

WEATHER IMPACT PLAYBOOK

CENTER WEATHER SERVICE UNIT

Nashua, New Hampshire

(CWSU ZBW)



CWSU ZBW WIP

Last Updated: 18 November 2009

Initials: _____

Meteorologist-in-Charge: Scott Reynolds

Weather Impact Playbook – CWSU Nashua NH

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Weather Impact Playbook – CWSU Nashua NH

Boston Air Route Traffic Control Center (ARTCC ZBW)

FAA-ARTCC

35 Northeastern Boulevard

Nashua, NH 03062

Center Weather Service Unit (CWSU ZBW)

<http://www.erh.noaa.gov/zbw/>

12-Planet ... BOX_CWSU

Contact Information:

Operations: (603) 879-6698

Portable: (603) 879-6440

Administrative: (603) 879-6326

Facsimile: (603) 879-2407

Meteorologist-in-Charge (MIC): Scott Reynolds

MIC Home: [REDACTED]

CWSU Staff:

John Hofmann [REDACTED]

John Stansfield [REDACTED]

Weir Lundstedt [REDACTED]

ARTCC Management and Operations Contacts

Air Traffic Management

Air Traffic Manager (ATM): *acting* Jim Rodrigues (603) 879-6633

Assistant ATM: *acting* Robert Jones (603) 879-6636

Support Manager: Ed de Lacy (603) 879-6558

Management and Program Asst: Pat Clark (603) 879-6638

Human Resources Specialist: Sandy Fabiano (603) 879-6492

Support Managers

Airspace and Procedures: William Roth (603) 879-6858

Plans and Programs: Ralph Schwarz (603) 879-6996

Safety Assurance: Tim Creedon (603) 879-6784

Training: Fran Bujak (603) 879-6883

Traffic Management Officer (TMO): Archer Davis (603) 879-6644

Airways Facilities

District Office Manager: Peter Ladd (603) 879-6969

Admin. Coordinator: Lori Brooks (603) 879-6601

NAS Ops. Center Supervisor: Mike Wayne (603) 879-6815

Duty NAS Operations Manager (NOM): (603) 879-6729

Communications: Darren McCranie (603) 879-6627

Automation: Don Nevers (603) 879-6723

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Operations / Control Room

Watch Desk:	(603) 879-6655
Portable:	(603) 879-6658
Traffic Management Unit (TMU):	(603) 879-6666
Flight Data:	(603) 879-6859
Supervisor: Eileen Bull	(603) 879-6860
Security Guard Office:	(603) 879-6760

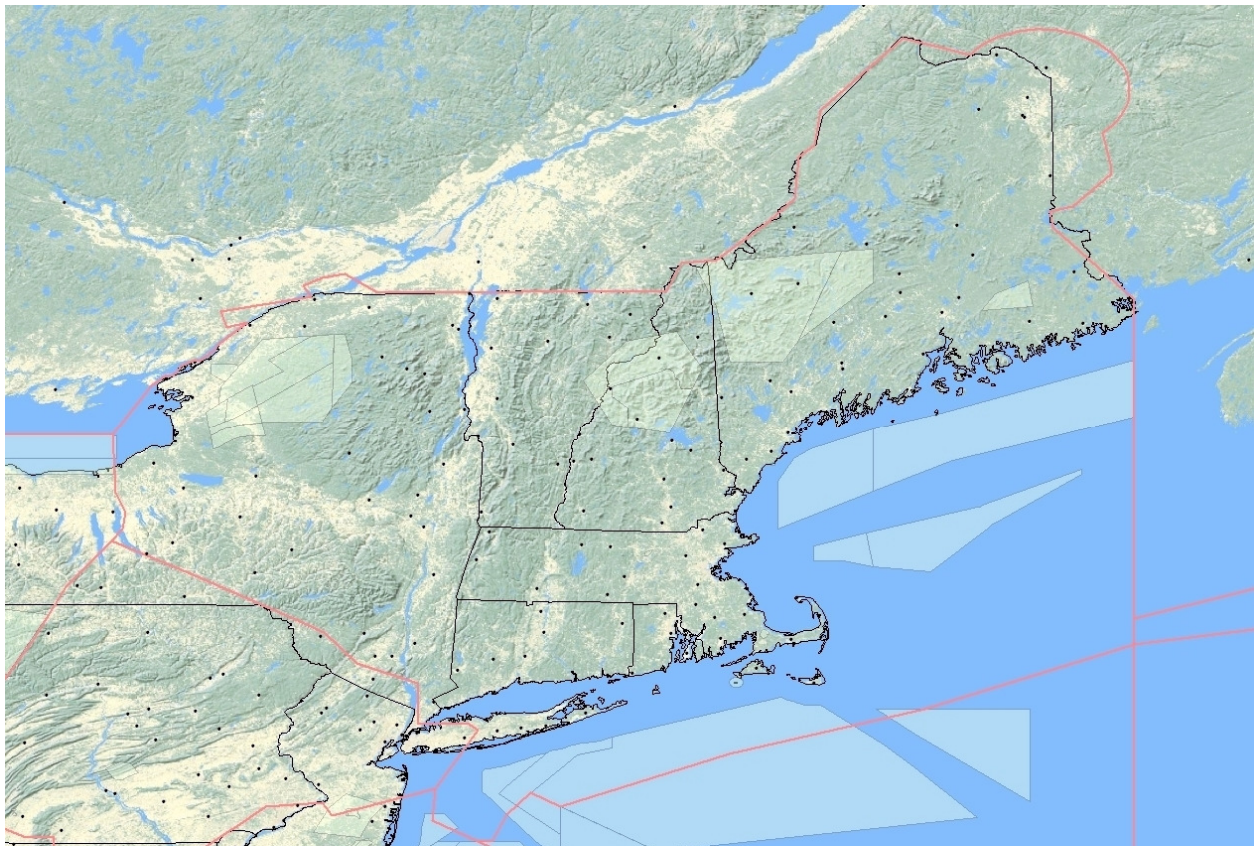
Air Traffic Control System Command Center (ATCSCC)

Herndon, VA

BOS Weather Desk	(703) 904-4455
NWS Liaison: Matt Lorentsen	(703) 925-3135

Other Support Contact Information

Harris Help Desk (WARP):	(800) 984-5594
ASOS Observation Monitoring Center (AOMC):	(800) 242-8194
FAA IT Assistance: NSC@faa.gov	or (866) 954-4002
MIT-Lincoln Labs (CIWS):	(800) 570-4851



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National Weather Service – Primary CWSU ZBW Support Facilities

Weather Forecast Office (WFO), Taunton MA (BOX)

NOAA/NWS

445 Miles Standish Boulevard

Taunton, MA 02780

Operations:

Primary backup office for WFO Upton NY (OKX)

Secondary backup office for WFO Gray ME

Primary support office for CWSU ZBW

<http://www.erh.noaa.gov/box/>

Internal Coordination: (508) 823-2087

External Coordination: (508) 823-2228

Administration/Coordination: (508) 823-1983

Facsimile: (508) 823-2321

Administration:

(508) 823-1900

Meteorologist in Charge (MIC): Robert Thompson x222

Science Operations Officer (SOO): Joseph Dellicarpini x224

Warning Coordination Met. (WCM): Glenn Field x223

Administrative Services Asst. (ASA): Donna Dumas x221

Electronics Systems Analyst (ESA): Mike Esip x228

Information Tech. Officer (ITO): Jim Notchey x235

Aviation Program

Aviation Focal Point (AFP): Bill Babcock

Assistant AFP: Mike Ekster

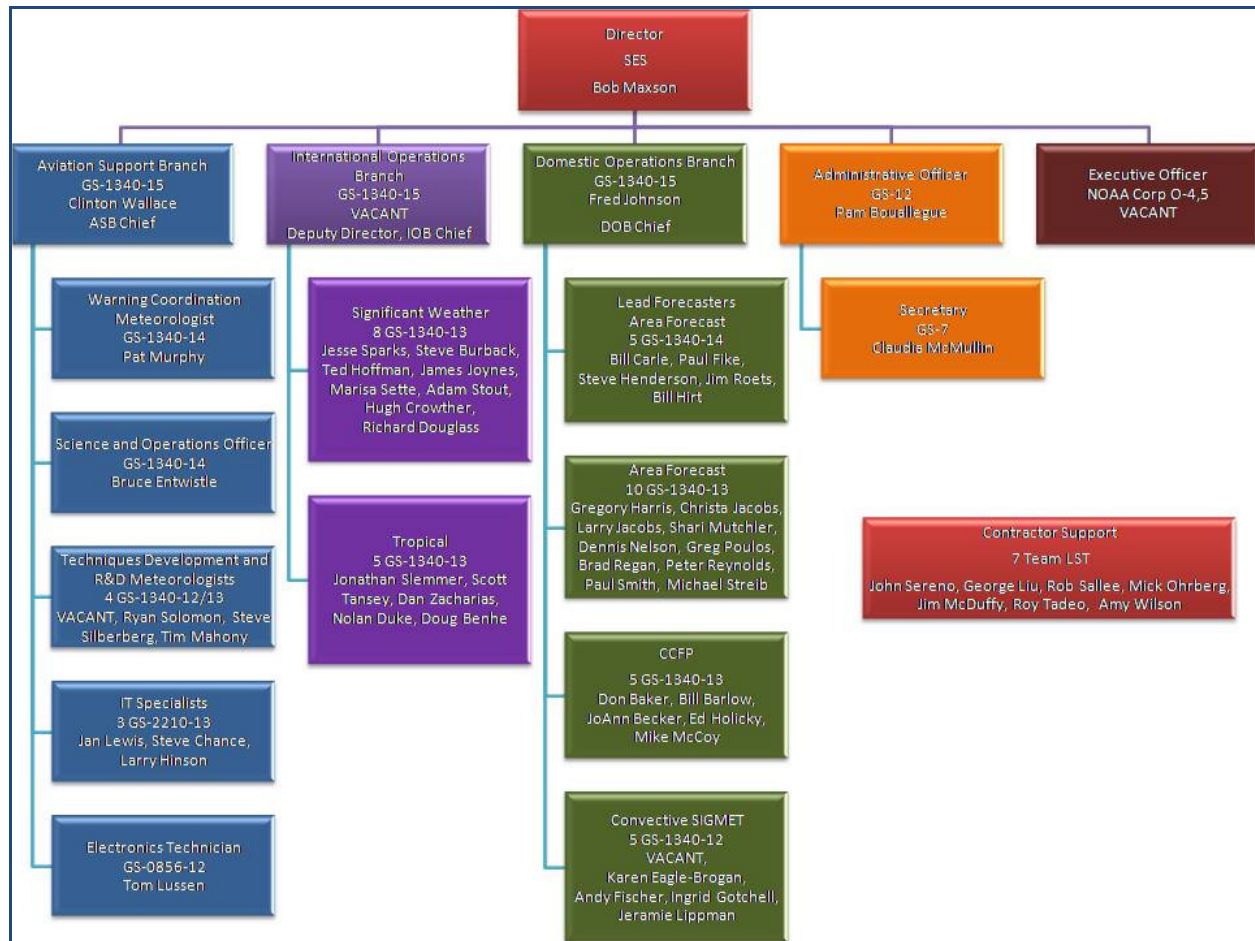
TAF Identifiers: **BOS, BDL, MHT, PVD, ACK, BAF, HYA, ORH, FMH**

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NOAA/NWS Aviation Weather Center

7220 NW 101st Terrace

Kansas City, MO 64153-2371



Administration: AWC Director: Robert Maxon

Administration: (816) 584-7200

Facsimile: (816) 880-0650

Chief, Aviation Support Branch: Clinton Wallace (816) 584-7248

Warning Coordination Met.: Pat Murphy (816) 584-7239

Science and Operations Officer: Bruce Entwistle (816) 584-7327

Domestic Operations Branch

Branch Chief: Fred Johnson (816) 584-7204

Collaborative Convective Forecast (CCFP) Desk: (816) 584-7221

FA East Desk: (816) 584-7223

Convective SIGMET Desk: (816) 584-7226

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NOAA/NWS Eastern Region Headquarters

Airport Corporate Center
630 Johnson Avenue, Suite 202
Bohemia, NY 11716-2618

Director's Office

Regional Director (<i>acting</i>):	Mickey Brown	(631) 244-0100
Deputy Regional Director:	Mickey Brown	(631) 244-0102
Service Improvement Manager:	Dave Manning	(631) 244-0107
Administrative Assistant:	Margaret Mahoney	(631) 244-0101
ERH Facsimile:		(631) 244-0167

Meteorological Services Division (MSD)

MSD Chief:	John Guiney	(631) 244-0121
MSD Deputy Chief:	John Koch	(631) 244-0104
Regional Aviation Met. (RAM):	Fred McMullen	(631) 244-0125

Scientific Services Division (SSD)

SSD Chief:	Ken Johnson	(631) 244-0136
SSD Deputy Chief:	Jeff Waldstreicher	(631) 244-0131
AWIPS/Apps. Development Met.:	Joshua Watson	(631) 244-0130

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NOAA/NWS Headquarters - Aviation Weather Services Branch

*1325 East West Highway
Silver Spring, MD 20910*

Branch Chief:

Cyndie Abelman

(301) 713-1726 ext. 140

cyndie.abelman@noaa.gov

Other CWSU/Aviation Program Contacts:

National CWSU Program Manager:

Dorothy Haldeman

(301) 713-1726 ext. 130

dorothy.haldeman@noaa.gov

Mike Graf

(301) 713-1726 ext. 117

michael.graf@noaa.gov

Beth McNulty

(301) 713-1726 ext. 116

beth.mcnulty@noaa.gov

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Supporting WFOs writing TAFs within CWSU ZBW airspace

WFO Upton NY (OKX)

NOAA/NWS

175 Brookhaven Avenue, Building NWS-1

Upton, NY 11973

Operations:

Primary backup office for WFO Taunton MA

Secondary backup office for WFO Mt. Holly NJ

Primary support office for CWSU ZNY

<http://www.erh.noaa.gov/okx/>

Coordination: (631) 924-0383

Coordination/Aviation: (631) 924-0562

Facsimile: (631) 345-2869

Administration:

(631) 924-0037

Meteorologist in Charge (MIC): Ross Dickman x222

Science Operations Officer (SOO): Jeff Tongue x224

Warning Coordination Met. (WCM): Gary Conte x223

Aviation Program

AFPs: Brandon Smith, Mike Silva

TAF Identifiers:

ZBW Airspace: BDR, GON, HPN, SWF

ZNY Airspace: EWR, ISP, JFK, LGA, TEB

Note: SWF TAF – Amendments not scheduled (due to occasional lack of timely observation transmissions)

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WFO Gray ME (GYX)

NOAA/NWS

175 Brookhaven Avenue, Building NWS-1

Upton, NY 11973

Operations:

Primary backup office for WFO Caribou ME

Secondary backup office for WFO Taunton MA

<http://www.erh.noaa.gov/gyx/>

Coordination: (207) 688-4170

Facsimile: (207) 688-3230

Administration:

(207) 688-3221

Meteorologist in Charge (MIC): Al Wheeler x222

Science Operations Officer (SOO): Dan St. Jean x224

Warning Coordination Met. (WCM): John Jensenius x223

Aviation Program

AFP: Mike Cempa

TAF Identifiers: **AUG, CON, LEB, PWM, PSM**

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WFO Albany NY (ALY)

NOAA/NWS

251 Fuller Road, B300

Albany, NY 12203

Operations:

Primary backup office for WFO Burlington VT

Secondary backup office for WFO Binghamton NY

Provider of wsWRF output for CWSUs ZBW and ZOB

<http://www.erh.noaa.gov/aly/>

Coordination: (518) 435-9575

Facsimile: (518) 435-9587

Administration:

(518) 435-9566 / 9569

Meteorologist in Charge (MIC): Gene Auciello x222

Science Operations Officer (SOO): Warren Snyder x224

Warning Coordination Met. (WCM): Ray O'Keefe x223

Aviation Program

AFP: Hugh Johnson

TAF Identifiers: **ALB, GFL, POU**

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WFO Binghamton NY (BGM)

NOAA/NWS
Binghamton Regional Airport
32 Dawes Drive
Johnson City, NY 13790

Operations:

Primary backup office for WFO State College PA
Secondary backup office for WFO Albany NY
<http://www.erh.noaa.gov/bgm/>

Coordination: (607) 729-7629
Facsimile: (607) 798-6624

Administration:

Meteorologist in Charge (MIC):	(607) 770-9531	
Science Operations Officer (SOO):	Barbara Watson	x222
Warning Coordination Met. (WCM):	Mike Evans	x224
	Dave Nicosia	x223

Aviation Program

AFP: Bob Mundschenk

TAF Identifiers:

ZBW Airspace:	SYR, BGM, UCA
ZOB airspace:	ELM, ITH
ZNY airspace:	AVP

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WFO Buffalo NY (BUF)

NOAA/NWS

587 Aero Drive

Cheektowaga, NY 14225-1405

Operations:

Primary backup office for WFO Cleveland OH

Secondary backup office for WFO State College PA

<http://www.erh.noaa.gov/buf/>

Coordination:

(716) 565-0013

Facsimile:

(716) 565-9002

Administration:

(716) 565-0103

Meteorologist in Charge (MIC):

Tom Niziol

x222

Science Operations Officer (SOO):

Dave Zaff

x224

Warning Coordination Met. (WCM):

Judy Levan

x223

Aviation Program

AFP: Dave Sage

TAF Identifiers:

ZBW Airspace: ART

ZOB airspace: BUF, IAG, JHW, ROC

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WFO Burlington VT (BTV)

NOAA/NWS
Burlington International Airport
1200 Airport Drive
South Burlington, VT 05403

Operations:

Primary backup office for WFO Albany NY
Secondary backup office for WFO Caribou ME
<http://www.erh.noaa.gov/btv/>

Coordination: (802) 658-0150
Facsimile: (802) 660-0705

Administration:

Meteorologist in Charge (MIC):	(802) 862-8711	
Science Operations Officer (SOO):	Andy Nash	x222
Warning Coordination Met. (WCM):	Paul Sisson	x224
	Scott Whittier	x223

Aviation Program

AFPs: Bill Hanley, Conor Lahiff

TAF Identifiers: **BTV, MPV, MSS, SLK**

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WFO Caribou ME (CAR)

NOAA/NWS
810 Main Street
Caribou, ME 04736

Operations:

Primary backup office for WFO Gray ME
Secondary backup office for WFO Burlington VT
<http://www.erh.noaa.gov/car/>

Coordination: (207) 492-0166
Facsimile: (207) 492-0190

Administration:

Meteorologist in Charge (MIC):	(207) 492-0180 Hendricus Lulofs	x222
Science Operations Officer (SOO):	Todd Lericos	x224
Warning Coordination Met. (WCM):	Michael Cantin	x223

Aviation Program

AFPs: Ken Wallingford

TAF Identifiers: **BGR, CAR, HUL, PQI**

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CWSUs Adjacent to CWSU ZBW Airspace

CWSU Oberlin OH (ZOB)

*Cleveland ARTCC
326 East Lorain Street
Oberlin, OH 44074*

<http://www.erh.noaa.gov/zob/>

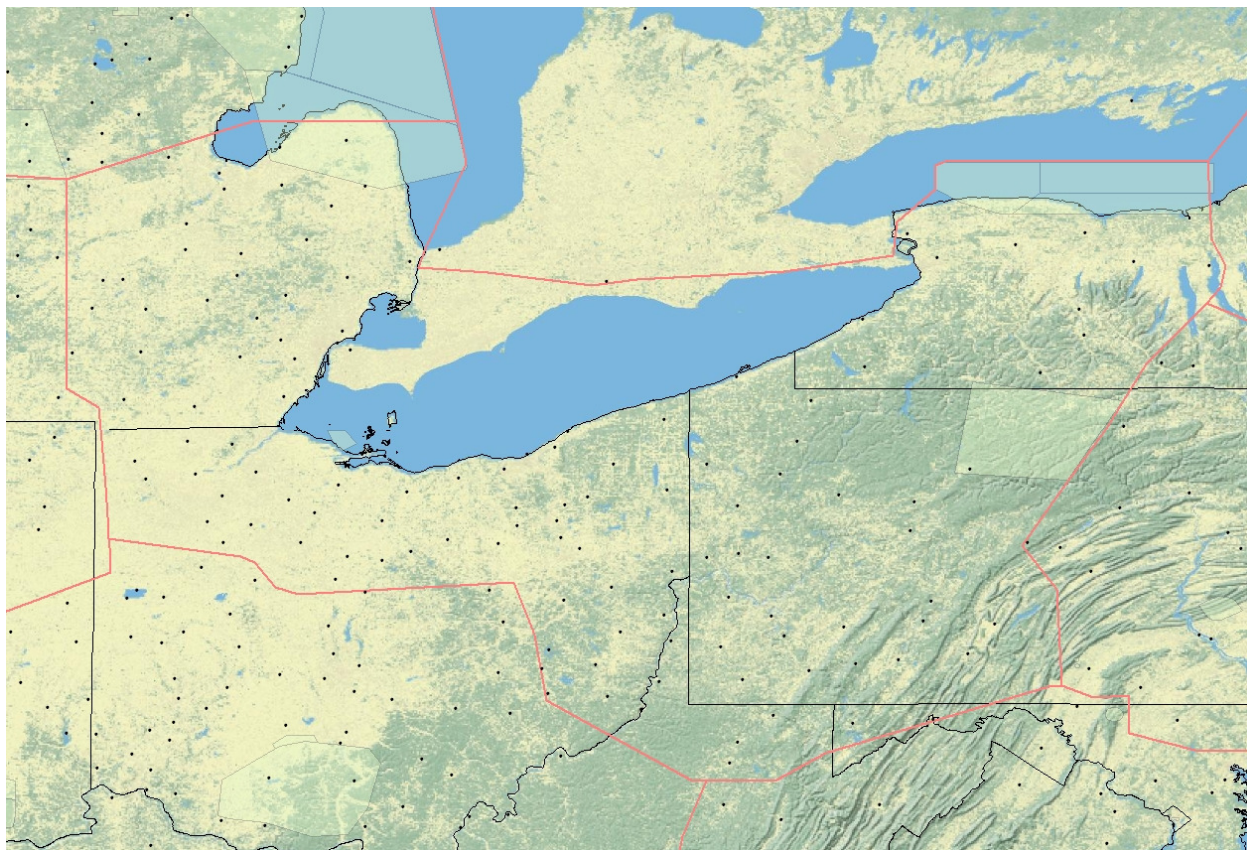
12-Planet ... CLE_CWSU

Primary backup for CWSU ZBW

Meteorologist-in-Charge (MIC): Mark McKinley

Contact Information:

Operations:	(440) 774-0508 / 0509
Administrative:	(440) 774-0364
Facsimile:	(440) 774-0465
ARTCC Watch Desk:	(440) 774-0426
ARTCC TMU Desk:	(440) 774-0411
ARTCC TMU Fax:	(440) 774-0629



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CWSU Ronkonkoma NY (ZNY)

NYARTCC

4205 Johnson Avenue

Ronkonkoma, NY 11779

<http://www.erh.noaa.gov/zny/>

12-Planet ... OKX_CWSU

Primary backup for CWSU ZDC

Meteorologist-in-Charge (MIC): Bill Scura

Contact Information

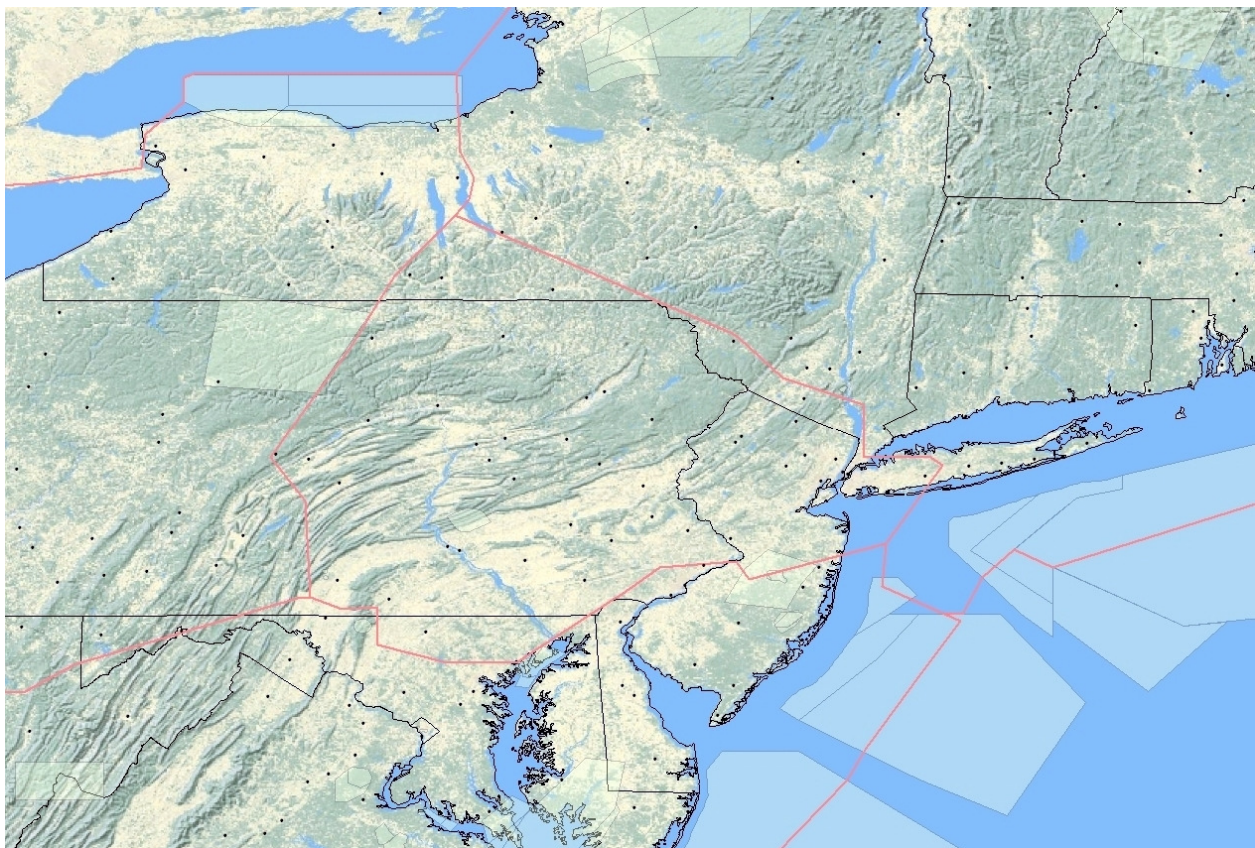
Operations: (631) 468-1082

Administrative: (631) 468-1376

Facsimile: (631) 468-1378

ARTCC Watch Desk: (631) 468-5959

ARTCC TMU Desk: (631) 468-1080



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CWSU Leesburg VA (ZDC)

*Washington ARTCC
825 East Market Street
Leesburg, VA 20176-4496*

<http://www.erh.noaa.gov/zdc/>

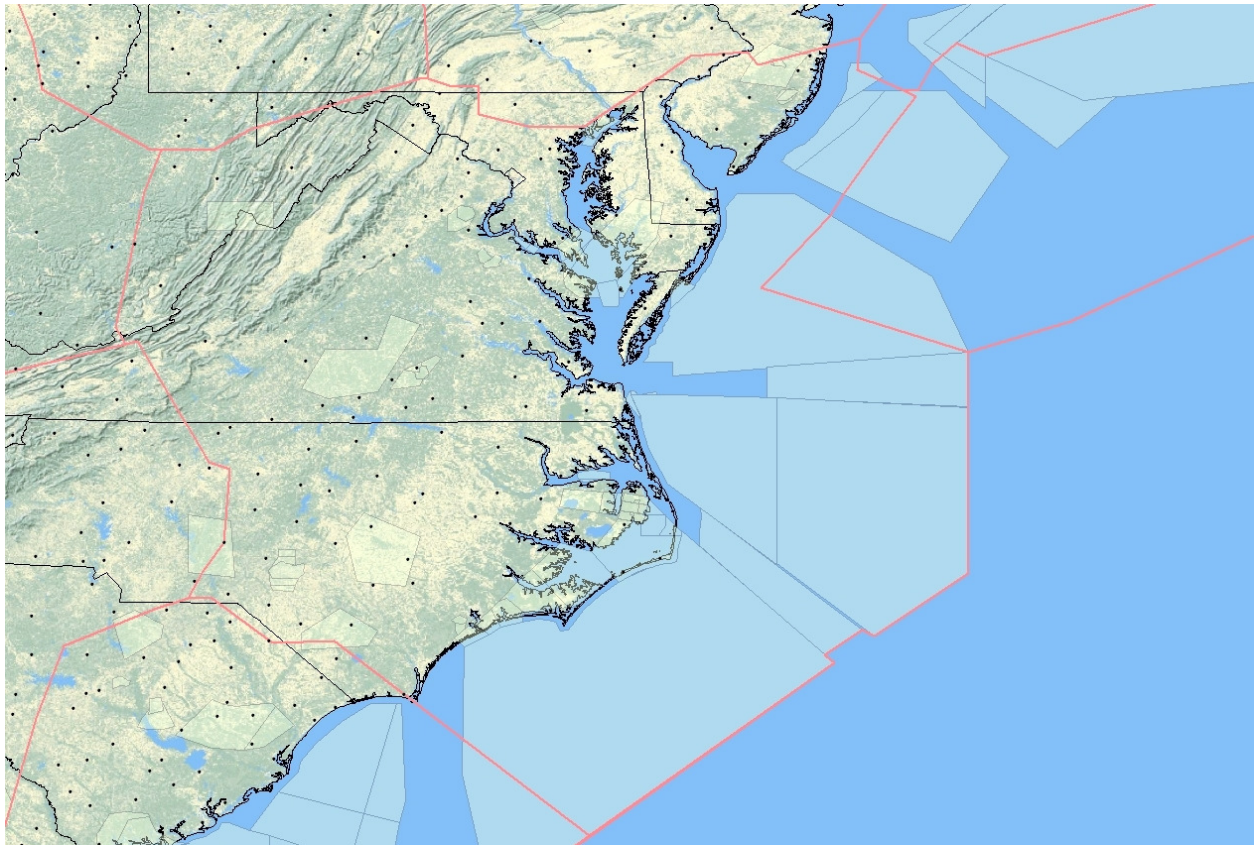
12-Planet ... LWX_CWSU

Primary backup for CWSU ZNY

Meteorologist-in-Charge (MIC): Rick Winther

Contact Information

Operations:	(703) 771-3480 / 3483
Administrative:	(703) 771-3449
Facsimile:	(703) 771-3444
ARTCC TMU Desk:	(703) 771-3504



Weather Impact Playbook – CWSU Nashua NH

Boston Center (ZBW) ARTCC ZBW Facility Structure

TMU Supervisory Traffic Management Controllers (STMCs):

Rusty Baird	Ed “Chip” Pollard
Jay Conroy	Jack White
Paul Keriazes	

TMU Positions:

Supervisory Traffic Management Controller (STMC)

Oversees all TMU operations and interfaces with ZBW Area Supervisors, ATCSCC, other ARTCCs, ZBW facilities

Weather Coordinator *(task typically performed by STMC)*

In charge of maintaining weather awareness by frequently coordinating with CWSU meteorologist on conditions that may impact the flow of air traffic within ZBW airspace. Also assures dissemination of PIREPS.

Weather Impacts - Thunderstorms, turbulence, icing, IFR/LIFR

Arrival Flow Management (AFM) *(Also known as “Metering Position”)*

Monitor and space flow of inbound traffic into BOS, NY TRACON airspace

Weather Impacts - Thunderstorms, turbulence, winds, IFR/LIFR, icing

ZBW Metering Positions:

BOS Metering – Monitors flow into Boston Logan Airport (BOS)

Staffed as conditions warrant

NY Metro Metering – Monitors flow of inbound traffic from ZBW into N90

airspace. EWR/JFK/LGA/PHL Metering typically staffed between 1000-2200 local (Monday-Friday)

En Route Flow Management (EFM)

Also known as DSP... Departure Spacing Position

Departure spacing for flow control on routes within ZBW.

Weather Impacts - Thunderstorms, turbulence, icing

Severe Weather Management (SWM)

In charge of coordinating reroutes due in large part to convective activity within and near ZBW airspace.

Weather Impacts - Thunderstorms, turbulence, icing

Mission Coordinator

Coordinates military activity within ZBW airspace

Weather Impacts - Thunderstorms, turbulence, icing

Weather Impact Playbook – CWSU Nashua NH

Area A

Operations Manager: Ellen McDonnell
Supervisor Desk Phone: (603) 879-6656

General Area:

Most of Northern, Central and Eastern NY

En Route Weather Impacts

Thunderstorms/turbulence/icing/fog at local airports

Sectors

Ultra High - NONE

High

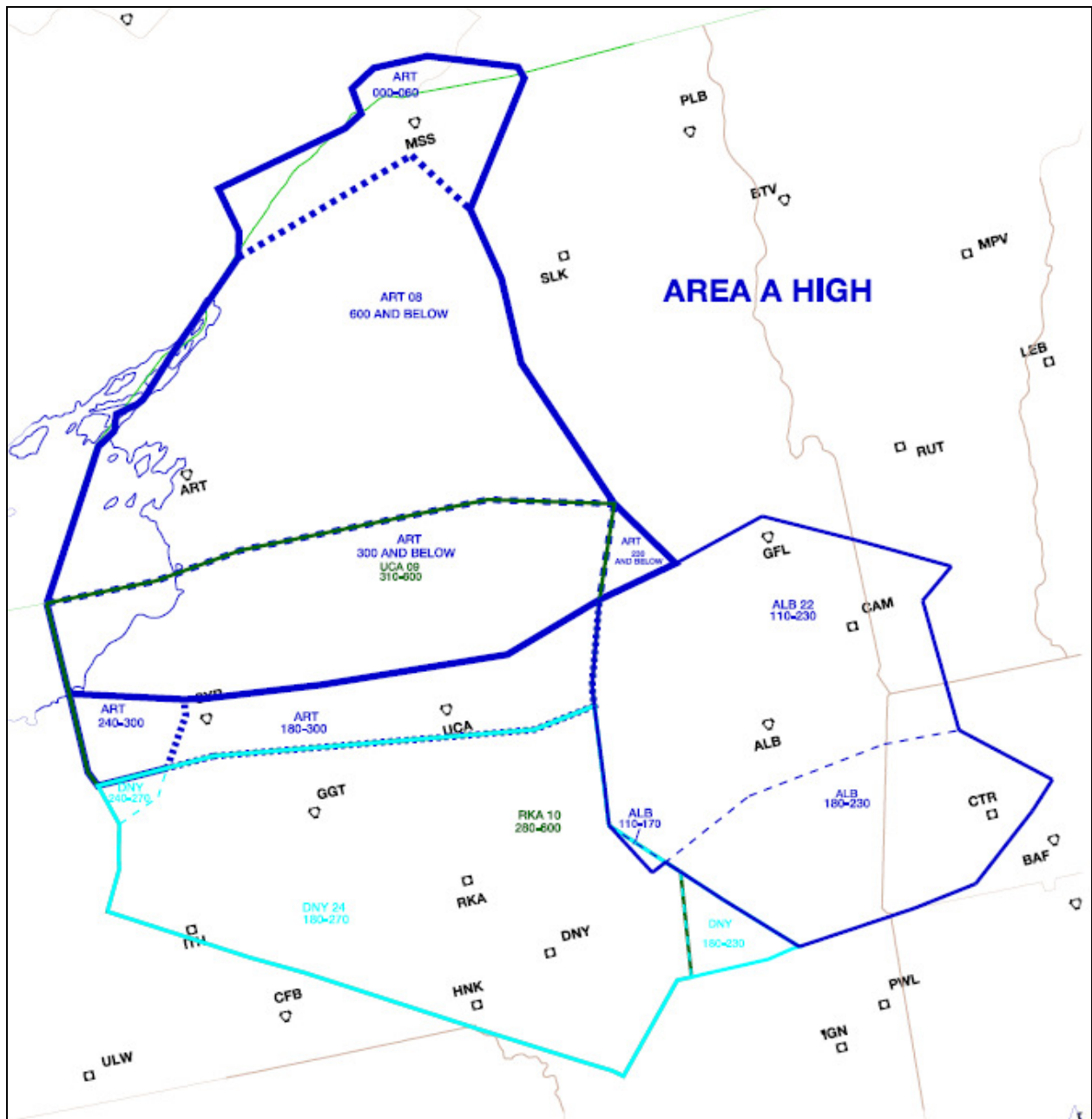
- #08 Watertown (Sfc-600)
- #09 Utica (FL280-600)
- #10 Rockdale (FL280-600)
- #24 Delancey (FL180-270)

Low

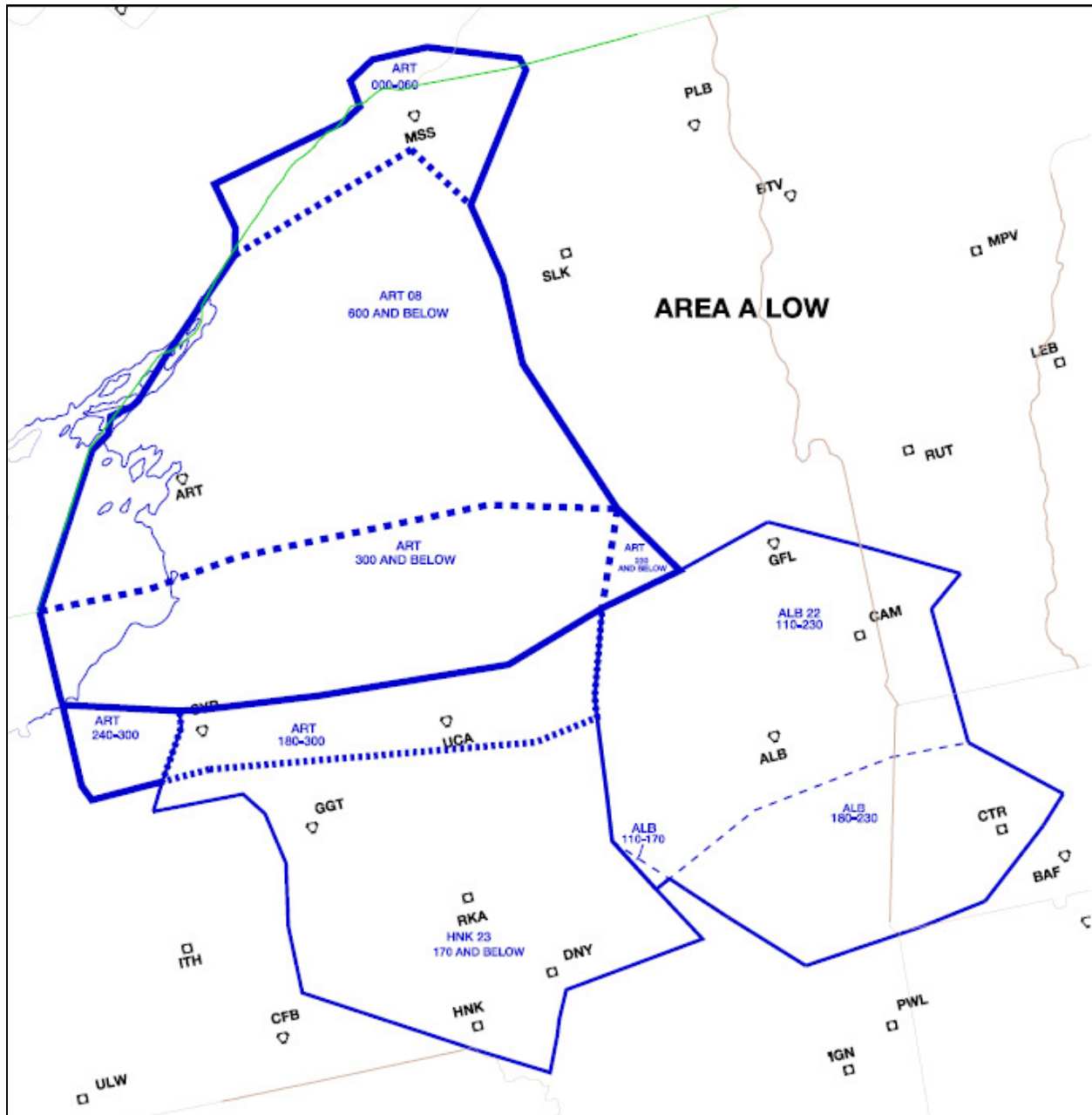
- #22 Albany (110-FL230)
- #23 Hancock (Sfc-170)

Ultra Low – NONE

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Weather Impact Playbook – CWSU Nashua NH

Area B

Operations Manager: Andy Hale
Supervisor Desk Phone: (603) 879-6665

General Area:

Northeast NY, most of VT, NH, Northern MA

En Route Weather Impacts

Thunderstorms/turbulence/icing/fog at local airports

Sectors

Ultra High - NONE

High

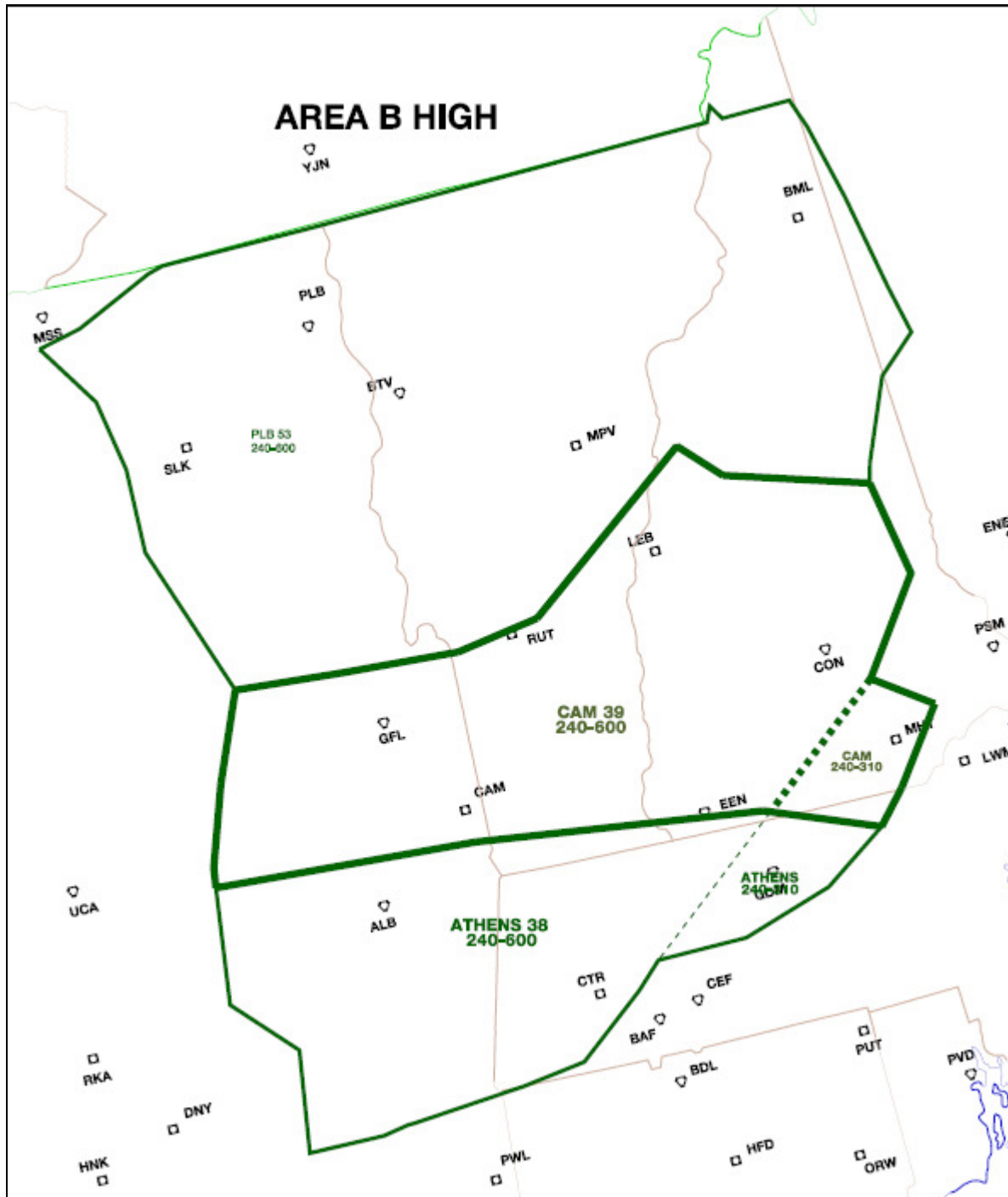
#38 Athens (FL240-600)
#39 Cambridge (FL240-600)
#53 Plattsburgh (FL240-600)

Low

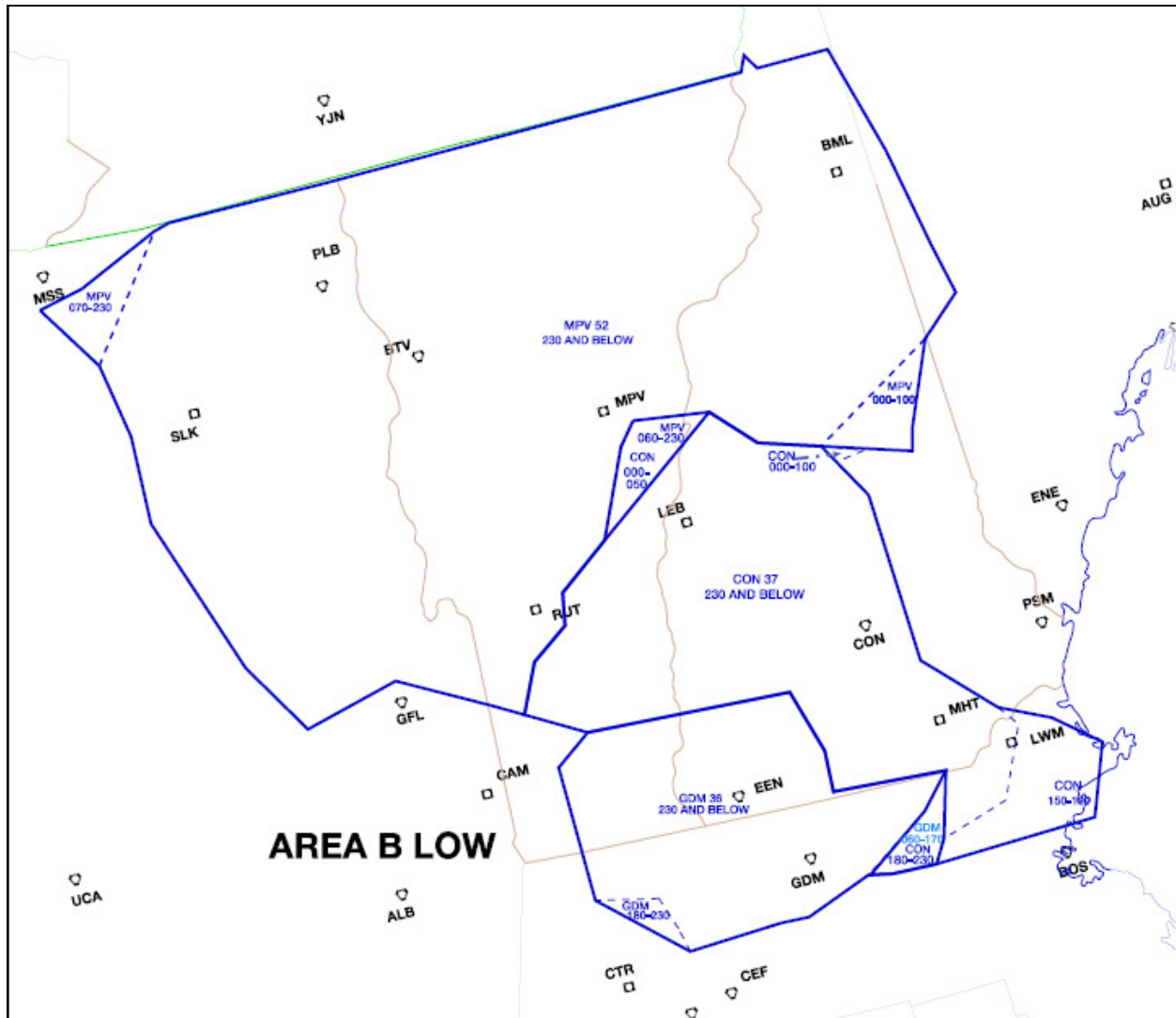
#36 Gardner (Sfc-FL230)
#37 Concord (Sfc-FL230)
#52 Montpelier (Sfc-FL230)

Ultra Low - NONE

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Area C

Operations Manager – Dan Alexander
Supervisor Desk Phone: (603) 879-6668

General Area:

Parts of MA, eastern CT, RI, eastern Long Island and adjacent coastal waters
... area covers the BOS-PVD corridor

En Route Weather Impacts

Thunderstorms/turbulence/icing/fog at local airports

Sectors

Ultra High

#48 Fenway (FL240-above)
#49 Yankee (FL330-Above)

High

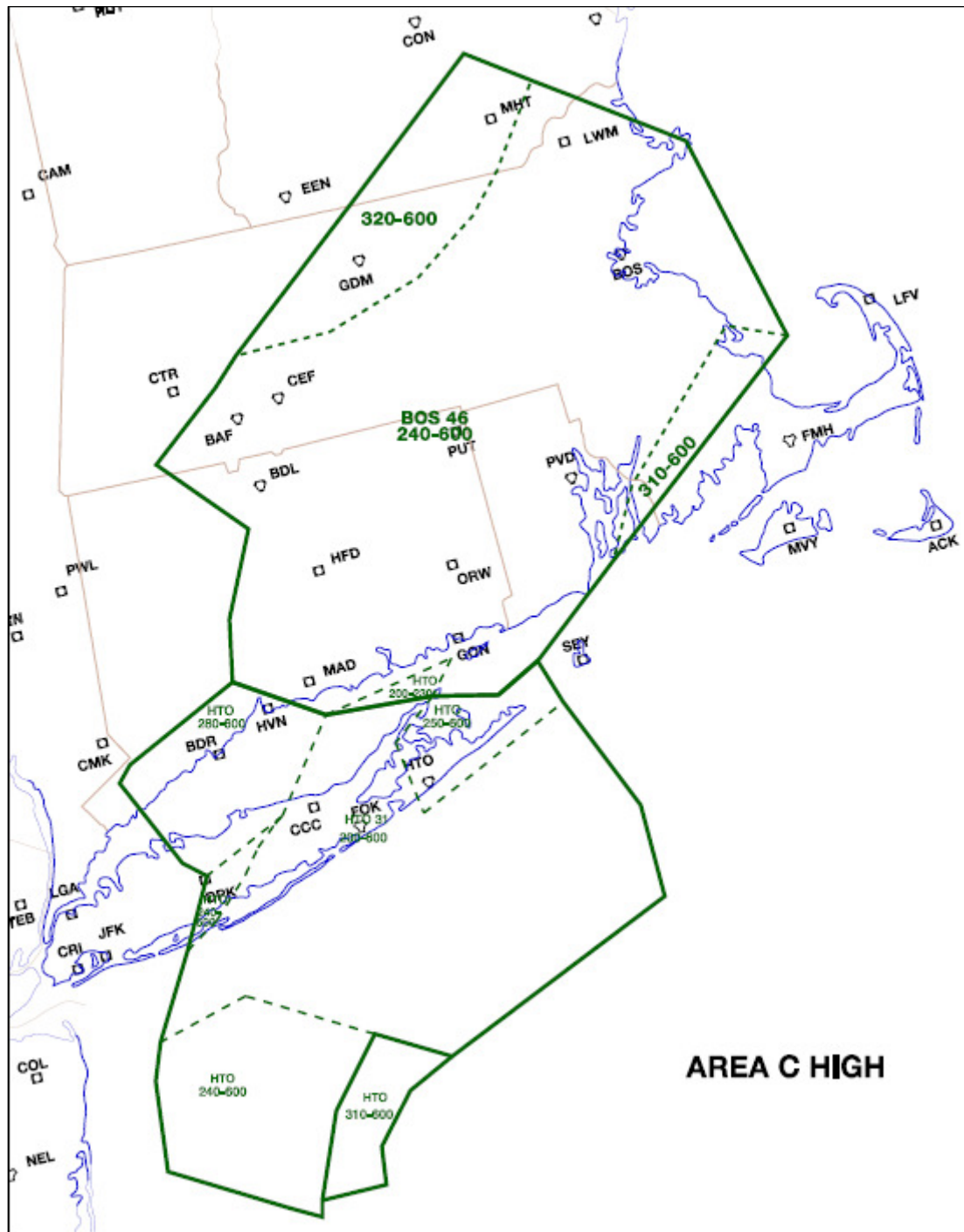
#31 Hampton (FL200-600)
#46 Boston (FL240-600)

Low

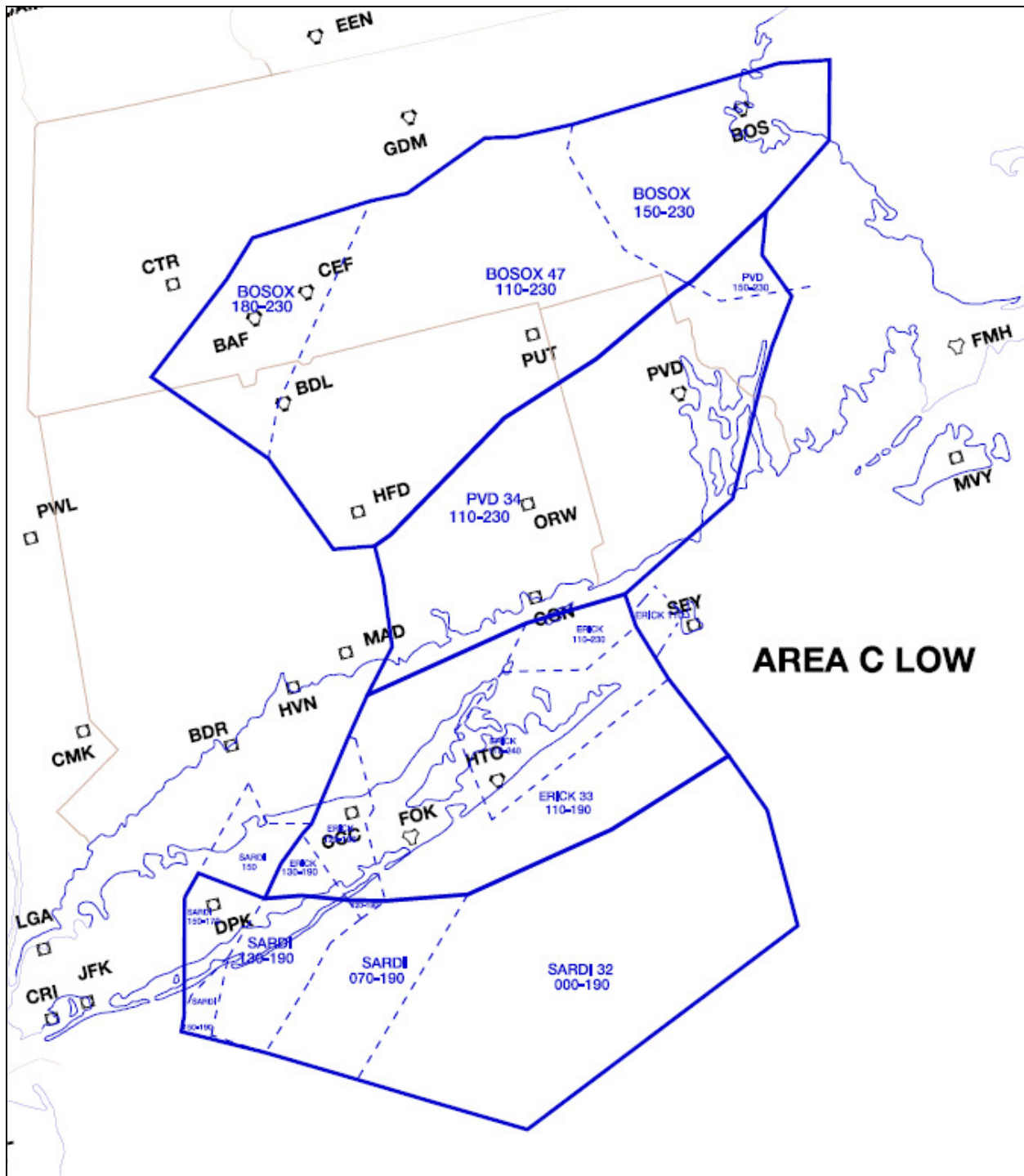
#32 Sardi (Sfc-FL190)
#33 Erick (110-FL240)
#34 Providence (110-FL230)
#47 Bosox (110-FL230)

Ultra Low - NONE

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Area D

Operations Manager: Gary Lavimoniere

Supervisor Desk Phone: (603) 879-6669

General Area:

ME, southeastern NH, southeastern MA, Cape Cod and the Islands, and the adjacent coastal waters

En Route Weather Impacts

Thunderstorms/turbulence/icing/fog at local airports

Sectors

Ultra High - NONE

High

#01 Millinocket (FL240-600)

#02 Augusta (FL240-600)

#17 Nantucket (Sfc-FL600)

#18 Cape (Sfc-FL600)

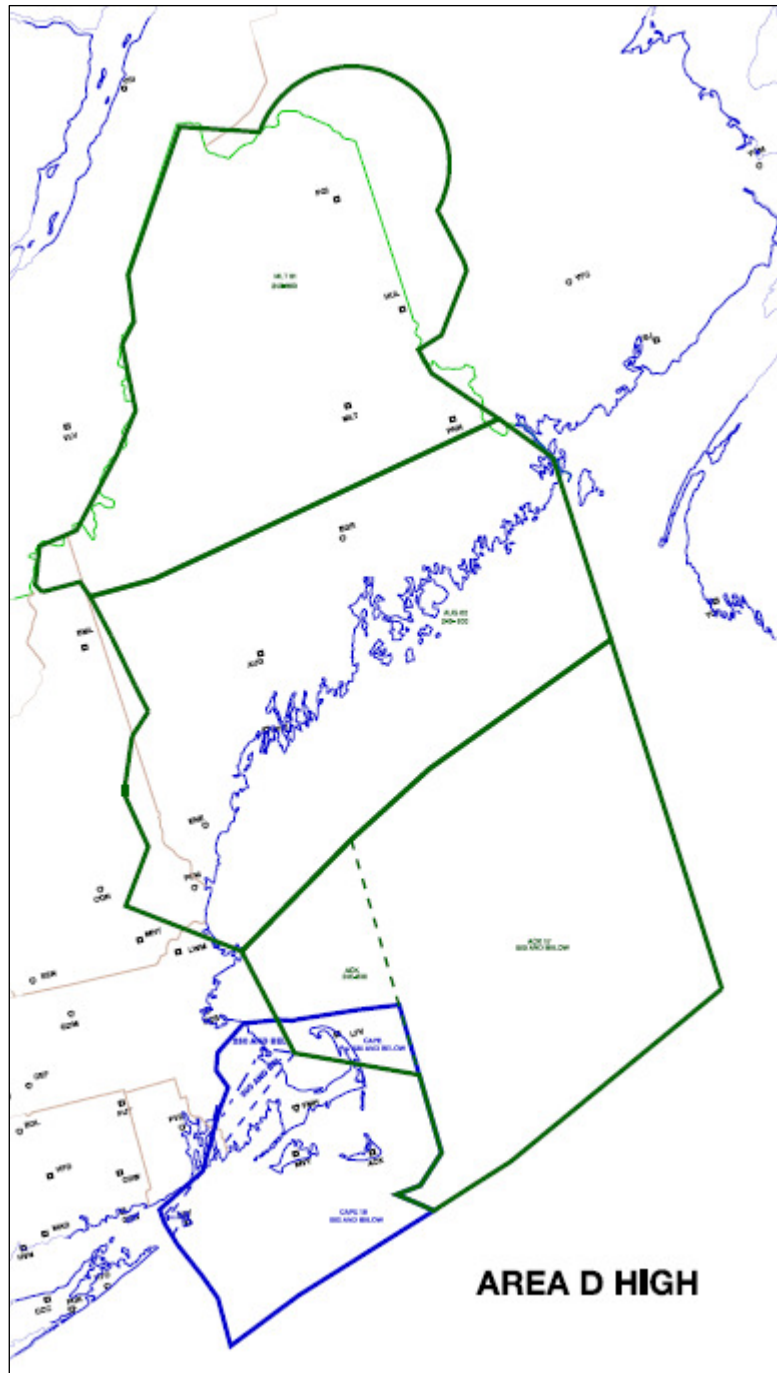
Low

#15 Surry (Sfc-FL230)

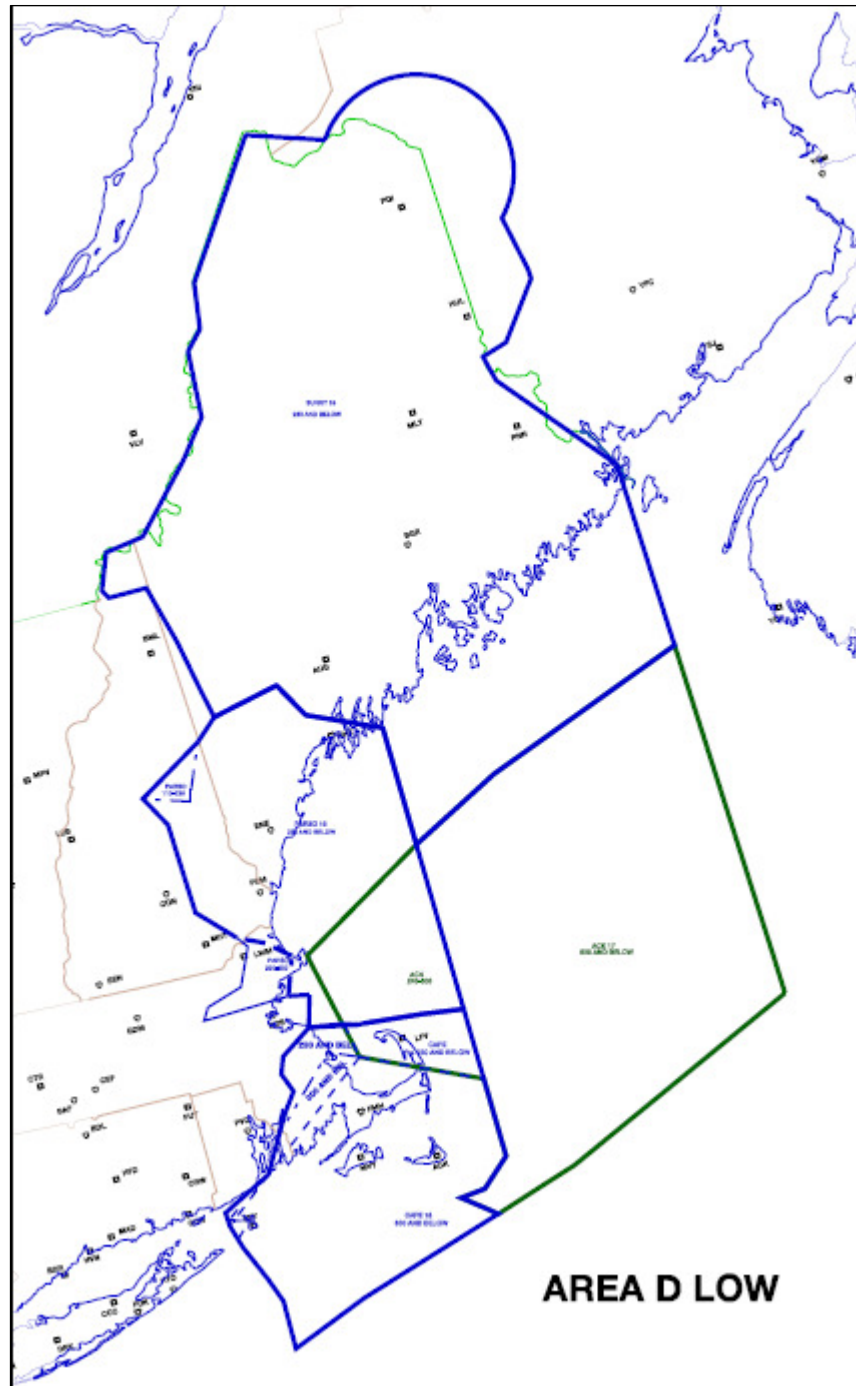
#16 Parso (Sfc-FL230),

Ultra Low – NONE

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Area E

Operations Manager: Ed Green
Supervisor Desk Phone: (603) 879-6722

General Area:

southeastern NY, southwestern MA, western CT, central Long Island

En Route Weather Impacts

Thunderstorms/turbulence/icing/fog at local airports

Sectors

Ultra High - NONE

High

#19 Danbury (110-FL270)

#20 Kingston (180-FL600)

Low

#05 Stewart (060-FL190)

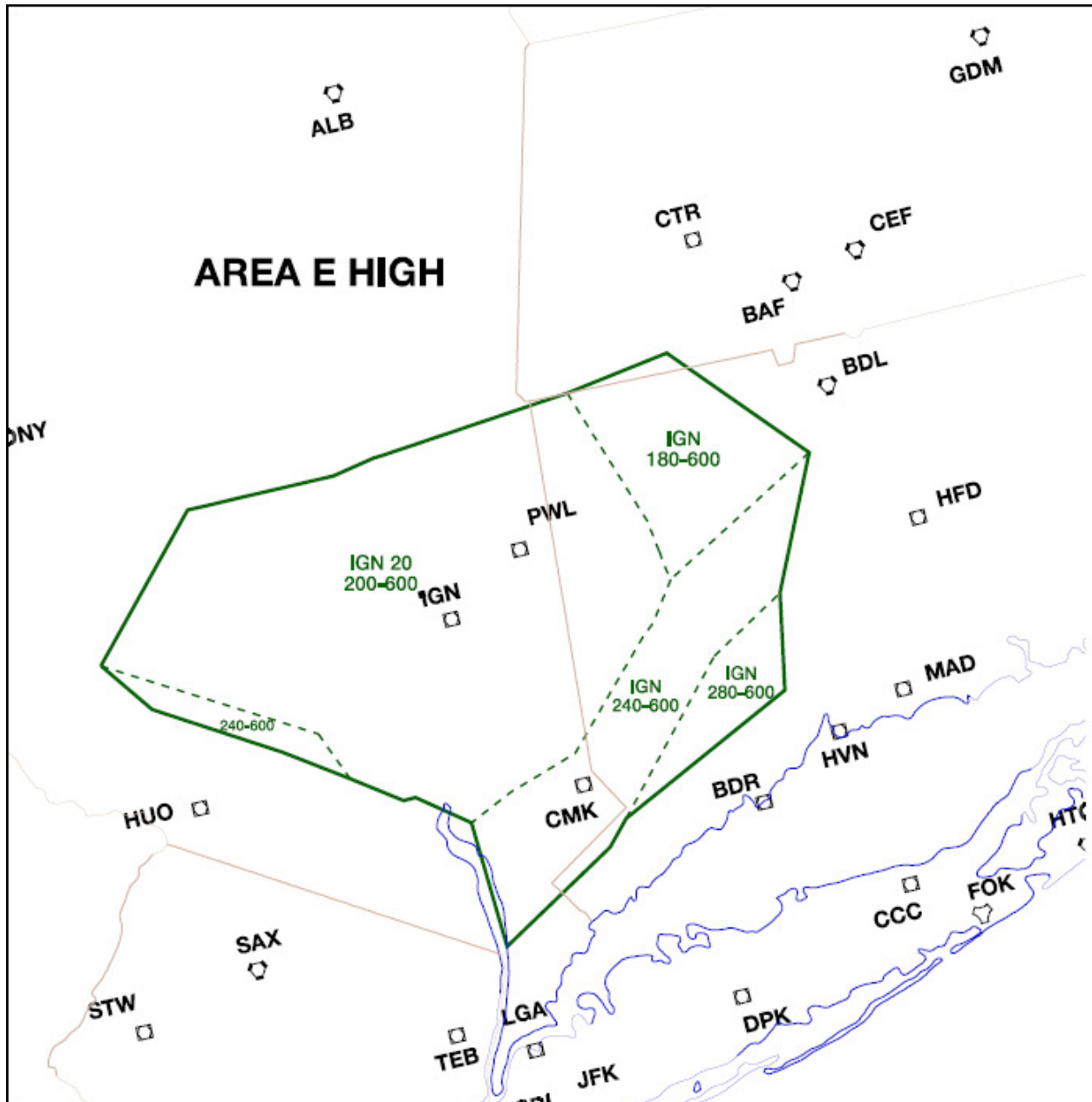
#06 Pawling (060-FL190)

#07 Chester (110-170)

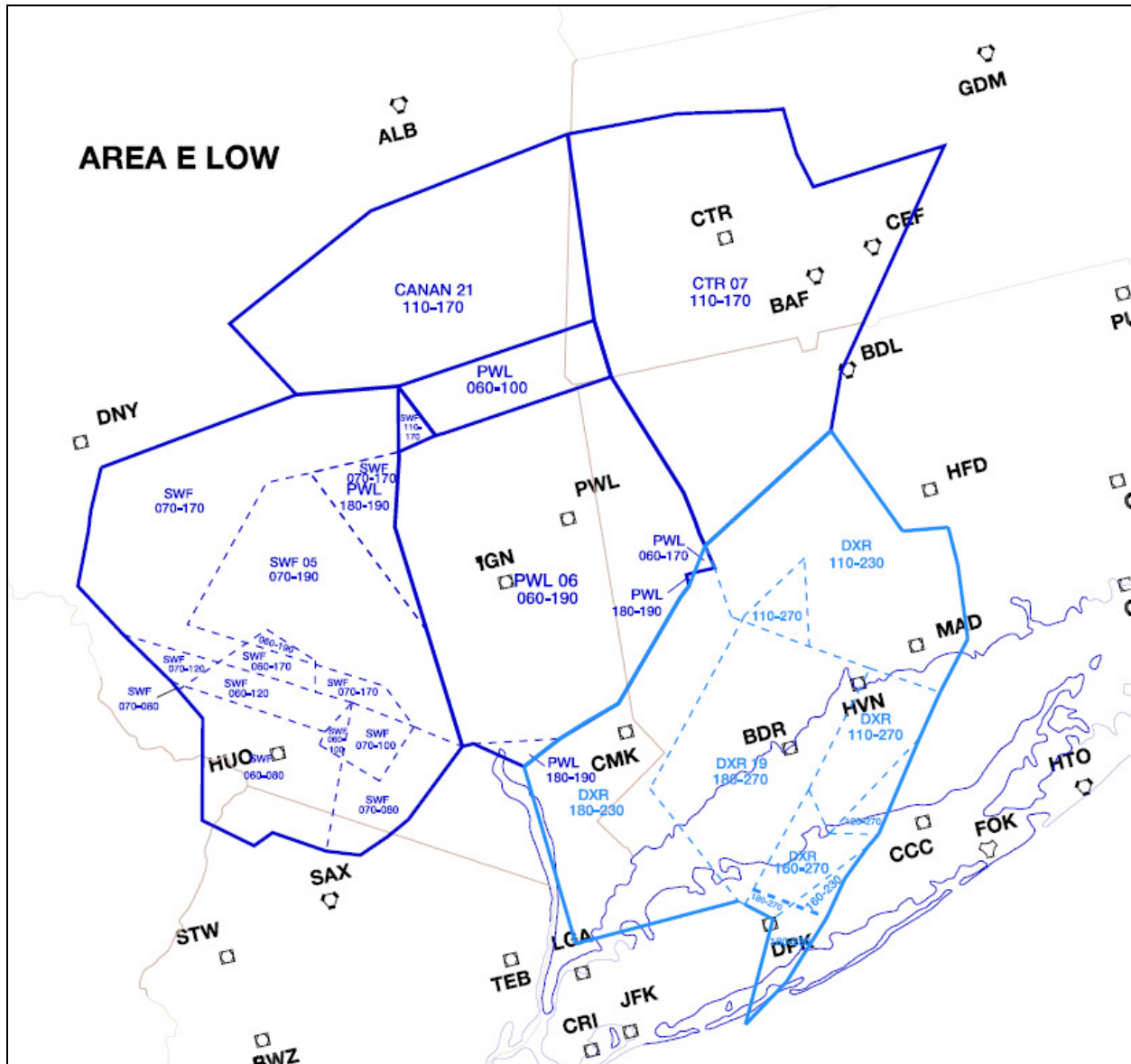
#21 Canaan (110-170)

Ultra Low – NONE

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Other FAA Facilities with ZBW Airspace

TRACONs and FAA Towers within ZBW Airspace and Phone #s

TRACON	Comm. Phone No.	VSCS Indirect #	VSCS Dial Code
Boston (A90)	603-594-5551/52/53/54 603-879-5553 (TMU)	9182	74
Albany (ALB)	518-862-2299/2345	9202	Voice 13 Line
Bradley (BDL)	860-386-3580/3530	9207	Voice 16 Line
Bangor (BGR)	207-942-3173	9217	Voice 19 Line
Burlington (BTV)	802-657-4401	9252	Voice 2 Line
Griffiss (GSS)	315-330-7814	9220	Voice 36 Line
Fort Drum (GTB)	315-772-8711	9284	Voice 46 Line
Cape (K90)	508-968-7126	9224	43
Manchester (MHT)	603-879-5552/53/54	9271	36 or 20
Brunswick (NHZ)	207-921-1743	9210	Voice 30 Line
Providence (PVD)	401-738-8945/734-2800	9241	20
Portland (PWM)	207-775-0602	9272	27
Syracuse (SYR)	315-455-6617/3840	9204	26

ATCT	Ident.	Comm. Phone No.	VSCS Indirect #	VSCS Dial Code
Boston Logan International	BOS	617-455-3172 617-561-5751 (observer)	9242/ 9243	2962/2995
Nantucket Memorial	ACK	508-228-0464	9232	Voice 7 Line
Albany International	ALB	518-862-2299/2345	9202	Voice 13 Line
Nashua Boire Field	ASH	603-595-2104	9271	96
Westfield Barnes	BAF	413-562-4582	9233	27
Bradley International	BDL	860-386-3581	9207	Voice 16 Line
Bridgeport Sikorsky	BDR	203-378-4106		
Bedford Hanscom Field	BED	781-372-5515	9235	34
Bangor International	BGR	207-942-3173 (rings in TRACON)	9217	Voice 19 Line
Burlington International	BTV	802-657-4402	9265	75
Beverly	BVY	978-922-1881	9233	29
Westover	CEF	413-557-2916	9233	47
Danbury	DXR	203-748-6375		

Weather Impact Playbook – CWSU Nashua NH

ATCT	Ident.	Comm. Phone No.	VSCS Indirect #	VSCS Dial Code
New Bedford Regional	EWB	508-993-3186	9241	30
Otis	FMH	508-968-7105	9232	Voice 47 Line
Groton-New London	GON	860-445-7019	9241	24
Fort Drum	GTB	315-772-6006	9284	Voice 46 Line
Hartford Brainard	HFD	860-247-8599	9207	Voice 16 Line
White Plains	HPN	914-948-8733		
Westchester Co.				
New Haven	HVN	203-467-5779		
Hyannis	HYA	508-771-0286	9232	Voice 7 Line
Lebanon	LEB	603-298-5901	9271	26
Lawrence	LWM	978-681-8704	9233	36
Manchester-Boston Regional	MHT	603-621-1713	9211	Voice 85 Line
Martha's Vineyard	MVY	508-693-1170	9232	Voice 7 Line
Brunswick	NHZ	207-921-1745	9210	Voice 30 Line
Quonset	OQU	401-886-1436	9241	25
Worcester	ORH	508-755-6083	9233	Voice 99 Line
Norwood	OWD	781-769-1845	9235	26
Waterbury-Oxford	OXC	203-262-1546		
Poughkeepsie	POU	845-462-3434		
Dutchess County				
Pease	PSM	603-430-2564/63	9238	Voice 29 Line
Providence T.F.	PVD	401-738-8945/734-2800	9241	26
Green State				
Portland	PWM	207-775-0602	9272	23
Rome/Griffiss	RME			
Schenectady	SCH	518-399-0377	9266	20
Newburgh Stewart International	SWF	845-567-1663		
Syracuse Hancock International	SYR	315-455-6617/3840	9204	25

Flight Service Stations within/serving ZBW Airspace

BTV FSS (via FTW Radio) - VSCS Indirect # 9265, VSCS Dial Code 89

Leesburg, VA: AFSS supervisor desk (703) 724-4288

Weather Impact Playbook – CWSU Nashua NH

BOS - Boston/General Edward Lawrence Logan International Airport



Time of Daily Pushes (i.e., aviation “rush hour”)

Morning:

7-8am (Arrival push)

8-10 am (Departure push)

Late morning:

11-12pm (Peak arrival of Internationals over SCUPP)

Evening:

4-8pm (Peak arrival)

6-8pm (Departure push)

Significant Weather

Thunderstorms: over/in vicinity of airport, approach and departure fixes, final approaches

C35 BKN and 5SM minimums for straight in approaches for 4L

C10-15 BKN and 5SM minimums for circle approach to 4L. (Minimum ceiling varies by supervisor.)

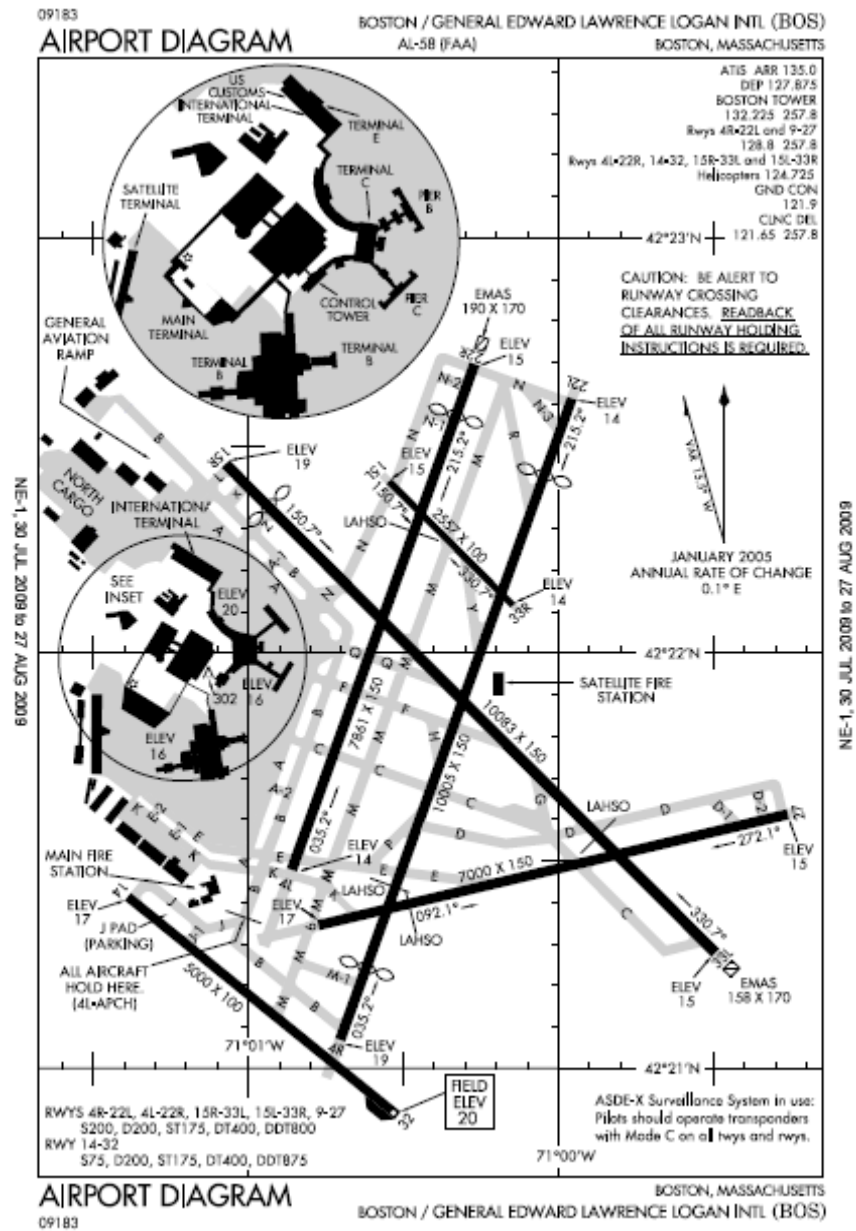
RVR 1800 ft. or less – can only land CAT II/III aircraft on 4R.

LLWS, strong crosswinds and/or wet runways will result in loss of runway 27 in LAHSO operation.

Wintertime snow and ice accumulation for runway treatment and plowing operations.

Haze aloft (below ceilings) restricting visibilities to below 7SM (7-10SM preferred)

Weather Impact Playbook – CWSU Nashua NH



Weather Impact Playbook – CWSU Nashua NH

Typical Runway Configurations

LAND 4R/4L, DEPART 9 (AAR 61)

Approaches: 4R – Visual/ILS; 4L – Visual only

Dual runway (side-by-side) operations

Limiting Issues:

Ceiling must be 035 or greater.

Lose side-by-side runway operations below 035.

Straight visual to 4L needs C35 BKN or higher.

LAND 27/22L, DEPART 22R (AAR 59)

Approaches: 22R/27 – Visual/ILS

Land and Hold Short (LAHSO) operations:

Aircraft landing on runway 27 need to hold short of runway 22L.

Limiting Issues

Wet runway

LLWS

Strong crosswinds

Wind direction of 310-130

Ceiling below 015 (as low as 011 with some supervisors)

Visibility below 5SM

LAND 33L/32, DEPART 27 (AAR 36-44)

Approaches: 33L - Visual/ILS; 32 - Visual only

Runway 32 Limiting Issues:

Requires observed or forecast winds (sustained or gusts) of 10kts or greater.

Carrier/aircraft sensitive. (Runway only 5000' in length.)

Winds must be between 275-005 degrees.

VFR operations only.

Used mostly during prevailing NW winds, and light-moderate demand.

No ceiling/visibility/wind restrictions for 33L/27.

Higher demand – will usually switch to higher capacity configuration.

Will also be used during morning/evening when demand allows (“noise friendly”) or during runway closures

LAND 15R, DEPART 9 (AAR 30)

Approaches – Visual/ILS

Used mostly during strong SE winds with no other alternatives

No ceiling/visibility/wind restrictions

LAND 4R, DEPART 4R (AAR 26)

Approaches – Visual/ILS

Used during IFR operations, N-NE winds

RVRs must be issued

Weather Impact Playbook – CWSU Nashua NH

LAND 4R, DEPART 4R/9 (AAR 34)

Approaches: Visual/ILS

Limiting Issues

If ceiling below 011-015 (supervisor dependent), Props unable to circle 15R to 4L. (If able to circle, AAR may be closer to 40.)

LAND 22L, DEPART 22L/R (AAR 32)

Approaches: 22R- Visual/ILS

Used during IFR conditions with prevailing SSW winds

LAND 27, DEPART 33L (AAR 34)

Approaches: Visual/ILS

Used during IFR conditions with prevailing W-WNW winds

Runway Minimums

Runway	Minimum Ceiling (feet)	Minimum RVR
4R	218	1800
4R – Cat II	118	1200
4R – Cat IIIA	n/a	700
4R – Cat IIIB	n/a	600
4R – Cat IIIC	No minimums – can land “W0X0F”	
33L	216	1800
33L – Cat II	116	1200
15R	267	2400
22L	216	4000
27	460	1½ SM

Weather Impact Playbook – CWSU Nashua NH

BOS Runway Maximum Crosswind Charts

You must add 16 degrees to the wind direction given in the surface observation before using these charts (Magnetic Variation).

DRY RUNWAY – Maximum Allowable Wind Velocity (Knots) – Including Gusts						
Wind Direction (° Magnetic)	RWY 4L/R	RWY 22L/R	RWY 15L/R	RWY 33L/R	RWY 09	RWY 27
010	40 kts			31 kts	20 kts	
020	58 kts			26 kts	21 kts	
030	60+ kts			23 kts	23 kts	
040	60+ kts			21 kts	26 kts	
050	60+ kts			20 kts	31 kts	
060	58 kts		20 kts	20 kts	40 kts	
070	40 kts		20 kts		58 kts	
080	31 kts		21 kts		60+ kts	
090	26 kts		23 kts		60+ kts	
100	23 kts		26 kts		60+ kts	
110	21 kts		31 kts		58 kts	
120	20 kts		40 kts		40 kts	
130	20 kts	20 kts	58 kts		31 kts	
140		20 kts	60+ kts		26 kts	
150		21 kts	60+ kts		23 kts	
160		23 kts	60+ kts		21 kts	
170		26 kts	58 kts		20 kts	
180	6 kts	31 kts	40 kts		20 kts	20 kts
190		40 kts	31 kts			20 kts
200		58 kts	26 kts			21 kts
210		60+ kts	23 kts			23 kts
220		60+ kts	21 kts			26 kts
230		60+ kts	20 kts			31 kts
240		58 kts	20 kts	20 kts		40 kts
250		40 kts		20 kts		58 kts
260	6 kts	31 kts		21 kts		60+ kts
270		26 kts		23 kts		60+ kts
280		23 kts		26 kts		60+ kts
290		21 kts		31 kts		58 kts
300		20 kts		40 kts		40 kts
310	20 kts	20 kts		58 kts		31 kts
320	20 kts		20 kts		60+ kts	26 kts
330	21 kts			60+ kts		23 kts
340	23 kts			60+ kts		21 kts
350	26 kts			58 kts		20 kts
360	31 kts			40 kts	20 kts	20 kts

Weather Impact Playbook – CWSU Nashua NH

RUNWAYS NOT DRY						
Wind Direction (° Magnetic)	RWY 4L/R	RWY 22L/R	RWY 15L/R	RWY 33L/R	RWY 09	RWY 27
010	30 kts			23 kts	15 kts	
020	44 kts			19 kts	16 kts	
030	60+ kts			17 kts	17 kts	
040	60+ kts			16 kts	19 kts	
050	60+ kts			15 kts	23 kts	
060	44 kts		15 kts	15 kts	30 kts	
070	30 kts		15 kts		44 kts	
080	23 kts		16 kts		60+ kts	
090	19 kts		17 kts		60+ kts	
100	17 kts		19 kts		60+ kts	
110	16 kts		23 kts		44 kts	
120	15 kts		30 kts		30 kts	
130	15 kts	15 kts	44 kts		23 kts	
140		15 kts	60+ kts		19 kts	
150		16 kts	60+ kts		17 kts	
160		17 kts	60+ kts		16 kts	
170		19 kts	44 kts		15 kts	
180		23 kts	30 kts		15 kts	15 kts
190		30 kts	23 kts			15 kts
200		44 kts	19 kts			16 kts
210		60+ kts	17 kts			17 kts
220		60+ kts	16 kts			19 kts
230		60+ kts	15 kts			23 kts
240		44 kts	15 kts	15 kts		30 kts
250		30 kts		15 kts		44 kts
260		23 kts		16 kts		60+ kts
270		19 kts		17 kts		60+ kts
280			17 kts	27 kts	21 kts	21 kts
290		16 kts		23 kts		44 kts
300		15 kts		30 kts		30 kts
310	15 kts	15 kts		44 kts		23 kts
320	15 kts			60+ kts		29 kts
330	16 kts			60+ kts		17 kts
340	17 kts			60+ kts		16 kts
350	19 kts			44 kts		15 kts
360	23 kts			30 kts	15 kts	15 kts

Weather Impact Playbook – CWSU Nashua NH

BOS Traffic Management Tips

Arrivals:

- BOS is very sensitive to less than optimum conditions; when conditions are not optimum (due to closed runways, bad weather etc.) the acceptance rate is reduced significantly.
- There is no instrument approach to RWY 4L or RWY 22R. These runways have strict noise abatement procedures.

General:

- On Fridays and Sundays, during the summer months, BOS has a large volume of VFR traffic to and from Cape Cod.

Weather Impact Playbook – CWSU Nashua NH

Airport Specific Amendment Criteria

Airport-Specific Ceiling/Visibility Criteria

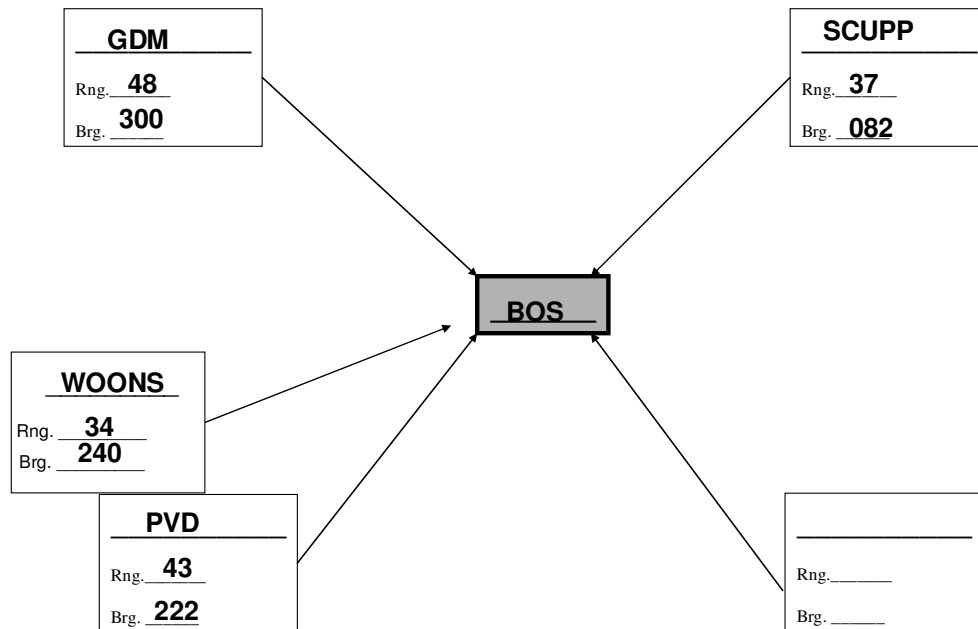
Element	Criteria (CIG ft AGL, VSBY in SM)	Notes
Ceiling/Visibility	025/3SM	Vectoring for Visual approaches
Ceiling/Visibility	014/5SM	For 15R circle to 4L
Ceiling/Visibility	010/3SM	Approach protection
Ceiling/Visibility	008/2SM	When AOB, Tower concern for taxis and maintenance vehicles
Visibility	Below 1SM	Start reportable RVRs
Wind/LLWS	Gain/loss 10-20 kt on final approach	Lose LAHSO for a minimum of 20 minutes

Alternate/Takeoff Minima – highly dependent on specific aircraft, pilot, airline considerations

Type	Ceiling (Ft AGL)	Visibility (SM)
Alternate	700	2
Takeoff	300	1

Weather Impact Playbook – CWSU Nashua NH

Arrival Fixes/Gates



Arrival Fix/Gate Significant Weather

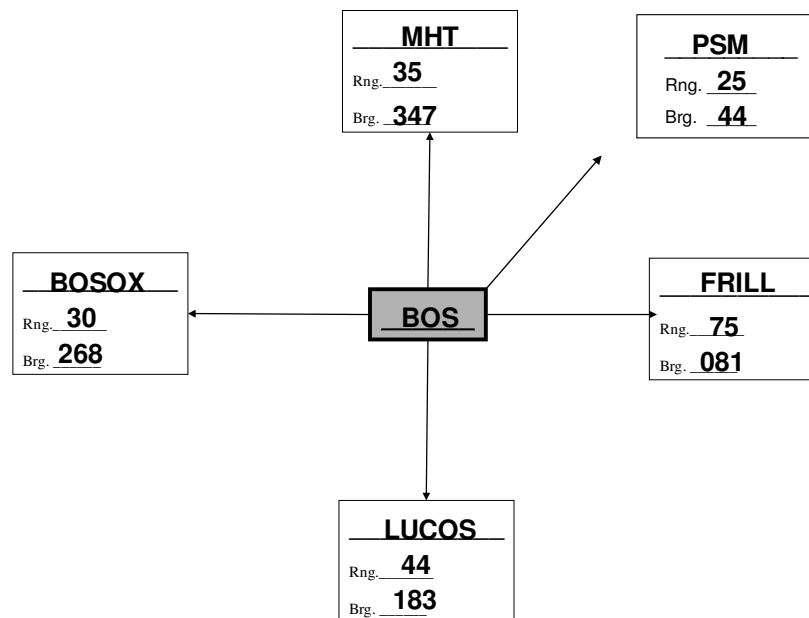
Thunderstorms

Significant low-level winds, icing, turbulence (moderate or greater)

AAR						
Land	Depart	IFR	VFR	VAPS (2500/5)	Suggested Program Rate	Notes
4R/L	9/4L		67	67		
4R	9	36			34	15 R C 4L in MVFR w/props only (+10)
4R	4R	25				CAT II/III
27/22L	22R	36	61		34	Dual RWY MVFR AAR 50, Single RWY IFR
22L	22R	33	36		32	Minimums are 400-1 3/4
22L	15R	33	33		32	
33L/R	27	31	36 (44)		30 I-34 V	33R 2500' - Props only, exempt from program
33L/R	33L	29	29		28	
27	33L	36	36		34	
15R/L	9	31	31 (39)		30	15L 2500' - Props only, exempt from program

Weather Impact Playbook – CWSU Nashua NH

Departure Fixes/Gates



Departure Fix/Gate Significant Weather

Thunderstorms

Significant Low-level winds, icing, turbulence (moderate or greater)

Weather Impact Playbook – CWSU Nashua NH

FAA Playbook Operations and CCFP

Support to Strategic Plan of Operations Telcon

Participants:

TMUs, (ARTCC and TRACONS), ATCSCC, Airlines

Telcon Schedule:

Every 2 hours, on the odd (even) hours during EDT (EST)

Weather Requirements

Determine areas impacted by severe convective weather, time of development, tops, movement and duration

Determine areas of low (IFR or below) ceilings/visibilities, precipitation (liquid, freezing, frozen), significant winds impacting BOS

NE Corridor Planning Telcon

Participants:

N90 STMC (leader), CWSUs ZNY/ZBW/ZDC, WFO OKX, ARTCCs ZBW/ZNY/ZDC, Potomac TRACON

Schedule:

Monday-Friday, 1030 local. Weather synopsis by CWSUs ZNY/ZBW/ZDC, runway configuration synopses by ARTCCs/ATCTs/TRACONS (ZNY, ZBW, ZDC, N90, NY Metros, PHL), ZBW International flow discussion.

Weather Requirements

Brief weather synopsis for ZBW and specific for BOS/A90 operations.

Collaborative Convective Forecast Product (CCFP)

Participants:

AWC, CWSUs, ATCSCC, Airlines

Schedule:

Every 2 hours (HH+15-45), on the even hours, approximately 1 April through 31 October

Weather Requirements

Collaborate areas impacted by convective weather meeting established coverage/tops/intensity criteria, time of development, tops, movement and duration

Weather Impact Playbook – CWSU Nashua NH

Weather Impacts to ZBW Internal Airports

Secondary airports of note include: ACK, BDL, MHT, PVD

Additional airports in which support is requested on occasion: ALB, BGR, BTV, PWM, SYR

Weather Impacts to Outer-Tier Airports

NY Metros (EWR, JFK, LGA, PHL, TEB)

DC Metros (BWI, DCA, IAD)

ATL, CVG, DEN, DFW, DTW, IAH, MDW, MEM, MSP, ORD, PHX, STL

Airway Closers

J6, J48, J80, J75, J29, J547, J121, J174

East to West Transcon Routes

CAN 1,4,5,6,7 WEST

West to East Transcon Routes

CAN 1,2,3,5,6,7 EAST

These routes are most heavily used routes in Boston Center Playbook.

Regional Routes

A761, FLORIDA, ORD GIJ-GERBS, SIERRAS, SKI COUNTRY, SNOWBIRDS

Special ARTCC Requirements

Routine Briefings to ARTCC and other FAA Facilities *(all times local)*

ARTCC Standup Briefing Times - 7 days per week, 0800 and 1545

Locally Required Briefing Content

Synopsis of current conditions/short term forecast

Advisories currently in effect (Convective SIGMETs, SIGMETs, CWAs, MISs)

Overview of BOS forecast

0-12 hr. forecast for CIG/VIS/SFC WINDS over ZBW airspace

0-12 hr. forecast for Winds Aloft/Jet Stream/High Level CAT

0-12 hr. forecast for Low Level Turbulence/LLWS

0-12 hr. forecast for Freezing Levels/Icing

Convective Outlook (Forecast Tops, Movement, Area Coverage)

Brief outlook for next shift/next day, and next several days

Brief synopsis of local forecast

Tactical Convective Briefing

As required for OMIC, STMC, Front Line Supervisors, but typically between 1045-1215

Adaptable to all current/forecast hazards, but primary focus on short term convective, or other significant weather hazard(s)

Overview of impacts to BOS, NY Metro airports

Weather Impact Playbook – CWSU Nashua NH

Corridor/route forecasts

0-3/3-6 hour convective forecasts (6-9, 9-12 hour forecasts as warranted)

Areas of development, areal coverage, forecast tops, movement, expected hazards/impacts

Convective SIGMETs, CWAs, Severe Thunderstorm/Tornado Watches in effect or forthcoming

ZBW TMU Briefings *(all times local)*

Scheduled shift change briefings specifically for BOS: 0630-0645, 1430-1445, 2045-2100 (end of CWSU operational day briefing)

BOS conditions next 4-6 hours

Winds, ceilings, visibilities, precipitation, other concerns including NAS issues (N90 airspace/NY Metro Airports in particular)

Scheduled briefings to support NY Metro Metering and new CCFP issuances
Every 2 hours starting at 0900

Other on-demand briefings as needed

ARTCC Written Briefings

Hard copy of overnight briefing package (same charts as stand-up briefings) given to OMIC prior to 2100 local

A90 TMU Briefings (BOS Consolidated TRACON)

Scheduled daily telcon briefings between 0645-0700 and 1415-1430

Similar information as with ZBW ARTCC standup briefings and TMU briefings, with emphasis below 12000 ft and BOS forecast

Emphasis on BOS, provide significant MHT information as warranted

Other on-demand briefings as conditions warrant

Emphasis on convective weather at/near BOS and arrival/departure fixes

New England Regional Airway Facilities Standup

Scheduled briefing at 0715 (Monday through Friday)

General weather briefing (significant weather, winds, precipitation) for FAA

Radar and NAVAID maintenance planning

On-demand briefings as needed, especially when convection or high winds in vicinity of ARTCC

Forecast Updates

Verbal updates to ZBW OMIC, STMC, Area Supervisors, all local

TRACON/ATCT personnel as conditions warrant

Meteorological Impact Statement (MIS) – scheduled issuances 0800, 1200, 1600, 2000 (+/- 1 hour), updates as needed

Forecast Collaboration

Frequent telcon, 12-Planet and/or WRKZBW collaboration with WFO Taunton MA regarding TAFs (primarily BOS, also ACK, BDL, MHT, PVD), other

aviation-related forecasts, discussions and briefings

Frequent telcon/CCFP forecast collaboration with AWC

Weather Impact Playbook – CWSU Nashua NH

Telcon and/or 12-Planet collaboration with other WFOs within ZBW airspace as needed during significant weather, NWS equipment outages

Special Event Briefings

2006-present: Annual New England Aviation Expo (sponsored by ARTCC ZBW Safety Assurance Office)

Weather Theory and Applications Seminars

Information Table in Exhibitors area

Regional Aviation Weather Workshops

Co-hosted 2007 workshop with WFO BOX

2008: presented at workshops held by WFO BGM (via telcon/Go-To-Meeting), WFO OKX/CWSU ZNY

2009: presented at WFO GYX workshop, attended WFO CLE workshop (via telcon/GTM)

Semi-Annual WFO Seasonal Workshops

Presented at each WFO Taunton workshop since Fall 2005

Presented at WFO BTV workshop (via telcon/GTM) Spring 2009

2009-present: Support to ZBW/A90 prior to/during/after NASCAR events (Loudon NH)

2008-present: New England Space Expo, Windsor Locks CT (significant number of private pilots attend this event at the New England Air and Space Museum)

Capability to provide GoToMeeting/telcon briefings as requested

Automated Flight Service Station (AFSS) Support

Issuance of CWAs, MISs

No other routine support

Safety Assurance Office Weather Support

Requirements for Operational Error/Deviation as requested

Snapshot of Radar Mosaic near time of Operational Error/Deviation

METAR observations near time and location of Operational Error/Deviation

Aircraft Accidents (fatal and non-fatal)

CWAs, MISs, SIGMETs, AIRMETs, METARs, Radar Mosaic

Outreach Programs and Center-Unique Support to FAA and NWS Components

“CWSU ZBW Road Show” (Spring 2007-present)

Familiarization/collaboration visits to local ATCTs/TRACONs, WFOs

Job familiarization, information exchange, aviation forecast service improvements

Facilities visited since Spring 2007:

NWS Facilities: WFOs Taunton MA (BOX), Albany NY (ALY), Binghamton NY (BGM), Burlington VT (BTV), New York City/Upton NY (OKX),

Portland/Gray ME (GYX), Aviation Weather Center (Kansas City MO)

Weather Impact Playbook – CWSU Nashua NH

FAA Facilities: Boston Consolidated TRACON (A90), Albany NY (ALB-ATCT/TRACON), Boston MA (BOS-ATCT), Bradley/Windsor Locks CT (BDL-ATCT/TRACON), Burlington VT (BTV-ATCT/TRACON), Manchester NH (MHT-ATCT), Portland ME (PWM-ATCT/TRACON), Syracuse NY (SYR-ATCT/TRACON).

Tentatively planned for Fall 2009/Spring 2010 – Cape Approach (K90), Providence RI (PVD-ATCT/TRACON), follow-up visits to A90 TRACON, BOS and MHT ATCTs.

Research and Development

MIC collaborating with Plymouth State University on BOS Sea Breeze research study (extension of 2006-2007 COMET Partners Project)
MIC/CWSU staff evaluating wsWRF model as part of WFO ALY efforts in CSTAR III Research (specific feedback for sea breeze, thunderstorms)
Exchange of information with MIT-Lincoln Labs regarding CIWS
WFO-CWSU Cross-Training Initiative being implemented between WFO BOX and CWSU ZBW (developed by CWSU MIC and WFO SOO)
MIC developing outreach materials (posters, brochures) with WFO BOX staff
Expansion of CWSU ZBW WIP for ASPM 77 airports within ZBW airspace
(planned for 2010)

Other

MIC member of Local Implementation Team for AMS DataStreme program (Atmospheres 2006-2007, Water in the Earth System 2007-2008, Earth in the Climate System pilot program Spring 2009)
MIC member of NOAA in New England Team
MIC currently member of Thesis committee for PSU graduate student
Student Volunteer Program established in 2007 between CWSU and Plymouth State University (7 students since program inception)
CWSU participated in “Project PIREP” – AWC initiative to obtain additional and more timely PIREPs during January-March 2009 – *to be continued in Winter 2009-2010*

Center-Unique Support

“CWSU ZBW Road Show”
Routine daily morning briefings with Combined BOS-MHT TRACON, ZBW AF personnel
Tactical Convective Briefings
Routine support briefings to NY Metros Metering positions
Developmental Controllers Weather Briefings as requested by ZBW Training Support Manager (unique briefings for Stage II and IV classes developed by CWSU staff)
Winter/Spring Seasonal Weather Hazards Briefings for ZBW Air Traffic Controller staff

Weather Impact Playbook – CWSU Nashua NH

Climatology

Three important influences are responsible for the main features of the Boston climate. First, the latitude places the city in the zone of prevailing west to east atmospheric flow. Both polar and tropical air masses influence the region. Secondly, Boston is situated on or near several tracks frequently followed by low pressure storm systems. The weather fluctuates regularly from fair to cloudy to stormy conditions and assures an adequate amount of precipitation. The third factor is the east-coast location of Boston. The ocean has a moderating influence on temperature extremes of winter and summer.

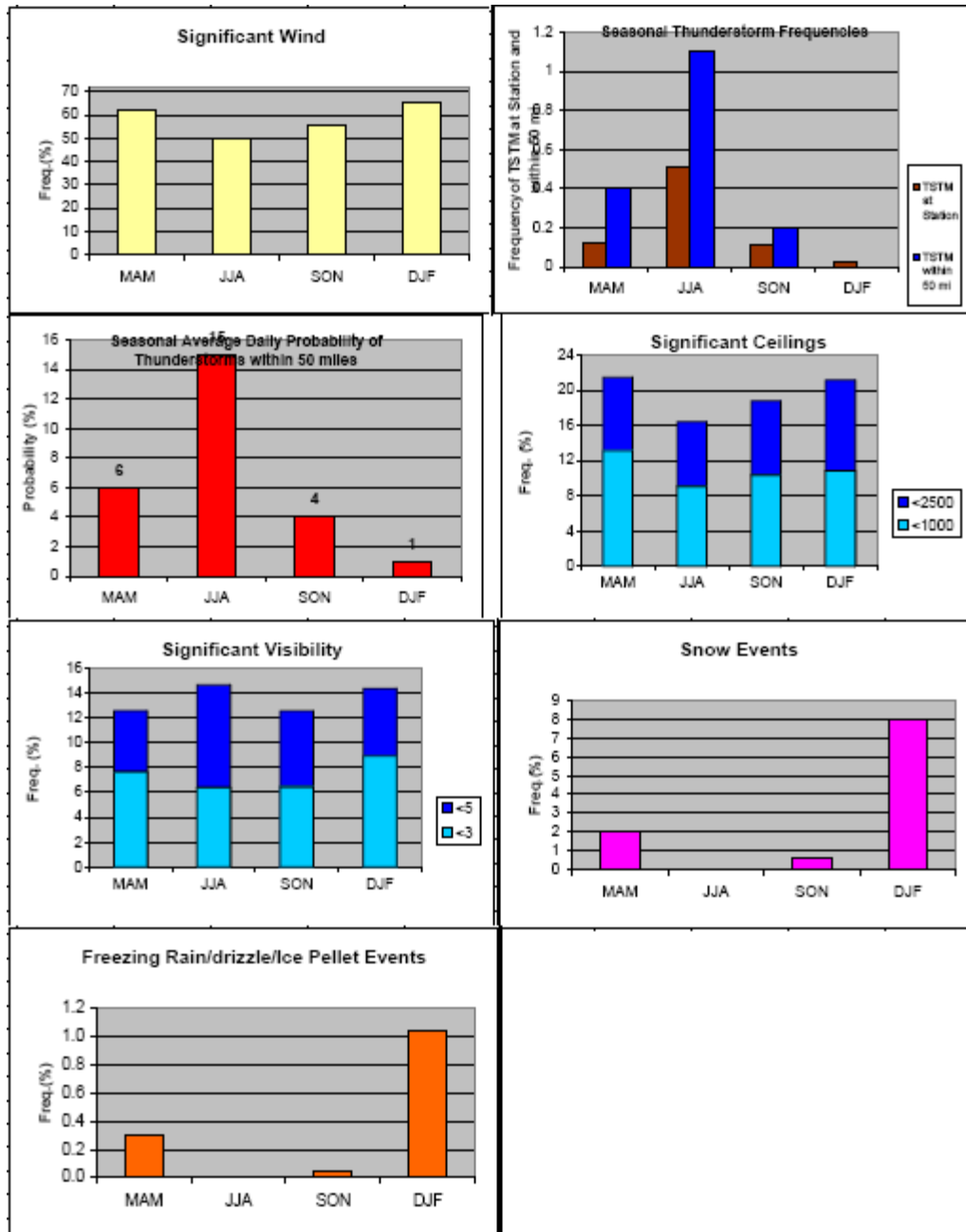
Hot summer afternoons are frequently relieved by the locally celebrated sea breeze, as air flows inland from the cool water surface to displace the warm air over the land. This refreshing east wind is more commonly experienced along the shore than in the interior of the city or the western suburbs. In winter, under appropriate conditions, the severity of cold waves is reduced by the nearness of the relatively warm ocean. The average last occurrence of freezing temperature in spring is early April and the first occurrence of freezing temperature in autumn is early November.

Boston has no dry season. Much of the rainfall from June to September comes from showers and thunderstorms. During the rest of the year, low pressure systems pass more or less regularly and produce precipitation on an average of roughly one day in three. Coastal storms, or northeasters, are prolific producers of rain and snow. The main snow season extends from December through March. Periods when the ground is bare of snow may occur at any time in the winter.

Relative humidity has been known to fall as low as 5%, but such desert dryness is very rare. Heavy fog occurs on an average of about two days per month with its prevalence increasing eastward from the interior of Boston Bay to the open waters beyond.

Although winds of 10 mph or higher may be expected on at least one day in every month of the year, gales are both more common and more severe in winter.

Weather Impact Playbook – CWSU Nashua NH



Weather Impact Playbook – CWSU Nashua NH

CWSU ZBW Weather Impact Playbook – Update Listing

<i>Date of Change</i>	<i>Reason for Change</i>	<i>SR Date/ Initial</i>	<i>JS Date/ Initial</i>	<i>JH Date/ Initial</i>	<i>WL Date/ Initial</i>
6/23/06	Initial version of ZBW WIP				
5/20/07	Version 2.0 – reformatting, numerous updates				
1/02/09	Administrative updates				
8/09	Administrative/operational updates				
11/09	Administrative/operational updates				