

NWS REQUEST FOR CHANGE FORM

1. WSH TRACKING NUMBER

DRG RC 12434

1A. REV LEVEL

REV 2

2. DATE RECEIVED

9/1/2010

PART A - COVER SHEET

This form is in three parts. Submitters must complete unshaded blocks in Part A, and as much of Part B and C as possible. If there is no specific required change date, enter 60 days from date submitted. Address questions to NWS Change Management at (301) 713-1373. Submit change requests to the NWSRC mailbox (External: NWSRC@noaa.gov).

3. ORIGINATOR OFFICE NWS/OST/MDL	4. SUBMITTING AUTHORITY Name: Phillip Shafer Routing Code: W/OST22	5. COGNIZANT TECHNICAL INDIVIDUAL Name: Michael N. Baker Routing Code: W/OST22 Phone: 301-713-0023 x 177	6. ORIGINATOR TRACKING NUMBER MDL2010-04	7. DATE SUBMITTED August 31, 2010
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8. SYSTEMS AFFECTED BY CHANGE <input type="checkbox"/> ASOS <input checked="" type="checkbox"/> AWIPS <input type="checkbox"/> CSSA <input type="checkbox"/> CRS <input checked="" type="checkbox"/> DATA PRODUCTS <input type="checkbox"/> EMWIN <input type="checkbox"/> NEXRAD <input type="checkbox"/> RRS <input checked="" type="checkbox"/> OTHER (specify) NDGD	9. ORD IDENTIFIER
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10. TITLE OF CHANGE
Add superheaders for GFS-based gridded MOS guidance for Hawaii for SBN transmission and distribution to NWSTG/NDGD and NCDC

11. CATEGORY OF CHANGE <input checked="" type="checkbox"/> RC <input type="checkbox"/> PECP <input type="checkbox"/> ECP	12. TYPE OF CHANGE <input type="checkbox"/> DOCUMENTATION ONLY <input type="checkbox"/> HARDWARE <input checked="" type="checkbox"/> SOFTWARE <input checked="" type="checkbox"/> DATA
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13. SITES AFFECTED
 All

14. STATEMENT OF REQUIREMENT, PROBLEM, OR DEFICIENCY OF EXISTING SYSTEM
 To support the NDFD, forecasters must produce accurate forecasts on a high-resolution grid in an optimal manner, using guidance available on a grid at a resolution comparable to that used in the WFO forecast process. The current Global Forecast System (GFS)-based Model Output Statistics (MOS) guidance is only available for Hawaii at specific sites. The IFPS ISST has recommended the development of MOS guidance in gridded format. This project has been approved through Stage 5 of OSIP as project 05-006.

15. KNOWN OR PROPOSED SOLUTION

PLEASE NOTE: Superheaders are now being used for SBN routing of the Hawaii gridded MOS products. This RC replaces RC 12307.

MDL will produce GFS-based gridded MOS guidance for Hawaii for the following elements:

1. Temperature
2. Dew point temperature
3. Maximum and minimum temperature
4. Relative humidity
5. Wind speed, wind direction, and wind gusts
6. 6- and 12-h probability of precipitation.

More elements will be added at a future date. The guidance will be available on a 2.5km Mercator grid covering the same expanse as the NDFD Hawaii grid. More information about the gridded MOS products is available at <http://www.weather.gov/mdl/synop/gmos.php>. The attached document outlines the super-headers and individual headers for each Hawaii gridded MOS element. These products should be transmitted across the SBN and routed to NDGD and NCDC beginning on November 9, 2010. To facilitate the addition of these products to NDGD, we are requesting that a new subdirectory ("AR.hawaii") be added to the experimental and operational areas of the NDGD ftp server:

<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndgd/GT.mosqfs/>
<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.mosqfs/>

The addition of these products to NDGD has been advertised in TIN 10-27. We anticipate these products to add roughly 27MB of data to the NDGD server twice per day at approximately 4:30 – 5:30Z and 16:30 – 17:30Z.

16. ALTERNATE SOLUTIONS
 None

17. REQUIRED CHANGE DATE Nov. 9, 2010	18. RATIONALE FOR REQUIRED CHANGE DATE Nov. 9, 2010 for SBN/NDGD routing per TIN 10-27	19. PRIORITY <input checked="" type="checkbox"/> ROUTINE <input type="checkbox"/> URGENT <input type="checkbox"/> EMERGENCY
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DRG/CCB/PMC/CMB DECISION

20. DECISION AUTHORITY AND IMPACT LEVEL	<input type="checkbox"/> PMC or NWS CMB DECISION REQUIRED <input type="checkbox"/> CCB LEVEL ONLY <input type="checkbox"/> FAST TRACK <input type="checkbox"/> MAJOR CHANGE <input type="checkbox"/> MINOR CHANGE	
21. CCB LEVEL DECISION	<input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED <input type="checkbox"/> RECOMMEND APPROVAL <input type="checkbox"/> REFERRED TO OSIP	SIGNATURE <i>Anthony Robinson</i> DATE RE-SIGNED <i>November 8, 2010 (September 27, 2010)</i>

FOR USE ONLY WHEN PMC or NWS CMB DECISION REQUIRED

22. PMC OR NWS CMB DECISION	<input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED	SIGNATURE/DATE
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NWS REQUEST FOR CHANGE FORM	1. WSH TRACKING NUMBER	1A. REV LEVEL	2. DATE RECEIVED
	DRG RC 12434	REV 2	9/1/2010

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PART A - DATA PRODUCTS SUPPLEMENT

This information is required for Data Products submissions.

3. INTERNAL NWS USE ONLY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		4. PRODUCT SOURCE NCEP CCS			5. AWIPS DATA TYPE Grids (GRIB2)		
6A. NOTIFICATION		6B. CHANGE NOTICE NUMBER			6C. ISSUE DATE	6D. TEST DATE	6E. IMPLEMENT DATE
SBN/NOAAPort							
EMWIN							
NWWWS							
NDGD		12434 (Rev 2)			Nov. 8, 2010		November 9, 2010
NCDC		12434 (Rev 2)			Nov. 8, 2010		November 9, 2010
7. NODE ID	8. AWIPS ID NNNXXX	9. WMO HEADER	10. ADD REV DEL	11. SEAS Y/N	12. CHAR PER MSG	13. FREQUENCY	14. NWSTG DISTR NDGD and NCDC

Please see attached documents for complete header and product size/projection information

Superheader:
Description:

		LBSZ98 KWBQ	Add	N	70K/grid	Twice daily	wind direction, days 1-3
		LCSZ98 KWBQ	Add	N	60K/grid	Twice daily	wind speed, days 1-3
		LDSZ98 KWBQ	Add	N	60K/grid	Twice daily	12-h POP, days 1-3
		LESZ98 KWBQ	Add	N	55K/grid	Twice daily	temperature, days 1-3
		LFSZ98 KWBQ	Add	N	55K/grid	Twice daily	dewpoint, days 1-3
		LGSZ98 KWBQ	Add	N	70K/grid	Twice daily	max temperature, days 1-3
		LHSZ98 KWBQ	Add	N	70K/grid	Twice daily	min temperature, days 1-3
		LRSZ98 KWBQ	Add	N	50K/grid	Twice daily	relative humidity, days 1-3
		LUSZ98 KWBQ	Add	N	55K/grid	Twice daily	6-h POP, days 1-3
		LWSZ98 KWBQ	Add	N	60K/grid	Twice daily	wind gusts, days 1-3
		LBSZ97 KWBQ	Add	N	70K/grid	Twice daily	wind direction, days 4-7
		LCSZ97 KWBQ	Add	N	60K/grid	Twice daily	wind speed, days 4-7
		LDSZ97 KWBQ	Add	N	60K/grid	Twice daily	12-h POP, days 4-7
		LESZ97 KWBQ	Add	N	55K/grid	Twice daily	temperature, days 4-7
		LFSZ97 KWBQ	Add	N	55K/grid	Twice daily	dewpoint, days 4-7
		LGSZ97 KWBQ	Add	N	70K/grid	Twice daily	max temperature, days 4-7
		LHSZ97 KWBQ	Add	N	70K/grid	Twice daily	min temperature, days 4-7
		LRSZ97 KWBQ	Add	N	50K/grid	Twice daily	relative humidity, days 4-7
		LUSZ97 KWBQ	Add	N	55K/grid	Twice daily	6-h POP, days 4-7
		LWSZ97 KWBQ	Add	N	60K/grid	Twice daily	wind gusts, days 4-7
		Total data volume per cycle:			~ 27 MB		
		Total data volume per day:			~ 54 MB		

NWS REQUEST FOR CHANGE FORM	1. WSH TRACKING NUMBER	1A. REV LEVEL	2. DATE RECEIVED
	DRG RC 12434	REV 2	9/1/2010

WMO Headings for Gridded MOS Products

WMO headings have the format of $T_1T_2A_1A_2ii$ CCCC

1. The CCCC for all gridded MOS product WMO headings is **KWBQ**.
2. The T_1 for all gridded MOS products based on the global model is **L**.
3. The T_2 represents the weather element type designator. The following values are used for a $T_1 = \mathbf{L}$. When feasible, these values match those used for the NDFD WMO headers.

Values for T_2 are:

- A = sky cover
- B = wind direction at sensor height (nominally, 10 m)
- C = wind speed at sensor height (nominally, 10 m)
- D = probability of precipitation (12 h)
- E = temperature at sensor height (nominally, 2 m)
- F = dewpoint temperature at sensor height (nominally, 2 m)
- G = daytime maximum temperature at sensor height (nominally, 2 m)
- H = nighttime minimum temperature at sensor height (nominally, 2 m)
- I = quantitative precipitation (6 h)
- J = thunderstorms (6 h)
- K = severe weather (6 h)
- L = precipitation type
- M = precipitation characteristics
- N = precipitation occurrence
- O = obstruction to vision
- P = visibility
- Q = ceiling height
- R = relative humidity
- S = snowfall amount (24 h)
- T = apparent temperature
- U = probability of precipitation (6 h)
- V = quantitative precipitation (12 h)
- W = wind gusts
- X = thunderstorms (12 h)
- Y = thunderstorms (3 h)
- Z = unassigned

4. The A_1 designates the geographical area. The following designators follow the conventions established in the NDFD WMO headers.

- A = Puerto Rico
- R = Alaska
- S = Hawaii**
- T = Guam
- U = CONUS

NWS REQUEST FOR CHANGE FORM	1. WSH TRACKING NUMBER	1A. REV LEVEL	2. DATE RECEIVED
	DRG RC 12434	REV 2	9/1/2010

5. The A_2 and ii follow the convention established in the NDFD. These three characters together represent the day and hour (UTC) for which the product is valid. The following convention for A_2 and ii is used for the gridded MOS products:

A = Day 0; ii = hour (0-23)

B = Day 1; ii = hour (0-23)

C = Day 2; ii = hour (0-23)

D = Day 3; ii = hour (0-23)

E = Day 4; ii = hour (0-23)

F = Day 5; ii = hour (0-23)

G = Day 6; ii = hour (0-23)

H = Day 7; ii = hour (0-23)

I = Day 8; ii = hour (0-23)

J = Day 9; ii = hour (0-23)

For super headers the grids for days 1-3, 4-7, and 8 and beyond are grouped as follows:

Days 1-3: $A_2 = \mathbf{Z}$, ii = 98

Days 4-7: $A_2 = \mathbf{Z}$, ii = 97

Days 8 and beyond: $A_2 = \mathbf{Z}$, ii = 96

NWS REQUEST FOR CHANGE FORM	1. WSH TRACKING NUMBER	1A. REV LEVEL	2. DATE RECEIVED
	DRG RC 12434	REV 2	9/1/2010

Table 1. Superheaders and product sizes for Hawaii gridded MOS products. The headers shown are for the elements that we will be routing to NDGD and NCDC beginning on November 2, 2010. Information for the other elements will be added as they become available.

Element	Super-header	No. of grids per cycle	First/Last Proj./Time Increment (hr)	Bytes per grid/cycle
Wind Direction	LBSZ98	23 (00Z) 27 (12Z)	6/72/3-hr 6/84/3-hr	70KB/1.6MB (00Z) 70KB/1.9MB (12Z)
	LBSZ97	40 (00Z) 36 (12Z)	75/192/3-hr 87/192/3-hr	70KB/2.8MB (00Z) 70KB/2.5MB (12Z)
Wind Speed	LCSZ98	23 (00Z) 27 (12Z)	6/72/3-hr 6/84/3-hr	60KB/1.4MB (00Z) 60KB/1.7MB (12Z)
	LCSZ97	40 (00Z) 36 (12Z)	75/192/3-hr 87/192/3-hr	60KB/2.6MB (00Z) 60KB/2.3MB (12Z)
PoP (12h)	LDSZ98	10 (00Z) 12 (12Z)	18/72/6-hr 18/84/6-hr	60KB/600KB (00Z) 60KB/720KB (12Z)
	LDSZ97	20 (00Z) 18 (12Z)	78/192/6-hr 90/192/6-hr	60KB/1.2MB (00Z) 60KB/1.1MB (12Z)
Temperature	LESZ98	23 (00Z) 27 (12Z)	6/72/3-hr 6/84/3-hr	55KB/1.3MB (00Z) 55KB/1.5MB (12Z)
	LESZ97	40 (00Z) 36 (12Z)	75/192/3-hr 87/192/3-hr	55KB/2.2MB (00Z) 55KB/1.9MB (12Z)
Dew Point	LFSZ98	23 (00Z) 27 (12Z)	6/72/3-hr 6/84/3-hr	55KB/1.3MB (00Z) 55KB/1.5MB (12Z)
	LFSZ97	40 (00Z) 36 (12Z)	75/192/3-hr 87/192/3-hr	55KB/2.2MB (00Z) 55KB/1.9MB (12Z)
Daytime Max	LGSZ98	3 (00Z) 3 (12Z)	24/48/24-hr 36/84/24-hr	70KB/210KB (00Z) 70KB/210KB (12Z)
	LGSZ97	5 (00Z) 4 (12Z)	96/192/24-hr 108/180/24-hr	70KB/350KB (00Z) 70KB/280KB (12Z)
Nighttime Min	LHSZ98	2 (00Z) 3 (12Z)	36/60/24-hr 24/72/24-hr	70KB/140KB (00Z) 70KB/210KB (12Z)
	LHSZ97	5 (00Z) 5 (12Z)	84/180/24-hr 96/192/24-hr	70KB/350KB (00Z) 70KB/350KB (12Z)
Relative Humidity	LRSZ98	23 (00Z) 27 (12Z)	6/72/3-hr 6/84/3-hr	50KB/1.1MB (00Z) 50KB/1.4MB (12Z)
	LRSZ97	40 (00Z) 36 (12Z)	75/192/3-hr 87/192/3-hr	50KB/2.0MB (00Z) 50KB/1.8MB (12Z)
PoP (6h)	LUSZ98	11 (00Z) 13 (12Z)	12/72/6-hr 12/84/6-hr	55KB/600KB (00Z) 55KB/720KB (12Z)
	LUSZ97	20 (00Z) 18 (12Z)	78/192/6-hr 90/192/6-hr	55KB/1.1MB (00Z) 55KB/1.0MB (12Z)
Wind Gusts	LWSZ98	23 (00Z) 27 (12Z)	6/72/3-hr 6/84/3-hr	60KB/1.4MB (00Z) 60KB/1.7MB (12Z)
	LWSZ97	40 (00Z) 36 (12Z)	75/192/3-hr 87/192/3-hr	60KB/2.6MB (00Z) 60KB/2.3MB (12Z)

NWS REQUEST FOR CHANGE FORM	1. WSH TRACKING NUMBER	1A. REV LEVEL	2. DATE RECEIVED
	DRG RC 12434	REV 2	9/1/2010

Table 2. Superheaders and individual headers for Hawaii gridded MOS products to be routed to NDGD and NCDC beginning on November 2, 2010.

Element	Superheader	Product Headers
Wind Direction	LBSZ98	LBSA18 LBSA21 LBSB00 LBSB03 LBSB06 LBSB09 LBSB12 LBSB15 LBSB18 LBSB21 LBSC00 LBSC03 LBSC06 LBSC09 LBSC12 LBSC15 LBSC18 LBSC21 LBSD00 LBSD03 LBSD06 LBSD09 LBSD12 LBSD15 LBSD18 LBSD21 LBSE00
	LBSZ97	LBSE03 LBSE06 LBSE09 LBSE12 LBSE15 LBSE18 LBSE21 LBSF00 LBSF03 LBSF06 LBSF09 LBSF12 LBSF15 LBSF18 LBSF21 LBSG00 LBSG03 LBSG06 LBSG09 LBSG12 LBSG15 LBSG18 LBSG21 LBSH00 LBSH03 LBSH06 LBSH09 LBSH12 LBSH15 LBSH18 LBSH21 LBSI00 LBSI03 LBSI06 LBSI09 LBSI12 LBSI15 LBSI18 LBSI21 LBSJ00
Wind Speed	LCSZ98	LCSA18 LCSA21 LCSB00 LCSB03 LCSB06 LCSB09 LCSB12 LCSB15 LCSB18 LCSB21 LCSC00 LCSC03 LCSC06 LCSC09 LCSC12 LCSC15 LCSC18 LCSC21 LCSD00 LCSD03 LCSD06 LCSD09 LCSD12 LCSD15 LCSD18 LCSD21 LCSE00
	LCSZ97	LCSE03 LCSE06 LCSE09 LCSE12 LCSE15 LCSE18 LCSE21 LCSF00 LCSF03 LCSF06 LCSF09 LCSF12 LCSF15 LCSF18 LCSF21 LCSG00 LCSG03 LCSG06 LCSG09 LCSG12 LCSG15 LCSG18 LCSG21 LCSH00 LCSH03 LCSH06 LCSH09 LCSH12 LCSH15 LCSH18 LCSH21 LCSI00 LCSI03 LCSI06 LCSI09 LCSI12 LCSI15 LCSI18 LCSI21 LCSJ00
PoP (12 h)	LDSZ98	LDSB06 LDSB12 LDSB18 LDSC00 LDSC06 LDSC12 LDSC18 LDSD00 LDSD06 LDSD12 LDSD18 LDSE00
	LDSZ97	LDSE06 LDSE12 LDSE18 LDSF00 LDSF06 LDSF12 LDSF18 LD SG00 LD SG06 LD SG12 LD SG18 LD SH00 LD SH06 LD SH12 LD SH18 LD SI00 LD SI06 LD SI12 LD SI18 LDSJ00

NWS REQUEST FOR CHANGE FORM	1. WSH TRACKING NUMBER	1A. REV LEVEL	2. DATE RECEIVED
	DRG RC 12434	REV 2	9/1/2010

Temperature	LESZ98	LESA18 LESA21 LESB00 LESB03 LESB06 LESB09 LESB12 LESB15 LESB18 LESB21 LESC00 LESC03 LESC06 LESC09 LESC12 LESC15 LESC18 LESC21 LESD00 LESD03 LESD06 LESD09 LESD12 LESD15 LESD18 LESD21 LESE00
	LESZ97	LESE03 LESE06 LESE09 LESE12 LESE15 LESE18 LESE21 LESF00 LESF03 LESF06 LESF09 LESF12 LESF15 LESF18 LESF21 LESG00 LESG03 LESG06 LESG09 LESG12 LESG15 LESG18 LESG21 LESH00 LESH03 LESH06 LESH09 LESH12 LESH15 LESH18 LESH21 LESI00 LESI03 LESI06 LESI09 LESI12 LESI15 LESI18 LESI21 LESJ00
Dew Point	LFSZ98	LFA18 LFA21 LFB00 LFB03 LFB06 LFB09 LFB12 LFB15 LFB18 LFB21 LFSC00 LFSC03 LFSC06 LFSC09 LFSC12 LFSC15 LFSC18 LFSC21 LFSD00 LFSD03 LFSD06 LFSD09 LFSD12 LFSD15 LFSD18 LFSD21 LFSE00
	LFSZ97	LFSE03 LFSE06 LFSE09 LFSE12 LFSE15 LFSE18 LFSE21 LFSF00 LFSF03 LFSF06 LFSF09 LFSF12 LFSF15 LFSF18 LFSF21 LFSG00 LFSG03 LFSG06 LFSG09 LFSG12 LFSG15 LFSG18 LFSG21 LFSH00 LFSH03 LFSH06 LFSH09 LFSH12 LFSH15 LFSH18 LFSH21 LFSI00 LFSI03 LFSI06 LFSI09 LFSI12 LFSI15 LFSI18 LFSI21 LFSJ00
Daytime Max	LGSZ98	LGSC00 LGSD00 LGSE00
	LGSZ97	LGSF00 LGSRG00 LGSH00 LGSI00 LGSJ00
Nighttime Min	LHSZ98	LHSB12 LHSC12 LHSD12
	LHSZ97	LHSE12 LHSE12 LHSE12 LHSE12 LHSE12
Relative Humidity	LRSZ98	LRSA18 LRSA21 LRSB00 LRSB03 LRSB06 LRSB09 LRSB12 LRSB15 LRSB18 LRSB21 LRSC00 LRSC03 LRSC06 LRSC09 LRSC12 LRSC15 LRSC18 LRSC21 LRSD00 LRSD03 LRSD06 LRSD09 LRSD12 LRSD15 LRSD18 LRSD21 LRSE00
	LRSZ97	LRSE03 LRSE06 LRSE09 LRSE12 LRSE15 LRSE18 LRSE21

NWS REQUEST FOR CHANGE FORM	1. WSH TRACKING NUMBER	1A. REV LEVEL	2. DATE RECEIVED
	DRG RC 12434	REV 2	9/1/2010

		LRSF00 LRSF03 LRSF06 LRSF09 LRSF12 LRSF15 LRSF18 LRSF21 LRSG00 LRSG03 LRSG06 LRSG09 LRSG12 LRSG15 LRSG18 LRSG21 LRSH00 LRSH03 LRSH06 LRSH09 LRSH12 LRSH15 LRSH18 LRSH21 LRSI00 LRSI03 LRSI06 LRSI09 LRSI12 LRSI15 LRSI18 LRSI21 LRSJ00
PoP (6h)	LUSZ98	LUSB00 LUSB06 LUSB12 LUSB18 LUSC00 LUSC06 LUSC12 LUSC18 LUSD00 LUSD06 LUSD12 LUSD18 LUSE00
	LUSZ97	LUSE06 LUSE12 LUSE18 LUSF00 LUSF06 LUSF12 LUSF18 LUSG00 LUSG06 LUSG12 LUSG18 LUSH00 LUSH06 LUSH12 LUSH18 LUSI00 LUSI06 LUSI12 LUSI18 LUSJ00
Wind gusts	LWSZ98	LWSA18 LWSA21 LWSB00 LWSB03 LWSB06 LWSB09 LWSB12 LWSB15 LWSB18 LWSB21 LWSC00 LWSC03 LWSC06 LWSC09 LWSC12 LWSC15 LWSC18 LWSC21 LWSD00 LWSD03 LWSD06 LWSD09 LWSD12 LWSD15 LWSD18 LWSD21 LWSE00
	LWSZ97	LWSE03 LWSE06 LWSE09 LWSE12 LWSE15 LWSE18 LWSE21 LWSF00 LWSF03 LWSF06 LWSF09 LWSF12 LWSF15 LWSF18 LWSF21 LWSG00 LWSG03 LWSG06 LWSG09 LWSG12 LWSG15 LWSG18 LWSG21 LWSH00 LWSH03 LWSH06 LWSH09 LWSH12 LWSH15 LWSH18 LWSH21 LWSI00 LWSI03 LWSI06 LWSI09 LWSI12 LWSI15 LWSI18 LWSI21 LWSJ00