NPDES National Pollutant Discharge Elimination System

NPIAS see National Plan of Integrated Airport Systems

NPS National Park Service

NRCS Natural Resources Conservation Service

NRHP National Register of Historic Places

NTSB National Transportation Safety Board

NWI national wetlands inventory

NWS National Weather Service

O

O & M operations and maintenance

object free area (OFA) An area centered on a runway, taxiway, or taxilane centerline that is free of objects except those required for air navigation or aircraft ground maneuvering purposes.

obstacle free zone (OFZ) The airspace below 150 feet located along the runway and extended runway centerline that is required to be clear of all objects except those required for air navigation or aircraft ground maneuvering purposes.

obstruction An object that penetrates any imaginary surface described in Federal Aviation Regulation Part 77. Obstructions are presumed to be hazards to air navigation until an FAA study has determined otherwise. (see Part 77)

OFA see object free area

OFZ see obstacle free zone

OPBA operations per based aircraft

operation see aircraft operation

Operations Network (OPSNET) The official FAA source for air traffic operations and delay data.

orientation see runway orientation

P

PAPI see precision approach path indicator

parallel taxiway A taxiway that runs parallel to a runway.

Part 135 The FAA grants the authority to operate on-demand, unscheduled air service in the form of Part 135 certificates. Air carriers authorized to operate with a 135 certificate provide a critical service to passengers and often provide a lifeline to remote populations. Part 135 is the term most people use when referring to Title 14 of the Code of Federal Regulations (CFR), Part 135, *Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft.*

Part 139 Airports that meet certain requirements must have an airport operating certificate issued by the FAA. It is commonly associated with commercial service airports. Part 139 is the term most people use when referring to Title 14 of the Code of Federal Regulations (CFR), Part 139, *Certification of Airports.*

Part 77 Establishes standards and requirements for objects affecting navigable airspace. Objects are considered to be obstructions when they exceed certain heights or penetrate the imaginary surfaces described within Part 77 including the approach surface, conical surface, horizontal surface, primary surface, and the transitional surface. Part 77 is the term most people use when referring to Title 14 of the Code of Federal Regulations (CFR), Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace.*

pavement classification rating (PCR) A number that expresses the carrying capacity of a pavement for unrestricted operations.

PCI pavement condition index

PCI per capita income

PCN pavement classification number

PCR see pavement classification rating

peak hour The busiest hour in a day. It is also known as the design hour because this information is used to determine if airport facilities are capable of accommodate existing and forecasted demand.

PMP pavement management program

POFZ precision obstacle free zone (see obstacle free zone)

precision approach A standard instrument approach procedure in which both vertical and horizontal guidance is provided.

precision approach path indicator (PAPI) A row of lights normally installed on the left side of a runway that provides visual guidance during an approach to the runway. A pilot on the correct glideslope path will see two white and two red lights.

primary surface An imaginary surface longitudinally centered on a runway. The specific dimensions of the primary surface is dependent on the type of runway. (see Part 77)

R

ramp see apron

RCRA Resource Conservation Recovery Act

RDC see runway design code

regional jet A commercial aircraft that typically carries fewer than 100 passengers.

REIL see runway end identifier lights

RNAV see area navigation

ROFA runway object free area (see object free area)

ROFZ runway obstacle free zone (see obstacle free zone)

rotating beacon see airport beacon

RPZ see runway protection zone

RSA see runway safety area

runway A defined rectangular area at an airport designated for landing and takeoff.

runway design code (RDC) The design standards that apply to a particular runway based on the type of aircraft that will be using the runway.

runway edge lighting system A visual navigation aid used to outline the edges of a runway during periods of darkness or reduced visibility. These systems are classified according to the intensity or brightness they are capable of producing which include high-intensity runway lights (HIRL), medium-intensity runway lights (MIRL), and the low-intensity runway lights (LIRL). HIRL and MIRL systems typically have variable intensity controls while LIRL systems normally have only one intensity setting.

runway end identifier lights (REIL) A pair of synchronized flashing lights located on each side of the runway threshold to aid pilots in identifying the approach end of a runway.

runway incursion Any occurrence at an airport involving the incorrect presence of an aircraft, vehicle, or person on the runway.

runway orientation The magnetic bearing of the runway centerline.

runway protection zone (RPZ) A trapezoidal area located at the end of a runway that is centered on the extended runway centerline. It should be kept clear of incompatible uses and activities to enhance the protection of people and property. The dimensions of the runway protection zone varies based on the type of runway and approach available.

runway safety area (RSA) A defined surface surrounding the runway that is typically 500 feet wide and extending 1,000 feet beyond each runway end that should be kept cleared, graded, free of potential hazards or objects except those required to be located within the runway safety area.

runway threshold The designated beginning of a runway. The term threshold always refers to landing rather than takeoff.

runway visual range (RVR) A value that represents the horizontal visual range a pilot sees down the runway from the approach end.

S

SEAT single engine air tanker

segmented circle A system of markers used by pilots to identify the aerial traffic pattern when flying under visual flight rules (VFR).

SHPO state historical preservation office

SIDA security identification display area

small aircraft Any aircraft with a maximum takeoff weight (MTOW) of 12,500 pounds or less.

socioeconomic Information relating to the interaction of social and economic factors.

SRE snow removal equipment

statute mile The formal or legal name given to the land-measured mile to distinguish it from a nautical mile. A statute mile is equal to 5,280 feet.

SUU Southern Utah University

SW single wheel landing gear (see landing gear)

T

T-hangar An aircraft hangar in which aircraft are parked tail to tail in the T-shaped space left by the other aircraft.

TAC technical advisory committee

TAF see terminal area forecast

taxilane Areas intended for low speed and precise movement of aircraft that allow aircraft to safely access taxiways and taxiway connectors from non-movement areas.

taxiway design group (TDG) A method of classifying aircraft based on the dimensions of the main gear width (MGW) and cockpit to main gear distance (CMG).

taxiway edge safety margin (TESM) The distance between the outer edge of an airplane's landing gear and the edge of the taxiway pavement when its nose gear is on the taxiway centerline.

taxiway or taxilane safety area (TSA) A defined surface located alongside the taxiway prepared and suitable for reducing the risk of damage to an aircraft unintentionally departing the taxiway.

taxiway or taxiway connector Defined paths that allow aircraft to safely and efficiently get to and from the runway without interfering with takeoffs or landings.

TDG see taxiway design group

Terminal Area Forecast (TAF) The official FAA forecast of aviation activity for all U.S. airports included in the National Plan of Integrated Airport Systems (NPIAS).

TESM see taxiway edge safety margin

TFMSC see traffic flow management system counts

THPO tribal historical preservation office

threshold lights A series of lights located at a runway threshold that emit green light outward from the runway and emit red light toward the runway to mark the ends of the runway.

tiedowns Aircraft parking positions with fixed anchor points for securing aircraft.

TODA takeoff distance available

TOFA taxiway / taxilane object free area (see object free area)

TORA takeoff run available

touch-and-go A maneuver in which a pilot lands the aircraft and then departs without coming to a complete stop or exiting the runway. These are typically performed to build piloting skills and expertise.

touchdown The point at which an aircraft first makes contact with the landing surface.

touchdown zone The first 3,000 feet of a runway intended to be where a landing aircraft first makes contact with the landing surface.

Traffic Flow Management System Counts (TFMSC) An FAA database that provides information on traffic counts for flights operated under instrument flight rules (IFR) and flights detected by the National Airspace System.

transient operations Flights performed by aircraft not based at the airport.

transitional surface An imaginary surface that extends outward and upward from the primary and approach surfaces at right angles to each of the runway centerlines at a slope of seven feet horizontally for each foot vertically. The transitional surface ends where it meets the horizontal surface at an elevation of 883 feet. (see Part 77)

TSA see taxiway or taxilane safety area

TSA Transportation Security Administration

U

UDOT Utah Department of Transportation

USACE U.S. Army Corps of Engineers

USC United States Code

USDA U.S. Department of Agriculture

USFS U.S. Forest Service

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey

V

VASI see visual approach slope indicator

very high frequency omnidirectional range (VOR) A ground-based NAVAID aligned with magnetic north that transmits azimuth information for high and low altitude routes and airport approaches.

VFR see visual flight rules

VHF very high frequency

visual approach An air traffic control authorization for an aircraft on an IFR flight plan to proceed to the airport and make an approach using visual references rather than an instrument approach.

visual approach slope indicator (VASI) A type of approach light system normally installed on the left side of a runway that provides visual guidance during an approach to the runway. A pilot on the correct glideslope path will see a set of red lights over a set of white lights.

visual flight rules (VFR) Rules and regulations established by the Federal Aviation Administration to govern flight using visual reference.

visual meteorological conditions (VMC) Weather conditions expressed in terms of visibility, distance from clouds, and ceiling equal to or better than specified minimum during which flight under visual flight rules (VFR) is permitted.

visual runway A runway without an instrument approach or departure procedure. For the purpose of this AC, consider runways with circling-only approaches as visual runways.

VLAT very large air tanker

VMC see visual meteorological conditions

VNAV vertical navigation

VOR see very high frequency omnidirectional range

VOR-DME When the very high frequency omnidirectional range (VOR) is located alongside distance measuring equipment (DME), it is referred to as a VOR-DME. Together, they transmit both azimuth and distance information to aircraft.

VSR vehicle service road

W

wide area augmentation system (WAAS) An extremely accurate navigation system developed for civil aviation.

wind cone or windsock A fabric cone tube resembling a giant sock that is used as a basic indicator of wind direction and strength.

wind rose A diagram showing wind direction, strength, and frequency for a particular location.

Endnotes

1 U.S. Department of Commerce. U.S. Census Bureau. "About the American Community Survey." January 6, 2022. https://www.census.gov/programs-surveys/acs/about.html.

2 U.S. Department of Transportation. Federal Aviation Administration. Airman Testing Standards Branch. "FAA-H-8083-25B, Pilot's Handbook of Aeronautical Knowledge, Glossary." Oklahoma City, Oklahoma. 2016. https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak.

3 U.S. Department of Transportation. Federal Aviation Administration. "Advisory Circular No: 150/5300-13B, Airport Design." March 22, 2022. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5300-13B-Airport-Design.pdf.

4 U.S. Department of Transportation. Federal Aviation Administration. "FAA Aerospace Forecast Fiscal Years 2021–2041." Accessed April 28, 2022. https://www.faa.gov/sites/faa.gov/files/data_research/aviation/aerospace_forecasts/FY2021-41_FAA_Aerospace_Forecast.pdf.

5 U.S. Department of Transportation. Federal Aviation Administration. "Pilot/Controller Glossary." May 19, 2022. https://www.faa.gov/air_traffic/publications/media/pgc_basic_with_chg_1_2_dtd_5-19-22.pdf.

6 U.S. Environmental Protection Agency. "National Environmental Policy Act Review Process." October 25, 2021. https://www.epa.gov/nepa/national-environmental-policy-act-review-process.

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CEDAR CITY REGIONAL AIRPORT (CDC)

CEDAR CITY, UTAH

AIRPORT MASTER PLAN

A.I.P. NO: 3-49-0005-045-2022
ACCEPTED: MONTH XXXX
AIRSPACE CASE NO: XXX-XX-XXXX-XXX

DRAWING INDEX:

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	7	RUNWAY DEPARTURE SURFACE - RUNWAY 2/20
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	10	PHOTO AND CONTOUR
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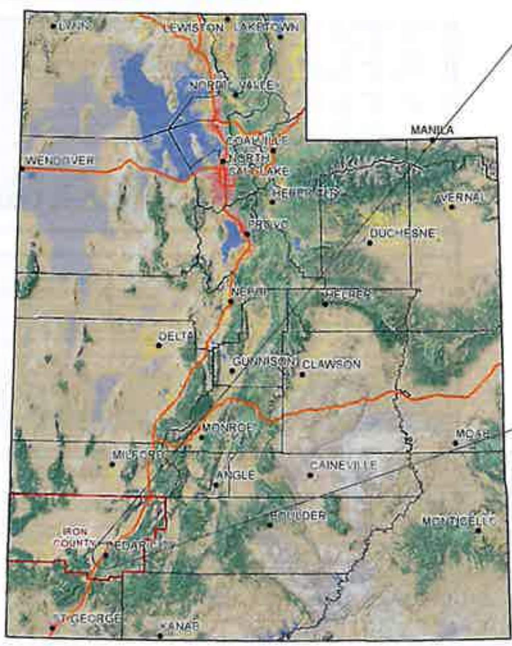
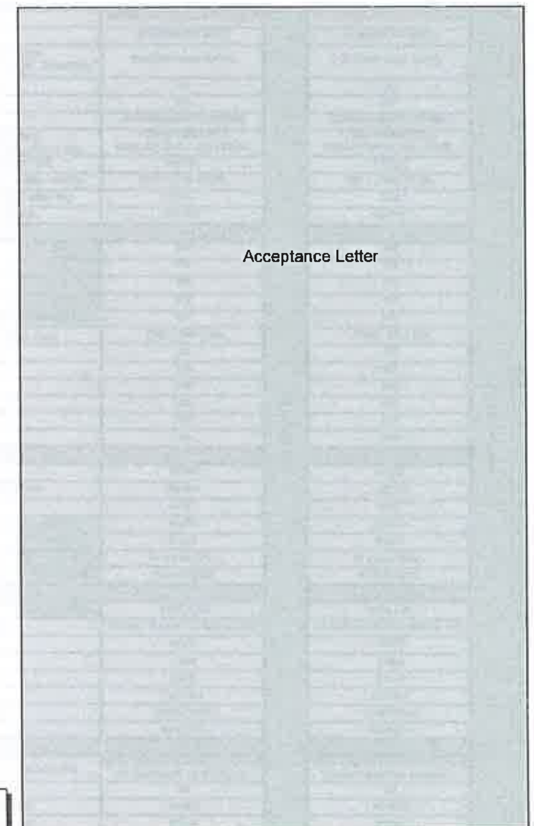


LOCATION MAP

VICINITY MAP

PLAN ACCEPTANCE:	
CEDAR CITY CORPORATION MAYOR	DATE

The preparation of this document may have been supported, in part, through the Airport Improvement Program financial assistance from the Federal Aviation Administration (Project Number AIP 3-49-0005-045-2022) as provided under title 49 U.S.C., section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable or would have justification in accordance with appropriate public laws.



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	REVISIONS	

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A.I.P. PROJECT # 3-49-0005-045-2022

TITLE SHEET
CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 1
1 OF 17

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AIRPORT DATA TABLE		EXISTING	FUTURE
AIRPORT REFERENCE CODE (ARC)		C-III (LARGE AIRCRAFT)	C-III (LARGE AIRCRAFT)
MEAN MAX TEMPERATURE HOTTEST MONTH		87°F (JULY)	87°F (JULY)
AIRPORT ELEVATION		5622.3'	5622.3'
AIRPORT NAVIGATIONAL AIDS		LOC, BEACON, PAPI, REILS, MALSR, GLIDE SLOPE	LOC, BEACON, PAPI, REILS, MALSR, GLIDE SLOPE
AIRPORT REFERENCE POINT	LAT:	N 37°42'03.49"	N 37°42'07.04"
	LONG:	W 113°05'55.86"	W 113°05'53.14"
MISCELLANEOUS FACILITIES		ASOS, LIGHTED WIND CONE	ASOS, LIGHTED WIND CONE
CRITICAL AIRCRAFT		AVRO RJ87 (ARC C-III)	EMBRAER E-175 (ARC C-III)
AIRPORT MAGNETIC VARIATION		10°44' E (SEPT 2024)	10°44' E (SEPT 2024)
NPIAS SERVICE LEVEL		NON-HUB	NON-HUB
UTAH STATE SERVICE ROLE		COMMERCIAL	COMMERCIAL

TAXIWAY DATA TABLE

TAXIWAY IDENTIFICATION	C (South of Runway 8/26	C (North of Runway 8/26)	C (North of Runway 8/26)*
TAXIWAY DESIGN GROUP	3	5	3
TAXIWAY WIDTH	50	75	50
TAXIWAY EDGE SAFETY MARGIN (TESM)	10	10	10
TAXIWAY SAFETY AREA (TSA) WIDTH	118	118	118
TAXIWAY OBJECT FREE AREA (TOFA) WIDTH	171	171	171
TAXIWAY CENTERLINE TO RUNWAY CENTERLINE SEPARATION	144	144	144
TAXIWAY LIGHTING	MITL	MITL	MITL

*Future

TAXIWAY/TAXILANE DATA TABLE - RUNWAY 2/20

TAXIWAY IDENTIFICATION	A	A1 & A4	A2 - A3
TAXIWAY DESIGN GROUP	3	5	3
AIRPLANE DESIGN GROUP	III	III	III
TAXIWAY AND TAXILANE WIDTH	50	75	50
TAXIWAY EDGE SAFETY MARGIN (TESM)	10	10	10
TAXIWAY AND TAXILANE SAFETY AREA (TSA) WIDTH	118	118	118
TAXIWAY OBJECT FREE AREA (TOFA) WIDTH	171	171	171
TAXILANE OBJECT FREE AREA (TOFA) WIDTH	158	158	158
TAXIWAY CENTERLINE TO RUNWAY CENTERLINE SEPARATION	144	144	144
TAXIWAY LIGHTING	MITL	MITL	MITL

DECLARED DISTANCE TABLE

RUNWAY 2/20 (PRIMARY)	EXISTING	FUTURE
TAKE-OFF RUN AVAILABLE (TORA)	8,663'	10,000'
TAKE-OFF DISTANCE AVAILABLE (TODA)	8,663'	10,000'
ACCELERATED STOP DISTANCE (ASDA)	8,663'	10,000'
LANDING DISTANCE AVAILABLE (LDA)	8,663'	10,000'

DECLARED DISTANCE TABLE

RUNWAY 8/26	EXISTING 8/26	FUTURE
TAKE-OFF RUN AVAILABLE (TORA)	4,822'	DECOMMISSIONED
TAKE-OFF DISTANCE AVAILABLE (TODA)	4,822'	
ACCELERATED STOP DISTANCE (ASDA)	4,822'	
LANDING DISTANCE AVAILABLE (LDA)	4,822'	

ABBREVIATIONS

AP AIRPORT
ARP AIRPORT REFERENCE POINT
BRL BUILDING RESTRICTION LINE
CL CENTER LINE
ELEV ELEVATION
(E) EXISTING
(F) FUTURE (MID-PHASE)
FAA FEDERAL AVIATION ADMINISTRATION
HP HIGH POINT
LP LOW POINT
NPI NONPRECISION INSTRUMENT
ROFA RUNWAY OBJECT FREE AREA
ROFZ RUNWAY OBSTACLE FREE ZONE
RPZ RUNWAY PROTECTION ZONE
RSA RUNWAY SAFETY AREA
RVZ RUNWAY VISIBILITY ZONE
RWY RUNWAY
STA STATION
TESM TAXIWAY EDGE SAFETY MARGIN
TOFA TAXIWAY OBJECT FREE AREA
TSA TAXIWAY SAFETY AREA
TDZ TOUCH DOWN ZONE
TYP TYPICAL
(U) ULTIMATE (LONG-TERM)
VIS VISUAL

RUNWAY DATA TABLE

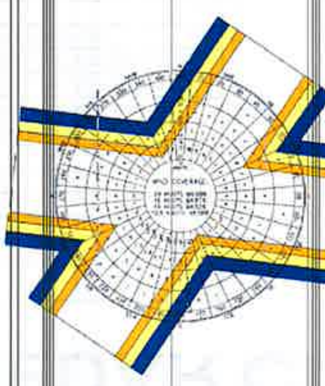
RUNWAY CODIFICATION		RUNWAY 2/20				RUNWAY 8/26			
		EXISTING/FUTURE	ULTIMATE	EXISTING/FUTURE	ULTIMATE	EXISTING	FUTURE	EXISTING	FUTURE
RUNWAY IDENTIFICATION		2	2	20	20	8	DECOMISSIONED	26	DECOMISSIONED
RUNWAY DESIGN CODE (RDC)		C-III-4000		C-III-2400		B-I-VIS		B-I-VIS	
APPROACH REFERENCE CODE (APRC)		D/IV/4000		D/IV/2400		B/I/4000		B/I/4000	
DEPARTURE REFERENCE CODE (DPRC)		D/V AND D/V				B/I		B/I	
CRITICAL AIRCRAFT		C-III GROUPING OF AIRCRAFT WITH SIMILAR CHARACTERISTICS				B-I GROUPING OF AIRCRAFT WITH SIMILAR CHARACTERISTICS		B-I GROUPING OF AIRCRAFT WITH SIMILAR CHARACTERISTICS	
PAVEMENT									
PAVEMENT TYPE		ASPHALT				ASPHALT		ASPHALT	
PAVEMENT STRENGTH BY WHEEL LOAD (LBS * 1,000)		56 SWG / 76 DWG / 127 DTG / 142 DDT				16,000 SWG		16,000 SWG	
PAVEMENT CLASSIFICATION NUMBER (PCN)		21/F/C/X/T				8/F/C/X/T		8/F/C/X/T	
EFFECTIVE RUNWAY GRADIENT (%)		0.29% (E) 0.26% (F)				0.91%		0.91%	
MAXIMUM GRADIENT WITHIN RUNWAY		0.41%				1.20%		1.20%	
SURFACE TREATMENT		GROOVED				NONE		NONE	
WIND COVERAGE (10.5/13/16) IN KTS		97.20% / 98.49% / 99.39% / 99.81%				81.37% / 87.56% / 93.80% 97.76%		81.37% / 87.56% / 93.80% 97.76%	
RUNWAY DIMENSIONS		8,653' X 150'	10,000' X 150'	8,653' X 150'	10,007' X 150'	4,822' x 60'		4,822' x 60'	
RUNWAY DATA									
RUNWAY END COORDINATES	LAT:	N 37°41'26.20"		N 37°42'35.88"	N 37°42'47.87"	N 37°42'09.82"		N 37°42'04.17"	
	LONG:	W 113°06'28.15"		W 113°05'27.55"	W 113°05'18.12"	W 113°06'22.07"		W 113°05'22.51"	
RUNWAY END ELEVATION		5579.8'		5605.3'	5605.3'	5578.6'		5622.3'	
RUNWAY TOUCHDOWN ZONE ELEVATION		5591.8'		5605.3'	5605.3'	5603.9'		5622.3'	
RUNWAY LIGHTING TYPE		HIRL				MIRL		MIRL	
RUNWAY MARKING TYPE		NON-PRECISION		PRECISION		VISUAL		VISUAL	
DISPLACED THRESHOLD		NONE				NONE		NONE	
RUNWAY AREAS / ZONES									
RUNWAY SAFETY AREA (RSA) WIDTH		500'				120'		120'	
RUNWAY SAFETY AREA (RSA) LENGTH OFF ENDS		1,000'				240'		240'	
RUNWAY OBJECT FREE AREA (ROFA) WIDTH		800'				400'		400'	
RUNWAY OBJECT FREE AREA (ROFA) LENGTH BEYOND RUNWAY END		1,000'				240'		240'	
RUNWAY OBSTACLE FREE ZONE (ROFZ) WIDTH		400'				400'		400'	
RUNWAY OBSTACLE FREE ZONE (ROFZ) LENGTH BEYOND RUNWAY END		200'				200'		200'	
RUNWAY PROTECTION ZONE DIMENSIONS (RPZ) (LENGTH/IN/OUT)		1,700' / 1,000' / 1,510'		2,500' / 1,000' / 1,750'		1,000' / 500' / 700'		1,000' / 500' / 700'	
INNER APPROACH OBSTACLE FREE ZONE LENGTH/WIDTH		N/A		2,400'/400' (50:1)	2,400'/400' (50:1)	N/A		N/A	
INNER TRANSITIONAL OBSTACLE FREE ZONE LENGTH		N/A		800'	800'	N/A		N/A	
INNER TRANSITIONAL OBSTACLE FREE ZONE H / SLOPE		N/A		150' (6:1)	150' (6:1)	N/A		N/A	
PRECISION OBSTACLE FREE ZONE WIDTH		N/A		200'	200'	N/A		N/A	
PRECISION OBSTACLE FREE ZONE LENGTH BY THRESHOLD		N/A		800'	800'	N/A		N/A	
CRITICAL AIRSPACE SURFACES									
APPROACH TYPE		NPI		PRECISION		VISUAL		VISUAL	
CFR PART 77 APPROACH CATEGORY		34:1		50:1 FOR 10,000' THEN 40:1		20:1		20:1	
CFR PART 77 APPROACH DIMENSION (IN/OUT/LENGTH)		1,000' / 4,000' /10,000'		1,000' / 16,000' / 10,000' + 40,000'		500' / 1,500' / 5,000'		500' / 1,500' / 5,000'	
VISIBILITY MINIMUMS		7/8 STATUTE MILE		1/2 STATUTE MILE		VISUAL		VISUAL	
APPROACH SURFACE (BEYOND RWY/IN/OUT/LENGTH/SLOPE)		SURFACE # 5 (200' / 400' / 3,400' / 10,000' / 20:1)		SURFACE # 5 (200' / 400' / 3,400' / 10,000' / 34:1)		SURFACE #3 (0' / 400' / 1,000' / 1,500' + 8,500' / 20:1)		SURFACE #3 (0' / 400' / 1,000' / 1,500' + 8,500' / 20:1)	
TYPE OF AERONAUTICAL SURVEYED		VERTICALLY GUIDED				NON-VERTICALLY GUIDED		NON-VERTICALLY GUIDED	
RUNWAY DEPARTURE SURFACE SURFACE #7 (APPLIED?)		YES				NO		NO	
APPROACH SURFACE #6 (APPLIED?) (IN/OUT/LENGTH/SLOPE)		YES (350' / 1,520' / 10,200' / 30:1)				NO		NO	
VISUAL AND INSTRUMENT NAVAIDS		BEACON, PAPI, REILS		BEACON, PAPI, MALSR, LOCALIZER, GLIDE SLOPE		BEACON, PAPI, REILS		BEACON, PAPI, REILS	
VERTICAL DATUM		NAVD088 (US FEET)				NAVD088 (US FEET)		NAVD088 (US FEET)	
HORIZONTAL DATUM		NAD83 (2011) (EPOCH 2010.0000)				NAD83 (2011) (EPOCH 2010.0000)		NAD83 (2011) (EPOCH 2010.0000)	

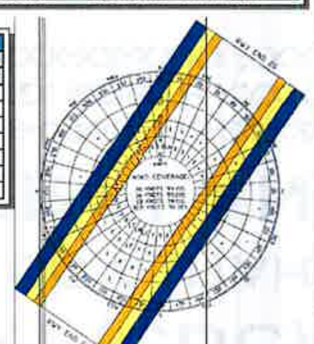
ALL WEATHER WIND COVERAGE

CROSSWIND COMPONENT	PERCENT COVERAGE		
	RUNWAY 2/20	RUNWAY 8/26	COMBINED
10.5 KNOTS	97.20%	81.37%	98.58%
13 KNOTS	98.49%	87.56%	99.53%
16 KNOTS	99.39%	93.80%	99.87%
20 KNOTS	99.81%	97.76%	99.98%
OBSERVATION	83968		
TIME PERIOD	2013-2022		
DATA SOURCE	ASOS		

IFR WIND COVERAGE

CROSSWIND COMPONENT	PERCENT COVERAGE
	RUNWAY 2/20
10.5 KNOTS	96.32%
13 KNOTS	98.01%
16 KNOTS	99.20%
20 KNOTS	99.70%
OBSERVATON	6042
TIME PERIOD	2013-2022
DATA SOURCE	ASOS


ALL WEATHER COMBINED


IFR RWY 2/20

AIRPORT NON-STANDARDS CONDITION TABLE

	ITEM OR SURFACE NOT MEETING STANDARD	ACTUAL	STANDARD	FAA APPROVED DATE
1	RUNWAY 8/26 TO TAXIWAY SEPERATION	200'	225'	RELOCATE TAXIWAY, CORRECT IN FUTURE CONSTRUCTION PROJECTS
2	PARALLEL TAXIWAY IS HIGHER THAN RUNWAY 2/20	2'	0'	RECONSTUCT TAXIWAY OR RUNWAY

BORDER SIZE 11"X17"	DESIGNED FINAL	DRAWN BRC	CHECKED BWC	APPROVED CLT

NO.	REVISIONS DESCRIPTION	DATE

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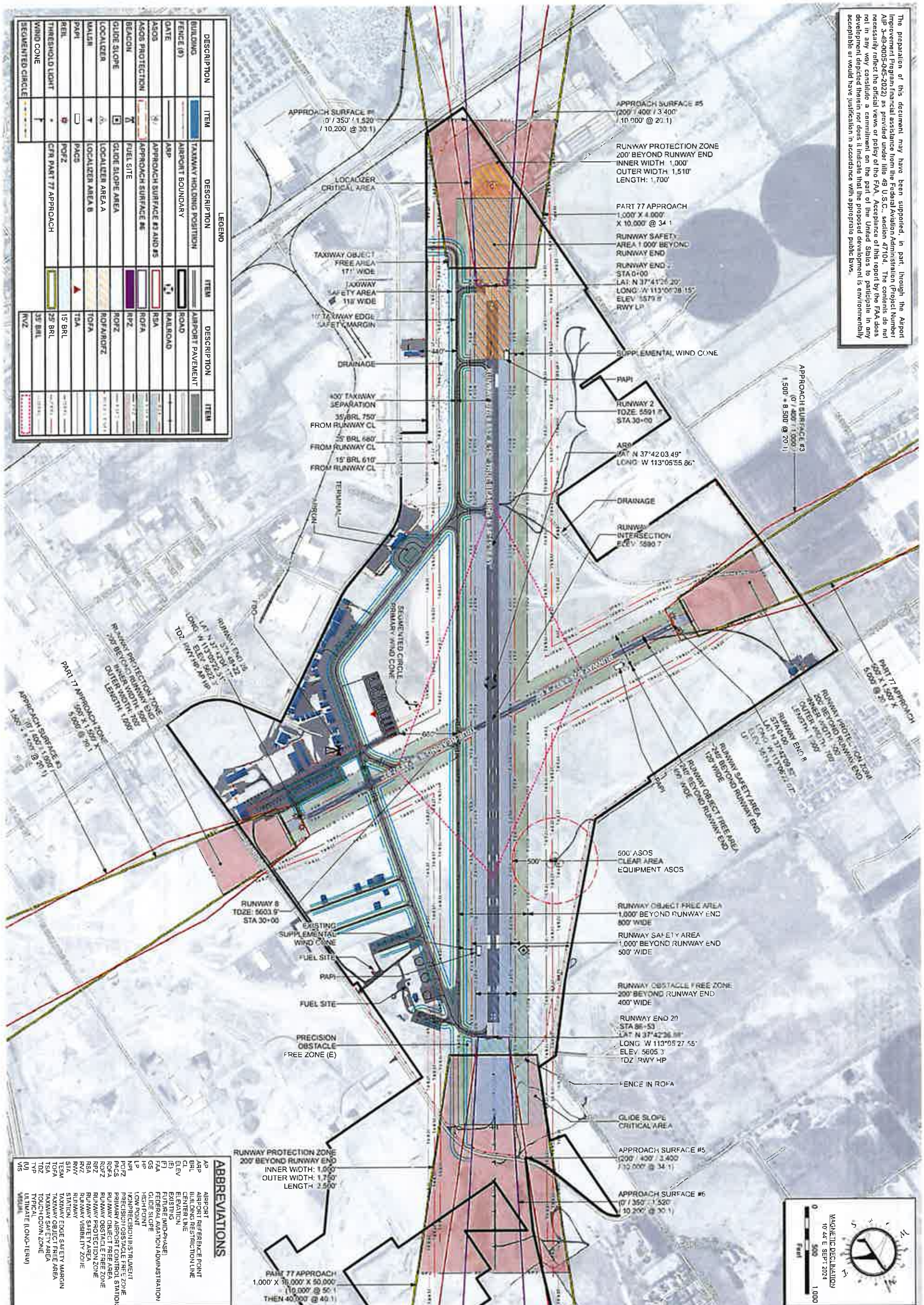
PHONE: 435.315.6168 WWW.ARDURRA.COM

A.I.P. PROJECT #3-49-0005-045-2022

DATA TABLE
CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 2
2 OF 17

Document Path: K:\210450-CDY\S_GIS\CDC_SHEET_3A_ALP.mxd



DATE: XXX XX, 2025	AIRPORT LAYOUT PLAN	A.I.P. PROJECT #: 3-49-0005-045-2022
PROJECT # 210450	EXISTING	
SHEET: 3A 3 OF 17	CEDAR CITY REGIONAL AIRPORT	

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REVISIONS		
NO.	DESCRIPTION	DATE:

BORDER SIZE 11"X17"
DESIGNED FINAL
DRAWN BRC
CHECKED BWC
APPROVED SEK

LEGEND

DESCRIPTION	ITEM EXISTING	ITEM FUTURE	DESCRIPTION	ITEM	DESCRIPTION	ITEM EXISTING	ITEM FUTURE
HANGAR			TAXIWAY HOLDING POSITION		AIRPORT PAVEMENT		
FUEL SITE			AIRPORT REFERENCE POINT (ARP)		PAVEMENT TO BE REMOVED	X	
FENCE (8')			APPROACH SURFACE #3 AND #5		ROAD		
GATE			APPROACH SURFACE #6		RAILROAD		
ASOS			CFR PART 77 APPROACH		RSA		
BEACON			ASOS PROTECTION		ROFA		
GLIDE SLOPE			GLIDE SLOPE		RPZ		
LOCALIZER			LOCALIZER AREA A		ROFZ		
MALSR	T	T	LOCALIZER AREA B		TOFA		
PAPI			PACS		TSA		
REIL			POFZ		15' BRL		
THRESHOLD LIGHT			SEGMENTED CIRCLE		25' BRL		
WIND CONE			AIRPORT BOUNDARY		35' BRL		

PLAN ACCEPTANCE

CEDAR CITY CORPORATION MAYOR — DATE

A.L.P. APPROVALS

FEDERAL AVIATION ADMINISTRATION

CONDITIONALLY APPROVED

PER LETTER DATE ____

NAME ____

SIGNATURE ____

TITLE ____

DATE ____

DENVER AIRPORTS DISTRICT OFFICE

AIRSPACE APPROVAL

A.L.P. AIRSPACE APPROVAL DATE ____

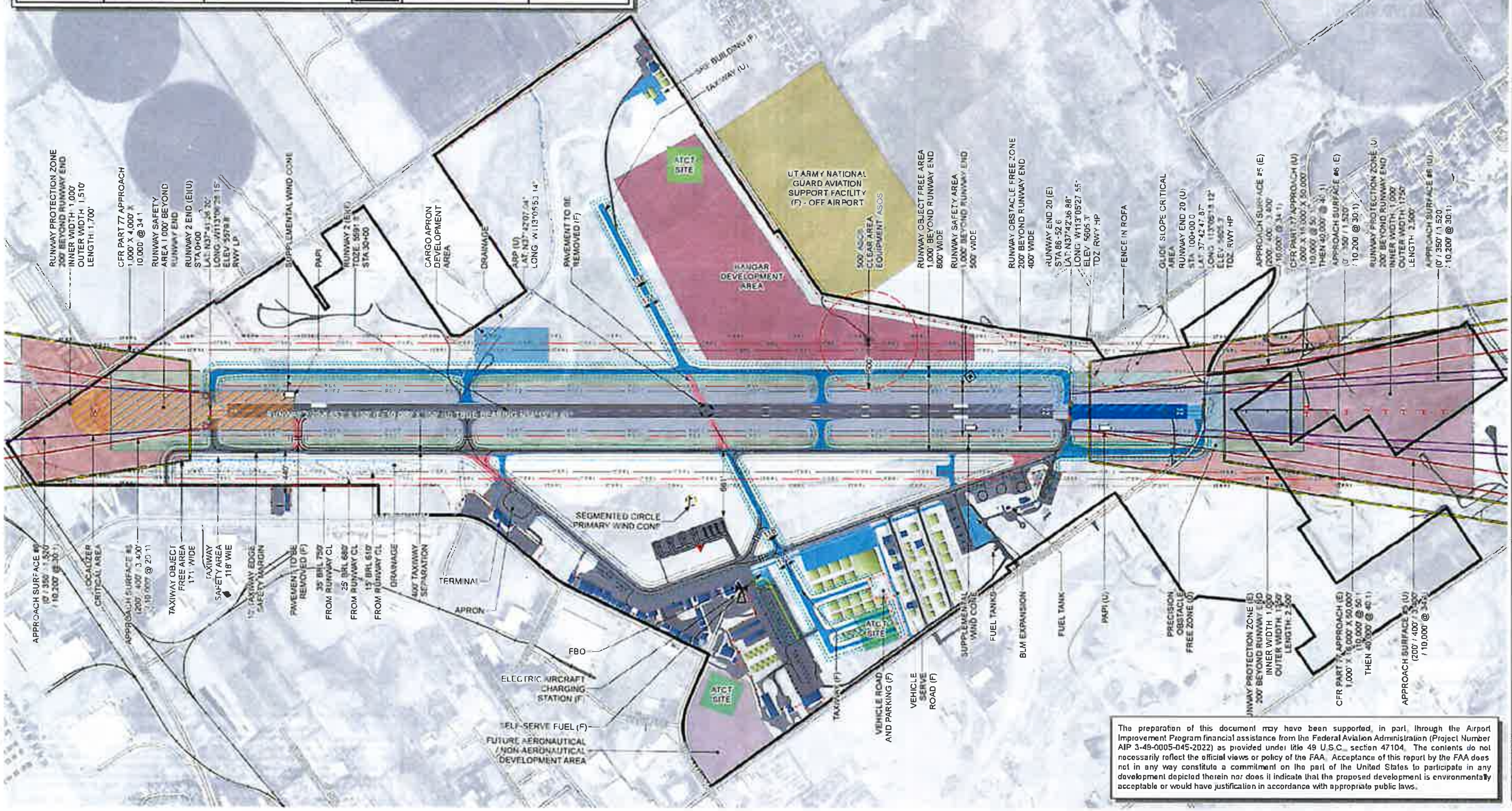
CASE NO ____

ABBREVIATIONS

AP	AIRPORT
ARP	AIRPORT REFERENCE POINT
BRL	BUILDING RESTRICTION LINE
CL	CENTER LINE
ELEV	ELEVATION
(E)	EXISTING
(F)	FUTURE (MID-PHASE)
FAA	FEDERAL AVIATION ADMINISTRATION
HP	HIGH POINT
LP	LOW POINT
NPI	NON PRECISION INSTRUMENT
ROFA	RUNWAY OBJECT FREE AREA
ROFZ	RUNWAY OBSTACLE FREE ZONE
RPZ	RUNWAY PROTECTION ZONE
RSA	RUNWAY SAFETY AREA
RVZ	RUNWAY VISIBILITY ZONE
RWY	RUNWAY
STA	STATION
TESM	TAXIWAY EDGE SAFETY MARGIN
TOFA	TAXIWAY OBJECT FREE AREA
TSA	TAXIWAY SAFETY AREA
TDZ	TOUCH DOWN ZONE
TYP	TYPICAL
(U)	ULTIMATE (LONG-TERM)
VIS	VISUAL

MAGNETIC DECLINATION 10°44' E SEPT 2024

0 500 1,000 Feet



The preparation of this document may have been supported, in part, through the Airport Improvement Program financial assistance from the Federal Aviation Administration (Project Number AIP 3-49-0005-045-2022) as provided under title 49 U.S.C., section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable or would have justification in accordance with appropriate public laws.

NO.	REVISIONS DESCRIPTION	DATE

BORDER SIZE 11"X17" | DESIGNED FINAL | DRAWN BRC | CHECKED BWC | APPR'V'D SEK

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A.L.P. PROJECT #: 3-49-0005-045-2022

AIRPORT LAYOUT PLAN FUTURE

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 3B
4 OF 17

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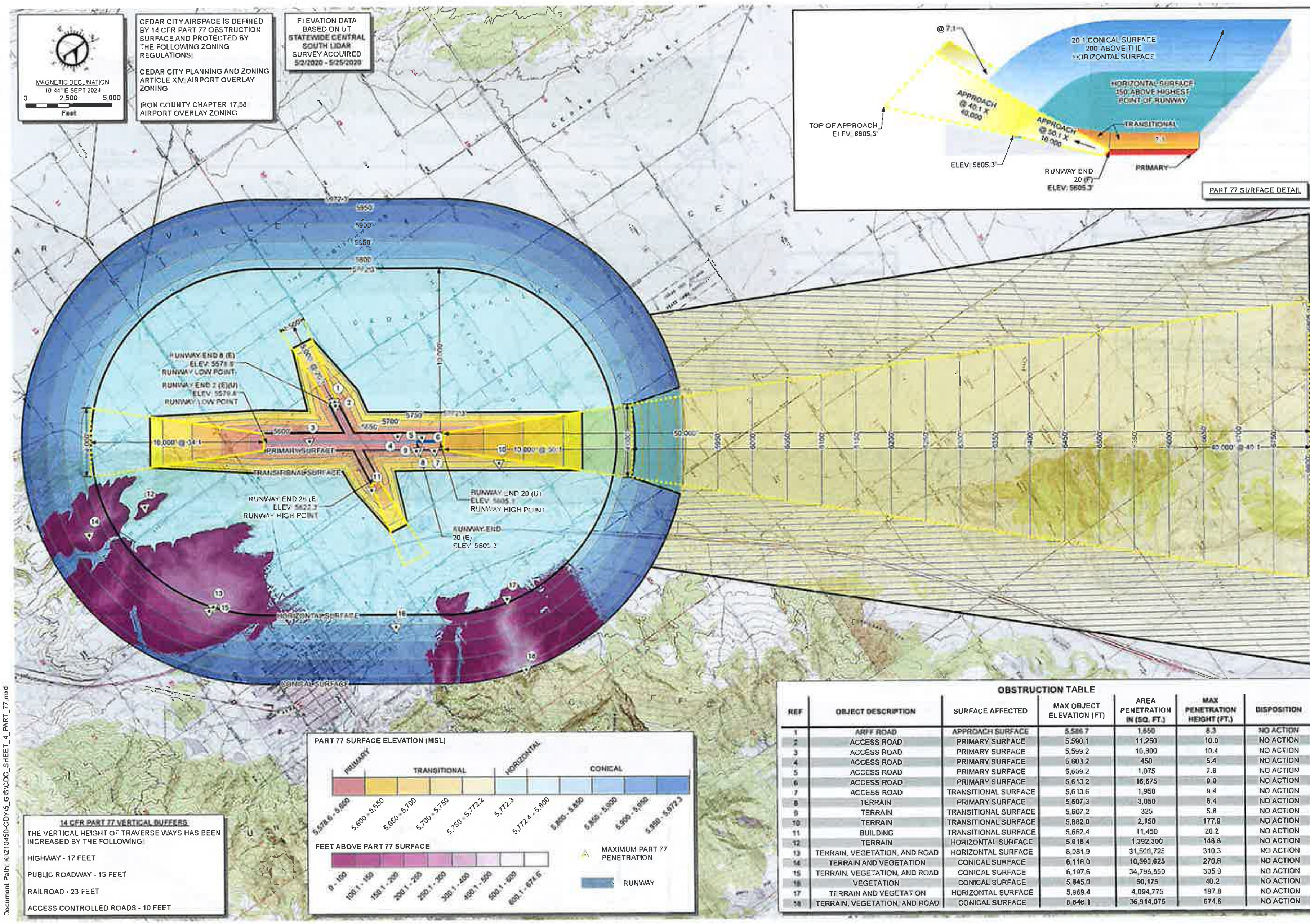

CEDAR CITY AIRSPACE IS DEFINED BY 14 CFR PART 77 OBSTRUCTION SURFACE AND PROTECTED BY THE FOLLOWING ZONING REGULATIONS:

CEDAR CITY PLANNING AND ZONING ARTICLE XIV: AIRPORT OVERLAY ZONING

IRON COUNTY CHAPTER 17.58 AIRPORT OVERLAY ZONING

ELEVATION DATA BASED ON UT **STATEWIDE CENTRAL SOUTH LIDAR** SURVEY ACQUIRED 5/2/2020 - 5/25/2020

14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

OBSTRUCTION TABLE

REF	OBJECT DESCRIPTION	SURFACE AFFECTED	MAX OBJECT ELEVATION (FT)	AREA PENETRATION IN (SQ. FT.)	MAX PENETRATION HEIGHT (FT.)	DISPOSITION
1	ARFF ROAD	APPROACH SURFACE	5,586.7	1,650	8.3	NO ACTION
2	ACCESS ROAD	PRIMARY SURFACE	5,590.1	11,250	10.0	NO ACTION
3	ACCESS ROAD	PRIMARY SURFACE	5,599.2	10,800	10.4	NO ACTION
4	ACCESS ROAD	PRIMARY SURFACE	5,603.2	450	5.4	NO ACTION
5	ACCESS ROAD	PRIMARY SURFACE	5,609.2	1,075	7.8	NO ACTION
6	ACCESS ROAD	PRIMARY SURFACE	5,613.2	16,675	9.9	NO ACTION
7	ACCESS ROAD	TRANSITIONAL SURFACE	5,613.6	1,950	9.4	NO ACTION
8	TERRAIN	PRIMARY SURFACE	5,607.3	3,050	6.4	NO ACTION
9	TERRAIN	TRANSITIONAL SURFACE	5,607.2	325	5.8	NO ACTION
10	TERRAIN	TRANSITIONAL SURFACE	5,882.0	2,150	177.9	NO ACTION
11	BUILDING	TRANSITIONAL SURFACE	5,662.4	11,450	20.2	NO ACTION
12	TERRAIN	HORIZONTAL SURFACE	5,818.4	1,392,300	148.8	NO ACTION
13	TERRAIN, VEGETATION, AND ROAD	HORIZONTAL SURFACE	6,081.9	31,500,725	310.3	NO ACTION
14	TERRAIN AND VEGETATION	CONICAL SURFACE	6,118.0	10,593,625	270.8	NO ACTION
15	TERRAIN, VEGETATION, AND ROAD	CONICAL SURFACE	6,197.6	34,796,850	305.9	NO ACTION
16	VEGETATION	CONICAL SURFACE	5,845.0	50,175	40.2	NO ACTION
17	TERRAIN AND VEGETATION	HORIZONTAL SURFACE	5,969.4	4,094,775	197.6	NO ACTION
18	TERRAIN, VEGETATION, AND ROAD	CONICAL SURFACE	6,848.1	36,914,075	674.6	NO ACTION

NO	DESCRIPTION	DATE

REVISIONS

BORDER SIZE 11"X17"
DESIGNED FINAL
DRAWN BRC
CHECKED BWC
APPROVED SEF

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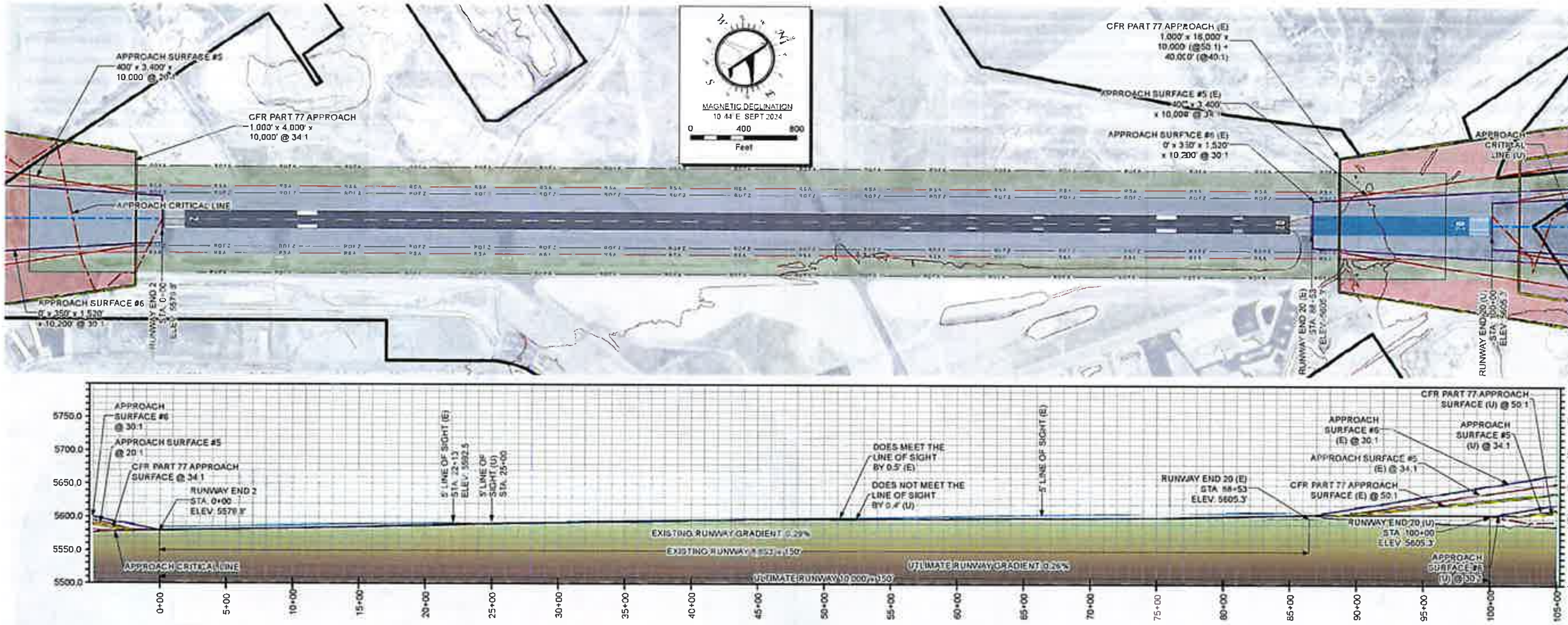
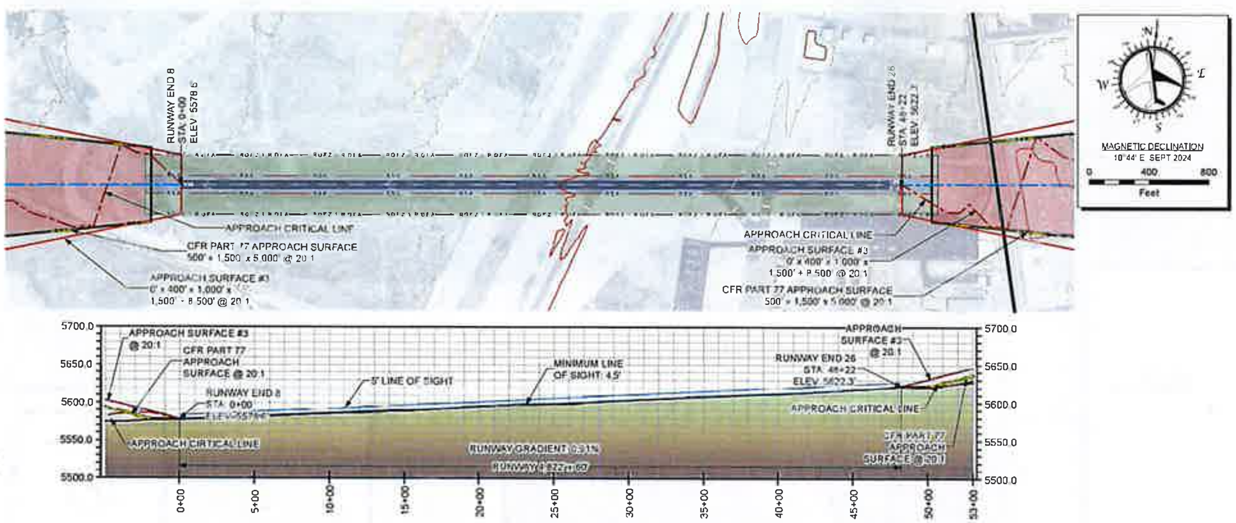
AIRSPACE

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET 4
5 OF 17





14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

LEGEND

DESCRIPTION	ITEM EXISTING	ITEM FUTURE
RUNWAY		
ROAD		
AIRPORT BOUNDARY		
FENCE (8')		
MAJOR 10FT CONTOUR		
MINOR 10FT CONTOUR		
RSA		
ROFA		
RPZ		
ROFA/ROFZ		
APPROACH CRITICAL LINE		
PROJECTED RUNWAY CENTERLINE		
APPROACH SURFACE #5 & #3		
APPROACH SURFACE #6		
CFR PART 77 APPROACH		

ELEVATION DATA BASED ON UT STATEWIDE CENTRAL SOUTH LIDAR SURVEY ACQUIRED 5/2/2020 - 5/25/2020

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REVISIONS		
NO.	DESCRIPTION	DATE

BORDER SIZE: 11"X17"
DESIGNED: FINAL
DRAWN: BRC
CHECKED: BWC
APPROVED: SEK

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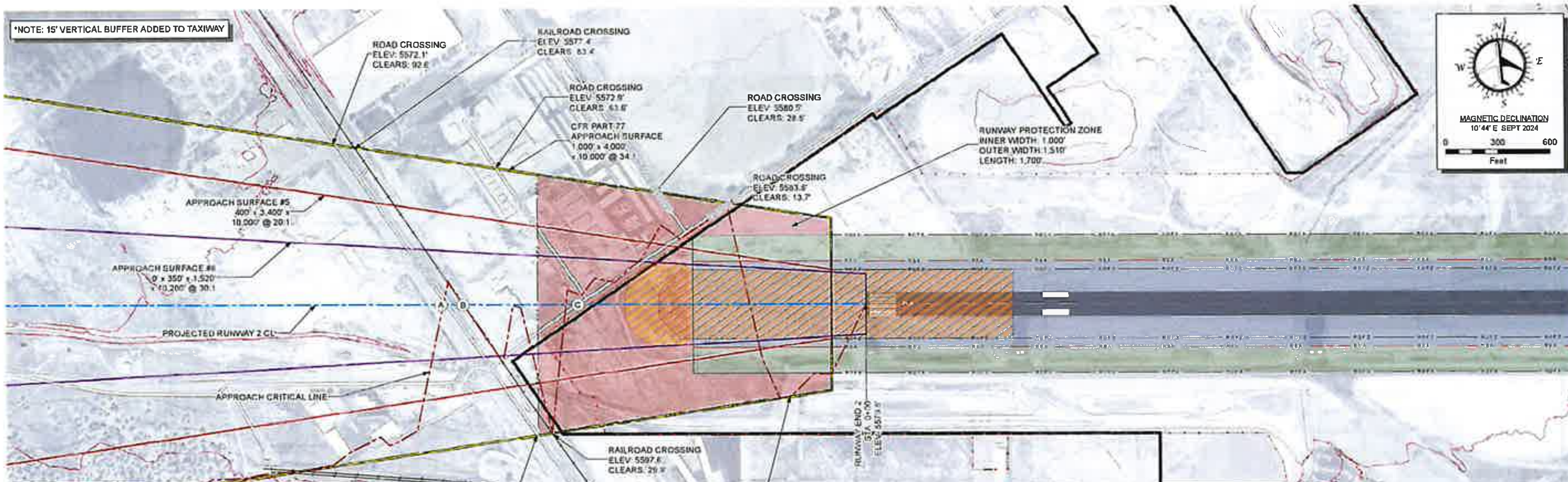
A.I.P. PROJEC #: 3-49-0005-045-2022

RUNWAY PROFILE RWY 2/20 AND 8/26

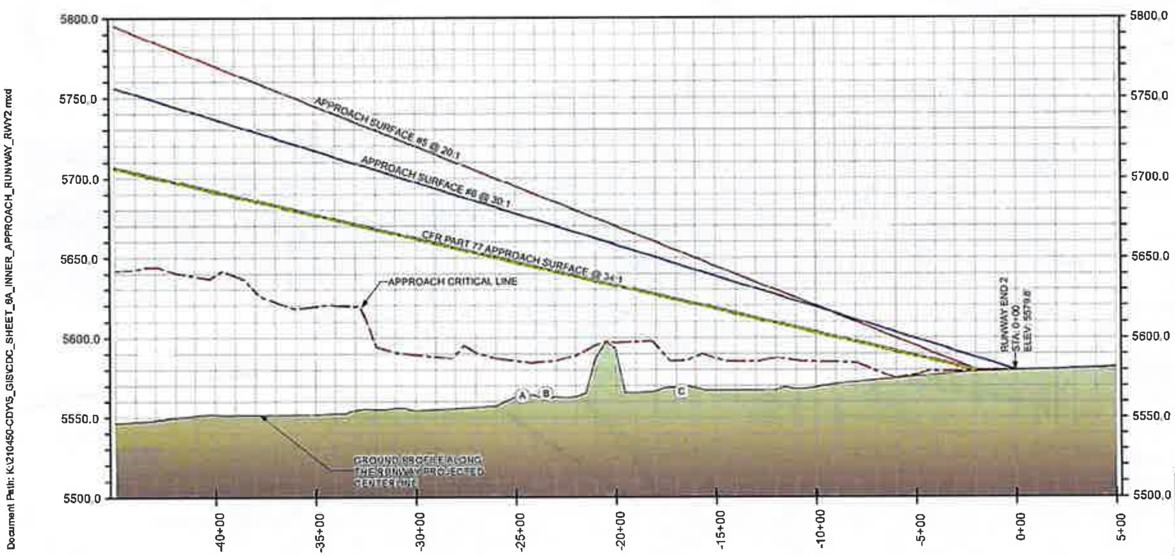
CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 5
6 OF 17

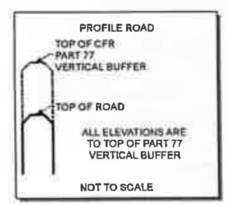


SIGNIFICANT OBJECTS

REF	DESCRIPTION	BUFFER	APPROACH SURFACE IMPACT	DISPOSITION
A	W HWY 56	17	CLEARS: 61.9	NO ACTION
B	RAILROAD	23	CLEARS: 80.3	NO ACTION
C	N LUND	15	CLEARS: 52.6	NO ACTION



ELEVATION DATA BASED ON UT STATEWIDE CENTRAL SOUTH LIDAR SURVEY ACQUIRED 5/2/2020 - 5/25/2020



14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

LEGEND

DESCRIPTION	ITEM
RUNWAY	
ROAD	
RAILROAD	
AIRPORT BOUNDARY	
LOCALIZER AREA A	
LOCALIZER AREA B	
FENCE (8')	
MAJOR 10FT CONTOUR	
MINOR 10FT CONTOUR	
RSA	
ROFA	
RPZ	
ROFZ	
APPROACH CRITICAL LINE	
PROJECTED RUNWAY CENTERLINE	
APPROACH SURFACE #5	
APPROACH SURFACE #6	
CFR PART 77 APPROACH	

NO	DESCRIPTION	DATE

REVISIONS

BORDER SIZE 11"X17"
DESIGNED FINAL
DRAWN BRC
CHECKED BWC
APPROVED SEK

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A.I.P. PROJECT #: 3-49-0005-045-2022

INNER PORTION OF THE APPROACH SURFACE RUNWAY 2

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 6A
7 OF 17

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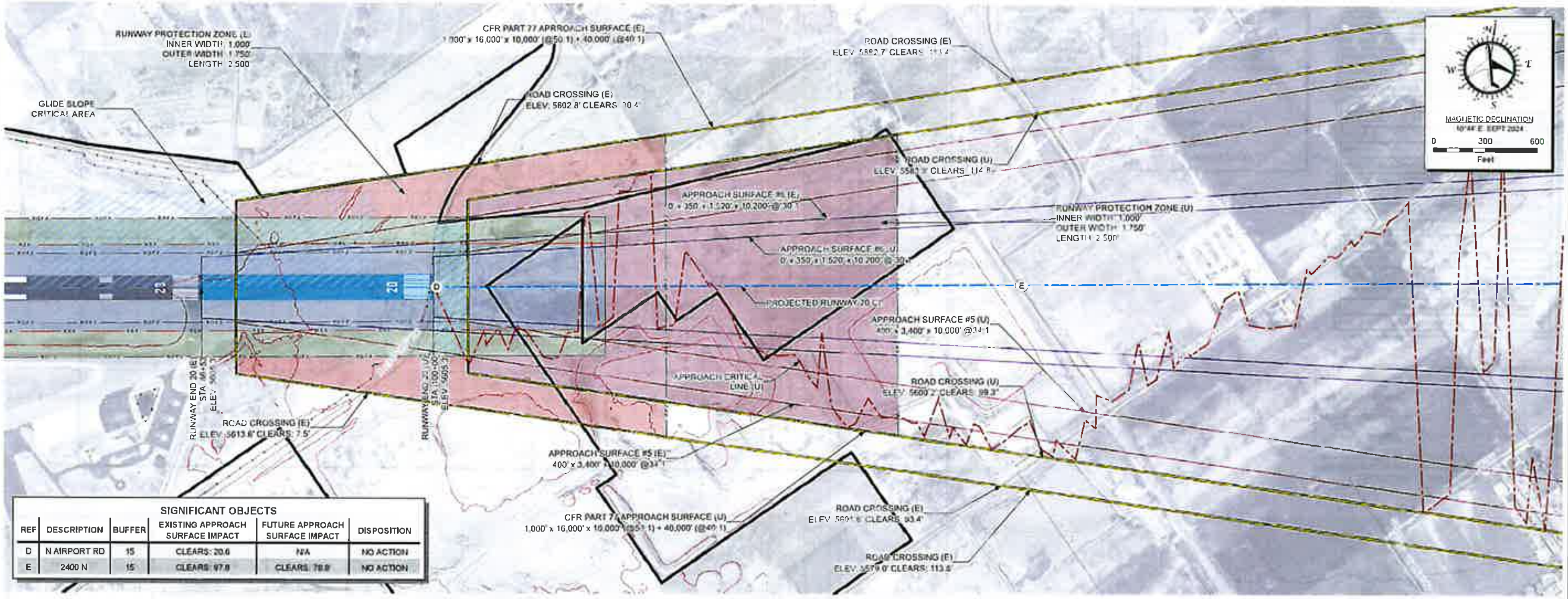
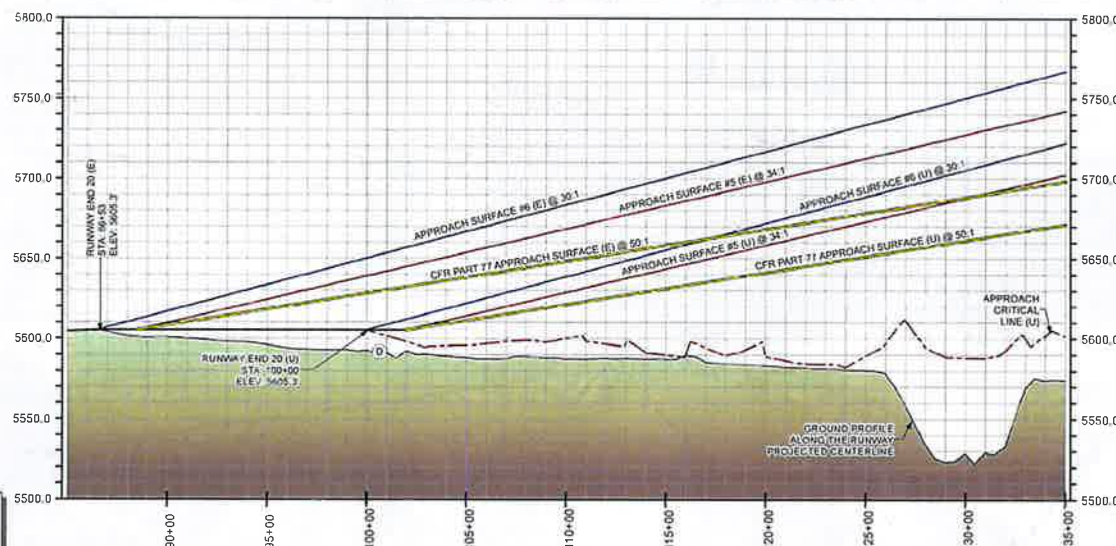
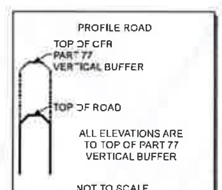


SIGNIFICANT OBJECTS

REF	DESCRIPTION	BUFFER	EXISTING APPROACH SURFACE IMPACT	FUTURE APPROACH SURFACE IMPACT	DISPOSITION
D	N AIRPORT RD	15	CLEARS: 20.6	N/A	NO ACTION
E	2400 N	15	CLEARS: 97.8	CLEARS: 78.8	NO ACTION



ELEVATION DATA BASED ON UT STATEWIDE CENTRAL SOUTH LIDAR SURVEY ACQUIRED 5/2/2020 - 5/25/2020



14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

LEGEND

DESCRIPTION	ITEM: EXISTING	ITEM: FUTURE
RUNWAY		
ROAD		
AIRPORT BOUNDARY		
GLIDE SLOPE		
POFZ		
FENCE (8')		
MAJOR 10FT CONTOUR		
MINOR 10FT CONTOUR		
RSA		
ROFA		
RPZ		
ROFZ		
APPROACH CRITICAL LINE		
PROJECTED RUNWAY CENTERLINE		
APPROACH SURFACE #5		
APPROACH SURFACE #6		
CFR PART 77 APPROACH		

NO.	REVISIONS: DESCRIPTION	DATE

BORDER SIZE 11"X17"
DESIGNED: FINAL
DRAWN: BRC
CHECKED: BWC
APPROVED: SEK

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A.I.P. PROJECT #: 3-49-0005-045-2022

INNER PORTION OF THE APPROACH SURFACE RUNWAY 20

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 6B
8 OF 1?

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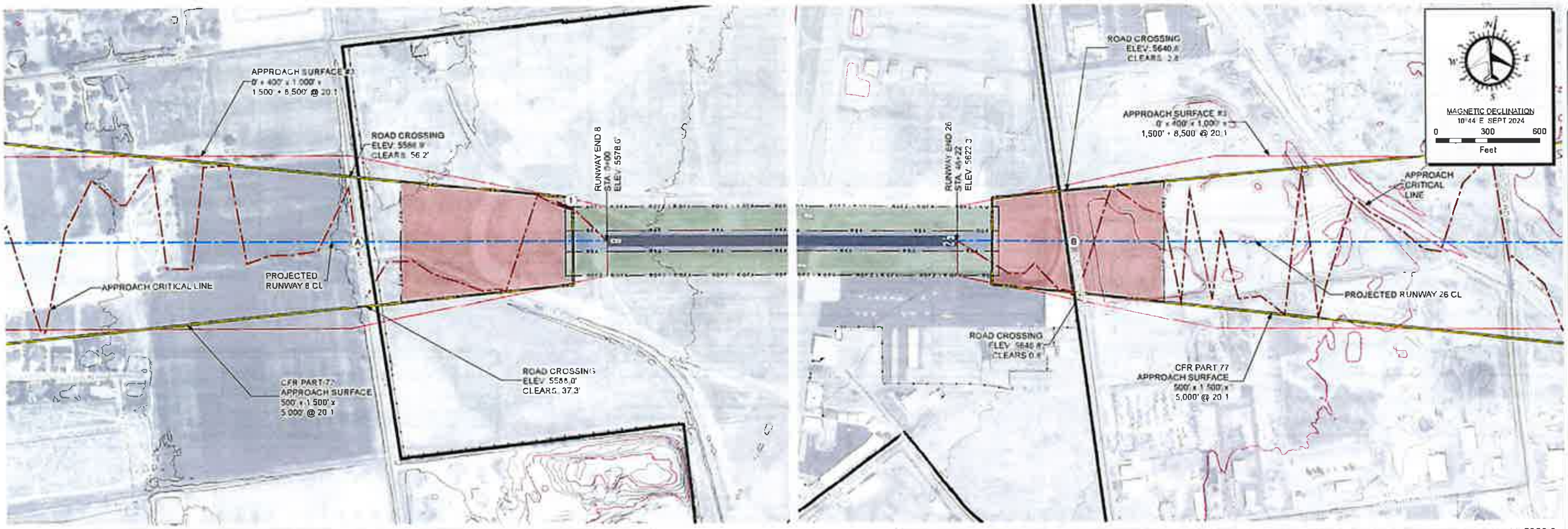

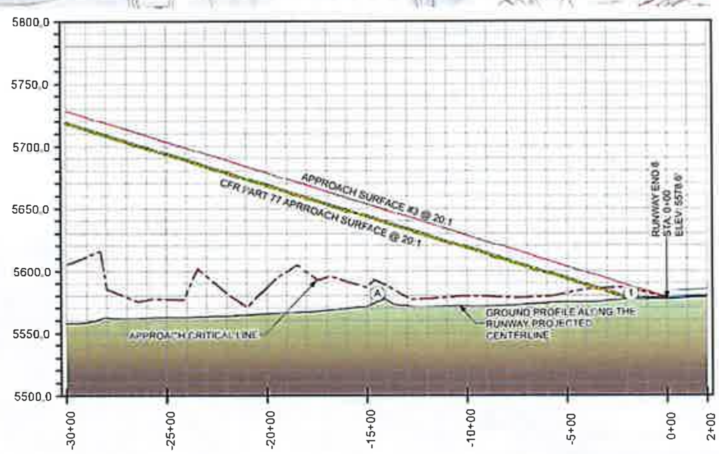

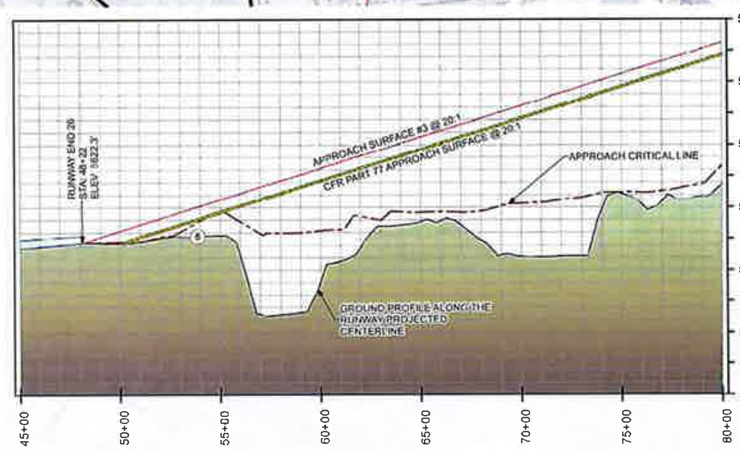

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LEGEND					
DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM
APPROACH CRITICAL LINE		AIRPORT BOUNDARY		RUNWAY	
PROJECTED RUNWAY CENTERLINE		CFR PART 77 APPROACH		ROAD	
APPROACH SURFACE #3		MAJOR 10FT CONTOUR		RSA	
OBSTRUCTIONS		MINOR 10FT CONTOUR		RPZ	
FENCE (8')				ROFA/ROFZ	

14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

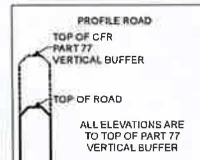
ELEVATION DATA BASED ON UT STATEWIDE CENTRAL SOUTH LIDAR SURVEY ACQUIRED 5/2/2020 - 5/25/2020

SIGNIFICANT OBJECTS

REF	DESCRIPTION	BUFFER	APPROACH SURFACE IMPACT	DISPOSITION
A	N 3100 W	15	CLEARS 51.0'	NO ACTION
B	N AIRPORT RD	15	CLEARS 5.1'	NO ACTION

OBSTRUCTION TABLE

REF	OBJECT DESCRIPTION	MAX OBJECT ELEVATION (FT)	AREA PENETRATION IN (SQ. FT.)	MAX PENETRATION HEIGHT (FT.)	DISPOSITION
1	ACCESS ROAD	5587	2050	8.1	NO ACTION



ALL ELEVATIONS ARE TO TOP OF PART 77 VERTICAL BUFFER

NOT TO SCALE

REVISIONS		
NO.	DESCRIPTION	DATE

BORDER SIZE 11"X17"
DESIGNED FINAL
DRAWN BRC
CHECKED BWC
APPROVED SEK

ARDURRA
2175 W. 3000 S., SUITE 200
HEBER CITY, UT 84032
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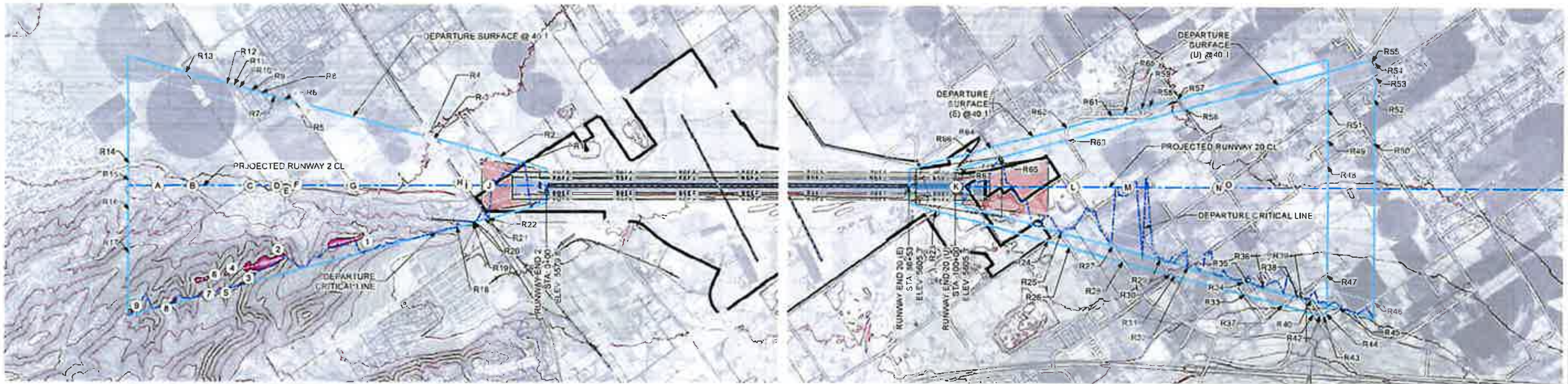
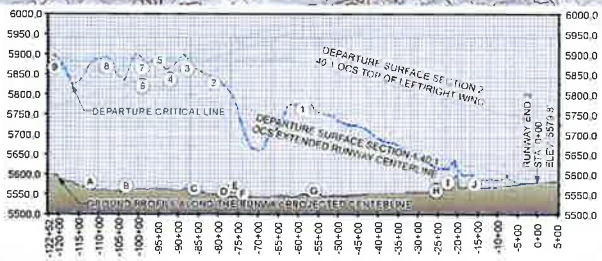
A.I.P. PROJEC #: 3-49-0005-045-2022

INNER PORTION OF THE APPROACH SURFACE RUNWAY 8/26

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 6C
8 OF 17





14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

DEPARTURE SURFACE DIMENSION

INSTRUMENT DEPARTURE SURFACE TYPE		DIMENSION STANDARDS FEET					SLOPE
		A	B	C	D	E	
7	RUNWAY PROVIDING INSTRUMENT DEPARTURE OPERATIONS	RUNWAY WIDTH (RW)	500' -1/2 RW	7,512'	12,152'	6,152'	40:1
		150'	425'				

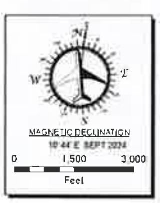
LEGEND

DESCRIPTION	ITEM	DESCRIPTION	ITEM EXISTING	ITEM FUTURE
PROJECTED RUNWAY CENTERLINE		RUNWAY		
DEPARTURE SURFACE		RAILROAD		
DEPARTURE SURFACE WINGS		ROAD		
DEPARTURE CRITICAL LINE		AIRPORT BOUNDARY		
OBSTRUCTION		FENCE (8')		
RSA		MAJOR 10FT CONTOUR		
ROFA		MINOR 10FT CONTOUR		
RPZ				
RPZ				

OBSTRUCTION TABLE

REF	OBJECT DESCRIPTION	MAX OBJECT ELEVATION (FT)	AREA PENETRATION IN (SQ. FT.)	MAX PENETRATION HEIGHT (FT.)	DISPOSITION
1	TERRAIN	5774.5	189,200.00	45.5	NO ACTION
2	TERRAIN	5846.7	311,825.00	38.2	NO ACTION
3	TERRAIN	5898.3	11,275.00	14.5	NO ACTION
4	TERRAIN	5838.8	15,625.00	15.5	NO ACTION
5	TERRAIN	5897.7	11,375.00	13.9	NO ACTION
6	TERRAIN	5859.7	50,325.00	20.4	NO ACTION
7	TERRAIN	5901.1	21,700.00	17.3	NO ACTION
8	TERRAIN	5893.1	21,225.00	9.3	NO ACTION
9	TERRAIN	5899.0	17,700.00	15.2	NO ACTION

ELEVATION DATA BASED ON UT STATEWIDE CENTRAL SOUTH LIDAR SURVEY ACQUIRED 5/2/2020 - 5/25/2020



SIGNIFICANT OBJECTS

REF	DESCRIPTION	BUFFER	EXISTING DEPARTURE SURFACE IMPACT	ULTIMATE DEPARTURE SURFACE IMPACT	DISPOSITION
A	S CANYON DR	15	CLEARS: 295.1	N/A	NO ACTION
B	S WESTVIEW DR	15	CLEARS: 277.5	N/A	NO ACTION
C	S WESTVIEW DR	15	CLEARS: 238.8	N/A	NO ACTION
D	FOUNDATION RD	15	CLEARS: 230.7	N/A	NO ACTION
E	HIDDEN HILLS DR	15	CLEARS: 224.3	N/A	NO ACTION
F	S WESTVIEW DR	15	CLEARS: 222.9	N/A	NO ACTION
G	CENTER ST	15	CLEARS: 174.1	N/A	NO ACTION
H	S1200 ST	15	CLEARS: 77.0	N/A	NO ACTION
I	RAILROAD	23	CLEARS: 75.9	N/A	NO ACTION
J	N 3100 W	15	CLEARS: 51.2	N/A	NO ACTION
K	N AIRPORT ROAD	15	CLEARS: 46.5	CLEARS: 12.8	NO ACTION
L	2400 N	15	CLEARS: 150.3	CLEARS: 118.6	NO ACTION
M	N BULLDOG RD	15	CLEARS: 194.7	CLEARS: 161.0	NO ACTION
N	775 W	15	CLEARS: 272.7	CLEARS: 239.0	NO ACTION
O	W 3000 N	15	CLEARS: 278.5	CLEARS: 244.8	NO ACTION

ROAD/ RAILROAD CROSSING

REF	CROSSING	ELEVATION	CLEARANCE
R1	ROAD	5569.1	178.5
R2	ROAD	5563.2	199.2
R3	RAILROAD	5551.1	258.2
R4	ROAD	5552.1	262.0
R5	ROAD	5531.0	352.8
R6	ROAD	5528.3	355.5
R7	ROAD	5527.4	356.4
R8	ROAD	5524.4	359.4
R9	ROAD	5524.1	359.7
R10	ROAD	5522.8	361.0
R11	ROAD	5522.9	360.9
R12	ROAD	5517.8	365.9
R13	ROAD	5516.1	367.7
R14	ROAD	5543.3	339.5
R15	ROAD	5603.9	278.8
R16	ROAD	5614.8	267.9
R17	ROAD	5771.9	110.8
R18	ROAD	5602.8	185.7
R19	RAILROAD	5589.3	189.8
R20	RAILROAD	5590.2	187.3
R21	ROAD	5580.7	185.9
R22	RAILROAD	5577.7	189.3
R23	ROAD	5600.4	166.9
R24	ROAD	5592.8	254.5
R25	ROAD	5589.2	233.4
R26	ROAD	5585.9	278.4
R27	ROAD	5581.3	281.1
R28	ROAD	5585.0	317.2
R29	ROAD	5590.1	306.8
R30	ROAD	5602.9	306.4
R31	ROAD	5605.1	304.5
R32	ROAD	5600.1	309.2
R33	ROAD	5633.7	275.5
R34	ROAD	5621.5	287.8
R35	ROAD	5622.2	287.1
R36	ROAD	5629.4	279.8
R37	ROAD	5642.7	266.6
R38	ROAD	5635.8	273.5
R39	ROAD	5639.4	269.5
R40	ROAD	5638.7	270.6
R41	ROAD	5653.9	255.4
R42	ROAD	5656.1	253.5
R43	ROAD	5656.0	253.3
R44	ROAD	5653.6	255.7
R45	ROAD	5648.8	260.5
R46	ROAD	5635.8	273.3
R47	ROAD	5618.8	290.2
R48	ROAD	5541.6	367.1
R49	ROAD	5540.0	369.1
R50	ROAD	5537.8	370.9
R51	ROAD	5536.3	372.8
R52	ROAD	5533.3	375.8
R53	ROAD	5528.7	380.4
R54	ROAD	5528.3	381.0
R55	ROAD	5528.5	380.8
R56	ROAD	5551.2	358.1
R57	ROAD	5551.6	357.7
R58	ROAD	5554.9	354.4
R59	ROAD	5556.3	353.0
R60	ROAD	5556.4	352.8
R61	ROAD	5559.0	340.5
R62	ROAD	5564.3	303.6
R63	ROAD	5566.4	266.3
R64	ROAD	5583.1	227.9
R65	ROAD	5582.4	198.2
R66	ROAD	5585.8	212.4
R67	ROAD	5590.2	185.6

REVISIONS		
NO.	DESCRIPTION	DATE

BORDER SIZE 11"X17"
DESIGNED FINAL
DRAWN BRC
CHECKED BWC
APPROVED SEK

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HEBER CITY, UT 84032
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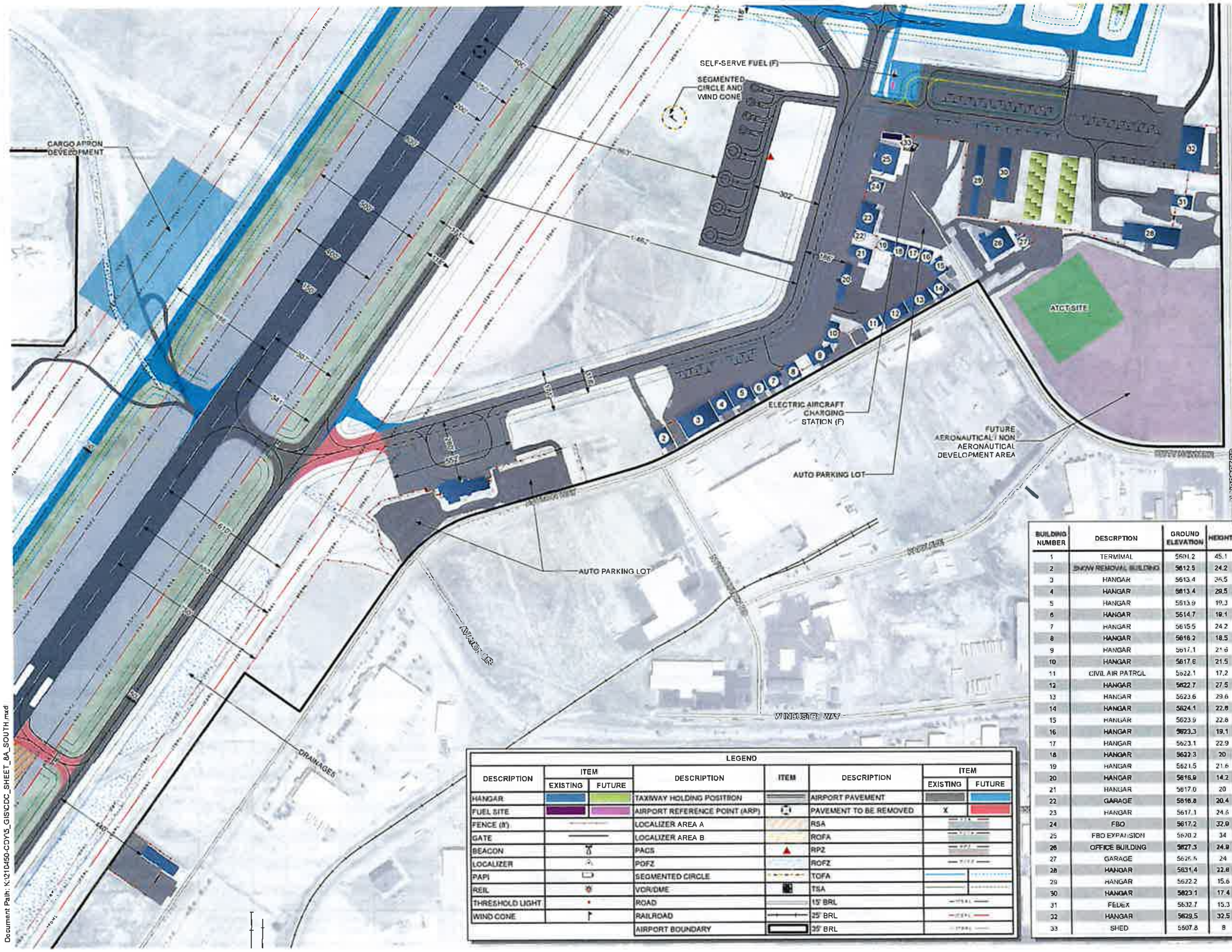
A.I.P. PROJEC #: 3-49-0005-045-2022

DEPARTURE SURFACE

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 7



BUILDING NUMBER	DESCRPTION	GROUND ELEVATION	HEIGHT	TOP OF BUILDINGS	AREA (SQ FT)	DISPOSITION
1	TERMINAL	5601.2	45.1	5646.3	22212.4	TO REMAIN
2	SNOW REMOVAL BUILDING	5612.5	24.2	5636.7	4861.1	TO REMAIN
3	HANGAR	5613.4	36.5	5640.9	16639.6	TO REMAIN
4	HANGAR	5613.4	29.5	5642.9	6480	TO REMAIN
5	HANGAR	5613.9	19.3	5633.2	9625.5	TO REMAIN
6	HANGAR	5614.7	19.1	5633.8	2834.1	TO REMAIN
7	HANGAR	5615.5	24.2	5639.7	4928.6	TO REMAIN
8	HANGAR	5616.2	18.5	5634.7	3568.6	TO REMAIN
9	HANGAR	5617.1	21.6	5638.7	6544.9	TO REMAIN
10	HANGAR	5617.6	21.5	5639.1	4298.2	TO REMAIN
11	CIVIL AIR PATROL	5622.1	17.2	5639.3	3268.4	TO REMAIN
12	HANGAR	5622.7	27.5	5650.2	8744.3	TO REMAIN
13	HANGAR	5623.6	29.6	5653.2	6711.9	TO REMAIN
14	HANGAR	5624.1	22.8	5646.7	4581.4	TO REMAIN
15	HANGAR	5623.9	22.8	5646.7	3700.9	TO REMAIN
16	HANGAR	5623.3	19.1	5642.4	2930.6	TO REMAIN
17	HANGAR	5623.1	22.9	5646.0	2853.6	TO REMAIN
18	HANGAR	5622.3	20	5642.3	2057.3	TO REMAIN
19	HANGAR	5621.5	21.6	5643.1	3172.6	TO REMAIN
20	HANGAR	5616.9	14.2	5631.1	5895.3	TO REMAIN
21	HANGAR	5617.0	20	5637.0	5220.4	TO REMAIN
22	GARAGE	5616.8	20.4	5637.2	1425.8	TO REMAIN
23	HANGAR	5617.1	24.6	5641.7	10555.6	TO REMAIN
24	FBO	5617.2	32.9	5650.1	3430	TO REMAIN
25	FBO EXPANSION	5620.2	34	5654.2	12650	TO REMAIN
26	OFFICE BUILDING	5627.3	24.9	5652.2	18100.4	TO REMAIN
27	GARAGE	5626.6	24	5650.6	1936.7	TO REMAIN
28	HANGAR	5631.4	22.6	5654.0	20378.7	TO REMAIN
29	HANGAR	5622.2	15.6	5637.8	10870.4	TO REMAIN
30	HANGAR	5623.1	17.4	5640.5	1155.8	TO REMAIN
31	FEDEX	5632.7	15.3	5648.0	5292.5	TO REMAIN
32	HANGAR	5629.5	32.5	5662.0	19959.7	TO REMAIN
33	SHED	5607.8	8	5615.8	73.8	TO REMAIN

LEGEND

DESCRIPTION	ITEM EXISTING	ITEM FUTURE	DESCRIPTION	ITEM	DESCRIPTION	ITEM EXISTING	ITEM FUTURE
HANGAR			TAXIWAY HOLDING POSITION		AIRPORT PAVEMENT		
FUEL SITE			AIRPORT REFERENCE POINT (ARP)		PAVEMENT TO BE REMOVED	X	
FENCE (8')			LOCALIZER AREA A		RSA		
GATE			LOCALIZER AREA B		ROFA		
BEACON			PACS		RPZ		
LOCALIZER			POFZ		ROFZ		
PAPI			SEGMENTED CIRCLE		TOFA		
REIL			VOR/DME		TSA		
THRESHOLD LIGHT			ROAD		15' BRL		
WIND CONE			RAILROAD		25' BRL		
			AIRPORT BOUNDARY		35' BRL		

NO.	REVISIONS DESCRIPTION	DATE

BORDER SIZE 11"X17"
DESIGNED FINAL
DRAWN BRC
CHECKED BWC
APPROVED SEK

ARDURRA
2175 W. 3000 S., SUITE 200
HEBER CITY, UT 84032
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A.I.P. PROJECT #: 3-49-0005-045-2022

TERMINAL AREA SOUTH

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 8A
11 OF 17

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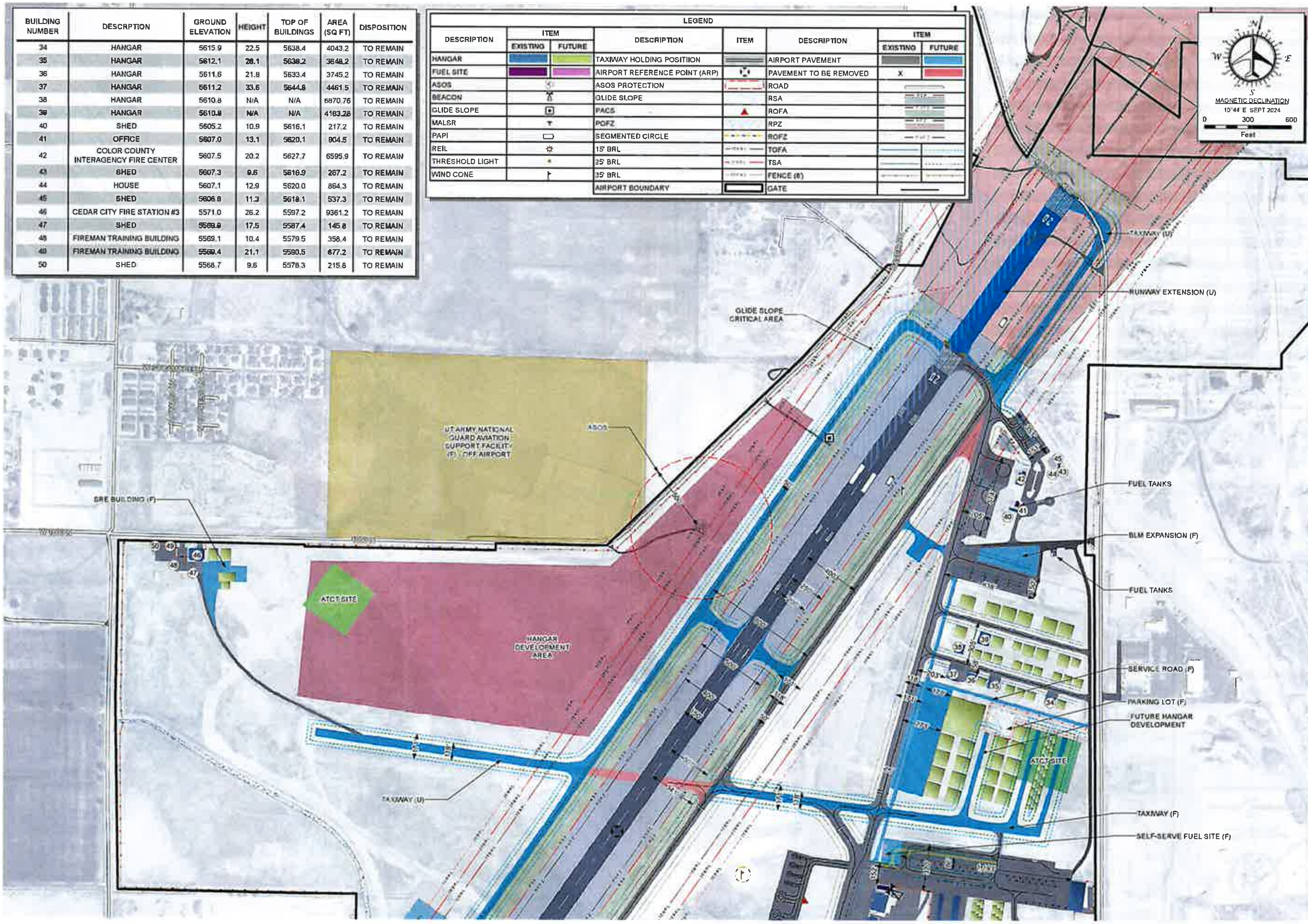
BUILDING NUMBER	DESCRPTION	GROUND ELEVATION	HEIGHT	TOP OF BUILDINGS	AREA (SQ FT)	DISPOSITION
34	HANGAR	5615.9	22.5	5638.4	4043.2	TO REMAIN
35	HANGAR	5612.1	26.1	5638.2	3648.2	TO REMAIN
36	HANGAR	5611.6	21.8	5633.4	3745.2	TO REMAIN
37	HANGAR	5611.2	33.6	5644.8	4461.5	TO REMAIN
38	HANGAR	5610.8	N/A	N/A	6870.76	TO REMAIN
39	HANGAR	5610.8	N/A	N/A	4163.28	TO REMAIN
40	SHED	5605.2	10.9	5616.1	217.2	TO REMAIN
41	OFFICE	5607.0	13.1	5620.1	804.5	TO REMAIN
42	COLOR COUNTY INTERAGENCY FIRE CENTER	5607.5	20.2	5627.7	6595.9	TO REMAIN
43	SHED	5607.3	9.6	5616.9	267.2	TO REMAIN
44	HOUSE	5607.1	12.9	5620.0	864.3	TO REMAIN
45	SHED	5606.8	11.3	5618.1	537.3	TO REMAIN
46	CEDAR CITY FIRE STATION #3	5571.0	26.2	5597.2	9361.2	TO REMAIN
47	SHED	5569.9	17.5	5587.4	145.8	TO REMAIN
48	FIREMAN TRAINING BUILDING	5569.1	10.4	5579.5	358.4	TO REMAIN
49	FIREMAN TRAINING BUILDING	5569.4	21.1	5590.5	677.2	TO REMAIN
50	SHED	5568.7	9.6	5578.3	215.8	TO REMAIN

LEGEND

DESCRIPTION	ITEM EXISTING	ITEM FUTURE	DESCRIPTION	ITEM	DESCRIPTION	ITEM EXISTING	ITEM FUTURE
HANGAR			TAXIWAY HOLDING POSITION		AIRPORT PAVEMENT		
FUEL SITE			AIRPORT REFERENCE POINT (ARP)		PAVEMENT TO BE REMOVED	X	
ASOS			ASOS PROTECTION		ROAD		
BEACON			GLIDE SLOPE		RSA		
GLIDE SLOPE			PACS		ROFA		
MALSR			POFZ		RPZ		
PAPI			SEGMENTED CIRCLE		ROFZ		
REIL			15' BRL		TOFA		
THRESHOLD LIGHT			25' BRL		TSA		
WIND CONE			35' BRL		FENCE (8')		
			AIRPORT BOUNDARY		GATE		



NO.	REVISIONS DESCRIPTION	DATE

BORDER SIZE 11"X17"
DESIGNED FINAL
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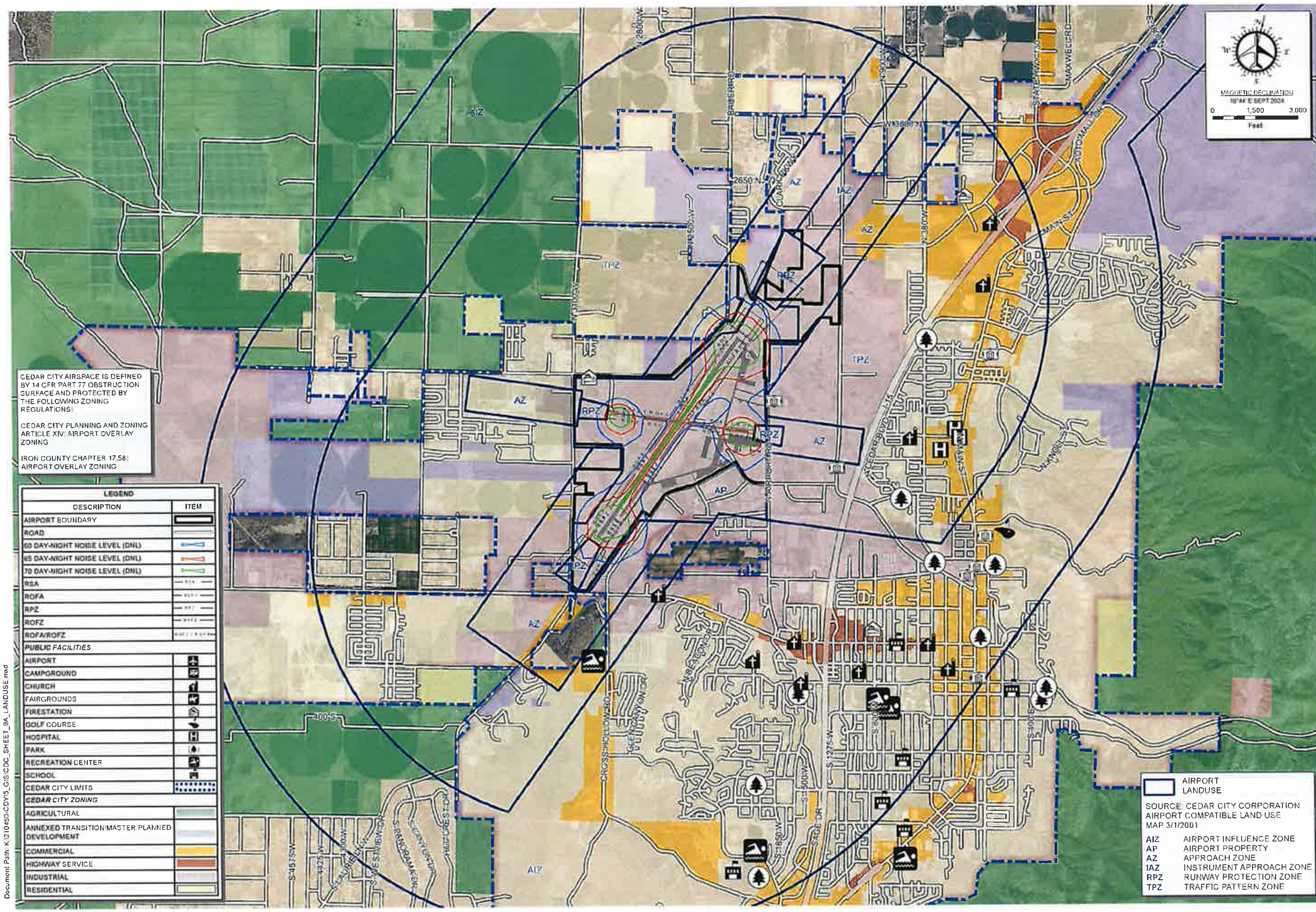
A.I.P. PROJECT #: 3-49-0005-045-2022

TERMINAL AREA NORTH

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET: 8B
12 OF 17

Document Path: K:\210450-COYS_GIS\CDC_SHEET_8B_NORTH.mxd



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REVISIONS		
NO.	DESCRIPTION	DATE

BORDER SIZE 00"X00"
DESIGNED
FINAL
DRAWN BRC
CHECKED BWC
APPROVED SEK

ARDURRA
2175 W 3000 S., SUITE 200
HEBER CITY, UT 84032
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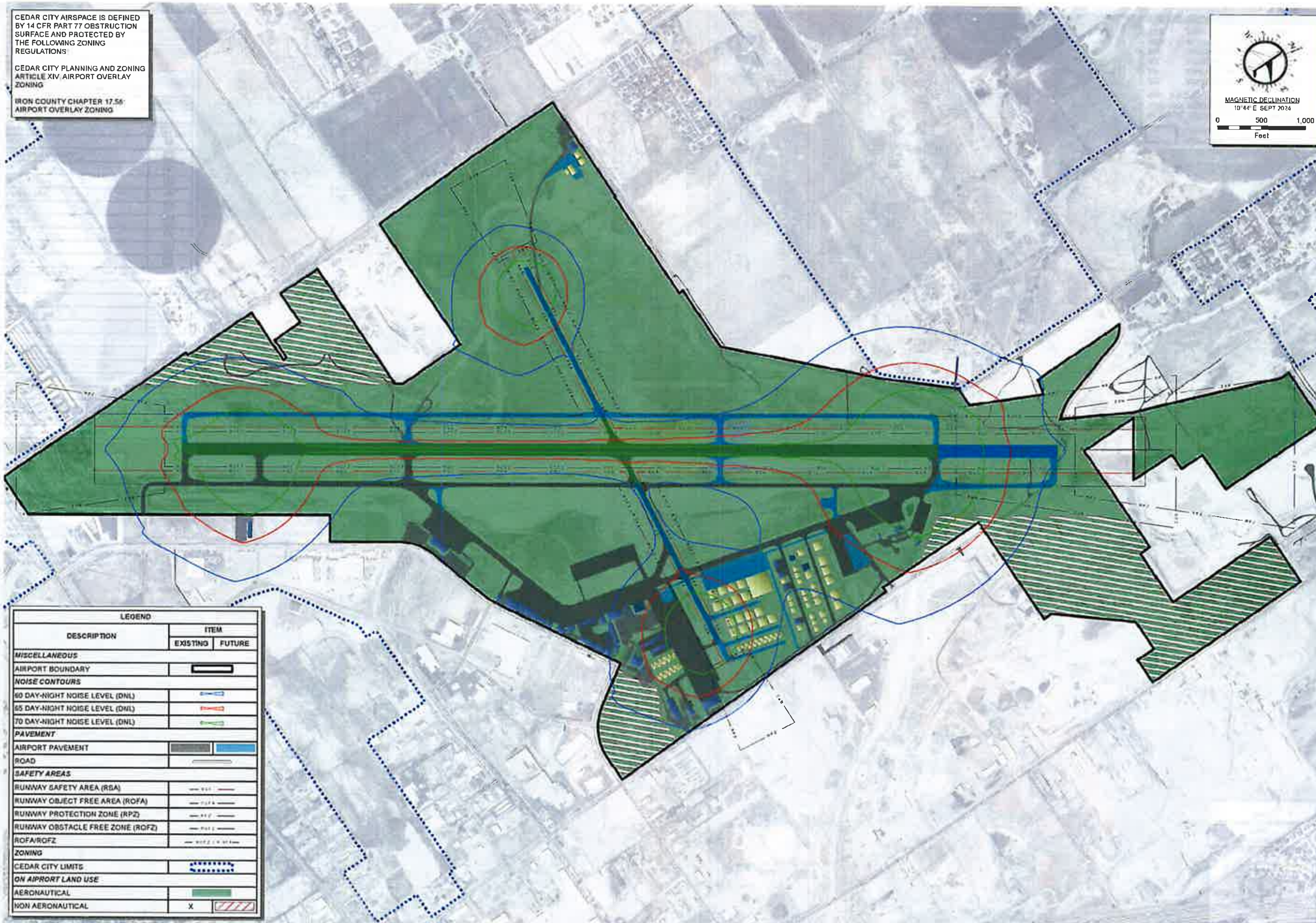
A.I.P. PROJECT #3-49-0005-045-2022

LAND USE
CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET:
9A
13 OF 17



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BORDER SIZE	11"X17"
DESIGNED	FINAL
DRAWN	BRC
CHECKED	BWC
APPROVED	SEK

REVISIONS

NO.	DESCRIPTION	DATE

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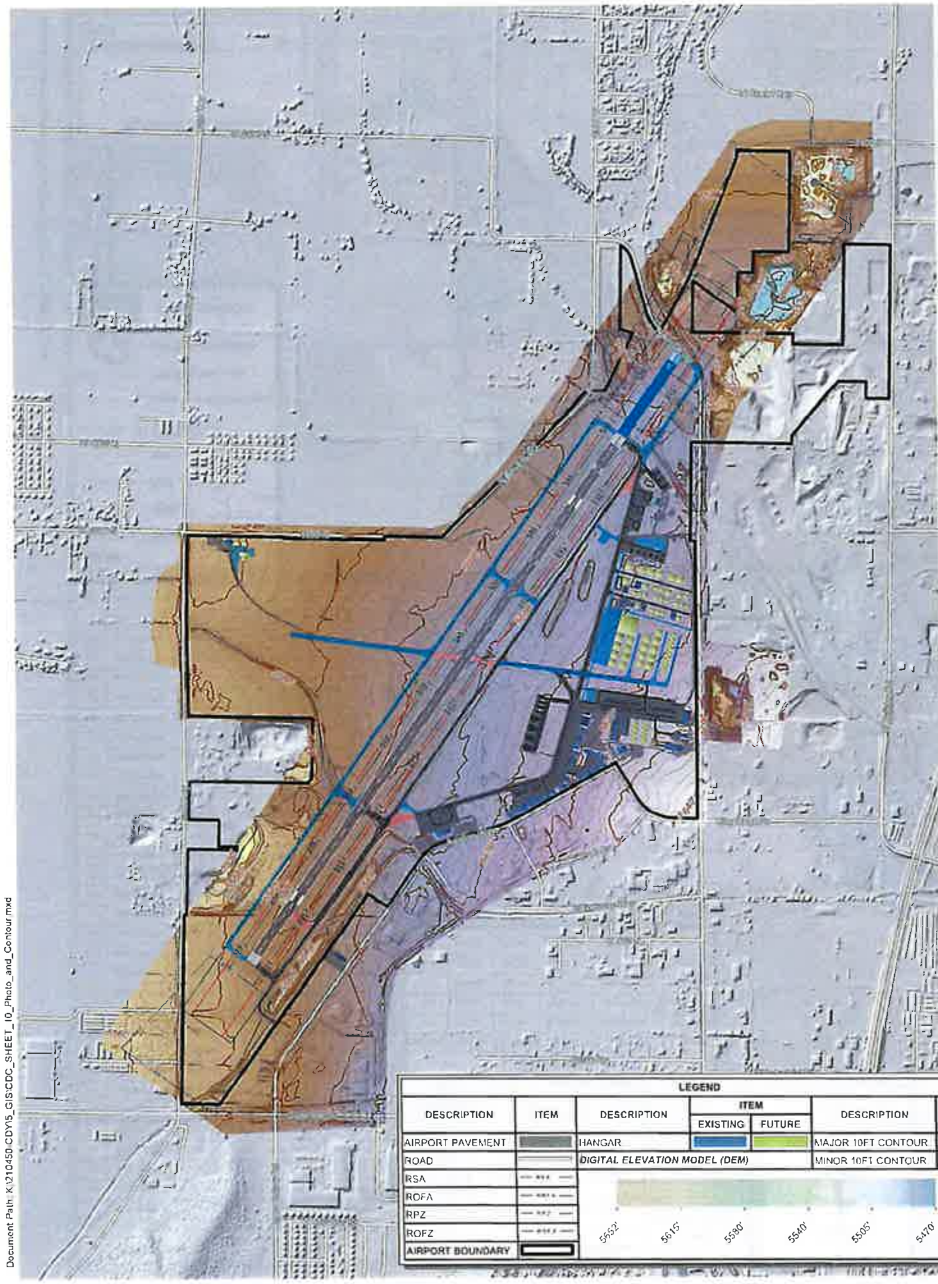
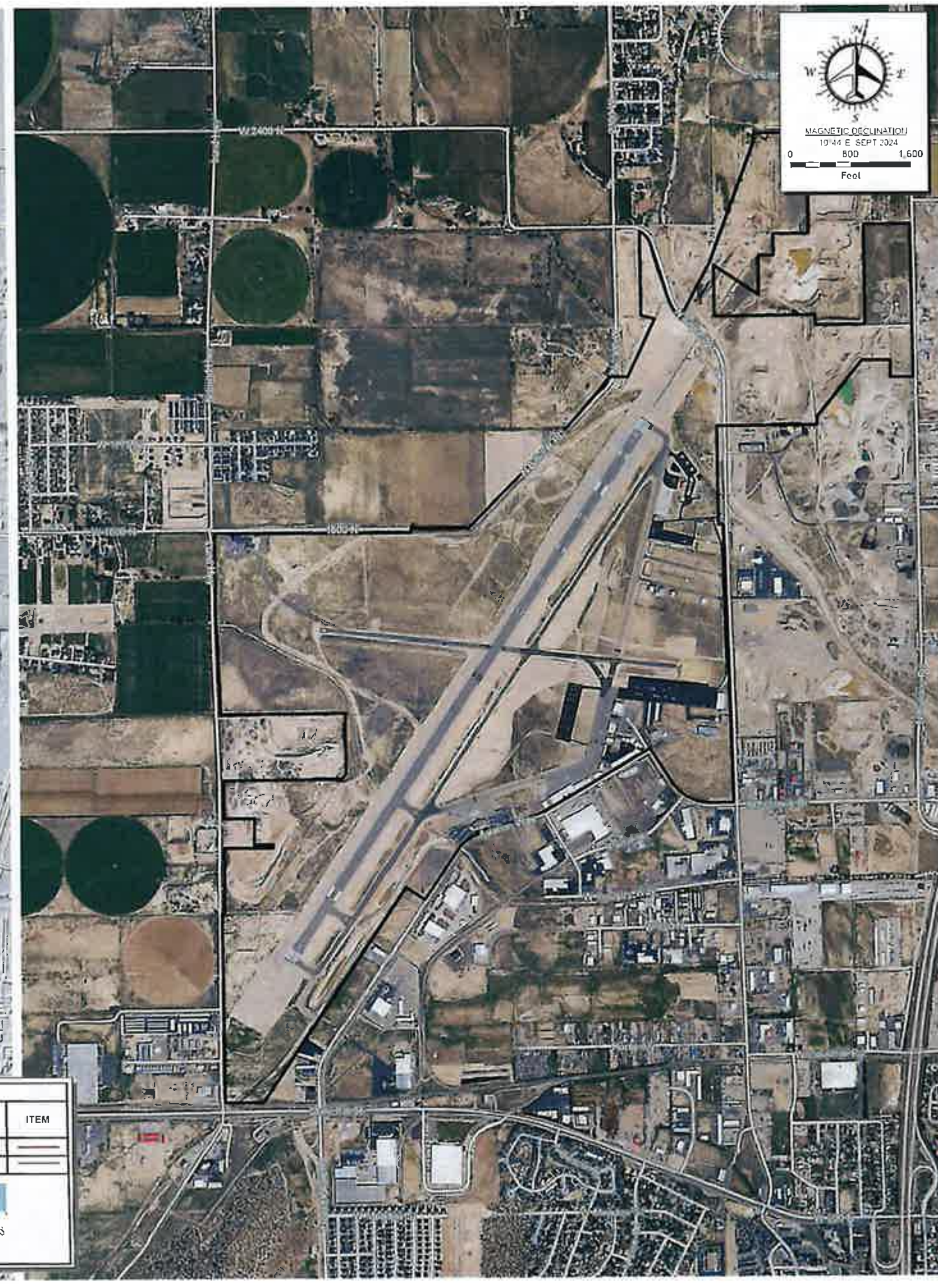
A.I.P PROJECT #3-49-0005-045-2022

ON AIRPORT LAND USE
CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET 9B
14 OF 17





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BORDER SIZE 11"X17"
DESIGNED FINAL
DRAWN BRC
CHECKED BWC
APPROVED SEK

REVISIONS

NO.	DESCRIPTION	DATE

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HEBER CITY, UT 84032
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A.I.P. PROJECT #: 3-49-0005-045-2022

PHOTO AND CONTOUR
FUTURE CONDITIONS

CEDAR CITY REGIONAL AIRPORT

DATE: XXX XX, 2025
PROJECT # 210450
SHEET 10
15 OF 17

EXHIBIT 'A'

CEDAR CITY REGIONAL AIRPORT

A.I.P. PROJECT #: 3-49-0005-045-2022

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
LINE TABLE			LINE TABLE		
L1	S15°47'21"E	708.44'	L33	S73°57'03"W	366.20'
L2	N29°26'26"E	841.07'	L34	S35°14'41"W	774.61'
L3	N31°57'57"E	1729.58'	L35	N54°45'19"W	300.00'
L4	N00°55'06"E	100.00'	L36	S35°14'41"W	3450.08'
L5	S46°40'56"E	701.34'	L37	N89°13'46"W	510.63'
L6	S00°58'07"W	1338.23'	L38	N00°56'04"E	2531.27'
L7	N89°05'16"W	472.10'	L39	S89°01'58"E	34.55'
L8	S01°36'10"W	285.00'	L40	N01°30'53"E	875.28'
L9	N89°05'16"W	195.00'	L41	S86°58'00"E	651.42'
L10	S01°36'10"W	526.51'	L42	N00°58'43"E	42.78'
L11	N54°44'04"W	715.84'	L43	N88°58'00"W	246.79'
L12	S00°53'52"W	678.68'	L44	N01°00'04"E	352.07'
L13	S89°07'05"E	1332.82'	L45	N89°01'56"W	401.07'
L14	S00°58'07"W	136.00'	L46	N01°30'53"E	506.01'
L15	S89°07'05"E	666.10'	L47	S89°00'55"E	1576.27'
L16	N00°59'10"E	1337.03'	L48	N35°07'45"E	94.49'
L17	S88°59'37"E	619.21'	L49	N01°00'28"E	796.31'
L18	S00°49'11"W	2044.43'	L50	N89°24'31"W	405.34'
L19	N89°07'45"W	304.36'	L51	N88°53'17"W	1250.13'
L20	N00°57'45"E	228.48'	L52	N00°54'07"W	1291.24'
L21	N89°07'45"W	375.30'	L53	N01°00'04"E	1134.83'
L22	S40°34'15"W	958.88'	L54	S88°44'00"E	1292.49'
L23	S00°58'08"W	183.41'	L55	S00°59'16"W	12.00'
L24	N89°00'03"W	1330.82'	L56	S88°56'39"E	1324.89'
L25	S00°53'52"W	1318.87'	L57	N00°56'46"E	49.50'
L26	S88°53'01"E	61.95'	L58	S88°56'39"E	769.07'
L27	S00°14'13"E	2616.77'	L59	N46°06'20"E	1874.46'
L28	N89°36'04"W	300.29'	L60	N42°24'09"E	878.52'
L29	N31°22'31"W	528.30'	L61	S88°43'16"E	236.71'
L30	S60°59'02"W	1565.09'	L62	N26°43'15"E	851.19'
L31	S73°57'03"W	370.54'	L63	N75°22'12"W	182.10'
L32	N16°02'57"W	2.00'	L64	N00°58'53"E	1121.37'

FUTURE EASEMENT

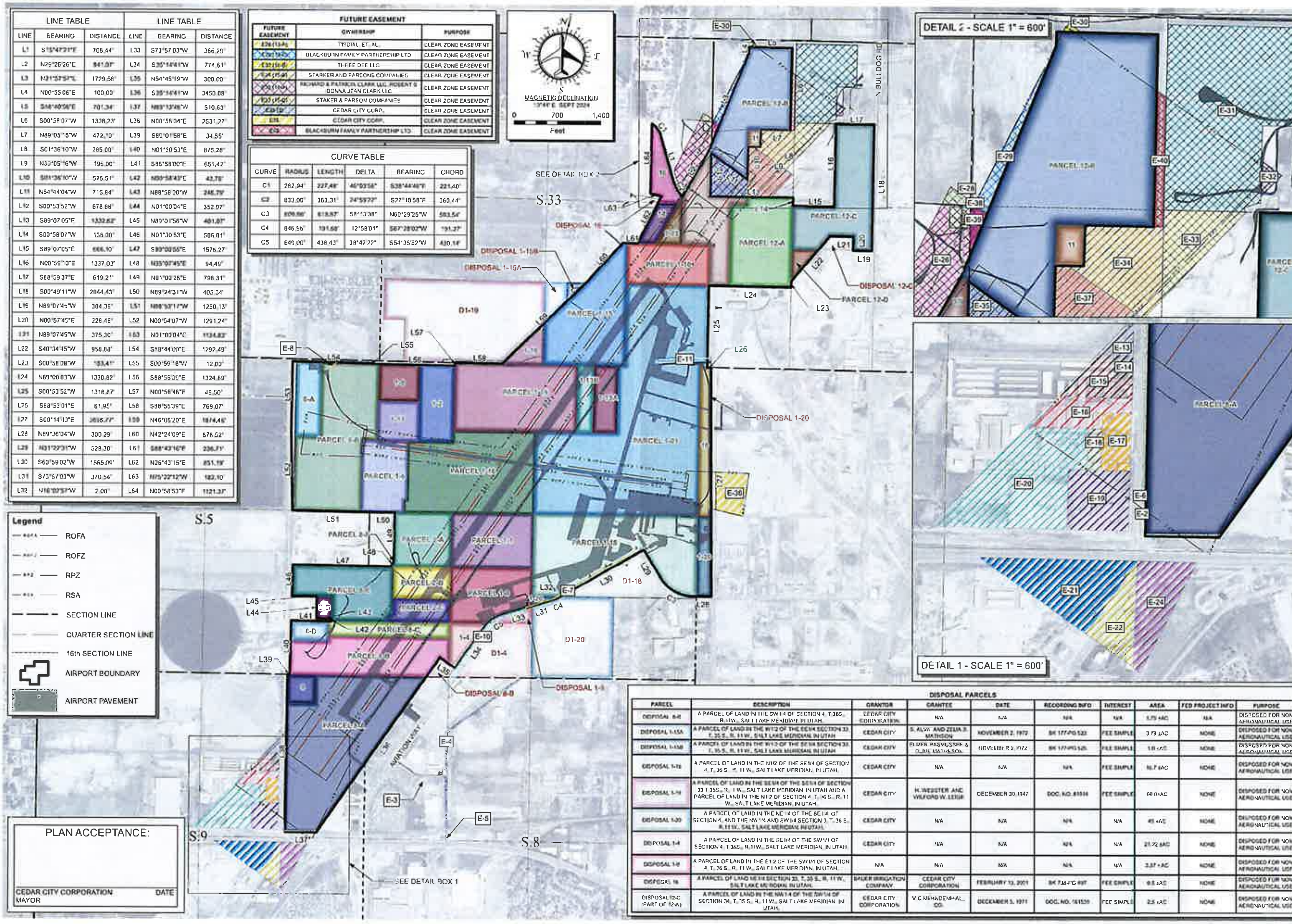
FUTURE EASEMENT	OWNERSHIP	PURPOSE
[illegible]	TISDIAL, ET. AL.	CLEAR ZONE EASEMENT
[illegible]	BLACKBURN FAMILY PARTNERSHIP LTD	CLEAR ZONE EASEMENT
[illegible]	THREE DEE LLC	CLEAR ZONE EASEMENT
[illegible]	STARKER AND PARSONS COMPANIES	CLEAR ZONE EASEMENT
[illegible]	RICHARD & PATRICIA CLARK LLC, ROBERT & DONNA JEAN CLARK LLC	CLEAR ZONE EASEMENT
[illegible]	STAKER & PARSON COMPANIES	CLEAR ZONE EASEMENT
[illegible]	CEDAR CITY CORP.	CLEAR ZONE EASEMENT
[illegible]	CEDAR CITY CORP.	CLEAR ZONE EASEMENT
[illegible]	BLACKBURN FAMILY PARTNERSHIP LTD.	CLEAR ZONE EASEMENT

CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	BEARING	CHORD
C1	282.94'	227.48'	46°03'58"	S38°44'46"E	221.40'
C2	833.00'	363.31'	24°59'22"	S27°18'58"E	360.44'
C3	606.66'	619.87'	58°43'38"	N60°29'25"W	593.54'
C4	846.96'	191.60'	12°58'01"	S67°28'02"W	191.27'
C5	649.00'	438.43'	38°42'22"	S54°35'52"W	430.14'

MAGNETIC DECLINATION 10°44' E SEPT 2024

0 700 1,400 Feet



Legend

- ROFA
- ROFZ
- RPZ
- RSA
- SECTION LINE
- QUARTER SECTION LINE
- 16th SECTION LINE
- AIRPORT BOUNDARY
- AIRPORT PAVEMENT

DISPOSAL PARCELS

PARCEL	DESCRIPTION	GRANTOR	GRANTEE	DATE	RECORDING INFO	INTEREST	AREA	FED PROJECT INFO	PURPOSE
DISPOSAL 8-B	A PARCEL OF LAND IN THE SW1/4 OF SECTION 4, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	CEDAR CITY CORPORATION	N/A	N/A	N/A	N/A	1.75 ±AC	N/A	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 1-15A	A PARCEL OF LAND IN THE W1/2 OF THE SE1/4 SECTION 33, T. 35 S., R. 11 W., SALT LAKE MERIDIAN IN UTAH	CEDAR CITY	S. ALVA AND ZELLA B. MATHESON	NOVEMBER 2, 1972	BK 177-PG 522	FEE SIMPLE	3.79 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 1-15B	A PARCEL OF LAND IN THE W1/2 OF THE SE1/4 SECTION 33, T. 35 S., R. 11 W., SALT LAKE MERIDIAN IN UTAH	CEDAR CITY	ELMER RASMUSSEN & OLIVE MATHESON	NOVEMBER 2, 1972	BK 177-PG 525	FEE SIMPLE	1.8 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 1-18	A PARCEL OF LAND IN THE N1/2 OF THE SE1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	CEDAR CITY	N/A	N/A	N/A	FEE SIMPLE	16.7 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 1-19	A PARCEL OF LAND IN THE SE1/4 OF THE SE1/4 OF SECTION 33 T.35S., R.11 W., SALT LAKE MERIDIAN, IN UTAH AND A PARCEL OF LAND IN THE N1/2 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	CEDAR CITY	H. WEBSTER AND WILFORD W. LEIGH	DECEMBER 30, 1947	DOC. NO. 81114	FEE SIMPLE	69.0 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 1-20	A PARCEL OF LAND IN THE NE1/4 OF THE SE1/4 OF SECTION 4, AND THE NW1/4 AND SW1/4 SECTION 3, T. 36 S., R.11 W., SALT LAKE MERIDIAN, IN UTAH.	CEDAR CITY	N/A	N/A	N/A	N/A	45 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 1-4	A PARCEL OF LAND IN THE SE1/4 OF THE SW1/4 OF SECTION 4, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH	CEDAR CITY	N/A	N/A	N/A	N/A	21.72 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 1-8	A PARCEL OF LAND IN THE E1/2 OF THE SW1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	N/A	N/A	N/A	N/A	N/A	3.37 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 16	A PARCEL OF LAND NE1/4 SECTION 33, T. 35 S., R. 11 W., SALT LAKE MERIDIAN IN UTAH.	BAUER IRRIGATION COMPANY	CEDAR CITY CORPORATION	FEBRUARY 13, 2001	BK 738-PG 497	FEE SIMPLE	0.5 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE
DISPOSAL 12-C (PART OF 12-A)	A PARCEL OF LAND IN THE NW1/4 OF THE SW1/4 OF SECTION 34, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	CEDAR CITY CORPORATION	V.C. MENDENHALL CO.	DECEMBER 5, 1971	DOC. NO. 181539	FEE SIMPLE	2.5 ±AC	NONE	DISPOSED FOR NON AERONAUTICAL USE

PLAN ACCEPTANCE:

CEDAR CITY CORPORATION MAYOR — DATE

NO.	DESCRIPTION	DATE
REVISIONS		

BORDER SIZE 11"X17"
DESIGNED FINAL
DRAWN SBD
CHECKED SWG
APPROVED AMP

ANDREW M. POE — PROFESSIONAL LAND SURVEYOR — STATE OF UTAH

ARDURRA
2175 W. 3000 S., SUITE 200
HEBER CITY, UT 84032
PHONE: 435.315.6168 WWW.ARDURRA.COM

DATE: FEB 6, 2025
PROJECT # 21045
SHEET: 11A
16 OF 17

Document Path: K:\21045\0-CDY15_GIS\CDC_SHEET_11A_EXHIBIT_A.mxd

PARCEL TABLE

PARCEL	DESCRIPTION	GRANTOR	GRANTEE	DATE	RECORDING INFO	INTEREST	RECORD AREA	FED PROJECT INFO	PURPOSE
10	A PARCEL OF LAND IN THE W1/2 OF THE NW1/4 OF SECTION 3, T. 36 S., R. 11 W., CEDAR CITY, COUNTY OF IRON, UTAH.	LEWIS W. ROOT AND MARY E. ROOT	CEDAR CITY	AUGUST 8, 1941	DOC. NO. 70471	FEE SIMPLE	14.8 ±AC *	NONE	AERONAUTICAL USE
11	A PARCEL OF LAND IN THE NE1/4 OF SECTION 34, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	ROBERT S. CLARK, DONNA JEAN W. CLARK, RICHARD Q. CLARK AND PATRICIA H. CLARK	CEDAR CITY CORPORATION	AUGUST 7, 1995	BK 538-PG 885	FEE SIMPLE	1.37 ±AC	NONE	AERONAUTICAL USE
1-4	A PARCEL OF LAND IN THE SW1/4 OF SECTION 4, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH	D.C. BULLOCH	CEDAR CITY	SEPTEMBER 12, 1941	DOC. NO. 73731	FEE SIMPLE	26.5 ±AC	NONE	AERONAUTICAL USE
1-10	A PARCEL OF LAND IN THE NE1/4 OF THE SE1/4 OF SECTION 33, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	J. CARLOS BAUER AND AURELIA BAUER	CEDAR CITY	OCTOBER 17, 1941	DOC. NO. 70219	FEE SIMPLE	20 ±AC	NONE	AERONAUTICAL USE
1-10A	A PARCEL OF LAND IN LOT 2, SECTION 4, T. 36 S., R. 11 W., CEDAR CITY, COUNTY OF IRON, UTAH.	ALFA H. ROLLO AND CATHERINE E. ROLLO	CEDAR CITY	FEBRUARY 25, 1939	DOC. NO. 51741	FEE SIMPLE	10 ±AC	NONE	AERONAUTICAL USE
1-10B	A PARCEL OF LAND IN LOT 2, SECTION 4, T. 36 S., R. 11 W., CEDAR CITY, COUNTY OF IRON, UTAH.	LEE RASMUSSEN AND VEOLA RASMUSSEN	CEDAR CITY	SEPTEMBER 10, 1971	BK 153-PG 529	FEE SIMPLE	6.34 ±AC	NONE	AERONAUTICAL USE
1-15	A PARCEL OF LAND IN THE W1/2 OF THE SE1/4 SECTION 33, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, UTAH.	WILLIAM H. WOOD AND RHODA M. WOOD	CEDAR CITY	AUGUST 22, 1941	DOC. NO. 75407	FEE SIMPLE	14.40 ±AC *	NONE	AERONAUTICAL USE
1-16	A PARCEL OF LAND IN THE NE1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	CLARENCE L. HAIGHT	CEDAR CITY	AUGUST 9, 1940	DOC. NO. 61605	FEE SIMPLE	[illegible] ±AC	NONE	AERONAUTICAL USE
1-17	A PARCEL OF LAND IN THE NW1/4 OF SECTION 32, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	DAVID C. DIX AND FAY D. DIX	CEDAR CITY	AUGUST 8, 1941	DOC. NO. 73235	FEE SIMPLE	8.12 ±AC	NONE	AERONAUTICAL USE
1-18	A PARCEL OF LAND IN THE N1/2 OF THE SE1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	LEWIS W. ROOT AND MARY E. ROOT	CEDAR CITY	MARCH 4, 1940	DOC. NO. 67212	FEE SIMPLE	10 ±AC *	NONE	AERONAUTICAL USE
1-19	A PARCEL OF LAND IN THE SE1/4 OF THE SE1/4 OF SECTION 33 T.35S., R.11 W., SALT LAKE MERIDIAN, IN UTAH AND A PARCEL OF LAND IN THE N1/2 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	EZRA ROLLO AND LULA ROLLO	CEDAR CITY	OCTOBER 2, 1941	DOC. NO. 73051	FEE SIMPLE	123.5 ±AC *	NONE	AERONAUTICAL USE
1-2	A PARCEL OF LAND IN LOT 4, SECTION 4, T.36S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	GEORGE E. PORTER AND RUTH S. PORTER	CEDAR CITY	AUGUST 8, 1941	DOC. NO. 73237	FEE SIMPLE	15.2 ±AC	NONE	AERONAUTICAL USE
1-20	A PARCEL OF LAND IN THE NE1/4 OF THE SE1/4 OF SECTION 4, AND THE NW1/4 OF THE SW1/4 SECTION, T. 36 S., R 11 W., SALT LAKE MERIDIAN, IN UTAH.	LEWIS W. ROOT AND MARY E. ROOT	CEDAR CITY	AUGUST 8, 1941	DOC. NO. 70471	FEE SIMPLE	49.16 ±AC *	NONE	AERONAUTICAL USE
1-21	SE1/4 OF THE SE1/4 OF SECTION 33, T. 35 S., R. 11 W., LOT 1 AND THE S1/2 OF THE NE1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	THE UNITED STATES OF AMERICA	CITY OF CEDAR CITY	JULY 20, 1951	DOC. NO. 92971	FEE SIMPLE	152.88 ±AC	NONE	AERONAUTICAL USE
1-23	A PARCEL OF LAND IN THE SE1/4 OF THE NE1/4 OF SECTION 33, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	WESLEY BAUER AND TIA L. BAUER	CEDAR CITY	JUNE 21, 1963	BK 105-PG 596	FEE SIMPLE	3.81 ±AC	NONE	AERONAUTICAL USE
12-A	A PARCEL OF LAND IN THE W1/2 OF SECTION 31 34, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	JACK E. WHITING, TRUSTEE	CEDAR CITY CORPORATION	MAY 13, 1985	BK 332-PG 204	FEE SIMPLE	33.3 ±AC	NONE	AERONAUTICAL USE
12-B	A PARCEL OF LAND IN THE NW1/4 SECTION 34, T. 35 S., R. 11 W., SALT LAKE MERIDIAN IN UTAH.	BLACKBURN FAMILY PARTNERSHIP LTD., CHARLES H. BLACKBURN AND MARJORIE B. BLACKBURN	CEDAR CITY CORPORATION	MAY 17, 1993	BK 332-PG 391	FEE SIMPLE	36.6 ±AC	NONE	AERONAUTICAL USE
12-C	A PARCEL OF LAND IN THE NW1/4 OF SECTION 34, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	V.C. MENDENHALL CO., INC.	CEDAR CITY CORPORATION	DECEMBER 3, 1971	DOC. NO. 161530	FEE SIMPLE	37.4 ±AC	NONE	AERONAUTICAL USE
12-D	A PARCEL OF LAND IN THE SW1/4 OF SECTION 34, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	WESTERN ROCK CORPORATION	CEDAR CITY CORPORATION	OCTOBER 11, 1973	BK 198-PG 533	FEE SIMPLE	2.5 ±AC	NONE	AERONAUTICAL USE
14	A PARCEL OF LAND IN THE NE1/4 SECTION 33, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	CEDAR CITY CORPORATION	BAUER IRRIGATION COMPANY	JANUARY 13, 2005	BK 734-PG 495	FEE SIMPLE	4.75 ±AC	3-49-0005-12	AERONAUTICAL USE
1-4	A PARCEL OF LAND IN THE SE1/4 OF THE SW1/4 OF SECTION 4, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	ANGUS BULLOCH AND MARY N. BULLOCH	CEDAR CITY	AUGUST 4, 1941	DOC. NO. 70788	FEE SIMPLE	26.5 ±AC *	NONE	AERONAUTICAL USE
14	A PARCEL OF LAND IN THE NE1/4 OF SECTION 33, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	SANDRA CONDIE AND RITCHIE KEITH BAUER, LARREN J. CONDIE AND SANDRA B. CONDIE	CEDAR CITY CORPORATION	JUNE 1, 1999	BK 641-PG 658	FEE SIMPLE	8.3 ±AC	3-49-0005-12	AERONAUTICAL USE
1-5	A PARCEL OF LAND IN THE SW1/4 OF THE NE 1/4 OF SECTION 4 AND THE SE1/4 OF THE NE1/4 OF SECTION 5, T. 36 S., R. 11 W., SALT LAKE MERIDIAN IN UTAH.	RUCK ROLLO AND BESSIE M. ROLLO	CEDAR CITY	AUGUST 30, 1941	DOC. NO. 73233	FEE SIMPLE	39 ±AC	NONE	AERONAUTICAL USE
1-6	A PARCEL OF LAND IN THE NW1/4 OF THE NW1/4 OF SECTION 4, T. 35 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	JANET ROLLO	CEDAR CITY	AUGUST 8, 1941	DOC. NO. 70234	FEE SIMPLE	9.12 ±AC	NONE	AERONAUTICAL USE
1-8	A PARCEL OF LAND IN THE E1/2 OF THE SW1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	MARY JANE BULLOCH	CEDAR CITY	AUGUST 6, 1941	DOC. NO. 70788	FEE SIMPLE	27.03 ±AC *	NONE	AERONAUTICAL USE
2-A	A PARCEL OF LAND IN THE W1/2 OF THE SW1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	VILDA BULLOCH RONNOW	CEDAR CITY	AUGUST 12, 1963	BK 106-PG 1	FEE SIMPLE	16.55 ±AC	8-24-024-C404	AERONAUTICAL USE
2-B	A PARCEL OF LAND IN THE W1/2 OF THE SW1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	CHESTER PARRY AND MAURINE H. PARRY	CEDAR CITY	JUNE 21, 1963	BK 106-PG 5	FEE SIMPLE	10.77 ±AC	NONE	AERONAUTICAL USE
2-C	A PARCEL OF LAND IN THE SW1/4 OF THE SW1/4 OF SECTION 4, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	HOWARD W. URIE	CEDAR CITY	AUGUST 12, 1963	BK 105-PG 589	FEE SIMPLE	8.41 ±AC	NONE	AERONAUTICAL USE
3/6	A PARCEL OF LAND IN THE E1/2 OF THE E1/2 OF SECTION 33 AND THE W1/2 OF THE W1/2 OF SECTION 34, T. 35 S., R.11 W., SALT LAKE MERIDIAN, IN UTAH.	VEGAS VALLEY INVESTMENT COMPANY	CEDAR CITY	JULY 8, 1963	BK 105-PG 498	FEE SIMPLE	34.06 ±AC	8-24-024-C404	AERONAUTICAL USE
6-A	A PARCEL OF LAND IN THE NE1/4 OF SECTION 5, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	JUNE F. BULLOCH	CEDAR CITY CORPORATION	APRIL 18, 1968	BK 137-PG 568	FEE SIMPLE	19.73 ±AC	NONE	AERONAUTICAL USE
6-B	A PARCEL OF LAND IN THE NE1/4 OF SECTION 5 AND THE NW1/4 OF SECTION 4, T.36 S., R.11 W., SALT LAKE MERIDIAN IN UTAH	JUNE F. BULLOCH	CEDAR CITY CORPORATION	APRIL 18, 1968	DOC. NO. 140738	FEE SIMPLE	63.1 ±AC	NONE	AERONAUTICAL USE
8-A	A PARCEL OF LAND IN THE NW1/4 OF THE NW1/4 OF SECTION 8 AND IN THE NE1/4 OF SECTION 9, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	THELMER STRATTON AND THELMA STRATTON	CEDAR CITY	JUNE 22, 1975	BK 154-PG 345	FEE SIMPLE	75.75 ±AC	NONE	AERONAUTICAL USE
8-B	A PARCEL OF LAND IN THE SW1/4 OF THE SW1/4 OF SECTION 4 AND THE SE1/4 OF THE SE1/4 OF SECTION 5, AND IN THE SE1/4 OF THE SE1/4 OF SECTION 5, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	THE STATE ROAD COMMISSION OF UTAH	CEDAR CITY	JUNE 5, 1963	BK 105-PG 499	FEE SIMPLE	37.26 ±AC *	NONE	AERONAUTICAL USE
8-C	A PARCEL OF LAND IN THE SW1/4 OF SECTION 4 AND THE SE 1/4 OF SECTION 5, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	THE STATE ROAD COMMISSION OF UTAH	CEDAR CITY	JUNE 5, 1963	BK 105-PG 499	FEE SIMPLE	10.99 ±AC	NONE	AERONAUTICAL USE
8-D	A PARCEL OF LAND IN THE SE 1/4 OF SECTION 5, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	ANGUS BULLOCH AND MARY N. BULLOCH	CEDAR CITY	FEBRUARY 11, 1947	DOC. NO. 80174	FEE SIMPLE	5.00 ±AC	NONE	AERONAUTICAL USE
8-E	A PARCEL OF LAND IN THE SW1/4 OF SECTION 4 AND THE SE 1/4 OF SECTION 5, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	CHESTER PARRY AND MAURINE H. PARRY	CEDAR CITY CORPORATION	APRIL 25, 1972	BK 171-PG 421	FEE SIMPLE	28.4 ±AC	NONE	AERONAUTICAL USE
8-F	A PARCEL OF LAND IN THE NW1/4 OF THE SW 1/4 OF SECTION 4, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	ROENE BULLOCH MORRIS AND VILDA BULLOCH RONNOW	CEDAR CITY CORPORATION	JUNE 1, 1972	BK 172-PG 578	FEE SIMPLE	5.348 ±AC	NONE	AERONAUTICAL USE
8-G	A PARCEL OF LAND IN THE SE1/4 OF SECTION 5, T.36S., R.11W., SALT LAKE MERIDIAN, IN UTAH.	STATE ROAD COMMISION OF UTAH	CEDAR CITY CORPORATION	DECEMBER 16, 1975	BK 193-PG[illegible]	FEE SIMPLE	2.2 ±AC	NONE	AERONAUTICAL USE
9	A PARCEL OF LAND IN THE N1/2 OF THE NE1/4 OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, IN UTAH.	ARIL STRATTON, LOCKEY STRATTON, GERALD A. STARTTON, PATRICIA A. STRATTON, DERRAL DREW STRATTON, KAREN P. STRATTON, MARYDON STRATTON YATES, L. DARLY YATES, CLOYD NEIL STRATTON AND DEON J. STRATTON	CEDAR CITY CORPORATION	FEBRUARY 1, 1978	BK 215-PG 606	FEE SIMPLE	5.00 ±AC	NONE	AERONAUTICAL USE

NOTE: * AREA PRIOR TO DISPOSAL

EASEMENT TABLE

EASEMENT	DESCRIPTION	GRANTEE	DATE	BK/PG	MISC	PURPOSE
E3	A STRIP OF LAND WITHIN THE SE1/4 OF THE NE1/4 OF SECTION 8, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	PACIFICORP	OCTOBER 26, 1989	BK 575-PG 85	10 FEET WIDE	INGRESS AND EGRESS EASEMENT
E3	A STRIP OF LAND WITHIN THE SE CORNER OF THE SW1/4NW1/4 OF SECTION 8, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	NORTON METALCRAFT	DECEMBER 17, 1973	[illegible]	STRIP OF LAND	RIGHT-OF-WAY
E4	A STRIP OF LAND WITHIN THE SE CORNER OF THE SW1/4NW1/4 OF SECTION 8, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	THELMER STRATTON AND THELMA STRATTON	DECEMBER [illegible], 1973	BK [illegible]-PG 270	STRIP OF LAND	RIGHT-OF-WAY
E5	A STRIP OF LAND WITH THE SE CORNER OF THE SW1/4NW1/4 OF SECTION 8, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	[illegible] AND ARDENE H. [illegible]	SEPTEMBER [illegible], 1973	[illegible]	STRIP OF LAND	RIGHT-OF-WAY
E6	A STRIP OF LAND WITHIN THE SE1/4 OF THE NE1/4 OF SECTION 8, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	SOUTH CENTRAL UTAH TELEPHONE ASSOCIATION	SEPTEMBER [illegible]	[illegible]	10 FEET WIDE	UTILITY EASEMENT
E7	A STRIP OF LAND WITHIN NW CORNER OF LOT 1 BLOCK 2, CEDAR INDUSTRIAL PARK SUBDIVISION [illegible] IRON COUNTY, CEDAR CITY, UTAH.	CEDAR CITY CORPORATION	NOVEMBER 13, 2007	[illegible]	[illegible] FEET WIDE	PUBLIC UTILITY EASEMENT
E8	A STRIP OF LAND WITHIN THE NE CORNER OF SECTION 5, ALONG THE TOWNSHIP LINE, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	PACIFICORP	JANUARY 1, 2001	[illegible]	[illegible] FEET WIDE	UTILITY EASEMENT
E10	A STRIP OF LAND WITHIN SW CORNER OF SECTION 4, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	ARMBRUST CONSTRUCTION LLC	OCTOBER 28, 2005	BK 1002-PG 894	STRIP OF LAND	UTILITY EASEMENT
E11	A STRIP OF LAND WITHIN THE NE CORNER OF SECTION 4, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	CEDAR CITY CORPORATION	APRIL [illegible]	BK 797-PG 60	[illegible] FEET WIDE	PUBLIC UTILITY EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE SW CORNER OF THE NW1/4NE1/4 OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	[illegible]	[illegible] 1976	BK [illegible]	0.77 ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE NW CORNER OF THE [illegible] OF SECTION 8, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	ALTHEA L. BROWN	SEPTEMBER 24, 1976	[illegible]	[illegible] ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE [illegible] OF SECTION 34, T.35S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	ROBERT AND DONNA JEAN CLARK, RICHARD AND PATRICIA CLARK	JUNE 1[illegible], 2004	[illegible]	24.64 ±AC	AVIGATION EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE NW CORNER OF THE [illegible] OF SECTION 8, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	CELESTIA A. NICHOLS	SEPTEMBER [illegible]	BK 240-PG [illegible]	[illegible] ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE S1/4 CORNER OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	VICTOR K. ISBELL AND LEDE A. ISBELL	JULY [illegible]	[illegible]	[illegible] ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE S1/4 CORNER OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	VICTOR K. ISBELL AND LEDE A. ISBELL	JUNE [illegible]	[illegible]	[illegible] ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE S1/4 CORNER OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	[illegible] HARDING AND ARTHUR G. HARDING OF HARDING BROTHERS CONSTRUCTION COMPANY	SEPTEMBER [illegible]	[illegible]	0.65 ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE S1/4 CORNER OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	[illegible]	SEPTEMBER [illegible], 1977	[illegible]	[illegible] ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE S1/4 CORNER OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	CELESTIA A. NICHOLS	SEPTEMBER [illegible]	[illegible]	[illegible]	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE NW CORNER OF THE [illegible] OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	ALTHEA L. BROWN	SEPTEMBER 24, 1976	[illegible]	[illegible] ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE NE CORNER OF [illegible] OF SECTION 8, T.36S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	C. KAY STURDEVANT AND NORMA D. STURDEVANT	MARCH [illegible]	[illegible]	[illegible] ±AC	CLEAR ZONE EASEMENT
[illegible]	A PARCEL OF LAND WITHIN THE NW CORNER OF THE NW1/4NSE1/4 OF SECTION 8, T. 36 S., R. 11 W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	CEDAR LIVESTOCK ASSOCIATION	JANUARY 14, 1977	[illegible]	4.20 ±AC	CLEAR ZONE EASEMENT
[illegible]	A STRIP OF LAND WITHIN THE NW 1/4 OF SECTION 34, T.35S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	CEDAR CITY CORPORATION	JUNE 24, 1998	[illegible]	[illegible] ±AC	AVIGATION EASEMENT
[illegible]	A STRIP OF LAND WITHIN THE NE 1/4 OF SECTION 33, T.35S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	CEDAR CITY CORPORATION	JUNE [illegible] 1998	BK 644-PG 4[illegible]	[illegible] ±AC	AVIGATION EASEMENT
[illegible]	A STRIP OF LAND WITHIN THE NW 1/4 OF SECTION 34, T.35S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	CEDAR CITY CORPORATION	FEBRUARY [illegible]	BK [illegible]-PG 548	[illegible] ±AC	AVIGATION EASEMENT
[illegible]	A STRIP OF LAND WITHIN THE NE 1/4 OF SECTION 33, T.35S., R.11W., SALT LAKE MERIDIAN, CEDAR CITY, UTAH.	CEDAR CITY CORPORATION	JUNE 24, 1998	BK 644-PG [illegible]	[illegible] ±AC	AVIGATION EASEMENT

REVISIONS		
NO.	DESCRIPTION	DATE

BORDER SIZE 11"X17"
DESIGNED
FINAL
DRAWN BRC
CHECKED BWC
APPROVED AMP

ANDREW M. POF
STATE OF UTAH

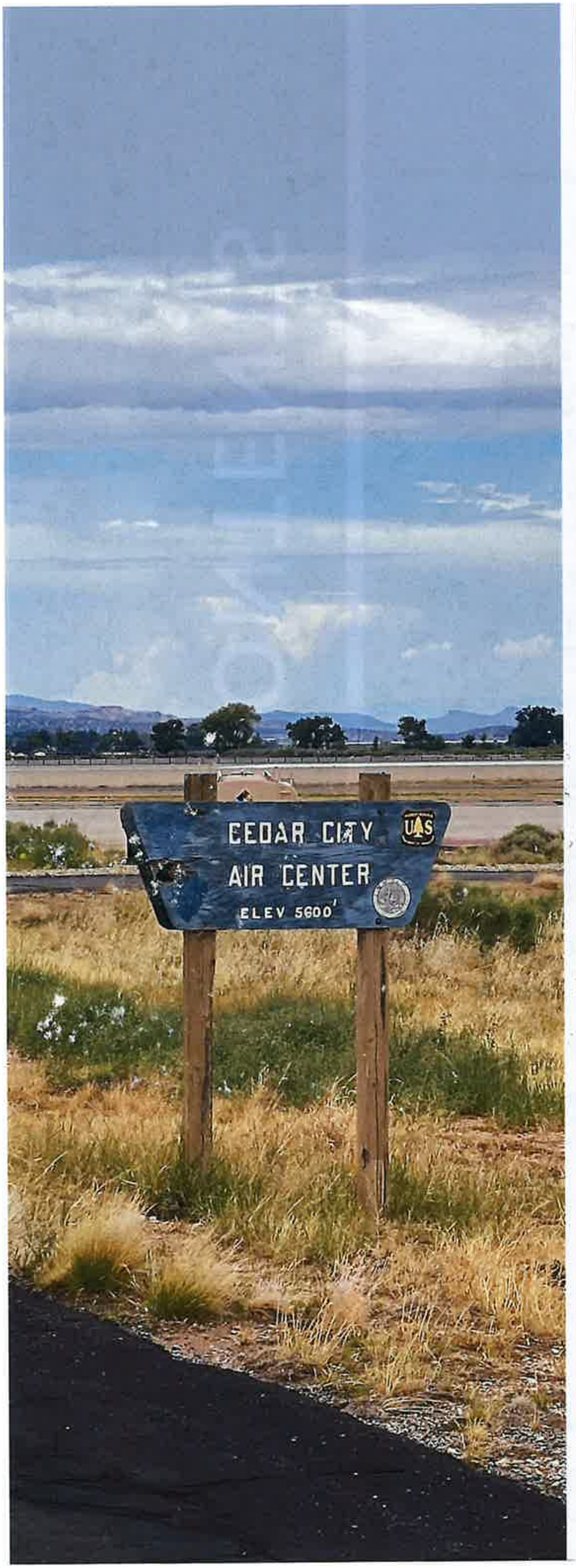
ARDURRA
2175 W. 3900 S., SUITE 200
HEBER CITY, UT 84032
PHONE: 435.315.8168 WWW.ARDURRA.COM

A.I.P. PROJECT #: 3-49-0005-045-2022

EXHIBIT 'A'
TABELS
CEDAR CITY REGIONAL AIRPORT

DATE: FEB 6, 2025
PROJECT # 21045G
SHEET: 11B
17 OF 17

Document Path: K:\21045G-CDY15_GIS\CDC_SHEET_11B_EXHIBIT_A_TABLE.mxd



APPENDIX A

Community Engagement Summary

Cedar City Regional Airport
2025 Airport Master Plan

January 2025

CONTENTS

Appendix A Community Engagement

01 Public Information Meetings

02 Technical and Community Advisory Committee Meetings

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APPENDIX A

COMMUNITY ENGAGEMENT

Community involvement and coordination is a critical component of the airport master planning process. Airport staff and the project team used several methods to engage the public and held several public meetings where members of the community were encouraged to share their ideas and provide feedback on important elements of the airport master plan.

Public Information Meetings

Airport staff and the project team hosted public information meetings at important milestones in the planning process to share relevant and timely information with the public and invite feedback. These meetings were advertised in the local newspaper, on social media, and the city and project websites. Mailings and press releases were also sent out to increase awareness and participation. Meeting attendees were asked to sign in and were provided with informational handouts and comment forms. All attendees were also made aware of future opportunities to be involved in the planning process. Members of the public could also view plan documents and submit comments via the project website.

Technical Advisory Committee

The airport staff and project team relied heavily on members of the technical advisory committee (TAC) to help guide development of the plan. This committee was comprised of members who have a deep understanding of the airport, its role in the community, and future opportunities for improvement. Committee members included city representatives, airport tenants, and local residents who interact with the airport on a regular basis. The technical advisory committee provided the aviation planning team with valuable feedback and insight into the needs of the local aviation community and kept the team informed of local issues throughout the planning process.

Community Advisory Committee

The airport staff and project team also relied heavily on members of the community advisory committee (CAC) to help guide development of the plan. This committee was comprised of representatives from local and regional government agencies who helped to ensure the planning committee took the needs of these agencies into consideration as they develop the plan. This perspective helped the planning team develop a plan with a strong understanding of how future development projects would impact these agencies.

01 Public Information Meetings

01.1. Public Meeting #1

a. Meeting Time and Location

Date: October 11, 2022

Time: 5:30—7:30 p.m.

Place: Festival Hall, 105 North 100 East

NEWS RELEASE

For Immediate Release: September 27, 2022
Information Contact: Nick Holt, Airport Manager, (435) 867-9408

Cedar City Regional Airport Kicks Off Master Plan Process

Cedar City, Utah – Cedar City Regional Airport announced the launch of its airport master plan which will help guide the next 20 years of growth at the airport. The community is encouraged to attend the kick-off meeting which will take place Tuesday, Oct. 11 at 5:30 p.m. The meeting will be held at Festival Hall, 105 North 100 East.

The planning process, which is expected to take two years to complete, will examine the airport's role within the community, airport assets and facilities, aviation activity forecasts, and future development as well as options for ongoing public engagement on airport matters.

Community members are encouraged to attend the kick-off meeting to learn more about the airport master planning process, share feedback with the planning team, and sign up to receive ongoing project updates.

The Federal Aviation Administration (FAA) requires airports to develop a 20-year airport master plan to ensure thoughtful and strategic planning of future facilities and airport infrastructure. The airport master plan will help guide the airport's future with the goal of ensuring the airport continues to operate in a safe, efficient, and effective manner while also reflecting our community values.

Updates and additional information will be made available at https://www.cedarcity.org.

---end---

c. Social Media Post

d. Meeting Handout


Cedar City Regional Airport
Airport Master Plan

Introduction

DID YOU KNOW?

- Cedar City Regional Airport (CDC) is owned and operated by Cedar City
- The majority of the airport's capital improvements are funded through state and federal grants
- According to the 2020 Utah Statewide Airport Economic Impact Study approximately $718,900 in annual economic activity is attributed to Cedar City Regional Airport

What is an Airport Master Plan?

Why Does the Airport Need One?

Who Determines This Process?

What Is the Purpose of This Plan?

The Airport Master Plan Process

Project Sponsor and Plan Oversight

Plan Guidance

Project Funding

Who Approves a Master Plan?

Community Outreach

The whole community is invited to attend these public meetings. We encourage you to share your thoughts and ideas and help shape the future of Cedar City Regional Airport.

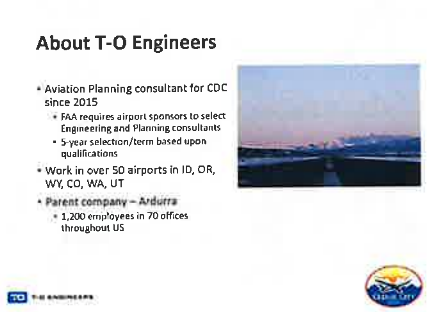
Plan Information and Project Updates

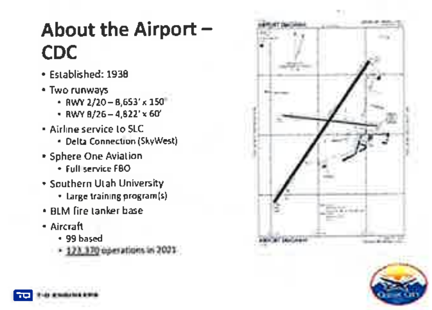
Please visit us online:
https://www.CedarCity.org/Airport

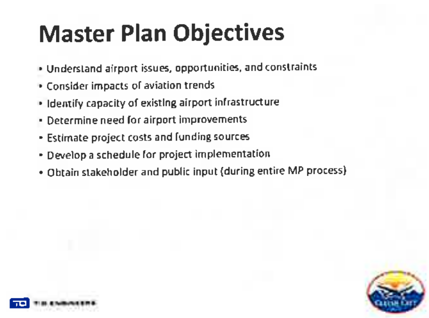
Or please contact:

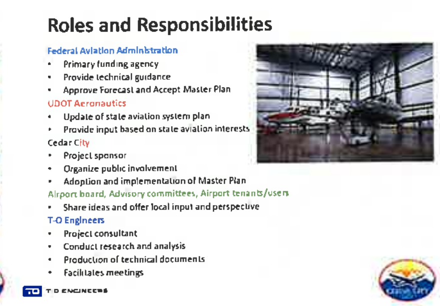
- Nick Holt, Airport Manager
- Jeremy McAllister, Project Manager
- Stephanie Krabbe, Aviation Planner

e. Presentation









01.2. Public Meeting #2

a. Meeting Time and Location

Date: March 16, 2023

Time: 5:30—7:30 p.m.

Place: Festival Hall, 105 North 100 East

NEWS RELEASE

For Immediate Release: February 3, 2023
Information Contact: Nick Holt, Airport Manager, (435) 867-9408

Cedar City Regional Airport to Hold Public Information Workshop for Airport Master Plan Study

Cedar City, Utah – Join Cedar City Regional Airport at its public information workshop to discuss the future of the airport. The community is encouraged to attend the meeting which will take place Thursday, Feb. 23 at 5:30 p.m. The meeting will be held at Festival Hall, 105 North 100 East.

The planning team will provide the community with an overview of the airport's current facilities and a draft of the aviation activity forecast. The information presented at this meeting will provide the foundation for the remainder of the planning process. This includes identification of the critical aircraft that will be used to determine the Federal Aviation Administration (FAA) design standards for the airport as development occurs. The community will have the opportunity to learn how airport activity is expected to change in the coming years and how the airport proposes to accommodate the growth forecasted for the next 20 years.

The airport master plan will help guide the airport's future with the goal of ensuring the airport continues to operate in a safe, efficient, and effective manner while also reflecting our community values. Community members are encouraged to attend this meeting to learn more about the airport master planning process, share feedback with the planning team, and sign up to receive ongoing project updates.

Updates and additional information will be made available at https://www.cedarcity.org.

---end---

c. Social Media Post

T-O ENGINEERS

CEDAR CITY
REGIONAL AIRPORT

TO: Technical Advisory Committee Member

FROM: T-O Engineers

DATE: September 27, 2022

SUBJECT: CDC Airport Master Plan
Technical Advisory Committee Confirmation

On behalf of Cedar City, and the Cedar City Regional Airport, I would like to thank you for your commitment to serve on the Airport Master Plan Technical Advisory Committee (TAC).

The TAC will assist in preparing the Master Plan by providing technical input and recommendations throughout the planning process. This role is advisory in nature; ultimately, the outcome of the Master Plan will be determined by FAA guidance, Cedar City, the Airport's goals and objectives, and the obligations of the Airport in accordance with FAA grant assurances.

d. Meeting Handouts

Cedar City Regional Airport
Airport Overview

Airport Layout

- TERMINAL BUILDING
- 2/20 PRIMARY RUNWAY
- 8/26 CROSSWIND RUNWAY
- CARGO FACILITY
- FBO SPHERE ONE
- GA APRON
- CEDAR CITY FIRE STATION #3

2/20 Primary Runway

- **Oriented:** Northeast-Southwest
- **Length:** 8,653 Feet
- **Width:** 150 Feet

8/26 Crosswind Runway

- **Oriented:** East-West
- **Length:** 4,822 Feet
- **Width:** 60 Feet

Airport Tenants

- Agrinautics
- Animal and Plant Health Inspection Service
- BZI Steel
- Civil Air Patrol
- Color Country Interagency Fire Center
- Southern Utah University

Cedar City Regional Airport
Forecast of Aviation Demand

Aircraft Operations

An aircraft operation is when an aircraft lands, takes off, or conducts a touch-and-go procedure. They are categorized as either commercial service, general aviation, or military.

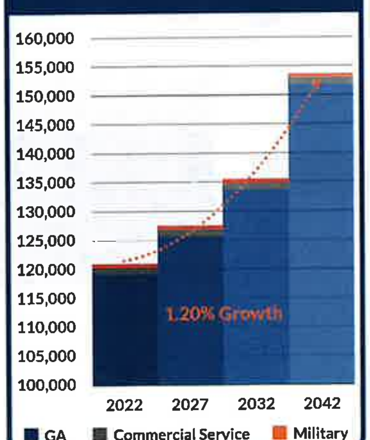
Passenger Enplanements

The forecast of passenger enplanements is particularly important because it will help determine future requirements for airport facilities that accommodate passengers like the terminal and automobile parking.

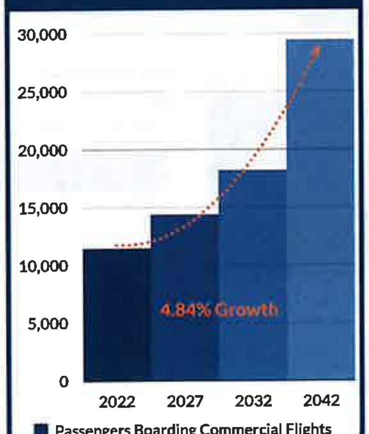
Critical Aircraft

The critical aircraft is often referred to as the design aircraft because it is used to determine many airfield design standards. Different critical aircraft may be identified for different areas of the airport.

Aircraft Operations Forecast



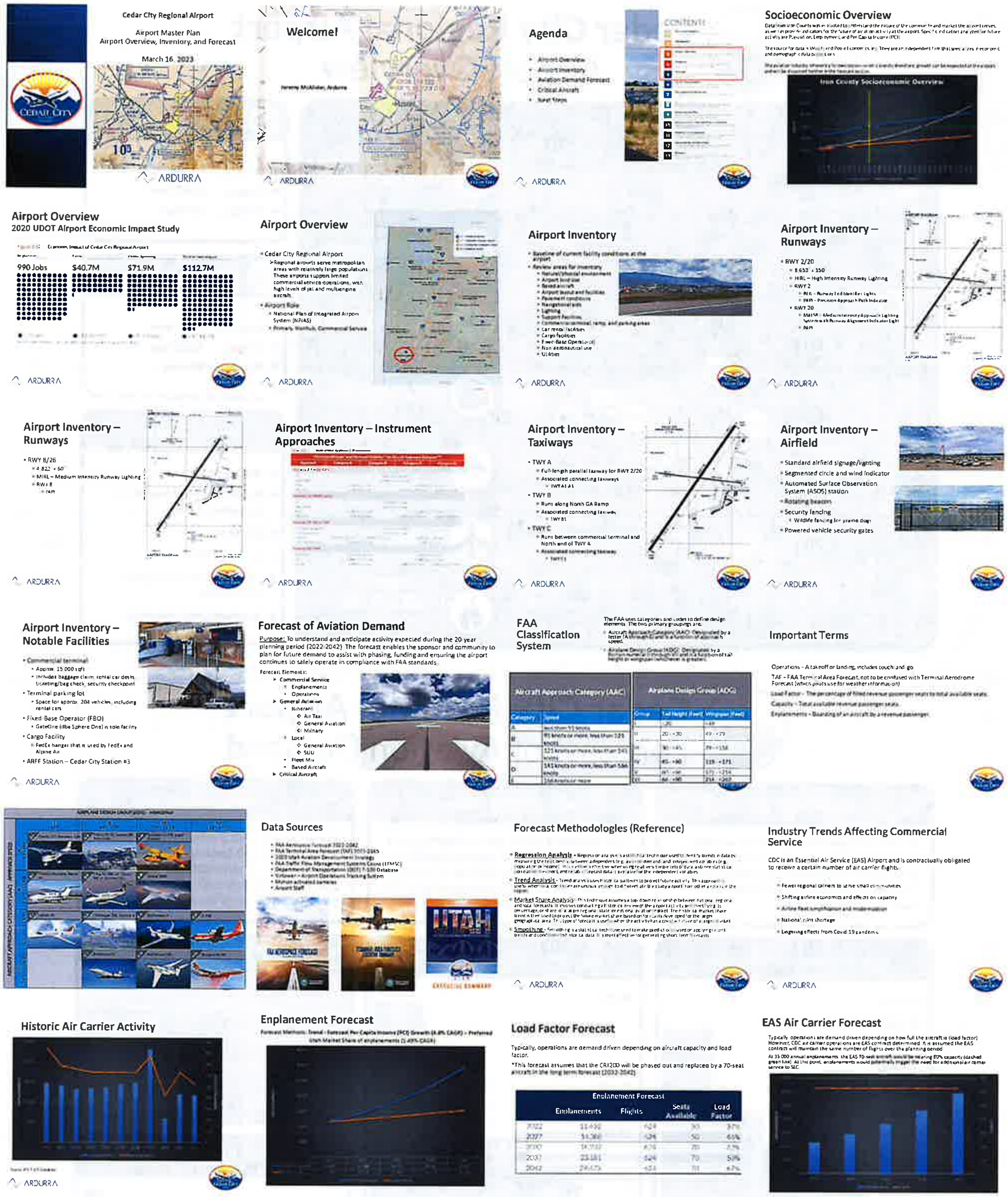
Passenger Enplanements Forecast



Existing: Avro RJ-85 Representative Critical Aircraft

Future: Embraer E-175

e. Presentation



General Aviation Forecast Overview

Forecasting Elements and Methods

- General Aviation Operations: Regression Analysis ([illegible] CAGR)
  - Air Taxi
  - Itinerant General Aviation
  - Local General Aviation
- SUU Operations – FAA Aerospace Forecast
  - Fixed Wing: -0.40% CAGR
  - Rotary Wing: 1.30% CAGR
  - Overall: 0.5% CAGR
- Based Aircraft – Forecast Population Growth (1.56% CAGR)

Baseline Data

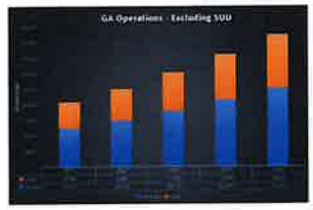
[illegible] were validated through motion-activated cameras and the FAA [illegible] database.

Itinerant GA includes air taxi operations. Total operations do not include Military or Air Carrier operations.

* It is assumed the percentages will remain the same over the planning period.

GA Baseline Operations	Percentage	2022 Operations
Itinerant GA	10%	12,418
Local GA	7%	8,279
SUU	82%	98,499
Total	99%	119,195

GA Operations - Regression Analysis

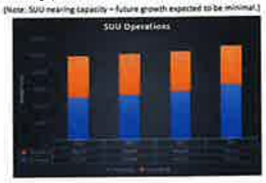


SUU Operations – FAA Aerospace Forecast

Helicopter Operations account for 51% of operations.

Fixed Wing Operations account for 49% of operations.

(Note: SUU nearing capacity – future growth expected to be minimal.)



Based Aircraft

Forecast Methods: Trend - Forecast Population Growth (1.56% CAGR) – Preferred
Trend – Employment Growth (1.88% CAGR)

Military Operations

Unless there is specific knowledge of an upcoming change, military operations are typically forecast at current TAF levels because the Department of Defense provides limited details regarding future activity levels.

There are no local military operations forecasted at this time. Although we know there are negotiations in progress, operational activity is unknown and therefore cannot be forecasted.

Military Operations Forecast	Itinerant
2022 (Baseline)	550
2027	550
2032	550
2037	550
2042	550

Forecast Summary

Year	Enplanements	Itinerant Operations				Local Operations					Total Ops	Based Aircraft
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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TAF Comparison

- FAA regulation states that for FAA approval a non-hub commercial service airport, the forecast elements must differ less than 10% in the 5 year forecast, and less than 15% in the 10 year period from the TAF. If the forecast exceeds this, additional coordination is needed with the FAA. [illegible] meets the criteria for all forecasting elements except with enplanements and commercial service operations.
- The difference is due to historical inconsistencies with the TAF, which was also noted in the previous master plan. Additionally, the TAF shows no growth in these two forecasting elements, which is unreasonable considering national trends and more local socioeconomic trends.
- Once approved, the FAA should use the forecast to update the TAF.

	Enplanements			Commercial Operations		
	TAF	Master Plan	Difference	TAF	Master Plan	Difference
2022	10,600	11,452	8%	1,304	2,432	87%
2027	10,600	14,388	36%	1,304	2,467	101%
2032	10,600	18,232	72%	1,304	2,972	128%
2042	10,600	29,473	178%	1,304	3,641	183%

Critical Aircraft

- Also called "design aircraft" and is used to determine correct design standards for runways/taxiways.
- Criteria
  - Most demanding aircraft/group of aircraft with regular use (500 annual operations), excluding touch and go operations.
  - When there is not a single aircraft with 500 operations, the aircraft grouping with similar characteristics method allowed. This method combines aircraft with comparable characteristics (AAC and ADG separately) to determine the most demanding design criteria.
- Standard industry practice include critical aircraft identification with greater than 350 operations, with an increasing trend.

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2017 Airport Master Plan

Cedar City Regional Airport is currently designed to support AAC C, ADG III aircraft.

The 2017 Airport Master Plan used the aircraft grouping method to identify the design aircraft. Representative aircraft included the Avro RJ 85, Gulfstream V, KC-135, and forecasted E175.

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Current Forecast

Based on the updated forecast, the critical aircraft and design standards for the airport are not anticipated to change.

Method: Aircraft grouping of Similar Characteristics.

	2022	2027	2032	2037	2042
[illegible]	56,143	71,244	77,624	84,539	92,030
[illegible]	2,218	2,492	2,714	2,956	3,220
[illegible]	1,512	1,752	1,798	1,847	1,900
[illegible]	35	38	41	45	49
[illegible]	56,300	71,453	77,808	84,740	92,249
[illegible]	3,212	3,491	2,662	2,899	3,156
[illegible]	283	423	1,709	1,750	1,794

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Representative Critical Aircraft – Existing Avro RJ 85 (C-III)

Critical Aircraft – Ultimate Embraer E175 (C-III)

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Conclusion

The critical aircraft determination from this forecast is consistent with the 2017 master plan and the design does not change over the planning period.

The next part of the master plan process will identify requirements and (if any) deficiencies to the FAA design standards.

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Next Steps

- Submittal of forecast to FAA for approval
- Facility Requirements based upon approved forecast/critical aircraft
- Development Alternatives to be drafted to fulfill Facility Requirements and Sponsor/community vision for the airport
- Public Meeting #3 – Completion of Facility Requirements and Presentation of Development Alternatives
  - Date TBD – estimated June 2023 (largely determined by when we receive forecast approval from the FAA)

Project Website – https://cdcmasterplan.com

ARDURRA

ARDURRA

01.3. Public Meeting #3

a. Meeting Time and Location

Date: April 10, 2024

Time: 5–7 p.m.

Place: Festival Hall, 105 North 100 East

b. Meeting Invite

c. Posters

Cedar City Regional Airport • Airport Master Plan

What is an Airport Master Plan?

An airport master plan is the process of establishing an airport's blueprint for long-term development to meet future aviation demand. It helps to ensure the airport will continue to meet the needs of its customers and that future development is consistent with local, state, and national goals. This includes identifying potential environmental and socioeconomic impacts of future airport projects.

Why Does the Airport Need One?

An airport master plan is typically updated every five to ten years. This helps the airport respond to updated design requirements as well as industry trends and changes in the economy. The last airport master plan was completed in 2017.

The Airport Master Plan Process

Research
- Research the airport's history.
- Inventory existing conditions.
- Develop a forecast of future activity levels.
- Identify critical aircraft.
- Forecast approval.

Requirements
- Identify improvements required due to updated standards or to accommodate forecasted activity.
- Evaluate each option to determine the most responsible plan.

Implementation
- Prepare an implementation plan with a preliminary schedule and estimated costs.
- Prepare a capital improvement plan.
- Prepare an airport layout plan (ALP).

Who Determines This Process?

The elements of an airport master plan are outlined by the Federal Aviation Administration (FAA), but the process is tailored to meet the needs of the airport.

Who Approves the Plan?

The City of Cedar City approves the plan. However, FAA approval is required for the forecast and airport layout plan because they are used for grant funding.

What Is the Purpose of the Plan?

- Identify the condition and capacity of existing airport infrastructure.
- Identify existing problems, opportunities, and constraints.
- Determine if improvements are needed to meet current safety standards or future activity levels.
- Identify industry trends and their potential impact to the airport.
- Ensure the airport is able to continue to safely and efficiently meet the needs of customers.
- Allow the community to provide input on the plan.
- Develop a financially responsible plan for airport development.
- Establish a realistic schedule for project implementation.
- Identify potential funding sources.
- Keep the community informed.

Cedar City Regional Airport • Airport Overview

Airport Layout

- Terminal Building
- 2/20 Primary Runway
- 8/26 Crosswind Runway
- Cargo Facility
- FBO GateOne
- General Aviation Apron
- Cedar City Fire Station #3

2/20 Primary Runway

- **Oriented:** Northeast-Southwest
- **Length:** 8,653 Feet
- **Width:** 150 Feet

8/26 Crosswind Runway

- **Oriented:** East-West
- **Length:** 4,822 Feet
- **Width:** 60 Feet

Airport Tenants

- Agrinautics
- Animal and Plant Health Inspection Service
- BZI Steel
- Civil Air Patrol
- Color Country Interagency Fire Center
- Southern Utah University

Cedar City Regional Airport • Aviation Forecast

Aircraft Operations

An aircraft operation is when an aircraft lands, takes off, or conducts a touch-and-go procedure. They are categorized as either commercial service, general aviation, or military.

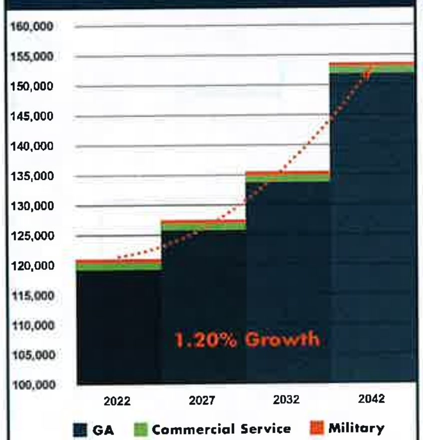
Passenger Enplanements

The forecast of passenger enplanements is particularly important because it will help determine future requirements for facilities that accommodate passengers like the terminal and automobile parking.

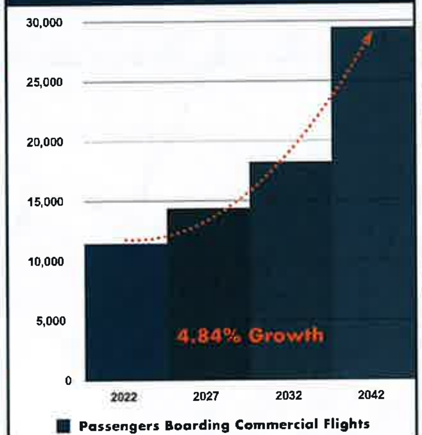
Critical Aircraft

The critical aircraft is often referred to as the design aircraft because it is used to determine many airfield design standards. Different critical aircraft may be identified for different areas of the airport.

Aircraft Operations Forecast



Passenger Enplanements Forecast



Existing: Avro RJ-85

Future: Embraer E-175

Based Aircraft Forecast

Cedar City Regional Airport • Facility Requirements

Recommendations Summary

- Need to plan for an ultimate runway length of 10,000 feet for Runway 2/20.
- Runway 8/26 designation needs to be updated to Runway 9/27.
- Land use planning if Runway 8/26 is decommissioned.
- Geometry of taxiway fillets should be updated when reconstructed.
- The rotating beacon should eventually be relocated to provide better visibility.
- Land should be preserved for a future airport traffic control tower.
- Additional parking is needed for general aviation businesses.
- The self-serve fuel facility should be relocated.
- Land should be reserved for additional hangars and at least 17 tie-downs.
- Land should be reserved for a future cargo processing apron.

Airport Traffic Control Tower Justification

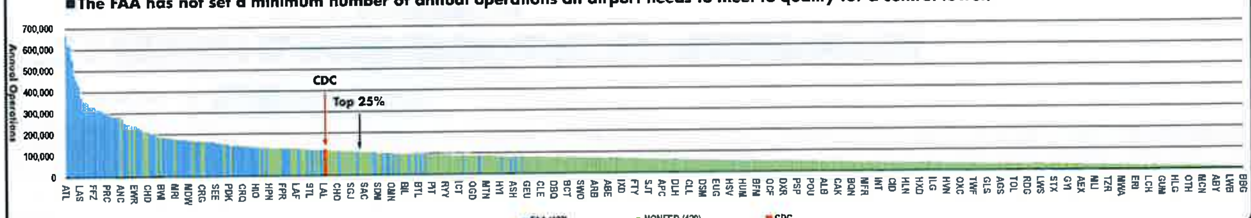
- Complex fleet mix that includes a flight school (fixed wing and rotor), GA aircraft (fixed wing and rotor), business and charter jets, military, aerial firefighting, and air carriers.
- Significant seasonal fluctuations due to fire season, tourism, and flight school schedule.

A tower will aid with:

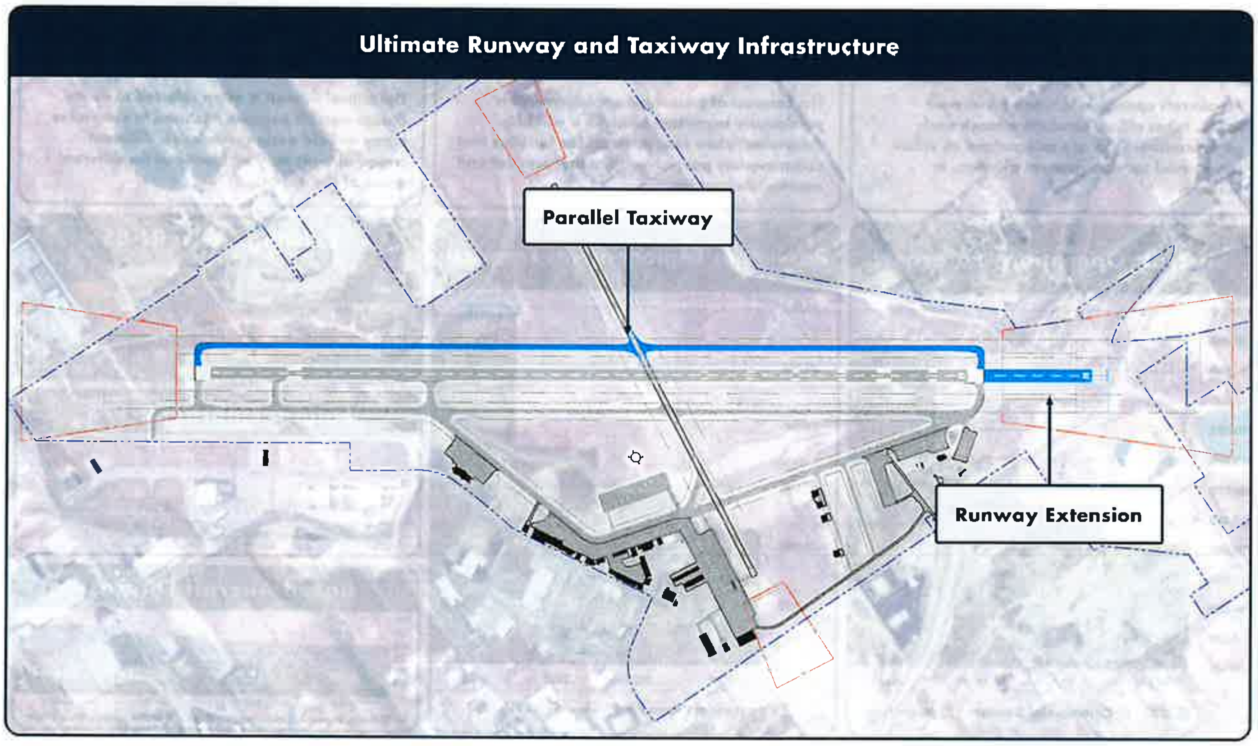
- Increasing efficiency for aircraft operations.
- Establishes standardization for aircraft movement.
- Separation of incompatible aircraft fleet mixes.
- Increasing situational awareness for pilots.
- Increasing airport operational safety.

CDC Annual Operations Compared to Airports With a Control Tower

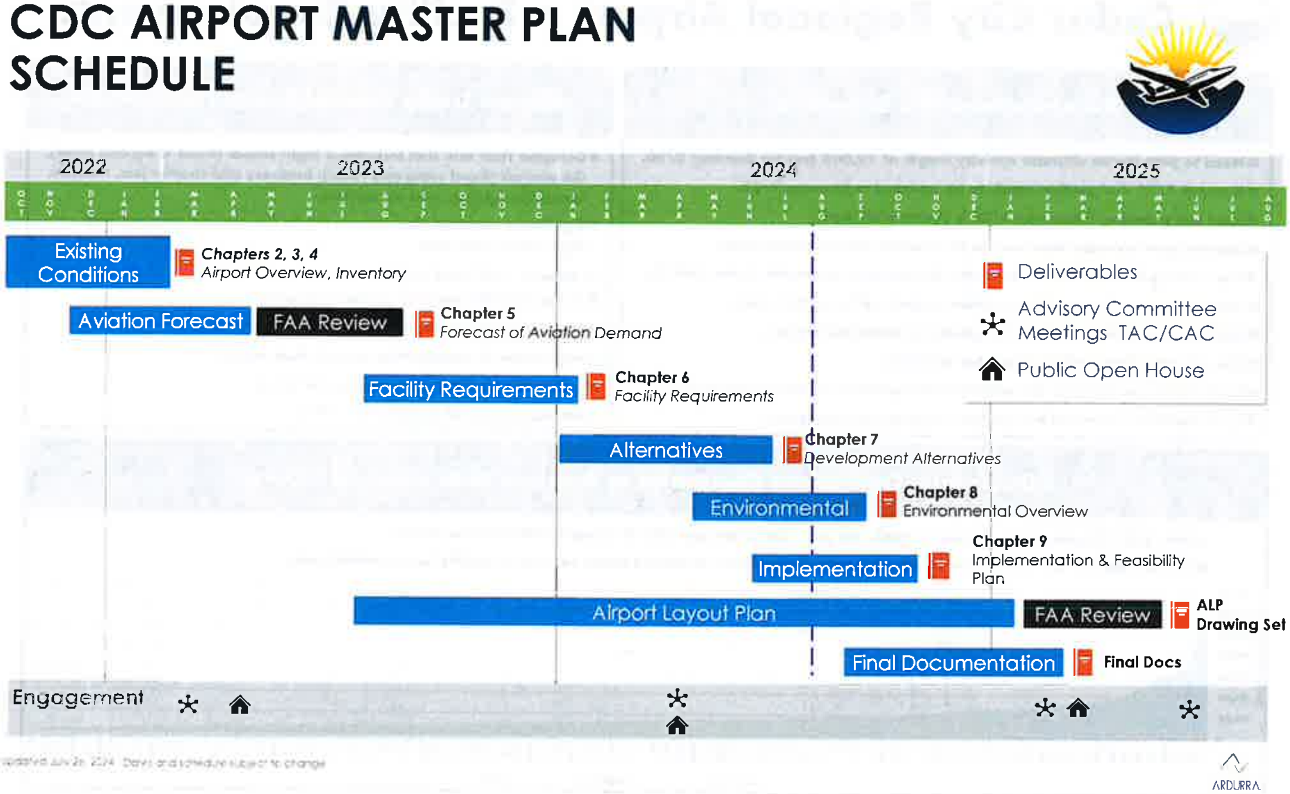
- With 120,996 annual operations in 2023, this puts CDC in the top 25% of airports with a control tower.
- The FAA has not set a minimum number of annual operations an airport needs to meet to qualify for a control tower.



Cedar City Regional Airport • Alternatives Analysis



CDC AIRPORT MASTER PLAN SCHEDULE



d. Presentation

01.4. Public Meeting #4

a. Meeting Time and Location

Date: March 4, 2025

Time: 5–7 p.m.

Place: Festival Hall, 105 North 100 East

02 Technical and Community Advisory Committee Meetings

02.1. Meeting #1

a. Meeting Time and Location

Date: October 10, 2022

Time: 2—4 p.m.

Place: Festival Hall, 105 North 100 East

b. Meeting Invite

T-O ENGINEERS

TO: Technical Advisory Committee Member

FROM: T-O Engineers

DATE: September 27, 2022

SUBJECT: CDC Airport Master Plan
Technical Advisory Committee Confirmation

CEDAR CITY
REGIONAL AIRPORT

On behalf of Cedar City, and the Cedar City Regional Airport, I would like to thank you for your commitment to serve on the Airport Master Plan Technical Advisory Committee (TAC).

The TAC will assist in preparing the Master Plan by providing technical input and recommendations throughout the planning process. This role is advisory in nature; ultimately, the outcome of the Master Plan will be determined by FAA guidance, Cedar City, the Airport's goals and objectives, and the obligations of the Airport in accordance with FAA grant assurances.

As the Airport Sponsor, Cedar City will retain ultimate decision-making authority, in accordance with FAA requirements.

Committee members will be requested to attend three in-person meetings, and up to two virtual meetings.

The first meeting is scheduled for:

October 10, 2022, 2:00-4:00
FESTIVAL HALL
105 North 100 East
Cedar City, UT 84720
Rooms 5 & 6

Please respond to this invitation so we may plan on your participation. If you have any questions or need additional information, please reach out to the members of the planning team.

Thank you for your interest in Cedar City Regional Airport and the Master Plan. We look forward to working with you as a member of the Technical Advisory Committee.

Sincerely,

Stephanie Krabbe
Aviation Planner
T-O Engineers
208-762-3644
skrabbe@to-engineers.com

Sam Allen, C.M., ACE
Aviation Planner
T-O Engineers
435-315-3168
sallen@to-engineers.com

Jeremy McAlister, PE
Project Engineer
T-O Engineers
435-315-3168
jmcalister@to-engneers.com

c. Principles of Participation

Principles of Participation

Mission
The Cedar City Regional Airport (CDC) Technical Advisory Committee (TAC) will advise the Airport Master Plan project team as a representative voice of airport stakeholders.

Responsibilities of Committee Members
To accomplish the mission described above, Committee members are being asked to:

- Become familiar with existing planning and policy documents related to the Airport.
- Become familiar with land uses, facilities, and environmental resources in the project area.
- Provide feedback to the project team (Airport staff and Consultant team) at the milestones in the planning process (see Meetings and Discussion Process below).
- Read the agenda and background materials distributed prior to the meetings by the project team.
- Publicize opportunities for members of respective organizations, other organizations, and the general public to participate in the planning process, including public workshops and website engagement activities.
- Listen carefully to others; the Committee will function best when we understand and value one another's views and experiences.
- Help create and maintain a respectful and productive working climate.

Representation
Committee members are chosen by identifying organizations and agencies that represent the various elements that will be considered in the Airport Master Plan. Identified organizations are often asked to choose individuals to represent them on the Committee.

Each Committee member is encouraged to report back to his/her respective organization to inform them about the Committee's discussions and the progress of the Master Plan. Meeting summaries will be prepared to facilitate this effort.

If an invited Committee member declines participation in the Committee, or at any point becomes unable to serve, they are requested to inform the project team, and an attempt to replace the member will be made.

Discussion Process
Committee members agree to abide by the following discussion process during the meetings:

- All participants are welcome to speak freely.
- All comments will be professional, constructive, and conducive to allowing others to participate.
- All perspectives are valued with one person speaking at a time.
- The preferred process for the Committee is collaborative problem solving with cases of mixed opinions being documented and alternative approaches considered.
- Committee members treat each other member viewpoints with respect.

Attendance
For the process to work effectively, full participation of representatives is critical. Committee members are asked to commit to attending Committee meetings as well as public outreach events to directly hear/gather input from the community. Meetings will generally be held during the late afternoon on a weekday but may be scheduled according to the needs of participants and venues.

Support

A member of the Consultant team will facilitate Committee meetings. The role of the facilitator is to ensure all perspectives are heard through a collaborative discussion process. The project team will provide technical and logistical support, including making presentations, answering questions, coordinating meetings, and documenting meeting content.

Meeting Agendas

The project team will be responsible for preparing the agendas, with consideration of input from Committee members. Agendas and assigned reference materials will be distributed by email in advance of each meeting.

Information Sharing

Committee members may want to share information and documents with other Committee members during the planning process. To ensure that all members have the same information available to them, all documents are to be distributed through the established point of contact for the Consultant team:

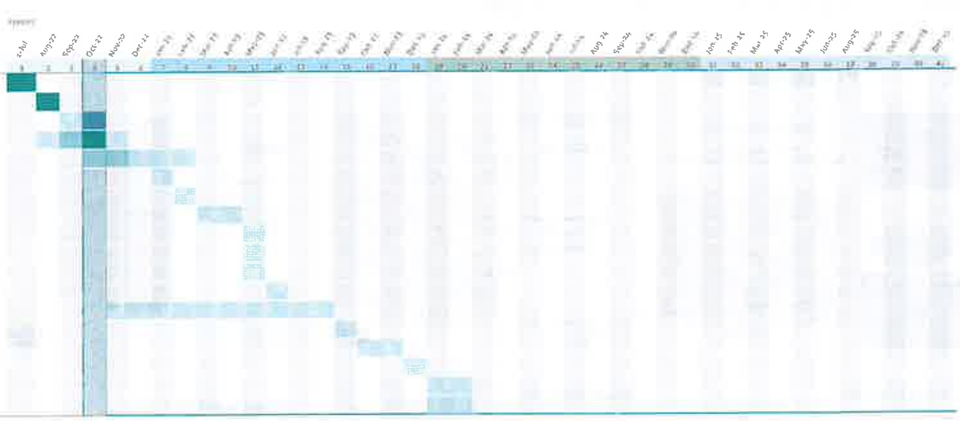
d. Project Schedule

Project Title:	Cedar City Regional Airport Master Plan Update
Sponsor:	Cedar City Corporation
Project No.:	AIP# 3-49-0005-045-2022
Project Manager:	Stephanie Krabbe

Project Schedule

Period Highlight: 4 | Plan | Actual | % Complete | Actual (beyond plan) | % Complete (beyond plan)

ACTIVITY	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE
Project Formulation	1	1	1	1	100%
Inventory Visit	2	1	2	1	100%
Public Meeting 1-Kick Off (10 11	3	1	4	1	90%
Existing Conditions	2	4	4	0	20%
Forecast Approval	4	5	5	0	0%
Public Meeting 2-Forecast	7	1	0	0	0%
Facility Requirements	8	1	0	0	0%
Development of Alternatives	9	2	0	0	0%
Public Meeting 3-Fac Req/Alts	11	1	0	0	0%
Environmental Coordination	11	1	0	0	0%
Facilities Implementation	11	1	0	0	0%
Remaining Chapters	12	1	0	0	0%
Airport Layout Plan	5	10	0	0	0%
Public Meeting 4-Draft Docs	15	1	0	0	0%
Document Review/Coordination	16	2	0	0	0%
Final Revisions	18	1	0	0	0%
Public Meeting 5-Final Docs	19	2	0	0	0%
Grant Closeout	19	2	0	0	0%



02.2. Meeting #2

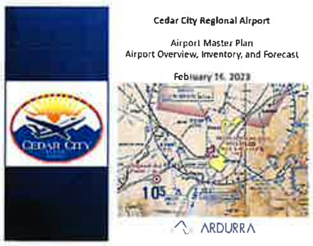
a. Meeting Time and Location

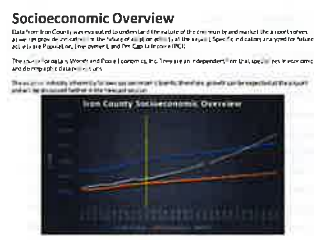
Date: February 16, 2023

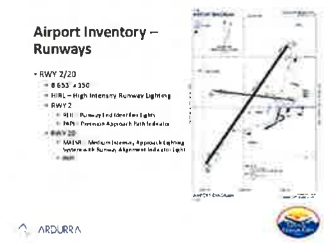
Time: 2–4 p.m.

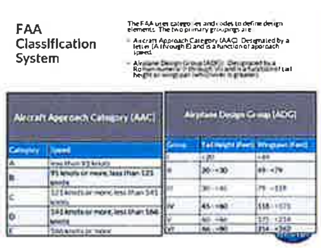
Place: Festival Hall, 105 North 100 East

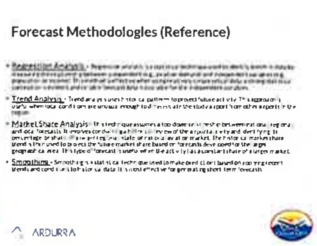
b. Presentation











Enplanement Forecast

Forecast Methods: Trend - Forecast Population Growth (1.56% CAGR)
Utah Market Share of enplanements (1.49% CAGR)

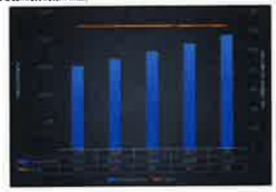
Load Factor Forecast

Typically, operations are demand driven depending on aircraft capacity and load factor
* This forecast assumes that the CRJ200 will be phased out and replaced by a 70-seat aircraft in the long term forecast (2032-2042)

Enplanement Forecast				
Year	Enplanements	Flights	Seats Available	Load Factor
2022	[illegible]	[illegible]	[illegible]	[illegible]
2027	16,351	624	50	52%
2032	[illegible]	[illegible]	[illegible]	[illegible]
2042	20,624	624	70	[illegible]

Air Carrier Operations Forecast

Typically, operations are demand driven; however, CDC air carrier operations are EAS contract determined.



Alternate Air Carrier Forecast

Air Carrier Operations		
Year	Master Plan Forecast	Alternate Forecast
2022	[illegible]	[illegible]
2027	1,248	1,297
2032	1,248	[illegible]
2042	1,248	1,640
CAGR	Master Plan Forecast	Alternate Forecast
2022-2042	[illegible]	[illegible]

General Aviation Forecast

Forecasting Elements and Methods
- General Aviation Operations: Regression Analysis
  - Air Taxi
  - Itinerant General Aviation
  - Local General Aviation
- SUU Operations – FAA Aerospace Forecast
  - Fixed Wing: -0.40% CAGR
  - Rotary Wing: 1.30% CAGR
  - Overall: 0.5% CAGR
- Based Aircraft – Population Growth (1.56% CAGR)

Baseline Data

Virtower operations were validated through motion-activated cameras and the FAA TFMSC database.

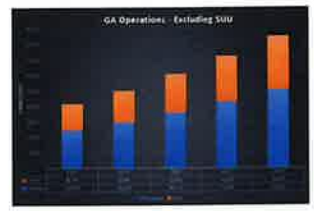
GA Baseline Operations		
	Percentage	2022 Operations
Itinerant GA	10%	12,418
Local GA	7%	8,279
SUU	82%	98,499
Total	99%	119,195

Regression Analysis

Two parts to a regression analysis
1. Determine if there is a statistical relationship between two data sets, known as R^2 and to evaluate the strength of that relationship, known as P factor.
2. Once an acceptable relationship has been established, the forecast uses elements from the regression analysis to forecast values.

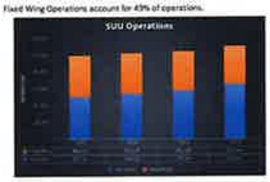
Regression Analysis		
	Acceptable Range	CDC
R2	>70%	93%
P Factor	<0.05	0.0003

Forecast Results



SUU Operations

Helicopter Operations account for 51% of operations
Fixed Wing Operations account for 49% of operations.



Military Operations

Unless there is specific knowledge of an upcoming change, military operations are typically forecast at current TAF levels because the Department of Defense provides limited details regarding future activity levels.

There are no local military operations forecasted at this time. Although we know there are negotiations in progress, operational activity is unknown at this time.

Military Operations Forecast	
	Itinerant
2022 (Baseline)	550
2027	550
2032	550
2037	550
2042	550

Forecast Summary

ARDURRA

TAF Comparison

	Enplanements			Commercial Operations		
	TAF	Master Plan	Difference	TAF	Master Plan	Difference
2022	10,600	15,131	43%	1,304	2,430	86%
2027	10,600	16,351	54%	1,304	2,667	105%
2032	10,600	17,667	67%	1,304	2,973	128%
2042	10,600	20,624	95%	1,304	3,663	181%

	GA Operations			Based Aircraft		
	TAF	Master Plan	Difference	TAF	Master Plan	Difference
2022	119,361	118,013	1%	100	100	0%
2027	123,429	124,215	1%	104	110	6%
2032	128,045	132,005	3%	104	119	15%
2042	137,418	149,429	9%	104	139	34%

ARDURRA

Critical Aircraft

- Criteria
  - Most demanding aircraft/aircraft group with regular use (minimum of 500 annual operations) at the airport
- Also called "design aircraft" as it is used to determine correct design standards for runways/taxiways.

ARDURRA

Critical Aircraft – Existing Avro RJ 85

Critical Aircraft – Future Embraer E175

ARDURRA

Next Steps

- Submittal of forecast to FAA for approval
- Facility Requirements start based upon approved forecast/critical aircraft
- Development Alternatives to be drafted to fulfill Facility Requirements and Sponsor/community vision for the airport
- Public Meeting #3 – Completion of Facility Requirements and Presentation of Development Alternatives

Project Website – https://cdcmasterplan.com

ARDURRA

ARDURRA

Thank you!

Please fill out a comment sheet

CEDAR CITY
REGIONAL AIRPORT
ARDURRA

02.3. Meeting #3

a. Meeting Time and Location

Date: April 10, 2024

Time: 2–4 p.m.

Place: Festival Hall, 105 North 100 East

b. Presentation

02.4. Meeting #4

a. Meeting Time and Location

Date: March 4, 2025

Time: 2–4 p.m.

Place: Festival Hall, 105 North 100 East

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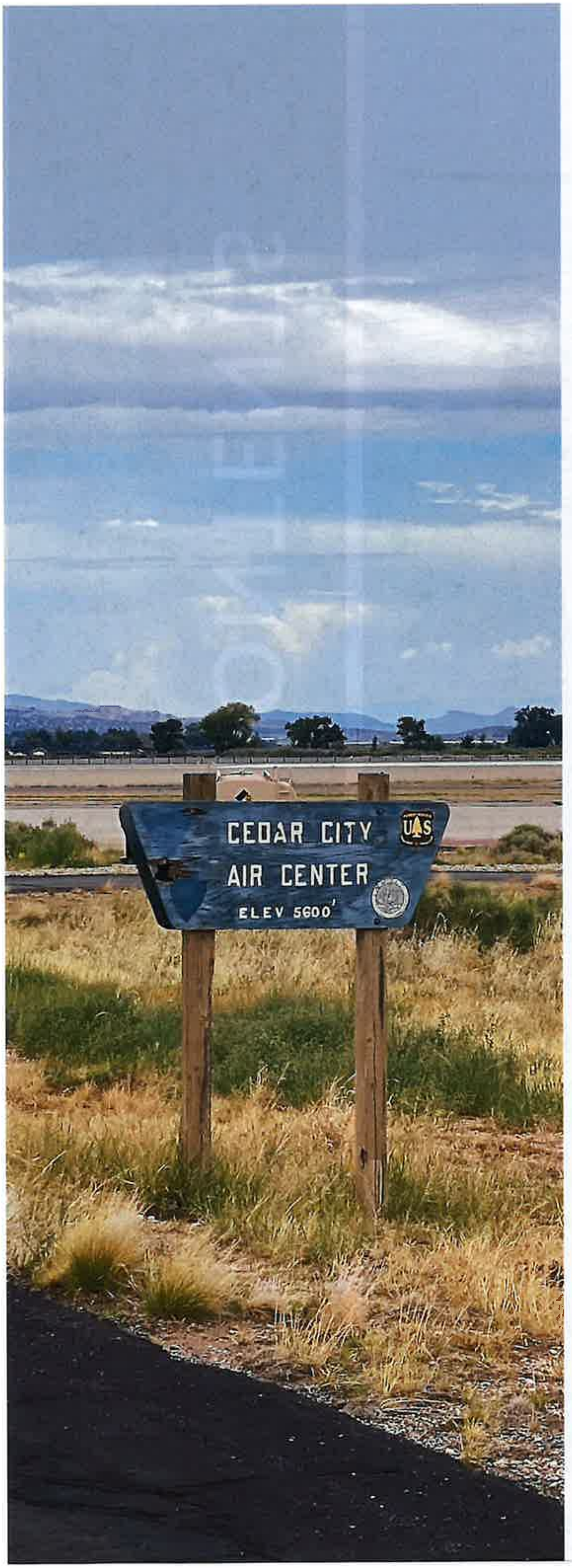

APPENDIX B

FAA Forecast Approval

Cedar City Regional Airport
2025 Airport Master Plan

August 2023

CONTENTS

Appendix B Forecast Approval

01 Federal Aviation Administration Forecast Approval

From: Yaffa, Christine (FAA) <Christine.Yaffa@faa.gov>
Sent: Tuesday, August 15, 2023 9:53 AM
To: Tyler Galetka
Cc: Jeremy McAlister; Stephanie Krabbe; Maiman, Peter
Subject: CDC Forecast Approval 3-49-0005-045-2022
Attachments: CDC_Airport Master Plan_Chapter 5-Forecast_08142023.pdf

U.S. Department of Transportation
Federal Aviation Administration

Northwest Mountain Region
Colorado · Idaho · Montana · Oregon · Utah
Washington · Wyoming

Denver Airports District Office
26805 E. 68th Ave., Suite 224 Denver, CO 80249

August 15, 2023

Tyler Galetka, Airport Manager
Cedar City Regional Airport
2560 W. Aviation Way, Suite 4
Cedar City, UT 84721

Cedar City Regional Airport
Cedar City, Utah
AIP: 3-49-0005-045-2022
Forecast Approval

Dear Mr. Galetka:

The Federal Aviation Administration (FAA) reviewed forecast information for the subject airport. The revised forecast was received August 14, 2023. FAA approves the attached forecast. The FAA also approves the Avro RJ87 for the existing and the Embraer E-175 for the future critical aircraft. We found the forecast to be supported by reasonable planning assumptions and current data. Your forecast appears to be developed using acceptable forecasting methodologies.

This forecast was prepared at the same time as the evolving impacts of the COVID-19 public health emergency. Forecast approval is based on the methodology, data, and conclusions at the time the document was prepared. However, consideration of the impacts of the COVID-19 public health emergency on aviation activity is warranted to acknowledge the reduced confidence in growth projections using currently-available data.

Accordingly, FAA approval of this forecast does not constitute justification for future projects. Justification for future projects will be made based on activity levels at the time the project is requested for development.

Documentation of actual activity levels meeting planning activity levels will be necessary to justify AIP funding for eligible projects.

The approval of the forecast and critical aircraft does not automatically constitute a commitment on the part of the United States to participate in any development recommended in the master plan or shown on the ALP. All future development will need to be justified by current activity levels at the time of proposed implementation. [*See FAA Order 5100.38D, Airport Improvement Program, Paragraph 3-12, for ADO options.*] Further, the approved forecasts may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or Part 150 noise planning purposes.

If you have questions, please call me at 303-342-1280.

Thank you,

Christy Yaffa
Community Planner (UT/WY)
FAA Denver Airports District Office

Phone 303-342-1280 **Fax** 303-342-1260
Email christine.yaffa@faa.gov
26805 E. 68th Ave., Ste 224, Denver, CO 80249-6361

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