Order ZDV 7110.65B

Denver Center
Standard Operating Procedures

August 16th, 2018

VATSIM

This document has been prepared for use in the Virtual Denver Air Route Control Center on the VATSIM network. This is not intended to be used for any real-world purposes. All controllers working Denver Center should know the procedures and requirements described within this document.

Contents

Overview

Airport List

Center controllers should input the following list of airports into VRC:
KDEN, KAPA, KBJC, KBKF, KFTG, KMNH, KEIK, KBDU,18V, KLMO, KGXY, KFNL, 11V, 3V5, CD08, 1V5,2V2,48V, KPGA, KBDG, KCEZ, KFMN, KTEX, KCNY, KDRO, KALS, KMVI, KTAD, KLHX, KPUB, KFCS, KCOS,1V6,00V, KAFF,04V, KGUC, KMTJ, KGJT, KASE, 7V1, KLXV, C003, KGWS, KEGE,4V0, KEEO, KCAG, KHDN, KSBS,20V, KFMM, KBDU, KCYS, KFEW, KIBM, KLAR, KSAA, KRWL, KCPR, KDGW, KGCC, KECS, KHSR, KCDR, KIEN, KGRN,9V6, KRAP, KRCA,49B, KSPF,KEFC, KPHP, KVTN, KRBE, KANW, KTIF, KBBW, KBUB, KHDE, KGTE, KLXN, KLBF, KCZD, KPHG, KNRN, KCSB, KOIN, KMCK, KADT, KCBK, KOEL, KLMO, KGLD, KITR, KSYF,2V5, KIML, KGGF, KOGA, KOKS, KCNP, KHEQ, KAKO, KSTK, KTQK, KLAA, KRIL, KSNY, KBFF, KTOR,7V6, KAIA, KFMN,2V1, KEAR

Communications

When relieving a controller, the relieving controller shall enter an "A" After the first number in the callsign. DEN_22_CTR becomes DEN_2A_CTR and DEN_17_CTR becomes DEN_1A_CTR. Denver Center Controllers shall use ZDV_Sector # for their voice channel. For example, the position DEN_17_CTR shall use the voice channel ZDV_17. Relief controllers using a "A" in their call sign should omit the "A" when determining what voice channel to use.

Students Logging on Denver Center with an instructor or mentor shall logon with DEN_S_CTR, regardless of which area they are controlling. Students are not permitted to control all of ZDV, they may only control one area. Students are only permitted log on with another center certified controller logged on at the same time.

Services

1. Non-Towered Airports
    a. Denver Center shall provide services to aircraft flying into or out of all non-towered airports within ZDV unless the airport falls under an Approach Control airspace which is currently staffed by another controller.
2. Class D Airports
    a. Denver Center shall control all class D airports not staffed by another controller and provide full tower services always unless excessive traffic *requires* Denver Center to treat the airport as uncontrolled.
3. Class B and C Airports
    a. Denver Center shall provide full services to all class B and C airports within ZDV.

Towered Airports

KAFF KAPA KASE KBJC KBKF KCOS
KCPR KCYS KDEN KEGE KFCS KFMN
KFTG KGCC KGJT KPUB KRAP KRCA
*Be aware of airport ATCT operational times. Most airport ATCT's are not 24/7, therefore, check the SOPs for when they are operational.

Minimum IFR Separation

IFR aircraft not operating in a designated approach control area shall be separated by at least 5 miles laterally or 1,000 feet of vertical separation (2,000 feet of vertical separation to all aircraft above FL410). IFR aircraft operating within designated approach control airspace shall be separated by 3 miles of lateral separation or 1,000 feet of vertical separation. This applies even when Denver Center is staffing an approach control position because that approach position is not staffed by another controller.

Squawk Codes

ZDV squawk code range 1400-1477

Radar Clients

Controllers have a large choice of options to choose from in ZDV. VRC, vSTARS, and vERAM

Airspace

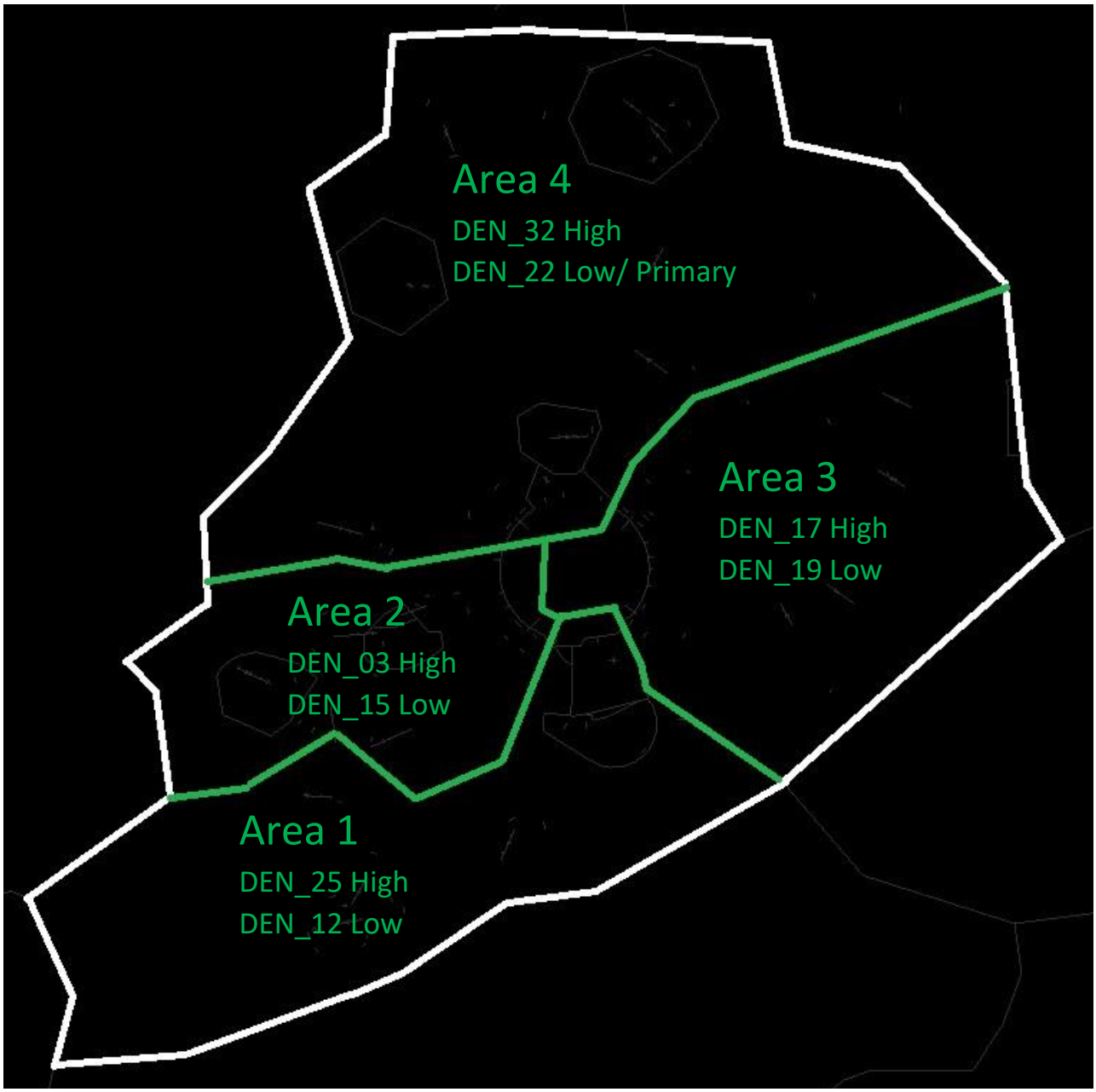


Diagram 1-1: Denver Center four area split

Lateral Split Denver Center shall be divided into the four areas depicted in Diagram 1-1. All splits shall be based off the boundaries of these four areas. Vertical Split When ZDV is split into high/low sectors, the low sector shall own airspace up to and including FL260 with the high sector owning FL270 and above.

Sector Splits

One Center

Callsign	Area's	Frequency	Vox Channel
DEN_22_CTR	1 – 4	135.600	ZDV_22

Two Centers

High/Low

DEN_17_CTR [High]	1 – 4	127.650	ZDV_17
DEN_22_CTR [Low]	1 – 4	135.600	ZDV_22

North/South

DEN_22_CTR [North]	2 & 4	135.600	ZDV_22
DEN_17_CTR [South]	1 & 3	127.650	ZDV_17

East/West

DEN_22_CTR [West]	1 & 2	135.600	ZDV_22
DEN_17_CTR [East]	3 & 4	127.650	ZDV_17

All Center Positions

These splits can be combined by the ATM or CIC as required by traffic or staffing.

Areas 1-4 [With High/Low]

Position Name	Area	Frequency	Vox Channel
DEN_25_CTR [High]	1	133.520	ZDV_25
DEN_12_CTR [Low]	1	125.350	ZDV_12
DEN_03_CTR [High]	2	126.720	ZDV_03
DEN_15_CTR [Low]	2	118.470	ZDV_15
DEN_17_CTR [High]	3	127.650	ZDV_17
DEN_19_CTR [Low]	3	132.700	ZDV_19
DEN_32_CTR [High]	4	133.670	ZDV_32
DEN_22_CTR [Low]	4	135.600	ZDV_22

*A map has been provided in the appendix with the sectors assigned to each area

All areas may deviate from the requirements in the "Responsibilities and Duties" sections only upon proper coordination between controllers.

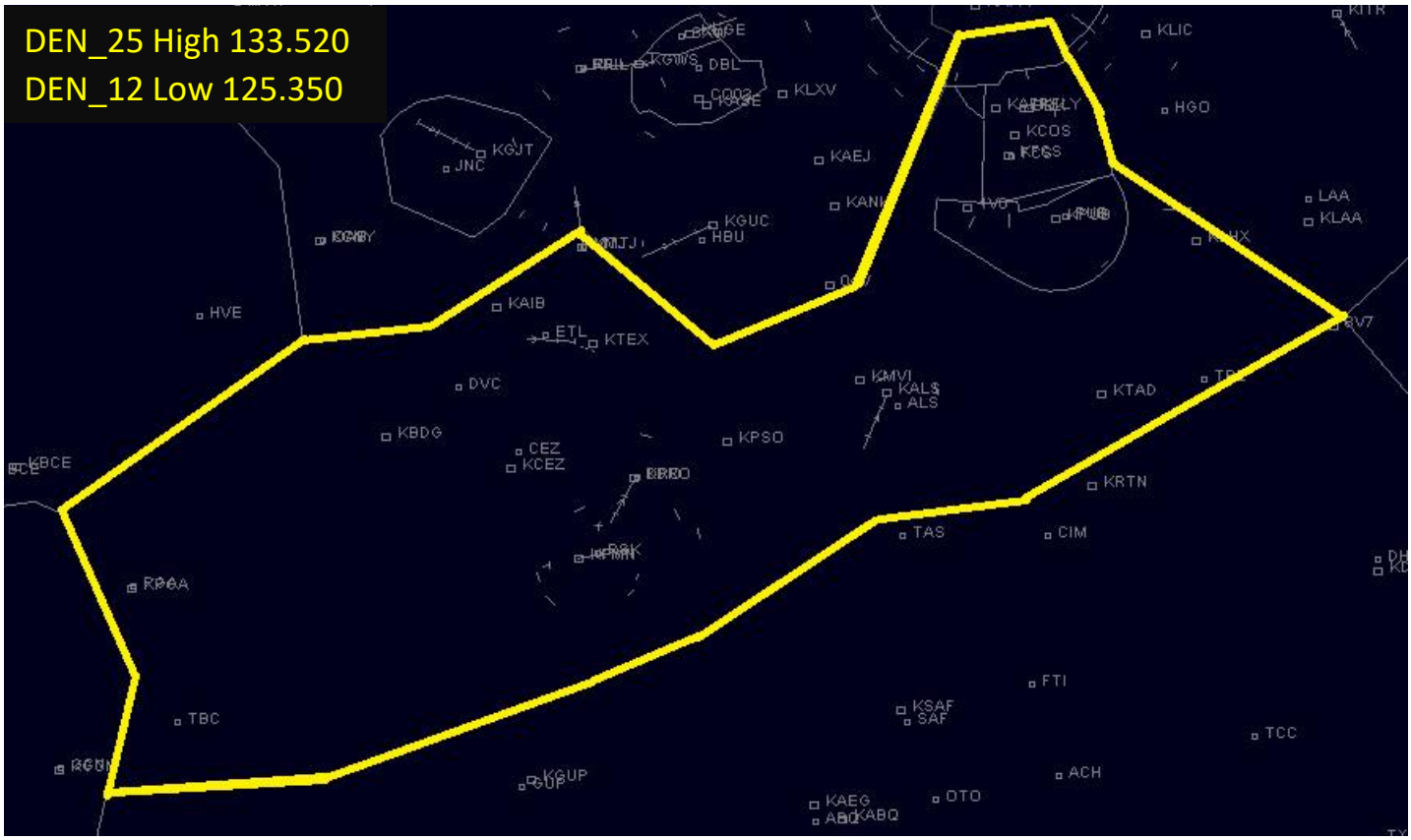
Required Routes

*Indicates routes with a filed altitude of FL180 or less.

To ensure proper entry into the following areas' and approach controls' airspace, aircraft must be routed along one of the following routes to their destination. Coordination between each area is required if an aircraft or controller requests a route that is different than what is listed below or if an aircraft requests "direct to" a fix.

Airport	From	Route
KASE	Area 4	LAR – EKR – TRUEL – DBL – ASE
	Area 2/4	EKR – TRUEL – DBL – ASE
		LOYYD – SKIER – DBL - ASE
	Area 3/D01	FQF – DBL – ASE
	Area 3/D01	FQF – WERNR – ZAKOR – ASE (SKW Only)
	Area 1	KANON – HAREI – DBL – ASE
		DVC – LOYYD – SKIER – DBL – ASE (West of DVC Only)
	Area 1/3	*PUB.V244.HBU – DBL145R.DBL – ASE
KEGE	Area 4	LAR – RLG – EGE
	Area 2/4	RLG – EGE
		EKR – JESIE – RLG –EGE
	Area 3/4	AVVVS – RLG – EGE
	Area 1	DVC – JNC – JESIE – RLG –EGE
	Area 2	JNC – JESIE – RLG –EGE (West of DVC only)
	Area 1/3	*PUB.V244.HBU – RIL – JESIE – RLG – EGE
KGJT	Area 4	LAR – EKR – GJT
		*LAR – CHE – EKR – GJT
	Area 2/4	EKR – GJT
	Area 1/3	PUB – HBU – GJT
	Area 1	DVV – DBL – GJT
		DVC – GJT
		HBU – GJT (South of PUB only)
KTEX	All Areas	ETL – TEX
KRIL	Area 4	LAR – EKR – RIL
	Area 2/4	EKR – RIL
	Area 3	FQF – DBL – RIL
	Area 1	DVC – JNC – RIL

Area 1



Responsibilities and Duties

1. Ensure aircraft are on the appropriate arrival procedure based on the current or future KDEN landing configuration
2. If aircraft indicate they are “top of descent,” then allow the aircraft to descend via the arrival. When shipping the aircraft to Area 2, use the phraseology, “…check in that you are descending via the XXXXX arrival…”
3. If aircraft request to fly direct to a fix on an arrival not in Area 1’s airspace other than the first fix depicted on each arrival, then Area 1 must coordinate with Area 2.

Arrivals – Inside Area 1

a. Area 1 has control for descent to 16,300 MSL and turns up to 20 degrees for TEX arrivals 15 miles north of the Area 1 & 2 common border

Arrivals – Outside Area 1

a. ASE, EGE, RIL, and LXV arrivals entering the Area 1/2 common boundary east of DVC must be descending to FL260 MSL or lower
b. GJT arrivals west of MJT must cross the Area 1/2 common boundary AoB FL230

Farmington/ Four Corners Airport

1. Arrivals to KFMN shall be routed via the RSK VOR.
2. Denver Center shall comply with all Requirements specified in the Letter of Agreement between Farmington Tower and ZDV.
3. Assign the following approaches unless the pilot requests otherwise.
    a. Land west: ILS RW 25 (primary)
    b. Land east: VOR RW5 (primary)

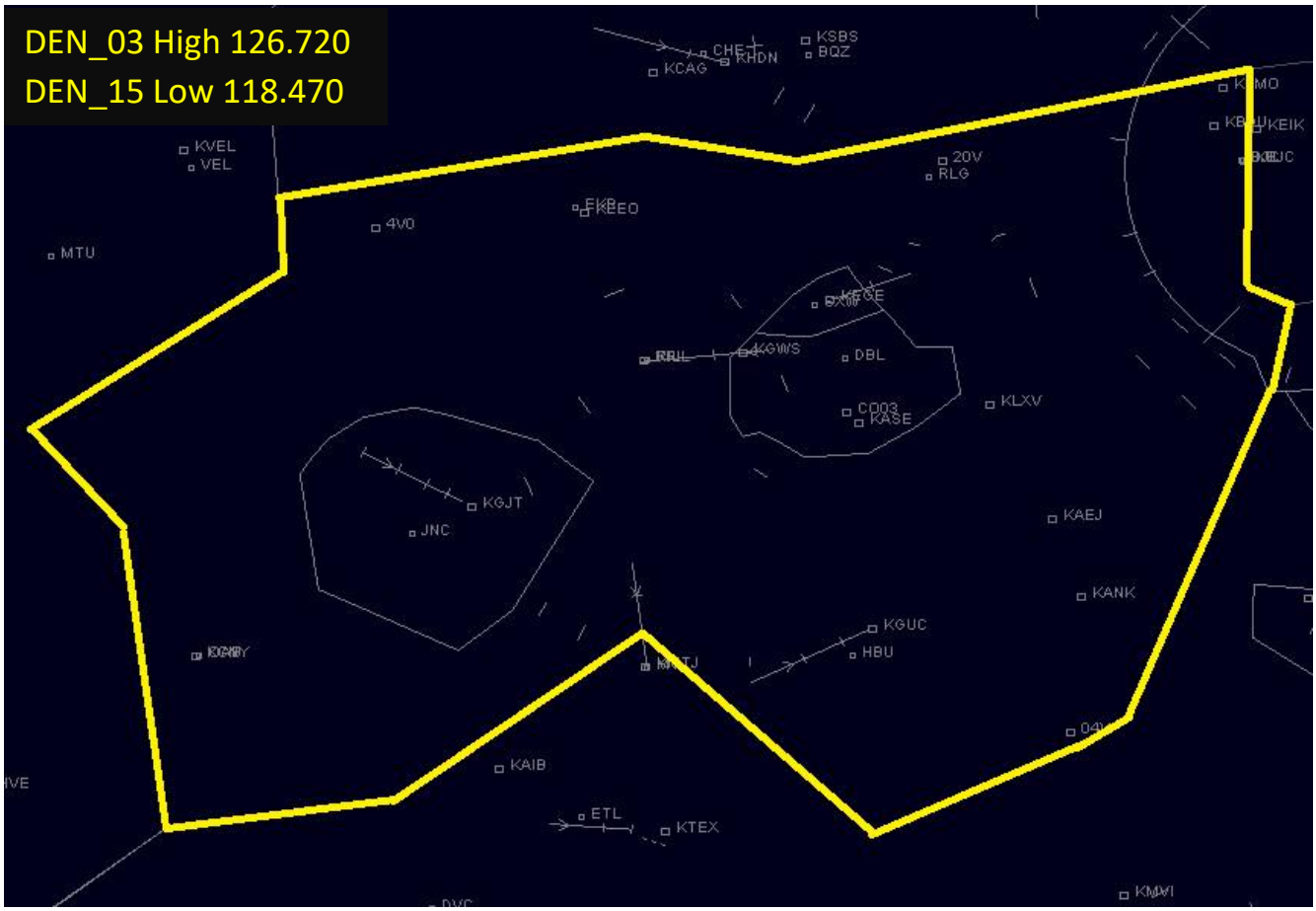
Colorado Springs

1. Denver Center shall comply with all provisions in the Letter of Agreement between Colorado Springs Approach and ZDV.
    a. Crossing Restrictions
        i. Arrivals on the DEBERRY3 arrival shall be instructed to descend to cross PYNON at the following altitudes depending on the aircraft type:
            1. Turbojet - 12,000 or lower cruise altitude at 220 kts
            2. Turboprop - 11,000 or lower cruise altitude
            3. Prop - 10,000 or lower cruise altitude

Pueblo

1. Denver Center shall comply with all requirements in the Letter of Agreement between D01 and ZDV.
2. Denver Center must point out all DEBERRY arrivals to D01 (Pueblo Sector)

Area 2



Responsibilities and Duties

1. Ensure aircraft are on the appropriate arrival procedure based on the current or future KDEN landing configuration
2. Issue “Descend via” commands to D01 arrivals into the SW gate with the local altimeter setting

Arrivals – Inside Area 2

1. Area 2 has control for descent to 15,000 MSL and turns up to 20 degrees for EGE, ASE, RIL, and LXV arrivals 15 miles north of the Area 2/4 common border
2. Area 2 has control for descent to FL240 MSL and turns up to 20 degrees for EGE, ASE, RIL, and LXV 10 miles east of the Area 2/3 common boundary

Arrivals – Outside Area 2

1. TEX arrivals must cross the Area 1/2 common boundary AoB FL210 MSL descending to FL180

Eagle County

Denver Center shall assign the LDA RWY 25 Approach to all EGE arrivals unless otherwise requested by the pilot. Up to two aircraft may be cleared for the LDA RWY 25 Approach at the same time as long as the first aircraft is at or beyond WASHI prior to the second aircraft crossing VOAXA.EGE departures are not authorized when RIL GPS/LILXO transition is in progress until the aircraft passes UYRIG. Denver Center shall abide by the Letter of Agreement between ZDV and EGE ATCT.

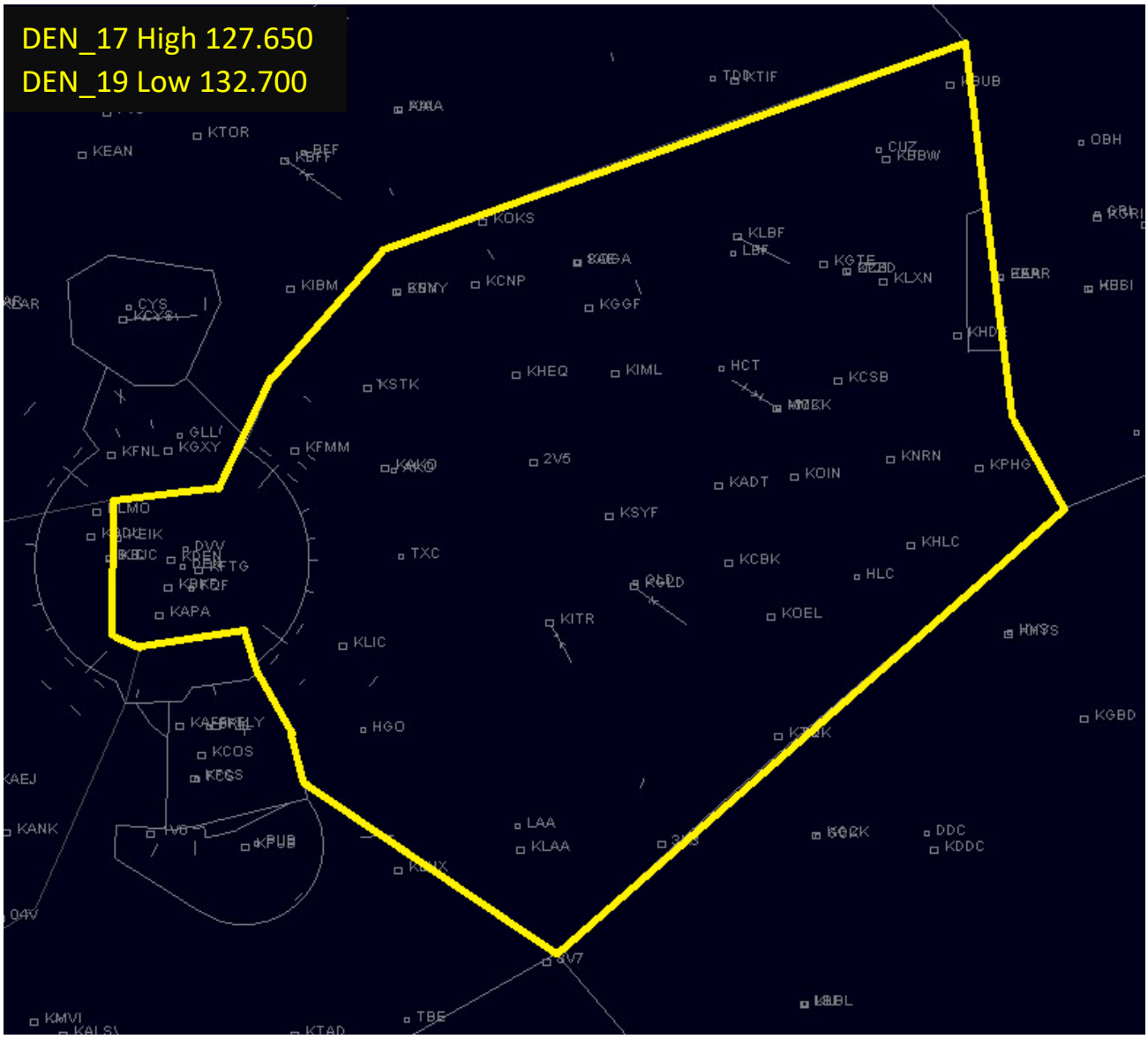
Aspen

Denver Center should consider slowing aircraft into Aspen as early as possible, especially during fly ins. The Aspen TRACON airspace is not designed to accommodate the levels of traffic seen during events which can be several times the rate of the real-world arrivals. Denver Center should do everything possible to assist the Aspen TRACON, such as early handoffs, early speed reductions and holding arrivals. Denver Center shall comply with all provisions in the Letter of Agreement between Aspen Approach and ZDV.

Grand Junction

Denver Center shall comply with all provisions in the Letter of Agreement between Denver Approach and ZDV.

Area 3



Responsibilities and Duties

1. Ensure aircraft are on the appropriate arrival procedure based on the current or future KDEN landing configuration
2. Issue “descend via” commands to aircraft entering D01 via the NE and SE gates

Arrivals – Outside Area 3

1. EGE, RIL, ASE, and LXV arrivals must cross the Area 2/3 common boundary AoB FL320 MSL.
2. CYS arrivals must cross the Area 3/4 common boundary descending to FL180 MSL

Kearny

Kearny Airport is located in ZMP's airspace. There is a shelf of airspace depicted in diagram 1-5 that extends approximately 10 miles into ZDV's boundary below 7,000 ft.

Diagram 1-5: ZMP's Kearny Shelf

Denver

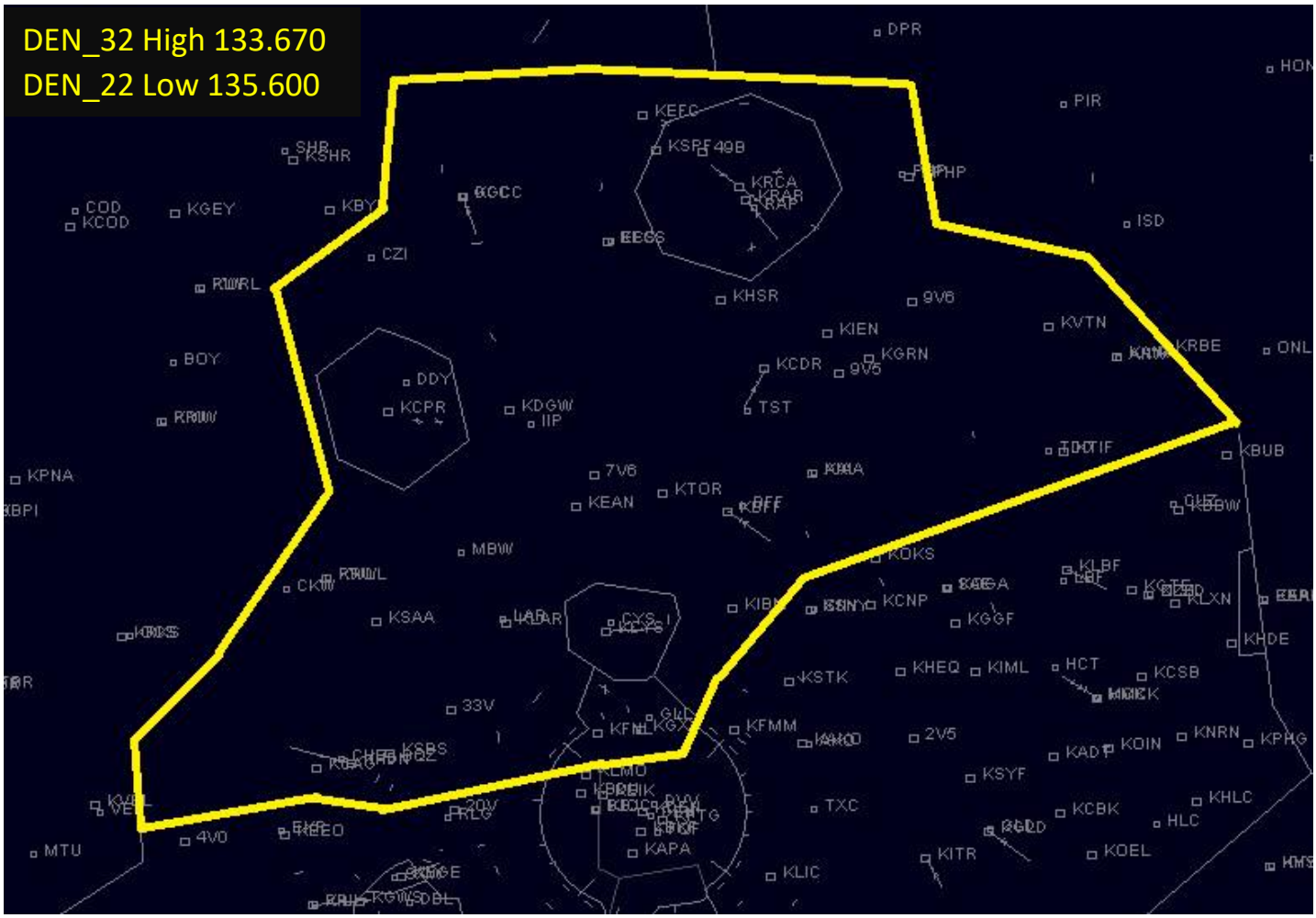
Denver Center shall comply with all provisions in the Letter of Agreement between Denver Approach and ZDV. The POWDR arrival is Denver's most used arrival as it feeds traffic from ZLA. During fly ins, Denver Center should be aware of traffic flying

HBU.POWDR and should consider switching arrivals on the JNC or DBL transitions of the POWDR arrival to the TOMSN arrival to prevent congestion in area four. When doing this be aware that this will likely cross the traffic through the ROCKIES departure corridor and special attention should be paid to separation.

Denver Center shall comply with all requirements specified in the Letter of Agreement between D01 and ZDV.

During fly-in events, Denver Center should be aware of traffic utilizing the SAYGE arrival. If traffic load increases, consider changing aircraft to the LANDR arrival or aircraft filed GLD.SAYGE to the GLD.DANDD arrival.

Area 4



Responsibilities and Duties

1. Ensure aircraft are on the appropriate arrival procedure based on the current or future KDEN landing configuration
2. Issue “descend via” commands to aircraft entering D01 via the NW gate

Arrivals – Outside Area 4

1. RIL, EGE, ASE, and LXV arrivals must cross the Area 2/4 common boundary AoB FL260 MSL
2. EGE arrivals’ handoffs must be initiated no less than 25 miles away from RLG

Rapid City / Ellsworth AFB

Ellsworth Approach covers the airspace at and below 16,000 feet. Denver Center shall comply with all provisions in the Letter of Agreement between Ellsworth Approach and ZDV.

Gillette

1. Arrivals into KGCC shall be routed via the GCC VOR.
    a. Land north: Assign the ILS RWY 34 approach unless otherwise requested by the pilot
    b. Land South: Assign the VOR/DME RWY 16 approach unless otherwise requested by the pilot.
2. Denver Center shall comply with all requirements specified in the Letter of Agreement between Gillette Tower and ZDV.

Casper

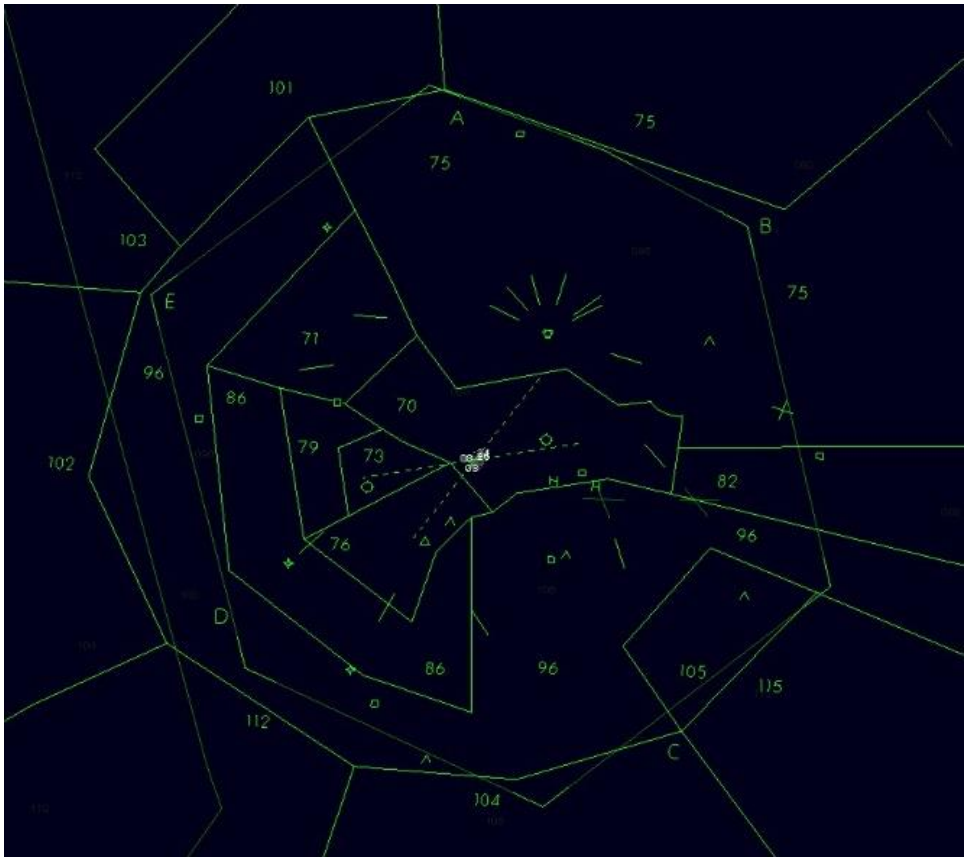


Diagram 1-3: Casper Approach Airspace

Casper Approach covers the airspace depicted in Diagram 1 3 at and below 14,000 feet. Denver Center shall comply with all provisions in the Letter of Agreement between Casper Approach and ZDV.

Cheyenne

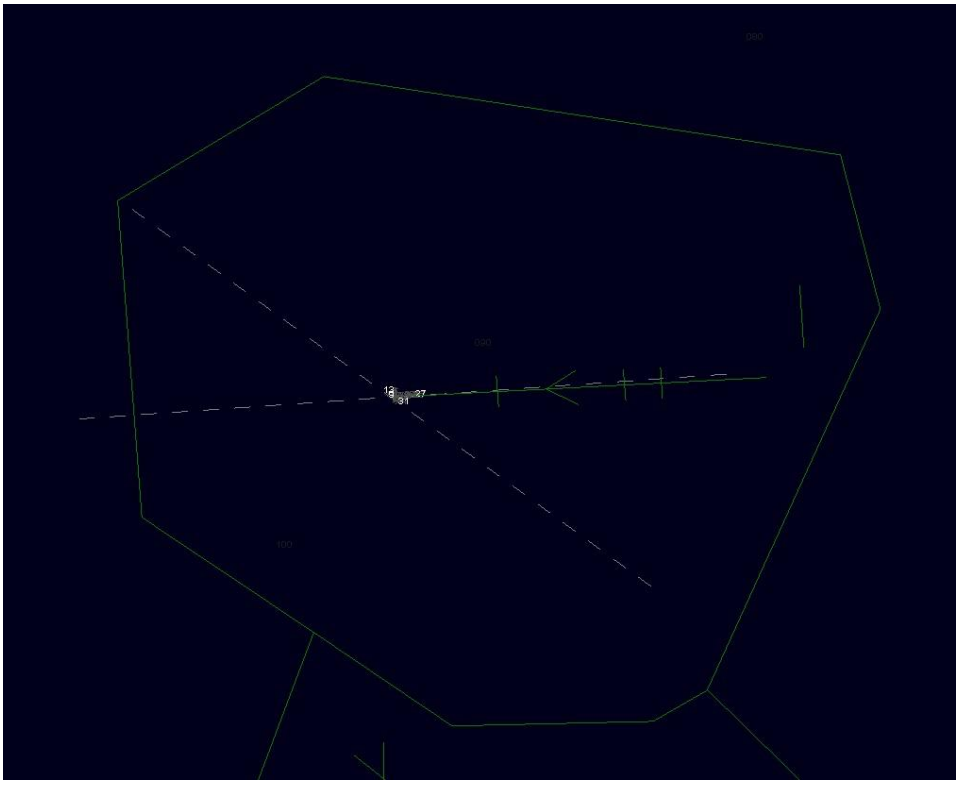


Diagram 1-4: Cheyenne Approach Airspace

Cheyenne Approach covers the airspace depicted in diagram 1 4 at and below 12,000 feet. Denver Center shall comply with all provisions in the Letter of Agreement between Cheyenne Approach and ZDV.

Tyler Beals

Tyler Beals

Air Traffic Manager

Denver ARTCC

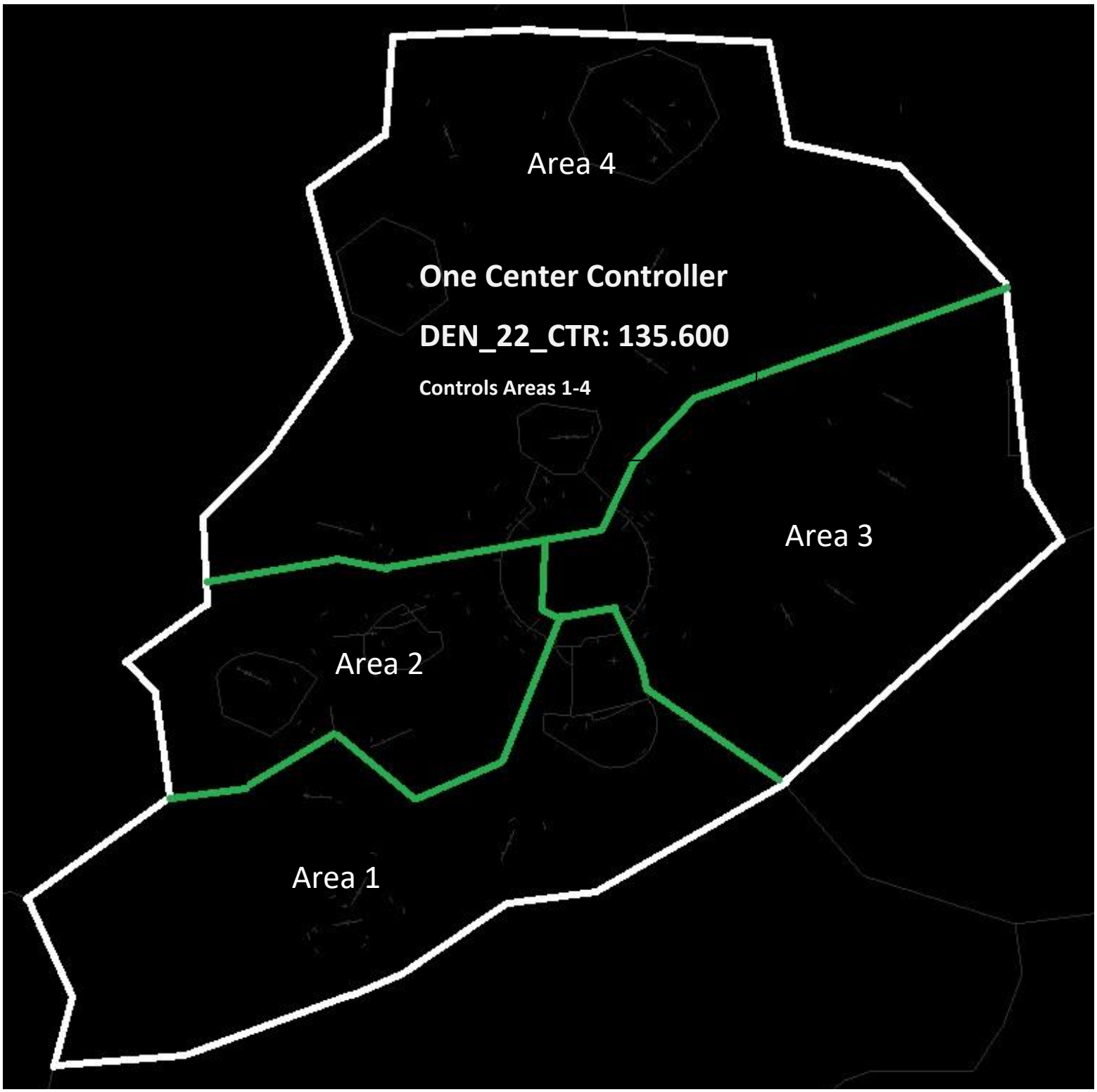
Chris Hadden

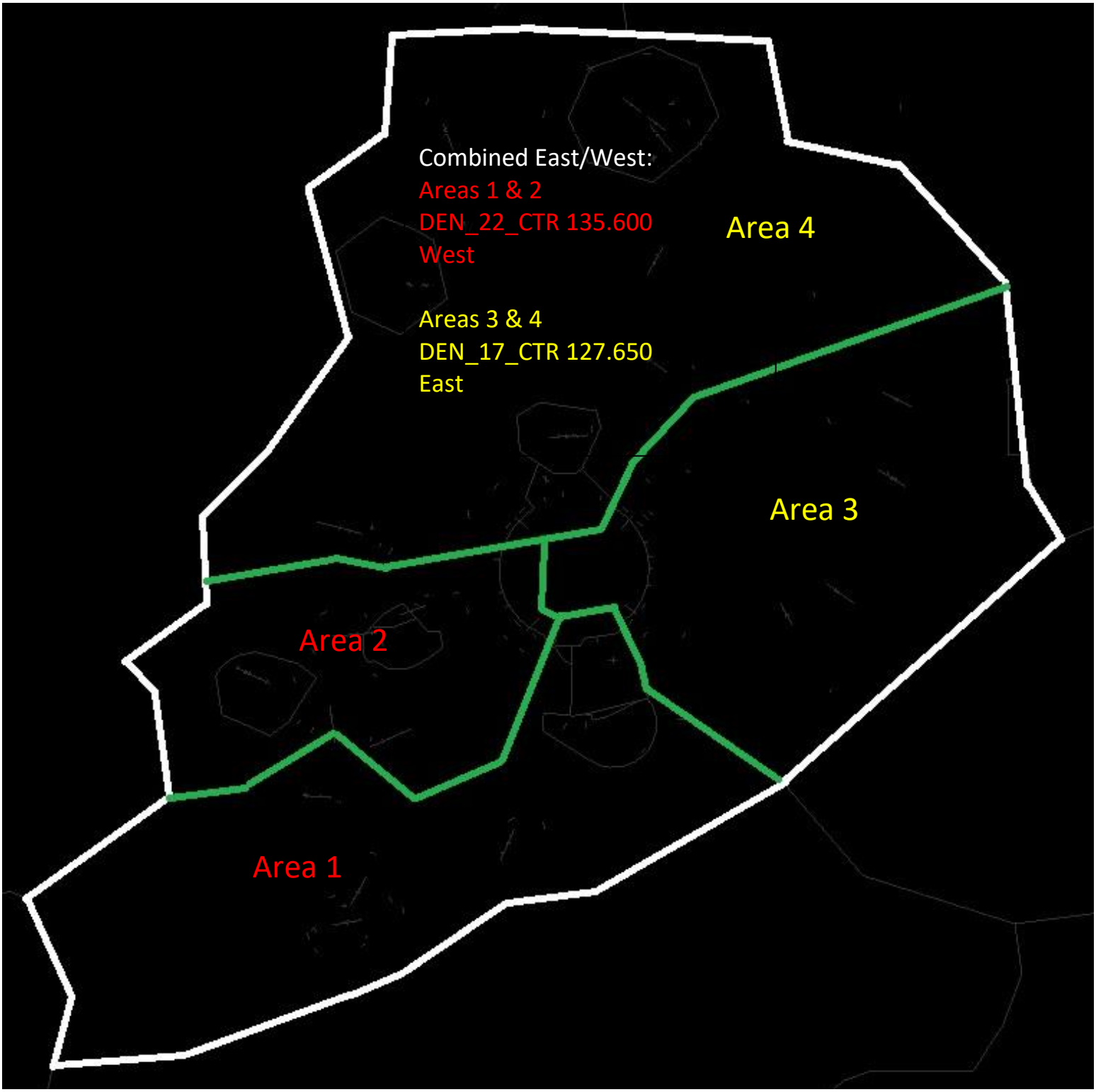
Christopher Hadden

Deputy Air Traffic Manager

Denver ARTCC

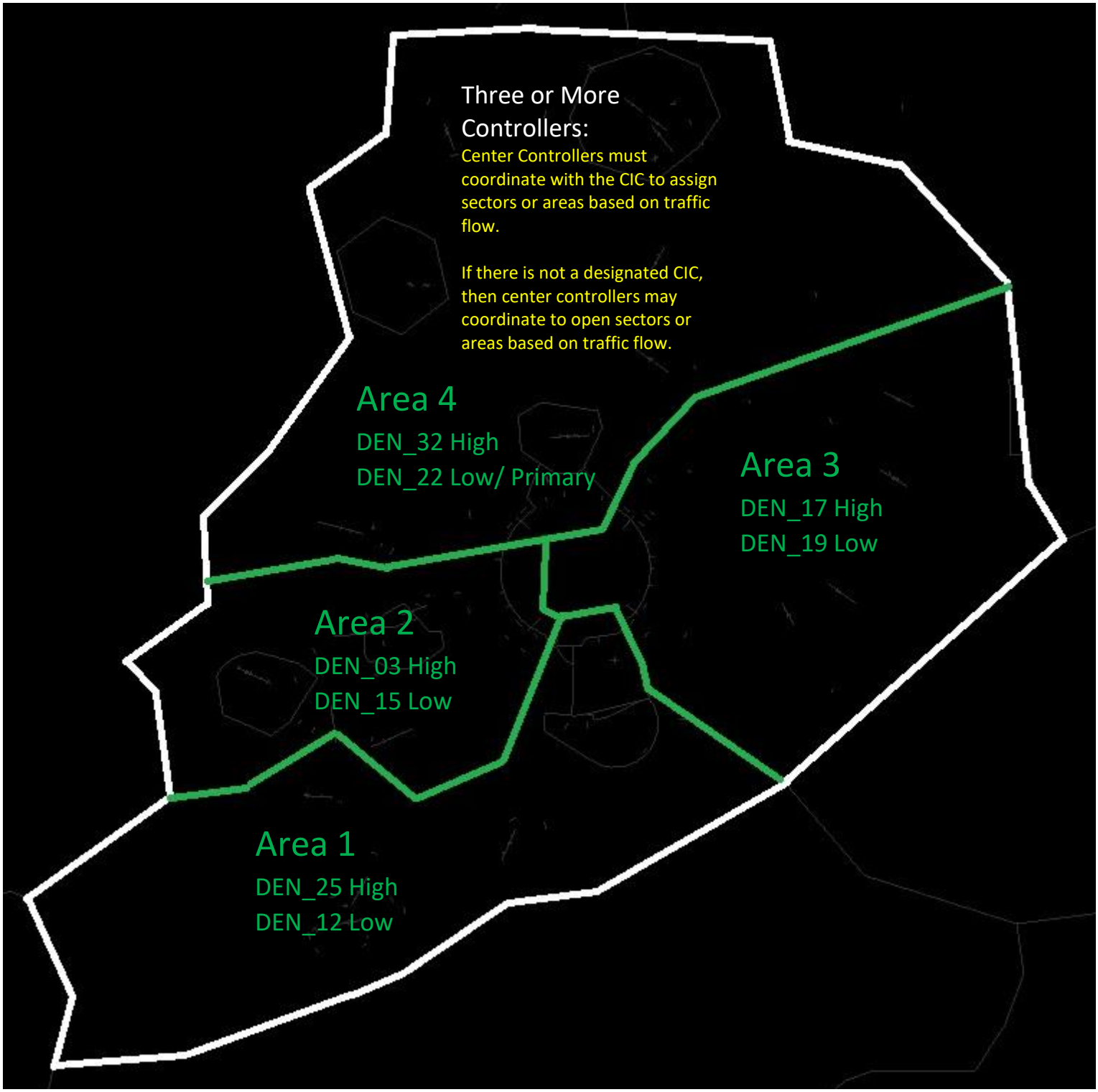
Appendix


Area 4
One Center Controller
DEN_22_CTR: 135.600
Controls Areas 1-4
Area 3
Area 2
Area 1


Combined East/West:
Areas 1 & 2
DEN_22_CTR 135.600
West
Areas 3 & 4
DEN_17_CTR 127.650
East
Area 4
Area 3
Area 2
Area 1


Combined
(North/South):
Areas 2 & 4
DEN_22_CTR 135.600
North
Areas 1 & 3
DEN_17_CTR 127.650
South
Area 4
Area 3
Area 2
Area 1


Combined:
Areas 1-4
HIGH
Above (Not Including) FL260
DEN_17_CTR 127.650
Area 4
Area 4
Areas 1-4
LOW
AoB FL260
DEN_22_CTR 135.600
Area 3
Area 3
Area 2
Area 2
Area 1
Area 1


Three or More Controllers:
Center Controllers must coordinate with the CIC to assign sectors or areas based on traffic flow.
If there is not a designated CIC, then center controllers may coordinate to open sectors or areas based on traffic flow.
Area 4
DEN_32 High
DEN_22 Low/ Primary
Area 3
DEN_17 High
DEN_19 Low
Area 2
DEN_03 High
DEN_15 Low
Area 1
DEN_25 High
DEN_12 Low