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FROM:     JASON TUELL  
CHIEF...SCIENCE PLANS BRANCH  
OFFICE OF SCIENCE AND TECHNOLOGY

SUBJECT:  RAPID UPDATE CYCLE CHANGES: MARCH 31 2009

EFFECTIVE TUESDAY MARCH 31 2009...BEGINNING WITH THE 1200  
COORDINATED UNIVERSAL TIME /UTC/ RUN...NWS WILL MAKE  
SEVERAL CHANGES TO THE RAPID UPDATE CYCLE /RUC/ MODELING-ASSIMILATION SYSTEM. THESE CHANGES ARE MADE TO CORRECT PROBLEMS OBSERVED DURING WINTER AND EARLY SPRING.

THE MODEL CHANGES INCLUDE:
1. INTRODUCING THE NESDIS SNOW ANALYSIS TO ELIMINATE SNOW COVER AT MODEL POINTS WHERE THE ANALYSIS INDICATES NO SNOW IS PRESENT. THE NEW CODE WILL INTRODUCE THE NESDIS ANALYSIS ONCE PER DAY AT 1900 UTC AND WILL ELIMINATE SNOW COVER AT ANY POINT WHERE THE ANALYSIS SHOWS NO SNOW... THE MODEL SURFACE TEMPERATURE IS ABOVE 274 K AND NO PRECIPITATION HAS FALLEN DURING THE PREVIOUS ONE HOUR FORECAST.
2. CHANGE OF THE CALL TO THE ANALYSIS OF CLOUD DATA TO OCCUR NEAR THE END OF THE ANALYSIS PROCESS TO PREVENT NON CLOUD OBSERVATIONS FROM CAUSING SUBSATURATION AT GRID POINTS WHERE CLOUDS EXISTS. A FINAL CHECK TO MAKE CERTAIN THE ANALYSIS INCLUDES ALL CLOUDY POINTS ARE SATURATED.
3. MODIFICATIONS TO THE CODE TO ALLOW GOES SATELLITE CLOUD DATA TO SUPERCEDE ANY METAR CLEAR REPORT.

THE OUTPUT CHANGE CONSISTS OF CORRECTION OF THE RUN TOTAL CONVECTIVE AND NONCONVECTIVE PRECIPITATION FIELDS.

THE COMBINED IMPACT OF THESE CHANGES HAS LED TO THE FOLLOWING IMPROVEMENTS IN MODEL PERFORMANCE:
1. SIGNIFICANTLY IMPROVED 2-M TEMPERATURE FORECASTS IN REGIONS WHERE NO ACTUAL SNOW COVER EXISTS... PARTICULARLY IN WARM ADVECTION EVENTS  
2. SIGNIFICANTLY IMPROVED REAL TIME MESOSCALE ANALYSIS /RTMA/ CONUS ANALYSES OF SURFACE TEMPERATURE AND DEW POINT IN THESE EVENTS SINCE THE RUC SERVES AS THE FIRST GUESS FOR
THE RTMA
3. IMPROVED CLOUD FORECASTS PARTICULARLY IN THE FIRST HOUR WHEN CURRENT VERIFICATION MEASURES SHOW A DRAMATIC DROP IN SKILL
4. PREVENTION OF HOLES PUNCHED INTO THE ANALYZED CLOUD BY ERRONEOUS METAR REPORTS OF CLEAR SKIES
5. CORRECTED RUN TOTAL PRECIPITATION FORECASTS

DATA AND RUC DELIVERY TIMING WILL NOT BE IMPACTED BY THIS IMPLEMENTATION NOR WILL DATA VOLUME. NWS DOES NOT EXPECT SIGNIFICANT DATA CONTENT CHANGES.

THE EFFECTIVE DATE OF THIS CHANGE IS SOONER THAN SPECIFIED BY NWS POLICY. THE REDUCTION OF THE NORMAL ADVANCE LEAD TIME WAS APPROVED BECAUSE NO SOFTWARE CHANGES WILL BE NECESSARY AND THE RUC FORECASTS ARE EXPECTED TO BE GREATLY IMPROVED WITH THE IMPLEMENTATION OF THE CHANGES.

FOR QUESTIONS CONCERNING THESE CHANGES...PLEASE CONTACT:

GEOFF MANIKIN
NCEP...MESOSCALE MODELING BRANCH
CAMP SPRINGS MARYLAND
301-763-8000 X7263
GEOFFREY.MANIKIN@NOAA.GOV
OR
STAN BENJAMIN
NOAA EARTH SYSTEM RESEARCH LABORATORY
BOULDER COLORADO
303-497-6387
STAN.BENJAMIN@NOAA.GOV

NATIONAL TECHNICAL IMPLEMENTATION NOTICES ARE ONLINE AT /USE LOWERCASE/:

HTTP://WWW.WEATHER.GOV/OS/NOTIF.HTM

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