ASOS Product Improvement Implementation Plan

[Addendum I]

For

ASOS Processor Board Upgrade

February 14, 2002

(Revision # 1: 02/05/03)

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Office of Operational Systems
Field Systems Operations Center/Observing Systems Branch

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Executive Summary

With the completion of the full deployment of the Automated Surface Observing System (ASOS) at *almost 1,000 National Weather Service (NWS), Federal Aviation Administration (FAA), and Department Of Defense (DOD)* locations nationwide, a new phase of Planned Product Improvement (PPI) has begun. These planned improvements will bring even greater observing capability, processing and communications capacity, and reporting accuracy and consistency to the ASOS. The planned improvements for the ASOS include:

Processor Board Replacement,
Dew Point Sensor Replacement,
All-Weather Precipitation Accumulation Gauge,
Ice Free Wind sensor,
Enhanced Precipitation Identification sensor,
Ceilometer replacement, and
Software Enhancements

A series of implementation plans are needed for these improvements. This document describes the step-by-step process and the factors which impact on the operational implementation of the new ASOS Processor Board at 884 NWS and FAA sponsored ASOS locations nationwide. This includes 313 NWS sponsored locations and 571 FAA sponsored locations. *The 109 ASOS locations sponsored by DOD are not included in this implementation plan*. Other documents in this series will describe the implementation process for the other components. Each document describes what will be done to successfully bring the improvement to an operational status.

Because of the enhanced reliability of the new Processor Board, all FAA locations and 286 of the 313 NWS locations can be configured with a single Processor Board. The remaining 27 NWS locations, known as Single Cabinet ASOS (SCA), are deployed in extremely remote and severe climate locations and require redundant extended temperature range boards. Based on funding availability, the implementation sequence for all 884 *NWS and FAA* locations will occur in three phases. Phase I was funded with Fiscal Year (FY) 2001 funds and includes the locations in the Operational Acceptance Test (OAT), (10 FAA, 22 NWS, and 4 NWS SCA). Phase II was also funded with FY 2001 funds and includes 197 FAA, 264 NWS and 23 NWS SCA. Phase III is being funded with FAA FY 2002 funds and includes the remaining 364 FAA locations.

A check list is provided to aid in monitoring progress in completing the necessary activities for operational implementation. The check list ensures that prerequisite System Test (ST) and OAT activities are completed prior to start of the operational implementation. It then covers pre-operational implementation planning actions involved in site identification, deployment strategy, maintenance and logistics planning, training, and user notification. The check list identifies the executable functions and deliverables in the implementation of the new Processor Board. Finally, any necessary post-

implementation activities are also covered, including documentation and disposition of old equipment.

This plan is written from the time perspective of imminent operational implementation. It assumes all necessary activities prior to operational implementation were, or *will have been*, completed and operational implementation activities are about to begin.

List of Organizational Codes

Code	NWS Organization
CCx2	National Logistics Support Center
OPS11	Engineering & Acquisition Branch
OPS12	Maintenance Branch
OPS13	Configuration Branch
OPS14	Logistics Branch
OPS22	Observing Systems Branch
OPS23	Software Branch
OPS24	Test & Evaluation Branch
OPS31	Operations Support & Performance Monitoring Branch
OPS33	Telecommunication Gateway Operations Branch (AOMC)
OS7	Observing Services Division
OST1	Programs & Plans Division

Code	FAA Organization
AUA-400	IPT* Lead for Weather/Flight Service Systems
AUA-430	Weather Sensors and Aviation Weather Research Program
ATP-300	Flight Service Operations Division
ATP-310	Meteorological Support
AOP-400	Telco Network Planning & Engineering Division
ARW-1	Aviation Weather Directorate, Program Director
ARW-100	Policy Division
ARW-200	Standards Division
ARW-300	Aviation Weather Requirements Division

*IPT = Integrated Product Team

ACRONYMS

ACCB	ASOS Configuration Control Board
ACU	Acquisition Control Unit
ADAS	Automated Weather Observing System/Automated Surface Observing System Data Acquisition System
AOMC	ASOS Operations and Monitoring Center
APMC	ASOS Program Management Committee
ASOS	Automated Surface Observing System
AWIPS	Advanced Weather Interactive Processing System
CMIS	Configuration Management Information System
CO	Contracting Officer
COTR	Contracting Officer Technical Representative
CPU	Central Processing Unit
DAPM	Data Acquisition Program Manager
DOD	Department Of Defense
DRR	*Deployment Readiness Review*
EMRS	Engineering Management Reporting System
ET	Electronics Technician
FAA	Federal Aviation Administration
FY	Fiscal Year
IFW	Ice Free Wind
METAR	Aviation Routine Weather Report
MIC	Meteorologist-In-Charge
MIRS	Management Information Reporting System
MOD KIT	Modification Kit
MTBF	Mean Time Between Failure
NLSC	National Logistics Support Center
NRC	National Reconditioning Center
NSN	National Stock Number
NWS	National Weather Service
OAT	Operational Acceptance Test
OI	Operational Implementation
OIP	Operational Implementation Plan
OPR	Office of Primary Responsibility
PPI	Planned Product Improvement
RAM	Random Access Memory
REL NOTE	Release Note
RC	Request for Change
RFP	Regional Focal Point
SCA	Single Cabinet ASOS
SHEF	Standard Hydrometeorological Exchange Format
SPECI	Selected Special Weather Report

ST	System Test
TCP/IP	Transmission Control Protocol/Internet Protocol
TDWR	Terminal Doppler Weather Radar
TTR	Test Trouble Report
WSOM	Weather Service Operations Manual
WFO	Weather Forecast Office
WSP	Weather Systems Processor

1. INTRODUCTION

1.1 Description of Technology Improvement Scheduled For Implementation

The Automated Surface Observing System (ASOS) processor upgrade consists of a new single Processor Board with expanded memory and processing capability to handle new high performance sensors with higher speed, greater reliability, and communication enhancements. These improvements are necessary to keep pace with the expanding demands placed on the ASOS for timely, accurate delivery of more observation parameters to more external users in real time. The existing Processor Board is based on a design over 10 years old. It cannot handle the expanded demands for data processing of new sensors, and dissemination of a myriad of data to more operational users in real time. The new Processor Board will serve as the launch platform for a host of new software and sensor applications. As part of the NWS modernization effort, key bottlenecks in the ASOS hardware platform are being upgraded. In particular, the Central Processing Unit (CPU) board is being upgraded from a 68010 at 10 MHZ to the PowerPC at 300 MHz, the Random Access Memory (RAM) is enhanced, Flash memory is being added, and the underlying kernel is being upgraded to include support for Transmission Control Protocol/ Internet Protocol (TCP/IP) connectivity.

1.2 Purpose

The purpose of this document is to provide a clear strategy for the implementation of the new Processor Board into the ASOS and minimize field operational impacts resulting from this modification. Furthermore, this plan delineates major implementation activities and organizational responsibilities required for a smooth transition into operations.

1.3 Scope

This plan covers implementation related activities starting with System Test (ST) preparation and ending with commencement of operations. This plan describes the extent of implementation related activities: the pre-implementation testing and operational readiness evaluation activities (described in Chapter 2); the pre-operational implementation activities (described in Chapter 3); the operational implementation activities (described in Chapter 4); and the post-operational implementation activities (described in Chapter 5). *This plan includes provision for a "Phased Implementation" approach as opposed to a single master schedule for all sites. The phased implementation approach breaks the entire population of sites into discrete implementation batches. Each batch consists of sites with similar characteristics and implementation risks. Implementation risks are changes to the existing suite which are more likely to result in failure. This includes complex modifications, complex configurations, and critical external components such as network communications which are beyond the control of ASOS. Those sites with the least operational risk are in the earlier batches, while those sites with the greater operational risk are in the latter batches. Batches are implemented sequentially as confidence is gained. The batches may be implemented with some overlap.* Furthermore, this plan describes any unique additions, exceptions, or limitations. For example, unlike other improvements , the new Processor does not require completion of a follow-on Climate Data Continuity Study.

*This plan applies to all **884** NWS and Federal Aviation Administration (FAA) ASOS locations. The implementation of the new processor board falls within the overall goal of modernizing the ASOS network. This implementation is phase Iof this modernization. Consequently, this implementation plan is labeled Addendum I.*

1.4 Applicable Documents

The following documents serve as a part of this plan:

- Engineering Modification Note # 73
- Field Release Note
- Operational Acceptance Test Plan

2.0 TEST ACTIVITIES

This chapter gives a brief overview of the test activities which precede, and lead to Operational Implementation (OI) activities. The pre-implementation test activities are the transition between development activities and OI activities. The sections in this chapter describe the test-related activities, are given in general serial order of completion, and identify the office(s) primarily responsible for their accomplishment. They are pre-ST activities, ST activities, pre-Operational Acceptance Test (OAT) activities, and OAT activities. These activities are necessary to determine if the product improvement is ready for full production and implementation.

2.1 Pre-System Test Activities

The following activities must be completed before the start of the ST.

1. **Prepare Request For Change (RC):** Prior to successful completion of the factory System Integration / Qualification Tests, the Programs and Plans division (OST1) will have submitted a Request For Change (RC), through the ASOS Change Management process, to begin the ST and OAT process. The ASOS Program Management Committee (APMC) is the approving management authority for this process. Management approval of this RC was based on the NWS Engineering & Acquisition branch (OPS11) Contracting Officer Technical Representative (COTR) certification of successful completion of the factory System Integration / Qualification Tests.

2. **Prepare ST Plan:** The NWS Test & Evaluation Branch (OPS24) prepared and distributed the ST plan prior to start of the ST. This plan includes all activities and deliverables for successful completion of the ST and a draft outline of the ST report. A test team was formed to support all test activities.

3. **ST Locations and Dates:** ST locations, schedules, and test procedures are determined and managed by OPS24. Selection of ST locations will have been made by OPS24 prior to start of the ST. The test dates were determined by OPS24 prior to the start of the ST. The Processor Board ST was conducted at the following locations:
Sterling Research & Development Center and National Weather Service Headquarters

4. **Acquisition of ST Units:** Upon successful completion of the factory System Integration / Qualification Tests, OST1 initiated procurement of the ST Processor Board Planned Product Improvement (PPI) components and delivery of these components to the designated ST locations. The NWS Maintenance Branch (OPS12) ensured delivery of the necessary test equipment to the designated ST locations.

5. **ST Logistic Support:** Necessary components, supplies, spare parts, and test equipment were made available to the ST locations.

6. **Prepare & Provide Modification Notes (MOD NOTEs):** Draft Engineering Modification Notes MOD NOTEs were produced by OPS12 and provided to installation technicians prior to start of the ST.

7. **Install Test Units at ST Sites:** Installation and maintenance of ST equipment was coordinated by OPS12.

2.2 System Test (ST) Activities

The following activities were accomplished during or before the end of the ST.

1. **Verify Start of ST:** OPS24 reported the start of the ST.

2. **Data Collection and Analysis:** All necessary data were collected, compiled and checked for quality and completeness in accordance with the ST plan. All Test Trouble Reports (TTRs) were reviewed and reconciled. This process is managed by OPS24.

3. **Verify Completion of the ST:** Where the ST identified serious flaws, additional STs were conducted. *During testing, OPS24 will inform the TRG of the results of the test. The TRG will recommend whether or not to proceed to the next phase of testing (i.e., OAT).*

4. **ST Report:** A preliminary test report was prepared and issued for review by OPS24 as the ST neared completion. This includes an assessment of all outstanding Test Trouble Reports (TTRs) and a recommendation whether *or not* to proceed with the follow-on OAT. *The program manager reviewed the recommendation and made the decision weather to proceed to OAT.* When the recommendation was issued to continue with the OAT, OPS24 provided preliminary written notification to the ASOS Configuration Control Board (ACCB) of satisfactory completion of the ST with a recommendation to issue a revision to the current Request for Change (RC) or issue a new RC to begin the OAT for this technological improvement. OPS24 subsequently completed and delivered the final ST report to the ACCB for consideration and management decision prior to the completion of the OAT.

2.3 Pre-Operational Acceptance Test Activities

The purpose of the OAT is to verify operational performance of the Processor Board under field conditions. In effect, this is a “dry-run” for the full implementation for the remaining sites.

The following activities must be completed prior to start of the OAT.

1. **RC for OAT:** Upon receipt of the preliminary ST report and a recommendation from OPS24 to proceed with the OAT, the Chair of the ACCB (i.e., ASOS PPI Manager (OST1)) initiated action to prepare and submit an RC for the OAT. This RC lists all locations included in the

OAT. The preparation of the final ST report and the RC for the OAT proceeded in parallel and were both completed before the start of the OAT.

2. **Operational Acceptance Test Management Decision:** Upon completion and delivery of the final ST report to the ACCB, by OPS24, the ACCB will have made a decision through the Change Management process whether to proceed with the OAT. If the incremental cost to proceed to the OAT is equal to or greater than $1 million then the management decision authority to proceed with the OAT resides with the APMC. If the incremental cost to proceed to the OAT is less than $1 million, then the the management decision authority to proceed with the OAT resides with the ACCB. Normally, the incremental cost is less than $1 million. In the case of the Processor Board, the incremental cost was less than $1 million and therefore the ACCB exercised the OAT management decision. When the RC to proceed with the OAT was approved and a decision made to proceed, the ACCB Chairperson (OST1) notified OPS11 to procure the planned quantity of equipment components necessary for the OAT. This decision and notification was made upon receipt of the final test report. Under special circumstances to meet critical deadlines, the decision to proceed with the OAT could be made based on the preliminary ST report provided no major changes are expected in the final ST report.

3. **Prepare OAT plan:** OPS24 prepared and distributed the OAT plan prior to start of the OAT. This plan identifies the OAT locations, dates, schedules, responsibilities, procedures, metrics, evaluation criteria and deliverables (data reports, evaluations, and recommendations) for successful completion of the OAT. This was done on September 19, 2001.

4. **OAT Locations and Schedule:** The OAT locations were determined by OPS24 in coordination with the NWS Observing Systems Branch (OPS22), NWS regions, and FAA. The sites selected for the OAT were chosen to ensure a representative sample of operational locations are evaluated. The criteria for selection include: site system configuration, site communications interfaces, and diversity of climatic regimes. This later criterion was imposed because the Dew Point OAT may start before the processor OAT ends (i.e., overlapping OAT). A site selection matrix was used to make this determination. Selection of OAT locations was made prior to the start of the OAT. The test dates were determined by OPS24 prior to the start of the OAT. See the OAT plan for further details.

5. **Acquisition of OAT Units:** OST1 initiated action for acquisition of the OAT units. Upon notification by the ACCB Chairperson (i.e., ASOS PPI Manager (OST1)) to proceed with acquisition of OAT equipment, OPS11 (acting as the COTR) acquired the planned OAT equipment and coordinated with OPS24 and the NWS regions the locations where the equipment will be delivered before the start of the OAT.

6. **OAT Logistic Support:** OPS12 ensured all necessary Modification Kits, maintenance components, supplies, spare parts, and test equipment were delivered to the designated OAT locations and installed prior to the start of the OAT. OPS12 coordinated with the Configuration Branch (OPS13) and Logistics Branch (OPS14) the assignment of test equipment part numbers and reference designators.

7. **OAT Maintenance Coordination Support:** OPS12 coordinated plans for installation and maintenance of the OAT Modification Kits (MOD KIT) with the NWS regions, and the Electronics Technician (ET) responsible for each OAT site prior to start of the OAT.

8. **OAT Documentation Support:** All necessary documentation was delivered to the NWS regions and the test sites prior to start of the OAT. This documentation includes: The Engineering Modification Notes produced by OPS12; The OAT procedures as contained in the OAT Plan produced by OPS24, and; a draft ASOS Release Note (REL NOTE) for software version 2.6X prepared by OPS22.

2.4 Operational Acceptance Test Activities

The OAT may be conducted in either a single phase or a multiple phase mode. In the single phase mode, the OAT is applied simultaneously to all sites. In the multiple phase mode, the OAT is applied sequentially to selected sub-groups of sites until all sites successfully complete the OAT. The successful completion of the OAT for one group does not preclude the start of the OAT for another group; as such OATs for multiple groups of sites can be conducted simultaneously. The initial group consists of similar sites with the greatest chance for successfully completing the OAT. Subsequent groups are incrementally added to the OAT as confidence is gained and necessary modifications are made until all sites successfully complete the OAT. A designated "group" of sites in the OAT is representative of the larger "batch" of subsequent similar sites to be implemented. The following activities must be accomplished during and completed before the end of the OAT.

1. **Verify Start of OAT:** OPS24 informed the test team of the times, places, and procedures for the OAT. This was done through ongoing coordination and formal issuance of the OAT plan.

2. **Data Collection and Analysis:** All necessary data was collected, compiled and checked for quality and completeness in accordance with the OAT plan. This process was managed by OPS24.

3. **Verify Draft OI Plan:** A key element of the OAT is the verification of the implementation procedures in the draft Operational Implementation Plan (OIP). In effect, the OAT was a "dry-run" for the OI. OPS12 ensured the draft OIP procedures were followed during MOD KIT installation and checkout at the OAT locations. OPS24 monitored this process, and reported any discrepancies found to OPS22. All reported discrepancies were rectified by OPS22 in the final OIP.

4. **Verify Completion of OAT:** If the OAT had a significant failure, a new successful ST and OAT were necessary after corrective action was completed. When the OAT was successfully completed, OPS24 informed the test team that full implementation of the new Processor Board can commence.

5. OAT Report: *The Processor Board OAT was subdivided into discrete test groups, each group representing a designated phased implementation batch of sites. The list of sites contained in each phased implementation batch is coordinated and provided separately by the ASOS PPI Manager. A preliminary OAT report was prepared by OPS24 for each group of test sites. Each preliminary OAT report includes an assessment of all outstanding TTRs which impact the group and a recommendation whether to proceed with the follow-on phased OI. A negative report resulted in remedial action and repeat of the OAT. Upon receipt of a positive OAT report (i.e., successful completion) from OPS24, the ASOS PPI Manager will conduct a Deployment Readiness Review (DRR) with other managers to make a go-no-go deployment decision for the designated batch of phased implementation sites.*

3.0 PRE-OPERATIONAL IMPLEMENTATION ACTIVITIES

This chapter gives a brief overview of the activities which immediately precede and lead to OI activities. These pre-implementation activities are the transition between the test activities and OI activities. The sections in this chapter describe the pre-implementation activities necessary to initiate the follow-on implementation activities and identify the office(s) responsible for their accomplishment. These activities are planning activities, logistic support activities, and documentation activities. They are accomplished in parallel and are completed by the start of the OI which occurs when the new Processor Board is installed and operationally activated at the first site following completion of the OAT. The following activities should be accomplished before the start of the OI.

3.1 Planning Activities

This section describes those plans and associated decisions which must be completed before the start of the OI. This description identifies the office responsible for completion of each plan or related decision. This a dynamic process with variations from the norm. These planning/decision activities include:

1. **Depot Spares Modeling:** Mean time Between Failure (MTBF) statistics was used by OPS14 to run a depot spares model to determine how many spares are needed to operationally support the new Processor Board. A MTBF of 182,000 hours and 884 operational systems were used to compute the required number of spares needed. This number was provided to the ASOS PPI Manager (OST1) prior to full scale production and acquisition management decision.

2. **RC for OI:** Concurrent with preparation of the preliminary OAT report and a recommendation from OPS24 to proceed with the OI, the Chair of the ACCB (i.e., the ASOS PPI Manager (OST1)) initiated action to prepare and submit an RC for the OI. This RC contains an Engineering Change Notice with parts to be added and/or deleted to/from the base line and lists all locations included in the OI. The ACCB considered the preliminary OAT report and recommendation in their deliberations and voting on the RC. The completion and provision of the final OAT report and favorable recommendation for implementation by OPS24 to the ACCB is a prerequisite for initiating the acquisition activities for the OI.

3. **Full Scale Production and Acquisition Management Decision:** *If the RC is not approved by the ACCB, it will be referred back to the submitter for rectification and resubmission in accordance with established ACCB procedures.* Upon ACCB approval of the RC for the OI, the ASOS PPI Manager (OST1) endorsed the RC and recommend to the APMC they approve the recommendation and issue a management decision to proceed with the OI. As the Chair of the APMC, OPS2 coordinated the APMC management decision making process. Upon receiving the APMC management decision, OST1 notified ASOS PPI Contracting Officer Technical Representative (COTR), OPS11 to procure the planned quantity of equipment components necessary for the OI. This notification will customarily be made upon receipt of the final OAT

report and recommendation to proceed with the OI. If the final OAT report did *not* support proceeding with the OI, then OST1 would have suspended procurement activity until the critical issue(s) cited in the report were satisfactorily resolved. *However, in this case, the procurement notification was actually made with acceptable minimal risk prior to receipt of the final OAT report to meet critical schedule deadlines.* The actual procurement may occur in batches and staggered delivery dates which coincide with the planned deployment schedule.

4. **Prepare OI Plan:** OPS22 will develop and coordinate the execution of the overarching OIP for all ASOS Planned Product Improvements (PPI), and the specific OIP for each PPI component. This OIP addresses the OI for the new ASOS Processor Board upgrade. It defines all activities for successful completion of the Processor Board OI and, as such, forms a part of the master OIP.

5. ***OI Deployment Decision.*** *Upon successful completion of either the full, or partial phased group OAT and receipt of the OAT report from OPS24, the ASOS PPI Manager will conduct a Deployment Readiness Review (DRR) with other managers to make a "go-no-go" deployment decision for the larger batch of similar sites in the general population represented by the smaller group of sites referenced in the OAT report. A "Go" deployment decision will be announced by the ASOS PPI Manager to all concerned parties. This will allow deployment planning and execution activities to continue to completion for the designated batch of sites.*

6. **Identify OI Installation Locations:** OPS22 will coordinate the selection of locations for each procurement batch with the appropriate NWS and FAA offices and solicit their input to this decision. This implementation plan only addresses the 882 ASOS locations in the combined NWS and FAA base program plus two additional post-base FAA locations (total 884 locations). These locations are identified on page 9 of Appendix II.

7. **Develop OI Strategy:** A key element of the OIP is the implementation strategy. Since not all Processor Board kits will be available initially to all technicians, *an overarching installation* strategy is needed to ensure equitable distribution *of MOD KITs* during the production cycle. OPS22 will establish the draw rate strategy for the Processor Board kits and the installation sequence strategy. The basic elements of these strategies are described below.

A. **Draw Rate Strategy:** Initially, OPS12 will issue the first two Processor Board kits to each Weather Forecast Office (WFO) as stock is received at National Logistics Support Center (NLSC). These first two kits *are* the spare kit plus the first installation kit. The first WFOs to receive the initial issue of two Processor Board kits will be to those WFOs which have ASOS locations included in the Ice Free Wind (IFW) sensor OAT. The remaining WFOs will receive the initial issue of two processor boards in the order specified by the NWS region. Concurrent with this initial distribution, the receiving WFOs will be instructed by OPS12 on how to draw additional kits from NLSC (CCx2) in accordance with the MOD NOTE #73 issued by OPS12. Upon completion of the initial issue of two processor boards to each WFO, NLSC will distribute subsequent processor boards to WFOs upon receipt of a draw request from the WFOs. The NWS regions are

responsible for establishing a regional draw rate strategy in consonance with the region's share of the national total, and monitoring and modifying the WFO monthly draw requests as necessary. The NWS regions will provide guidance to their WFOs on the draw sequence within the region. The NWS regions will inform OPS12 of the draw sequence within the region and will report the regional monthly draw rate status to OPS22.

WFOs are to draw only those additional kits they plan on installing within the next 30 days. No more than one draw request should be submitted by each WFO to NLSC in a calendar month. NLSC will strive to fill the draw requests in the order they are received.

B. Installation Sequence Strategy: The initial kit acquired by each WFO must be set aside for use as a spare. *The spares kit includes those components most likely to require maintenance, repair, or replacement, whereas the operational MOD KIT contains all components needed for complete installation and operation.* The succeeding *operational MOD KITS may* be implemented with consideration of the following criteria:

1. The OI may be conducted in either a single phase or a multiple phase mode. In the single phase mode, the OI strategy is applied simultaneously to all sites. In the multiple phase mode, the OI strategy is applied sequentially to selected sub-groups of sites until all sites successfully complete the OI. The successful completion of the OI for one group does not preclude the start of the OI for another group. The initial group consists of similar sites with the greatest chance for successfully completing the OI. Subsequent groups are incrementally added to the OI as confidence is gained and necessary modifications are made until all sites successfully complete the OI.

2. The first group of sites to be implemented are those sites (10 FAA & 26 NWS) included in the OAT for the new processor. This group includes the 20 climate continuity sites needed for the dew point sensor OAT. These sites are operationally implemented at the conclusion of the OAT process. See page 3 of Appendix II, for this list of Processor Board OAT sites.

2. The second group of sites to be implemented are those 20 (NOMINAL NUMBER) sites included in the IFW sensor OAT, with precedence given to those in this group which are IFW climate continuity study sites. This is because the IFW OAT is planned to begin before the implementation of the processor boards is completed. The sites selected for the IFW climate study require dual wind instruments and cannot be sites with Backup Ceilometers. This is because of bandwidth limitations and timing contention between the ASOS Acquisition Control Unit (ACU) and Data Collection Platform (DCP). The Observing Services Division (OS7) is responsible for selecting these IFW climate continuity study sites. The remaining sites in the IFW OAT are selected by OPS24 based on other considerations, such as site configuration. See page 4 of Appendix II, for

list of IFW OAT sites.

3. The last group of 99 sites to be implemented are those locations with specialized software loads which must remain on the old Processor Board until these loads are rehosted on the new Processor Board after the new board is implemented. The sites with these specialized software loads include 34 Weather System Processor (WSP) sites and 42 Terminal Doppler Weather Report (TDWR) sites with software load 2.63 (total 76 sites), and 23 Ice Accretion remark evaluation sites with software load 2.62I. See pages 5-8 of Appendix II for list of WSP/TDWR & Ice Accretion sites.

4. Of the884 sites in the ASOS base program/post-base (313 NWS and 571 FAA) scheduled to receive the new Processor Board, the vast majority, 724 sites, fall between the second group and the last group. The number of sites in this middle group is the difference between the total number of base program sites, (884 sites) minus the number in the first group already implemented (36 sites), the second group of 20 IFW sites, and the last group of 99 WSP/TDWR/Ice Accretion sites. These sites should be deployed within each region in the general following order:

   - non-airport sites
   - non-Automated Weather Observing System/Automated Surface Observing System Data Acquisition System (ADAS) sites
   - "non-problem" ADAS sites
   - "problem" ADAS sites

   Further preference should be given to sites with greater dew point maintenance problems and associated maintenance costs. Consideration should also be given to scheduling sites on the same day which are closely spaced wherever possible. The details of the implementation order for this middle group is left to the regions.

- A major consideration in the implementation schedule for the middle and last group is the timely purchase and acquisition of processor boards. The procurement/acquisition strategy is to purchase sufficient quantity of standard temperature range single processor boards for installation in the ACU at 857 sites plus 20% spares (total 1027 ACU boards), and purchase sufficient quantity of extended temperature range dual processor boards for use at the 27 Single Cabinet ASOS (SCA) sites (54 Boards) plus 10% spares (total 60 SCA boards). This strategy is shown in the following three tables.

  Thus far, Fiscal Year (FY) 2001 funds have purchased 75 boards for 36 OAT sites (10 FAA & 22 NWS ACU sites; 4 NWS SCA sites) plus 40 spares (38 ACU and 2 SCA). Additional FY 01 funds have purchased another 650 boards for 489 sites (all remaining 264 NWS ACU sites, all remaining 23 NWS SCA sites, and

202 FAA ACU sites) plus 138 spares (134 ACU and 4 SCA). When FY 02 funds are received from FAA, 362 boards will be purchased for the remaining 362 FAA ACU sites (no additional spares are required).

With Initial FY 01 NWS & FAA Funds:	**OAT SITES**			
	ACU		**SCA**	**TOTAL**
	FAA	**NWS**	**NWS**	
BOARDS	39	26	10	75
SPARES	34	4	2	40
SITES	10	22	4	36

With Additional FY 01 NWS & FAA Funds:				
	ACU		**SCA**	**TOTAL**
	FAA	**NWS**	**NWS**	
BOARDS	282	318	50	650
SPARES	80	54	4	138
SITES	197	264	23	484

With FY 02 FAA Funds (When Available):				
	ACU		**SCA**	**TOTAL**
	FAA	**NWS**	**NWS**	
BOARDS	364	0	0	364
SPARES	0	0	0	0
SITES	364	0	0	364

Grand Total:

1087 Boards (1027 ACU, 60 SCA)
178 Spares (120 ACU @ WFO, 52 ACU @ NLSC, 6 SCA @NLSC)
884 Sites (286 NWS ACU, 27 NWS SCA, 571 FAA ACU)

- Within this framework, the following implementation scenario will occur:

  For OAT Sites:

  1. Issue 27 ACU processors to 27 WFOs for installation at first 27 locations (22 NWS, 5 FAA)
     Issue 8 SCA processors to 4 WFOs for installation at first 4 NWS locations (Note: each of these locations receives 2 processor boards)
     Issue 27 ACU processor spares to 27 WFOs for OAT
     Put 11 ACU processor spares in stock at NLSC;
     Put 2 SCA processor spares in stock at NLSC

2. Issue 186 ACU processors from NLSC to remaining 93 WFOs for installation at next 93 NWS locations (1 spare + 1 for installation for each WFO)
   Put 40 ACU processor spares in stock at NLSC
   Note: At this point all 120 WFOs have 1 spare ACU processor and NLSC has 51 ACU spares

3. Issue 23 SCA processors from NLSC to 23 WFOs for installation at last 23 NWS locations
   Put 4 SCA processor spares in stock at NLSC
   Note: At this point NLSC has 6 SCA spare.

4. WFOs draw 172 ACU processors from NLSC for installation at last 172 NWS locations
   WFOs draw 202 ACU processors from NLSC for installation at next 202 FAA locations

Note: In effect, 99 of these NWS & FAA sites are included in the WSP/TDWR support and Ice Accretion test batch and will be set aside as the last to be implemented. See pages 5-7 of Appendix II, for a list of these sites. This only leaves a combined total of 275 sites for implementation in this batch. At this point a total of 421 of the 884 sites will be implemented. The NWS Regional Focal Point (RFP) will monitor to ensure these 99 sites are not implemented until the software in the new processor is upgraded to include WSP/TDWR and Ice Accretion functionality.

Pending FAA FY 02 Funds:

5. WFOs draw 364 ACU processors for installation at the last 362 FAA locations. At this point 785 of the 884 sites will be implemented.

More guidance is to be provided on # of NWS and FAA sponsored sites to be implemented last and how this may affect schedule if FAA FY 02 funds are not received before step 4 is completed (i.e., as many as 99 of the 172 NWS sites in step 4 may have to be deferred until after the 364 FAA sites in step 5).

6. WFOs draw 99 ACU processors for installation at 76 WSP/TDWR sites and 23 Ice Accretion sites. At this point all scheduled base program sites are implemented. Note: The ice accretion test on the old processor board will end on April 15, 2002. Two of these sites are collocated with WSP/TDWR. These sites are Des Moines (DSM), IA, and Raleigh/Durham (RDU), NC. These sites will still require the use of the

old processor through the end of the WSP/TDWR testing period. The other 21 ice accretion sites are free to be installed with the new processor after April 15, 2002.

3.2 Logistic Support Activities

1. **Procurement:** Full production and procurement of the new Processor Board and associated equipment and their delivery to NLSC will be managed by OPS11. This function includes serving as the COTR. Upon notification of approval of the full production contract award by the ACCB, OPS11 will coordinate the issuance of the production contract with the Contracting Officer (CO). A production rate and procurement schedule will be established by OPS11 at time of contract award.

2. **Logistic Support Strategy:** All procured full production processor boards will be entered into the supply channel through the NLSC. OPS14 will establish national stock numbers for the new Processor Board kits.

Note: the ACU kit is different from the SCA kit. The MOD NOTE for this installation issued by OPS12 will inform field technicians how to order this kit. Note: each WFO having an ASOS technician must have on hand a spare kit before installing their first site.

3. **Installation and Maintenance Coordination:** In the case of the new Processor Board, no maintenance training is necessary. However, the existing course at the NWS training Center will be modified to include the new processor.

3.3 Operational Support Activities

This section describes those documentation, training, user notification, and validation activities which must be completed before the start of the OI. This section identifies the office(s) responsible for completion of each activity. These activities include:

1. **Documentation:** The following documentation will be provided to the implementation and operational personnel at the responsible WFO prior to OI of a given site:

A. Engineering MOD NOTES will be provided to WFO technicians by OPS12 for installation and follow-on maintenance activities. This will occur prior to the start of scheduled OI of the first full production Processor Board in the WFO's area of responsibility. In the case of the Processor Board, the MOD NOTES include instructions on installation and checkout to ensure all interface functions and system displays are identical to the old Processor Board with software version 2.60. The display will show the modified software version installed on the new processor board, vice version 2.60.

B. Operational Release Notes will be provided by OPS22 to the NWS ASOS Regional Focal Point (RFP) for distribution to affected WFOs prior to the start of the scheduled OI of the first processor boards in their region. These release notes will also be distributed by OPS22 to designated FAA and DOD focal points for distribution to their affected facilities.

C. Normally, any update to Weather Service Operations Manual (WSOM) chapters will be provided by the appropriate Weather Service Headquarters Office to the WFOs prior to OI. **In the case of the Processor Board, no WSOM updates are planned.**

D. Normally, any update to the ASOS Users' Guide and other related ASOS documents will be provided to the WFOs and other affected other Federal agencies (FAA, DOD) by OPS22 prior to OI. **In the case of the Processor Board, no ASOS Users' Guide updates are planned.**

2. **Training:** All training for responsible operators and maintenance personnel will normally be completed prior to OI. **In the case of the Processor Board, there is no functional change and therefore no observing or maintenance training required.**

3. **Pre-Implementation User Notification:** Any planned change in operations or disruption in service must be documented and distributed to the affected user community prior to actual execution of the change. *OPS22 will coordinate with various organizations to ensure these notifications are disseminated.* **In the case of the Processor Board, there is no planned change in operations or disruption in service, and therefore no notification is required.**

4. **Verify completion of all Pre-OI Activities:** The preceding activities must be completed before commencement of the OI activities. The OPS22 Implementation Manager will ensure all prerequisite activities are verified as completed. Furthermore, OPS22 will have informed the implementation team of the schedules, responsibilities, and procedures for the OI. This was done through ongoing coordination and formal issuance of the OIP.

4.0 OPERATIONAL IMPLEMENTATION (OI) ACTIVITIES

This chapter gives a comprehensive description of the OI activities. The sections in this chapter describe the implementation activities necessary to initiate operational activation of the product improvement and identify the office(s) responsible. These activities include: Implementation Management, Acquisition, Installation, and Implementation. They are accomplished in parallel during the OI activity phase.

4.1 Implementation Management Activities

1. **Oversight Responsibilities:** OPS22 has overall responsibility for managing and coordinating the OI activities. These responsibilities include ensuring the implementation is executed according to plan and coordinating any necessary adjustments with other key participants. This includes coordination with: OPS24 for managing the successful completion of all prerequisite testing prior to OI; OPS11 for monitoring acquisition and delivery of MOD KITS and other material necessary for implementation to NLSC; OPS14 for managing the logistics supply, repair; OPS12 for managing the distribution of OI MOD KITS and other materials, and the installation and maintenance activities; and the NWS Regional Focal Point (RFP) for managing and coordinating all implementation activities within their respective regions.

   The RFPs have a unique responsibility to fine tune and manage the implementation sequence within the region, and coordinate with the local WFO to resolve implementation issues and ensure a successful implementation. The RFPs will compile and forward 30-day implementation status reports to OPS22 via E-Mail. These status reports will include the newly completed Checklist, Part B and the 30-day Evaluation Reports from the WFO.

2. **Check List:** A key component of the oversight responsibilities is monitoring the status and progress of the implementation. A two part check list tool has been developed to assist in this activity. The purpose of the check list is to ensure that all essential activities described in this document are completed as scheduled. The check list follows the general organization of this plan.

   Part A: This part is completed once by OPS22. It applies to all locations subject to OI. It is completed prior to the beginning of the OI process for the first full production Processor Board.

   Part B: This part is initially completed by the responsible WFO for each site implemented. The Meteorologist-In-Charge (MIC) at each WFO is responsible for ensuring this check list is completed and sent forward in a timely manner. This includes annotating the check list with the completion dates (mm/dd/yy) of those items for which the WFO is designated as the Office of Primary Responsibility (OPR), and attaching a brief narrative which describes any problems encountered and any solutions found or recommended. Both the check list and narrative will be forwarded via e-mail to the RFP upon completion. The RFP will compile these check lists and

narratives into a monthly e-mail report to OPS22. OPS22 will coordinate with the designated OPRs to ensure that the remaining items are completed.

4.2 Acquisition Activities

1. **Verify Start of OI:** OPS22 will verify the start of the OI.

2. **Monitor & Validate Delivery:** As the COTR, OPS11 will monitor and ensure timely delivery of all planned production units to the NLSC. Any discrepancies or delays in scheduled delivery of the Processor Board to NLSC will be reported by NLSC to OPS11 in a timely manner. Throughout the production cycle, OPS11 will perform a quality assurance function on units being delivered to the NLSC, report any discrepancies, and provide remediation recommendations to the CO.

3. **Stock Kits at NLSC:** The new Processor Board and associated parts needed for installation will be stocked as a kit at NLSC. There are two basic types of kits for the new Processor Board. One kit is for a single processor ACU installation (ACU kit), and the other is for a dual processor SCA installation (SCA kit). A National Stock Number (NSN) will be established for each type of kit by the Logistics Branch (OPS14). *A subsequent management decision was made that all sites including SCA sites will get only 1 processor. Additionally, SCA sites will receive the single processor with extended temperature boards.* Procedures for requisitioning this kit will be disseminated to field installation technicians by OPS12 at the start of the OI. OPS14 will manage all logistic support for the implementation of the new ASOS Processor Board. NLSC will manage inventory of all necessary supplies, spares, and modification kits, and filling orders from field technicians for dissemination of Processor Board kits.

4. **Requisition Kits from NLSC:** The first two ACU kits will be issued to each WFO by OPS12 from the stock at NLSC. This includes one spare and one initial kit for installation. For all subsequent installation kits, the WFO Electronics Technician (ET) will requisition the appropriate Processor Board kit (ACU or SCA) from NLSC when they are ready to install the Processor Board in accordance with the Draw Rate Strategy described in Section 3.1, 5A.

4.3 Installation Activities

1. **Downloading of Archive:** At the start of the installation process, prior to system power down and installation of the new Processor Board, the ET will download the ASOS archive data sets to a laptop and copy these files to a disc using direct command mode as described in the installation MOD NOTES. These data sets include, but are not limited to, the 5-minute observations, the SYSLOG, the Edit Log, the Daily and Monthly Summary Data, and the Standard Hydrometeorological Exchange Format (SHEF) data. The disc containing this archive data will be provided to the Data Acquisition Program Manager (DAPM) at the local responsible WFO.

The DAPM, the lead Hydrometeorological Technician, or the Information Technology Manager, as appropriate, will extract current climate records from the disc and forward them to NCDC for archive, and retain the disc for 60 days for possible future use.

2. Installation & Checkout: Field technicians will perform installation and checkout of the Processor Board in accordance with Engineering MOD NOTE 73. Generally this process will take about two hours or less. Key activities include:

A. Make a hard copy of selected system configuration and maintenance screens prior to removal of the old XYCOM memory boards. This will be used as comparison to ensure configuration screen displays remain unchanged after installation.

B. Perform installation of new processor board.

C. Ensure the latest software version 2.6 rehost is loaded on new processor board.

D. Start system/cold boot.

E. Complete ASOS Operations and Monitoring Center (AOMC) download.

F. Verify the DCPs are providing data from the configured sensors. Turn on report processing. Let system run for 15 minutes. Note: Step G may be completed during this 15 minute period.

G. During the first 15 minutes, compare new configuration screens with those printed prior to installation. Verify the new configuration is identical to the configuration downloaded from the old XYCOM boards.

H. Also during the first 15 minutes, verify the connected peripherals are displaying ASOS algorithm output as before installation. Exception: The "SKY" condition field will initially contain missing data elements (MM) for 30 minutes.

I. After a total of 30 minutes, verify "SKY" condition output data are now displayed on peripherals.

J. Wait for and verify dissemination of the next hourly Aviation Routine Weather Report (METAR).

K. Check maintenance page and clear all data quality errors, as appropriate.

L. Annotate the ASOS maintenance page of installation action and update Engineering Management Reporting System (EMRS) as appropriate.

M. Installation at this site is now complete.

4.4 OI Monitoring & Coordination Activities

1. Installation Notification: Upon successful completion of installation and checkout, the ET will update the EMRS in accordance with MOD NOTE 73 and notify, via e-mail, the responsible WFO, the RFP, and the AOMC of this occurrence.

2. Initiate Maintenance Monitoring Confirm Operations:

A. **WFO Status Monitoring:** The WFO in conjunction with the AOMC will begin routine maintenance monitoring.

B. **30-Day Evaluation Report:** The WFO will also conduct a detailed 30 consecutive day meteorological monitoring and evaluation of the data from the newly implemented site to ensure the data are complete, consistent with expected local conditions or independently confirmed as representative of unique meso-scale phenomena, and the system is operating normally. All discrepancies will be noted and reported to the RFP in a timely manner. Upon the conclusion of the 30-day monitoring period, the WFO will complete and forward to the RFP a narrative report on the results of the monitoring and evaluation, along with any recommendations. The report shall include the identification of the location evaluated, the dates of the evaluation, the office and person conducting the evaluation, and the narrative. The narrative shall include a description of any discrepancies found which relate in any way to the implemented change, and any solutions which act on the discrepancy.

C. **RFP Status Monitoring:** The RFP will closely monitor the status of the installation, checkout and OI. The RFP will conduct periodic teleconferences with the field to assess installation, maintenance, and meteorological performance. When necessary, they will initiate timely corrective actions which are beyond the capability of the local WFO. They will also collect and compile the 30-day implementation reports from the WFOs and forward them in monthly reports to the OPS22 Implementation Manager via e-mail.

D. **AOMC Status Monitoring:** The AOMC will monitor the operational status of the newly implemented ASOS site for
30 days to ensure proper functioning and availability of data from that site. The AOMC will monitor and report on the status of the implementation and apprise the OPS22 Implementation Manager of any unusual ASOS performance related to the implemented improvement during the 30-day close monitoring period.

3. Installation Status Reporting Coordination:

A. Status accounting is a routine configuration management function provided by OPS13. The AOMC will monitor the installation and implementation status of every site and provide daily

reports. These reports will be provided through the ASOS Implementation List Server (ASOS_Implementation@infolist.nws.noaa.gov) And posted on the Surface Observing Program Web Site: **http://www.nws.noaa.gov/ops2/Surface/index.htm**.

B. OPS22 will monitor the status and track the progress of the implementation from daily AOMC reports, periodic reports from the EMRS, Configuration Management Information System (CMIS), and Management Information Reporting System (MIRS), and monthly reports provided by the RFP. OPS22 will use these reports to provide weekly staff note updates for mid- and upper-level management on the status of the implementation, and initiate remedial coordination actions to resolve any difficulties and keep the implementation on schedule. The OST1 ASOS Product Improvement Manager will use these reports to update monthly/quarterly management Quad Chart reports for senior management briefings. OPS22 will also ensure that drafts, updates, data bases, and other documents related to the formal Implementation Plan which are too large for the list server will be announced on the list server and posted on the Surface Observing Program Web Site: **http://www.nws.noaa.gov/ops2/Surface/index.htm**.

4. **Post-Implementation User Notification:** Upon notification of successful initiation of service by the AOMC, OPS22 will normally issue notification of the change and its impact to all affected users on a monthly basis until all scheduled sites have been implemented. **In the case of the Processor Board, since there is no functional change, no notification is required.**

5.0 POST- OI ACTIVITIES

The completion of the OI at each location marks the transition to post implementation activities. This chapter gives a comprehensive description of the post-OI activities. The sections in this chapter describe the post-implementation activities necessary to integrate the new Processor Board into routine ongoing operations, and identify the office(s) responsible. These activities include: Operational Quality Control, Documentation, Disposition of Old Equipment, and Climate Continuity Study. They begin immediately upon operational activation and are accomplished in parallel.

1. **Operational Quality Control:** The responsible WFO will continue with normal monitoring of the operation of the newly installed Processor Board beyond the initial 30-day detailed monitoring period. This will ensure proper ongoing operation of both the installed unit and the entire system. The WFO will perform maintenance on system components for which they are responsible. Any PPI parts returned to National Reconditioning Center (NRC) which are still under warranty will be reported by NRC (OPS16) to the PPI COTR, OPS11.

2. **Documentation:** Three operations are necessary to ensure proper documentation of changes to ASOS. They are:

   A) Data entry into the EMRS;
   B) Data entry into the CMIS, and;
   C) Data entry into the MIRS

   The EMRS *Form A-26* update is accomplished by the ET as part of the OI. *A sample Form A-26 is included as part of Appendix IV. The Regional EPM* will ensure the EMRS update is accomplished. The CMIS will be updated from new information in the EMRS. OPS13 will ensure this action is accomplished. The MIRS will be updated through the EMRS input to the CMIS. OPS 22 will ensure that the MIRS staff makes timely updates to the MIRS.

3. **Disposal of Old Equipment:** After the installation has been completed, package and ship the old equipment (CPUs and memory board) to the National Reconditioning Center in accordance with the Mod Note.

4. **Climate Continuity Study:** At a sub-set of implemented sites, a climate continuity study will be conducted to ensure no biases or meteorological discontinuities are introduced into the climate record which are not documented. **In the case of the Processor Board, there is no functional change and therefore no climate continuity study is required.**

APPENDIX I

ASOS Operational Implementation Check List

For

New Processor Board Upgrade

ASOS Planned Product Improvement

OI Check List - Part A

Planned Product Improvement:_____

Office completing this check list:_____ Date:_____

Item #	Item Description	OPR	Completion Date
2.1	**Pre- System Test (ST) Activities**		
1.	Submit RC for ST & obtain APMC approval to proceed	OST1	
2.	Prepare ST plan & draft outline for ST report	OPS24	
3.	Identify ST locations & dates	OPS24	
4.	Initiate procurement/delivery of PPI test units to ST sites	OST1	
5.	Deliver logistic supplies & test equipment to ST sites	OPS12	
6.	Provide draft MOD NOTES to ST sites	OPS12	
7.	Install PPI test units at ST sites	OPS12	
2.2	**ST Activities**		
1.	**Verify start date for ST**	**OPS22**	
2.	Complete ST data collection & analysis	OPS24	
3.	**Verify completion date for ST**	**OPS22**	
4.	Provide ST report to ACCB	OPS24	
2.3	**Pre-Operational Acceptance Test (OAT) Activities**		
1.	Submit RC to ACCB for OAT	OST1	
2.	OAT management decision by ACCB	OST1	
3.	Prepare OAT plan	OPS24	
4.	Determine OAT locations and schedule	OPS24	
5.	Initiate procurement/delivery of OAT units	OST1	

6.	Coordinate OAT logistics support	OPS12	
7.	Coordinate OAT maintenance support	OPS12	
8a.	OAT Documentation: Deliver MOD NOTES to OAT sites	OPS12	
8b.	OAT Documentation: Deliver OAT procedures to OAT sites	OPS24	
8c.	OAT Documentation: Deliver draft Release Notes to OAT sites	OPS22	
2.4 OAT Activities			
1.	**Verify start date for OAT**	**OPS22**	
2.	Complete OAT data collection and analysis	OPS24	
3.	Verify efficacy of draft OI plan	OPS24	
4.	**Verify completion date for OAT**	**OPS22**	
5.	Provide OAT report to ACCB	OPS24	
3.1 Pre- Operational Implementation (OI) Planning Activities			
1.	Prepare RC for OI	OST1	
2.	Production and acquisition management decision by APMC	OPS2	
3.	Prepare OI plan	OPS22	
4.	Identify OI locations	OPS22	
5.	Develop OI draw rate/installation sequence strategy	OPS22	
3.2 Pre-OI Logistic Support Activities			
1.	Initiate procurement/delivery of OI production units to NLSC	OPS11	
2.	Initiate logistic support process for OI production units	OPS12	
3.	Coordinate installation & maintenance of OI production units	OPS12	
3.3 Pre-OI Operational Support Activities			
1a.	Provide MOD NOTES to WFOs	OPS12	
1b.	Provide Release Notes to WFOs	OPS22	
1c.	Provide updates of appropriate WSOM chapters to WFOs	OS7	NA
1d.	Provide updates of ASOS Users' Guide and other appropriate user information materials to WFOs, FAA, DOD	OPS22	NA

2a.	Provide maintenance training materials to WFOs	OPS22	NA
2b.	Provide observer training materials to WFOs	OPS12	NA
2c.	Conduct local operator/maintenance training	WFOs	NA
3.	Provide pre-implementation user notification	OPS22	NA
4.	**Verify completion of all pre-OI activities**	OPS22	
4.2	**Acquisition Activities**		
1 .	**Verify start date for Operational Implementation (OI)**	**OPS22**	
2.	Monitor & validate delivery of all production units to NLSC	OPS11	
3.	Stock production units and spare kits at NLSC	OPS14	
4.4	**OI Monitoring & Coordination Activities**		
2.a	Begin routine maintenance monitoring	AOMC	
3.a	Begin monitoring and reporting implementation status for all sites	AOMC	
3.b	Begin monitoring implementation status reports and initiate coordination	OPS22	
4.	Issue post-implementation notification to affected users	OPS22	NA

ASOS Planned Product Improvement
Operational Implementation (OI) Check List - Part B

Planned Product Improvement:_____

Location (SID, Name, State):_____

Office completing this check list:_____ Date:_____

Item #	Item Description	OPR	Completion Date
4.2	**Acquisition Activities**		
4.	Requisition PPI production units and kits from NLSC as needed	WFO	
4.3	**OI Installation Activities**		
1.	Download files for NCDC archive	WFO	
2.	Perform installation & checkout in accordance with MOD NOTE	WFO	
4.4	**OI Monitoring & Coordination Activities**		
1.	Installation notification	WFO	
2.b	Begin 30-day monitoring & coordination	WFO	
2.c	Begin 30-day monitoring & coordination	RFP	
2.d	Begin 30-day monitoring & coordination	AOMC	
5.0	**Post OI Activities**		
1.	Operational quality control: Monitor ongoing meteorological performance	WFO	
2a.	Ensure system changes are documented through EMRS	WFO	
2b.	Ensure new EMRS data are documented in the CMIS	OPS13	
2c.	Ensure CMIS documentation changes are entered into MIRS	OPS22	
3.	Dispose of old equipment in accordance with Mod Note	WFO	
4.	Conduct climate continuity study at selected locations (Begin 1-2 year study)	OS7	NA

APPENDIX II

ASOS Site Configuration List

For

New Processor Board Upgrade

OAT Sites for Processor Board

These are the WFOs responsible for the Processor Board OAT sites:

OAT Site		Responsible WFO
1V4	St. Johnsbury, VT	Burlington, VT
CLE	Cleveland, OH	Cleveland, OH
DCA*	Washington, DC	Sterling, VA
GFL *	Glens Falls, NY	Albany, NY
GSP	Greer, SC	Greer, SC
PWM *	Portland, ME	Gray, ME
BIS *	Bismarck, ND	Bismarck, ND
CNK*	Concordia, KS	Topeka, KS
CYS	Cheyenne, WY	Cheyenne, WY
EYE	Eagle Creek, IN	Indianapolis, IN
MDW*	Chicago, IL	Romeoville, IL
TQE	Tekamah, NE	Omaha, NE
ASD	Slidell, LA	Slidell, LA
ATT	Austin, TX	New Braunfels, TX
BNA	Nashville, TN	Old Hickory, TN
BVE	Boothville, LA	Slidell, LA
CSM *	Clinton, OK	Norman, OK
DFW	Dallas-Ft. Worth, TX	Fort Worth, TX
GDP	Guadalupe Pass, TX	Midland, TX
GUY*	Guymon, OK	Amarillo, TX
MEM	Memphis, TN	Memphis, TN
MIA*	Miami, FL	Miami, FL
MOB*	Mobile, AL	Mobile, AL
SSI	Brunswick, GA	Jacksonville, FL
VRB	Vero Beach, FL	Melbourne, FL
AST*	Astoria, OR	Portland, OR
BOI *	Boise, ID	Boise, ID
CZZ *	Campo, CA	San Diego, CA
PHX *	Phoenix, AZ	Phoenix, AZ
SFO *	San Francisco, CA	Monterey, CA
SLC *	Salt Lake City, UT	Salt Lake City, UT
SNT *	Stanley, ID	Pocatello, ID
UAO	Aurora, OR	Portland, OR
PABR *	Barrow, AK	Barrow, AK

PAFA *	Fairbanks, AK	Fairbanks, AK
PHTO *	Hilo, HI	Hilo, HI

Note: * = Also Dew Point OAT & Dew Point Climate Continuity Sites

ASOS Sites With WSP or TDWR

					WSP Delivery date (Per FAA 4/3/2001)
ABQ	Albuquerque	NM	WSP		June 2000
ALB	Albany	NY	WSP		June 2002
ATL	Atlanta	GA		TDWR	
BDL	Windsor Locks	CT	WSP		June 2002
BHM	Birmingham	AL	WSP		January 2002
BNA	Nashville	TN		TDWR	
BOS	Boston	MA		TDWR	
BSM	Austin-Bergstrom	TX	WSP		June 2000
BUF	Buffalo	NY	WSP		May 2001
BWI	Baltimore	MD		TDWR	
CHS	Charleston	SC	WSP		May 2002
CID	Cedar Rapids	IA	WSP		July 2002
CLE	Cleveland	OH		TDWR	
CLT	Charlotte	NC		TDWR	
CMH	Columbus	OH		TDWR	
CVG	Covington/Cincinnati	KY		TDWR	
DAY	Dayton	OH		TDWR	
DCA	Wash. National	VA		TDWR	
DEN	Denver	CO		TDWR	
DFW	Dallas/Ft Worth	TX		TDWR	
DSM	Des Moines	IA	WSP		March 2002
DTW	Detroit	MI		TDWR	
ELP	El Paso	TX	WSP		November 2001
EWR	Newark	NJ		TDWR	
FLL	Ft. Lauderdale	FL		TDWR	
FWA	Fort Wayne	IN	WSP		April 2002
GRR	Grand Rapids	MI	WSP		July 2001
GSO	Greensboro	NC	WSP		February 2002
HNL	Honolulu	HI	WSP		May 2001
HOU	Houston (Hobby)	TX		TDWR	
HPN	White Plains	NY	WSP		June 2001
HSV	**Huntsville**	**AL**	**WSP**		**May 2001**
IAD	Dulles	VA		TDWR	
ICT	Wichita	KS		TDWR	
IND	Indianapolis	IN		TDWR	
ISP	**Islip**	**NY**	**WSP**		**September 2001**
JAX	Jacksonville	FL	WSP		May 2001
JFK	New York	NY		TDWR	
LAS	Las Vegas	NV		TDWR	
LAX	Los Angeles	CA	WSP		January 2002
LBB	Lubbock	TX	WSP		April 2002
LOU	Louisville	KY		TDWR	

MCI	Kansas City	MO		TDWR	
MCO	Orlando	FL		TDWR	
MDT	**Harrisburg**	**PA**	**WSP**		**March 2002**
MDW	Chicago (Midway)	IL		TDWR	
MEM	Memphis	TN		TDWR	
MIA	Miami	FL		TDWR	
MKE	Milwaukee	WI		TDWR	
MSN	Madison	WI	WSP		November 2001
MSP	Minneapolis	MN		TDWR	
MSY	New Orleans	LA		TDWR	
OKC	Oklahoma City	OK		TDWR	
ONT	**Ontario**	**CA**	**WSP**		**August 2001**
ORD	Chicago (O'Hare)	IL		TDWR	
ORF	Norfolk	VA	WSP		August 2000
PBI	West Palm Beach	FL		TDWR	
PDX	**Portland**	**OR**	**WSP**		**June 2001**
PHI	Philadelphia	PA		TDWR	
PHX	Phoenix	AZ		TDWR	
PIT	Pittsburgh	PA		TDWR	
RDU	Raleigh/Durham	NC		TDWR	
RIC	Richmond	VA	WSP		February 2002
ROC	Rochester	NY	WSP		July 2002
SAT	San Antonio	TX	WSP		July 2001
SEA	**Seattle**	**WA**	**WSP**		**October 2001**
SJU	San Juan	PR		TDWR	
SLC	Salt Lake City	UT		TDWR	
SRQ	Sarasota	FL	WSP		September 2001
STL	St. Louis	MO		TDWR	
SYR	Syracuse	NY	WSP		October 2001
TOL	Toledo	OH	WSP		August 2002
TPA	Tampa	FL		TDWR	
TUL	Tulsa	OK		TDWR	
TUS	Tucson	AZ	WSP		May 2002
TYS	Knoxville	TN	WSP		August 2001

Sites in **bold** do not have LLWAS installed

FAA contacts:

WSP	John Farr	202-267-7244
TDWR	Ted Weyrach	202-267-9443

Suggested ASOS Locations for Ice Accretion Remark Demonstration

ASOS Site	Site ID	# of FZRAHourlies 1961-2000	Icing Priority	Service Level	Comments
Worcester, MA	ORH	651	1	C	
Binghamton, NY	BGM	594	3	C	
Bradford, PA	BFD	589	5	C	
Massena, NY	MSS	583	6	D	
Allentown, PA	ABE	517	7	C	
Lebanon, NH	LEB	419 approx.	9	C	Cold Regions Lab in area.
Erie, PA	ERI	278	10	C	
Roanoke, VA	ROA	380	13	B	
Peoria, IL	PIA	380	14	B	
Columbia, MO	COU	372	15	C	
Springfield, MO	SGF	337	17	B	
Pendleton, OR	PDT	328	18	C	
Caribou, ME	CAR	320	19	D	
Chattanooga, TN	CHA	168	21	B	
Rochester, MN	RST	295	24	C	
Des Moines, IA*	DSM	262	27	A	
Moline, IL	MLI	289	28	C	
Akron, OH	CAK	300	31	A	
Yakima, WA	YKM	237	32	C	
Asheville, NC	AVL	282	33	C	
Topeka, KS	TOP	178	34	C	
Raleigh, NC*	RDU	313	36	A	
Sault Ste. Marie, MI	ANJ	219	37	D	

* These sites are also WSP/TDWR sites and will continue with WSP/TDWR after April 15, 2002.

ASOS PORT CONFIGURATION REPORT

DATE:11-06-02

SID	PORT NUM	FUNCTION	STATUS	BAUD RATE	PARITY	BITS	STOP BITS	HANDSHAKE	CONNECTION	MODEM SLOT	DIAL TYPE
XNA	2-1	ACU-DCP A	Enabled	2400	NONE	8	1	RTS/CTS	Radio		
XNA	2-2	Pressure 1	Enabled	2400	NONE	8	1	None	Hard-Wire		
XNA	2-3	OID-4 User 1	Enabled	2400	NONE	8	1	None	Phone	4	Tone
XNA	2-4	VOICE	Enabled	9600	NONE	8	1	None	Hard-Wire		
XNA	3-1	ACU-DCP B	Enabled	2400	NONE	8	1	RTS/CTS	Radio		
XNA	3-2	Pressure 2	Enabled	2400	NONE	8	1	None	Hard-Wire		
XNA	3-3	OID-5 User 2	Enabled	38400	NONE	8	1	None	Phone	5	Tone
XNA	3-4	OID-1 Local	Enabled	9600	NONE	8	1	None	Hard-Wire		
XNA	4-1	UPS	Enabled	9600	NONE	8	1	None	Hard-Wire		
XNA	4-2	Pressure 3	Enabled	2400	NONE	8	1	None	Hard-Wire		
XNA	4-3	GTA Radio	Enabled	1200	NONE	8	1	None	Hard-Wire		
XNA	4-4	OID-2 Secondary	Enabled	9600	NONE	8	1	None	Hard-Wire		
XNA	5-1	ADAS	Enabled	2400	NONE	8	1	Synchronous	Hard-Wire		
YIP	1-3	RVR	Disabled	2400	EVEN	7	1	None	Hard-Wire		
YIP	2-1	ACU-DCP A	Enabled	2400	NONE	8	1	RTS/CTS	Radio		
YIP	2-2	Pressure 1	Enabled	2400	NONE	8	1	None	Hard-Wire		
YIP	2-3	OID-4 User 1	Enabled	2400	NONE	8	1	None	Phone	4	Tone
YIP	2-4	VOICE	Enabled	9600	NONE	8	1	None	Hard-Wire		
YIP	3-1	ACU-DCP B	Enabled	2400	NONE	8	1	RTS/CTS	Radio		
YIP	3-2	Pressure 2	Enabled	2400	NONE	8	1	None	Hard-Wire		
YIP	3-3	OID-5 User 2	Enabled	38400	NONE	8	1	None	Phone	5	Tone
YIP	3-4	OID-2 Secondary	Enabled	9600	NONE	8	1	None	Hard-Wire		
YIP	4-1	UPS	Enabled	9600	NONE	8	1	None	Hard-Wire		
YIP	4-2	Pressure 3	Enabled	2400	NONE	8	1	None	Hard-Wire		
YIP	4-3	CVD-1	Enabled	1200	NONE	8	1	None	Leased	6	Tone
YIP	4-4	OID-1 Local	Enabled	2400	NONE	8	1	None	Leased	2	Tone
YIP	5-1	Printer	Enabled	9600	NONE	8	1	XON/XOFF	Leased	1	Tone
YIP	5-3	ADAS	Enabled	2400	NONE	8	1	Synchronous	Hard-Wire		

ASOS Count: 976

ASOS SENSOR CONFIGURATION REPORT

DATE: 11-06-02

SID	LOCATION	ST	S/W VER	ACU S/W DATE	ACU/ UPS	DCP/ UPS	DCP 1-SENSORS					PORTS																DCP 2-SENSORS					PORTS			DCP 3-SENSORS					PORTS					LOCAL SENSORS													ACU/DCP COMM
							STAT	CPUS	SIO	UPS	A/D	1-2	1-3	1-4	2-1	2-2	2-3	2-4	3-1	3-3	3-4	4-1	4-2	4-3	4-4	5-1	5-2	STAT	CPUS	SIO	UPS	A/D	1-2	1-3	1-4	STAT	CPUS	SIO	UPS	A/D	1-2	1-3	1-4	P1	P2	P3	1	2	3	4	5	6	7	8	9	10	11	12	13	
1V4	St. Johnsbury	VT	2.62A	09/28/01			D	1	1	0	1																	D	1	1	0	1				D	1	1	0	1				X	X		WS	TD	TB										PH I RADIO
2WX	Buffalo	SD	2.6				D	0	0	0	0																	D	0	0	0	0				D	0	0	0	0				X	X		TD	WS	TB										PH I RADIO
40J	Perry - Foley Airport	FL	2.6				E	1	2	0	1				TB	WS	TD											D	0	0	0	0				D	0	0	0	0				X	X														PH I RADIO
6R6	Terrell County Airport	TX	2.6				D	0	0	0	0																	D	0	0	0	0				D	0	0	0	0				X	X				TB	WS	TD								PH I RADIO
79J	Andalusia Municipal Airport	AL	2.6		SOLA	SOLA	E	2	3	1	2	C1	FR	PW	TB	WS	TD	V1		TS								D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
87Q	Point Piedras Blancas	CA	2.6				D	0	0	0	0																	D	0	0	0	0				D	0	0	0	0				X	X		TB	WS	TD										PH I RADIO
8D3	Sisseton Municipal Airport	SD	2.6				E	1	2	0	1				TB	WS	TD											D	0	0	0	0				D	0	0	0	0				X	X														PH II RADIO
9V9	Chamberlain Municipal Airport	SD	2.6				D	0	0	0	0																	D	0	0	0	0				D	0	0	0	0				X	X		TD	WS	TB										PH I RADIO
AAF	Apalachicola Municipal Airport	FL	2.6			SOLA	E	1	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH II RADIO
AAO	Colonel James Jabara Airport	KS	2.6				E	1	2	0	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH II RADIO
AAT	Alturas Municipal Airport	CA	2.6				E	1	2	0	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH I RADIO
ABE	Lehigh Valley Int'l. Airport	PA	2.62	12/19/01	SOLA	SOLA	E	2	4	1	2			PW		WS	TD	V1		C1	C3	TB						D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
ABI	Abilene Regional Airport	TX	2.6		SOLA	CPI	E	2	4	1	2		FR	PW		WS	TD	V1		C3	C1	TB						D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
ABQ	Albuquerque Int'l. Sunport Airport	NM	2.6		SOLA	SOLA	E	2	4	1	2			PW		WS	TD	V1	V3	C1	C3	TB						D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
ABR	Aberdeen Regional Airport	SD	2.6		SOLA	SOLA	E	2	4	1	2		FR	PW	TB	WS	TD	V1		C1	C3							D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
ABY	Southwest Georgia Regional Airport	GA	2.6		SOLA	CPI	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
ACK	Nantucket Memorial Airport	MA	2.6		SOLA		E	2	2	0	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
ACT	Waco Regional Airport	TX	2.6		SOLA	CPI	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
ACV	Arcata Airport	CA	2.6		DELT	SOLA	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
ACY	Atlantic City Int'l. Airport	NJ	2.6		SOLA		E	2	2	0	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
ADG	Lenawee County Airport	MI	2.6				E	1	2	0	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH II RADIO
ADQ	Kodiak Airport	AK	2.6		SOLA	SOLA	E	2	2	1	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
AEX	Alexandria Int'l. Airport	LA	2.6		SOLA	CPI	E	2	2	1	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
AFAC1	Bullseye Aux Airfield	CO	2.6		SOLA		D	1	1	0	1																	D	1	1	0	1				D	1	1	0	1				X	X	X	C1	FR	PW	TB	WS	TD	V1	TS					PH I RADIO
AFW	Jaffrey - Silver Ranch Airport	NH	2.6		SOLA	CPI	E	1	2	1	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH II RADIO
AFW	Fort Worth Alliance Airport	TX	2.6		SOLA	CPI	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
AGC	Allegheny County Airport	PA	2.6		DELT	SOLA	E	2	2	1	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
AGS	Augusta Regional at Bush Field	GA	2.6		SOLA	CPI	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
AHN	Athens/Ben Epps Airport	GA	2.6		SOLA	CPI	E	2	2	1	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
AIA	Alliance Municipal Airport	NE	2.6				E	1	2	0	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH I RADIO
AKH	Gastonia Municipal Airport	NC	2.6				E	1	2	0	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH II RADIO
AKN	King Salmon Airport	AK	2.6		SOLA	SOLA	E	2	2	1	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
AKO	Colorado Plains Regional Airport	CO	2.6		SOLA	CPI	E	2	2	1	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
AKQ	Wakefield Municipal Airport	VA	2.6		SOLA	SOLA	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
AKR	Akron Fulton Int'l. Airport	OH	2.6		SOLA		E	1	2	0	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH II RADIO
ALB	Albany Int'l. Airport	NY	2.63	03/28/02	SOLA	SOLA	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
ALI	Alice Int'l. Airport	TX	2.6		SOLA	SOLA	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	1	1	0	1				D	1	1	0	1				X	X	X													PH II RADIO
ALO	Waterloo Municipal Airport	IA	2.6		DELT	CPI	E	2	2	1	1	C1	FR	PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
ALS	San Luis Valley Regional Airport/Bergman Field	CO	2.6		SOLA	SOLA	E	2	3	1	1	C1		PW	TB	WS	TD	V1	TS									D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
ALW	Walla Walla Regional Airport	WA	2.6		SOLA	CPI	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH I RADIO
AMA	Amarillo Int'l. Airport	TX	2.6		SOLA	SOLA	E	2	4	1	2		FR	PW		WS	TD	V1		C1	TB							D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
AMG	Bacon County Airport	GA	2.6		SOLA	SOLA	E	2	2	1	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X	X													PH II RADIO
AMW	Ames Municipal Airport	IA	2.6				E	1	2	0	1	C1		PW	TB	WS	TD	V1										D	0	0	0	0				D	0	0	0	0				X	X														PH I RADIO

ASOS Count: 975

SID: Site Location Identifier
ST: State
S/W VER: Software Version Used In Acquisition Control Unit (ACU)
ACU S/W DATE: Date Software Installed
ACU/UPS: Acquisition Control Unit Uninterruptible Power Supply (UPS)
DCP/UPS: Data Collection Package(DCP)Uninterruptible Power Supply (UPS)
DCP: Data Collection Package
STAT: Status D-Disabled, E-Enabled
CPUS: Number Of Central Processing Boards
SIO: Number Of Serial InPut/OutPut Boards
UPS: Number Of Uninterruptible Power Supplies
ACU/DCP COMM: Communications Method Between ACU & DCP
A/D: Number Of Analog To Digital Converters

Sensors:
C1: Primary Ceilometer
C2: Meteorological Discontinuity Ceilometer
C3: Backup Ceilometer
DT: Vaisala DTS1 Dewpoint Temperature
FP: All Weather Precipitation Accumulation Gauge
FR: Freezing Rain
P1: Pressure 1
P2: Pressure 2
P3: Pressure 3
PW: Present Weather
TB: Tipping Bucket Rain Gauge
TD: 1088 or H083 Ambient/Dew Point Temperature
TS: Lighting Detection
V1: Primary Visibility
V2: Meteorological Discontinuity Visibility
V3: Backup Visibility
WI: Ice Free Wind (Vaisala 425)
WS: Belfort Wind

ASOS SENSOR FIRMWARE VERSION REPORT

DATE: 11-06-02

SID	CEIL	VIS	TA TD	PWX	WND	PRESS	FZRA	SNOW	HAIL	SUN	L PRECIP	TSTM
12N	0000.00	0000.00	2.46	0000.00	4.0	N/A	0000.00	SD		SS	N/A	0000.00
1V4	0000.00	0000.00	A92/F91	0000.00	4.0		0000.00	SD		SS		0000.00
2WX	0000.00	0000.00	B91/F91	0000.00	4.0	N/A	0000.00	SD		SS	N/A	0000.00
40J	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	SD		SS	0000.00	0000.00
6R6	0000.00	0000.00	A92/F91	0000.00	4.00	N/A	0000.00	SD		SS	N/A	0000.00
79J	0002.46	0039.00	A92/F91	0003.64	0004.00	0000.00	0002.00	SD		SS	0000.00	0001.06
87Q	0000.00	0000.00	B91AF91	0000.00	4.0	N/A	0000.00	SD		SS	N/A	0000.00
8D3	0000.00	0000.00	A92/F91	0000.00	4.0	N/A	0000.00	SD		SS	N/A	0000.00
9V9	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	SD		SS	0000.00	0000.00
AAF	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	SD		SS	0000.00	0000.00
AAO	0002.46	0040.00	A92/F91	0003.64	0004.00	0000.00	0002.00	SD		SS	0000.00	0000.00
AAT	2.46"	039"	A92/F91	3.64"	4.0"	N/A"	"	"	"	"	N/A"	"
ABE	2.46"	040"	A92/F91	3.64	4.0	N/A	0000.00	SD		SS	N/A	0000.00
ABI	2.46	039	B91/F91	3.64	4.0	N/A	2	SD		SS	N/A	0000.00
ABQ	2.46.00	0040.00	B91/F91	0003.64	004.00	0000.00	0000.00	SD		SS	0000.00	0000.00
ABR	2.46	039	B91/F91	3.64	4.0	N/A	2	SD		SS	N/A	0000.00
ABY	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	SD		SS	0000.00	0000.00
ACK	2.46"	040	A92/F91	3.64	4.0	N/A	2	SD		SS	N/A	0000.00
ACT	2.46	039	A92/F91	3.64	40	N/A	0000.00	SD		SS	N/A	0000.00
ACV	2.46	039	B91/F91	3.64	4.0	N/A	0000.00	SD		SS	N/A	0000.00
ACY	2.46	040	A92/F91	3.64	4.0	N/A	2	SD		SS	N/A	0000.00
ADG	2.46	040	A92/F91	3.64	4.0	N/A	2	SD		SS	N/A	0000.00
ADQ	2.46	039	A92/F91	3.64	4.00	N/A	2	SD		SS	N/A	0000.00
AEX	K.46	040"	A9K/F91	3.64	4.0	N/A	3	SD		SS	N/A	0000.00
AFAC1	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	SD		SS	0000.00	0000.00
AFN	2.46	040	A92/F91	3.64	4.00	N/A	2	SD		SS	N/A	0000.00
AFW	2.46	040	B91AF91	3.64	4.0	N/A	2	SD		SS	N/A	0000.00
AGC	2.46	040	A92/F91	3.64	4.0	N/A	0000.00	SD		SS	N/A	0000.00
AGS	2.46	040	A92/F91	3.64	4.0	N/A	2	SD		SS	N/A	0000.00
AHN	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	0000.00	SD		SS	0000.00	0000.00
DAB	2.46	040	A92/F91	3.64	4.00	0000.00	0000.00	SD		SS	0000.00	0000.00

ASOS Count: 887

ASOS IMPLEMENTATION SITE CONFIGURATION DATA BASE

	SID	Date Commissioned	Location		Owner	Old SID	LCD	HWR	SL A/B	OTHER	30-YR NORMAL
1	K12N	08/17/98	Andover	NJ	NWS						
2	K1V4	07/15/98	St. Johnsbury	VT	NWS						
3	K2WX	04/16/98	Buffalo	SD	NWS						
4	K40J	02/27/98	Perry-Foley	FL	NWS						
5	K6R6	06/15/99	Dryden	TX	NWS						
6	K87Q	09/02/97	Pt. Piedras Blancas	CA	NWS						
7	K8D3	08/27/98	Sisseton	SD	NWS						
8	K9V9	02/05/98	Chamberlain	SD	NWS						
9	KAAF	07/31/98	Apalacicola	FL	NWS	AQQ					
10	KAAO	11/14/95	Wichita (Jabara)	KS	FAA	3KM					
11	KAAT	06/01/98	Alturas	CA	NWS	O00					
12	KABE	11/01/95	Allentown	PA	NWS						
13	KABI	05/01/96	Abilene	TX	NWS						
14	KABQ	03/01/96	Albuquerque	NM	NWS						
15	KABR	11/01/94	Aberdeen	SD	NWS						
16	KACK	06/16/97	Nantucket	MA	FAA						
17	KACT	07/01/93	Waco	TX	NWS						
18	KACY	09/01/95	Atlantic City	NJ	NWS						
19	KADG	12/17/97	Adrian	MI	FAA						
20	KAEX	07/20/99	Alexandria	LA	FAA						
21	KAFN	05/24/95	Jaffrey	NH	FAA						
22	KAFW	07/25/97	Ft. Worth (Alliance)	TX	FAA						
23	KAGC	02/03/99	Pittsburgh (Allegheny)	PA	FAA						
24	KAGS	05/01/94	Augusta	GA	NWS						
25	KAHN	02/01/96	Athens	GA	NWS						
26	KAIA	05/16/96	Alliance	NE	FAA						
27	KAKH	01/20/99	Gastonia	NC	FAA						
28	KAKO	02/06/96	Akron	CO	FAA						
29	KAKQ	10/16/97	Wakefield	VA	NWS						

30	KAKR	05/19/99	Akron	OH	FAA						
31	KALB	08/01/95	Albany	NY	NWS						
32	KALO	04/01/96	Waterloo	IA	NWS						
33	KALS	09/01/92	Alamosa	CO	NWS						
34	KALW	10/23/98	Walla Walla	WA	FAA						
35	KAMA	11/01/92	Amarillo	TX	NWS						
36	KAMG	12/13/00	Alma	GA	FAA						
37	KAMW	09/19/96	Ames	IA	FAA						
38	KANB	06/17/98	Annistion	AL	FAA						
39	KAND	11/04/98	Anderson	SC	FAA						
40	KANJ	01/01/97	Sault Ste. Marie	MI	NWS	Y62					
41	KAOH	01/28/98	Lima	OH	FAA						
42	KAOO	07/14/99	Altoona	PA	FAA						
43	KAPA	06/29/98	Denver (Centennial)	CO	FAA						
44	KAPC	05/22/98	Napa	CA	FAA						
45	KAPN	04/01/96	Alpena	MI	NWS						
46	KAQW	06/15/95	North Adams	MA	FAA	2B6					
47	KARA	05/05/98	New Iberia	LA	FAA						
48	KARB	11/05/98	Ann Arbor	MI	FAA						
49	KARR	10/08/98	Chicago/Aurora	IL	FAA						
50	KASD	06/24/98	Slidell	LA	FAA	6R0					
51	KASE	05/21/98	Aspen	CO	FAA						
52	KAST	03/01/93	Astoria	OR	NWS						
53	KASX	10/16/98	Ashland	WI	FAA						
54	KATL	08/01/95	Atlanta	GA	NWS						
55	KATT	07/01/95	Austin	TX	NWS	(AUS)					
56	KATY	04/24/96	Watertown	SD	FAA						
57	KAUS	10/02/97	Austin-Bergstrom	TX	FAA	(BSM)					
58	KAUW	09/14/00	Wausau	WI	FAA						
59	KAVL	06/01/96	Asheville	NC	NWS						
60	KAVP	04/01/96	Wilkes-Barre Scranton	PA	NWS						
61	KAVX	06/07/00	Avalon	CA	FAA						
62	KAXN	12/14/95	Alexandria	MN	FAA						
63	KAZO	01/15/98	Kalamazoo	MI	FAA						
64	KBAF	08/05/98	Westfield	MA	FAA						

65	KBAZ	02/29/96	New Braunfels	TX	FAA	3R5					
66	KBBW	07/29/99	Broken Bow	NE	FAA						
67	KBCE	11/16/00	Bryce Canyon	UT	FAA						
68	KBDE	06/28/95	Baudette	MN	FAA						
69	KBDL	04/01/96	Windsor Locks	CT	NWS						
70	KBDR	05/01/96	Bridgeport	CT	NWS						
71	KBED	08/19/98	Bedford	MA	FAA						
72	KBEH	06/19/96	Benton Harbor	MI	FAA						
73	KBFD	12/02/96	Bradford	PA	FAA						
74	KBFF	06/01/95	Scottsbluff	NE	NWS						
75	KBFI	12/09/98	Seattle (Boeing)	WA	FAA						
76	KBFL	06/01/96	Bakersfield	CA	NWS						
77	KBFM	09/05/96	Mobile	AL	FAA						
78	KBGD	12/19/95	Borger	TX	FAA						
79	KBGM	11/01/95	Binghamton	NY	NWS						
80	KBGR	04/01/98	Bangor	ME	FAA						
81	KBHK	02/19/98	Baker	MT	FAA						
82	KBHM	09/25/98	Birmingham	AL	FAA						
83	KBIH	05/01/95	Bishop	CA	NWS						
84	KBIL	05/01/95	Billings	MT	NWS						
85	KBIS	05/01/96	Bismarck	ND	NWS						
86	KBIV	06/21/96	Holland	MI	FAA						
87	KBJJ	12/11/96	Wooster	OH	FAA						
88	KBKL	02/11/98	Cleveland (Burke)	OH	FAA						
89	KBKV	05/24/95	Brooksville	FL	FAA						
90	KBKW	02/01/96	Beckley	WV	NWS						
91	KBLF	11/08/00	Bluefield	WV	FAA						
92	KBLH	08/30/00	Blythe	CA	FAA						
93	KBLI	09/17/98	Bellingham	WA	FAA						
94	KBLU	01/31/93	Emigrant Gap	CA	NWS						
95	KBMG	03/12/98	Bloomington	IN	FAA						
96	KBML	04/28/95	Berlin	NH	FAA						
97	KBMQ	07/12/96	Burnet	TX	FAA						
98	KBNA	06/01/96	Nashville	TN	NWS						
99	KBNO	07/01/95	Burns	OR	NWS						

100	KBOI	12/01/95	Boise	ID	NWS						
101	KBOS	04/01/96	Boston (Logan)	MA	NWS						
102	KBPI	02/26/98	Big Piney	WY	FAA						
103	KBPK	10/22/98	Mountain Home	AR	FAA						
104	KBPT	07/01/95	Beaumont/Port Arthur	TX	NWS						
105	KBRD	10/24/95	Brainerd	MN	FAA						
106	KBRL	11/21/96	Burlington	IA	FAA						
107	KBRO	05/01/94	Brownsville	TX	NWS						
108	KBTL	02/12/98	Battle Creek	MI	FAA						
109	KBTM	11/09/00	Butte	MT	FAA						
110	KBTR	05/01/93	Baton Rouge	LA	NWS						
111	KBTV	02/01/96	Burlington	VT	NWS						
112	KBUF	12/01/95	Buffalo	NY	NWS						
113	KBUR	05/22/98	Burbank	CA	FAA						
114	KBUY	07/01/98	Burlington	NC	FAA						
115	KBVE	06/30/99	Bootheville (ex-Venice)	LA	NWS	7R1					
116	KBVO	11/09/99	Bartlesville	OK	FAA						
117	KBVY	12/09/98	Beverly	MA	FAA						
118	KBWG	02/06/96	Bowling Green	KY	FAA						
119	KBWI	04/01/96	Baltimore	MD	NWS						
120	KBYG	07/30/98	Buffalo	WY	FAA						
121	KBYI	11/08/00	Burley	ID	FAA						
122	KBZN	06/15/95	Bozeman	MT	FAA						
123	KCAE	12/01/95	Columbia	SC	NWS						
124	KCAG	08/15/96	Craig	CO	FAA						
125	KCAK	09/01/95	Akron	OH	NWS						
126	KCAO	06/01/96	Clayton	NM	NWS						
127	KCAR	08/01/96	Caribou	ME	NWS						
128	KCCR	06/08/99	Concord	CA	FAA						
129	KCDC	05/28/98	Cedar City	UT	FAA						
130	KCDJ	05/21/98	Chillicothe	MO	NWS						
131	KCDR	08/30/00	Chadron	NE	FAA						
132	KCDS	07/31/96	Childress	TX	FAA						
133	KCDW	06/02/99	Caldwell	NJ	FAA						
134	KCEC	09/13/00	Crescent City	CA	FAA						

135	KCEU	03/16/00	Clemson	SC	FAA						
136	KCEW	07/01/97	Crestview	FL	FAA						
137	KCEZ	05/23/96	Cortez	CO	FAA						
138	KCFV	04/17/96	Coffeyville	KS	FAA						
139	KCGI	03/05/97	Cape Girardeau	MO	FAA						
140	KCHA	09/01/95	Chattanooga	TN	NWS						
141	KCHO	11/18/98	Charlottesville	VA	FAA						
142	KCHS	10/01/95	Charleston	SC	NWS						
143	KCID	04/24/96	Cedar Rapids	IA	FAA						
144	KCKB	08/12/98	Clarksburg	WV	FAA						
145	KCLE	12/01/95	Cleveland	OH	NWS						
146	KCLL	12/10/96	College Station	TX	FAA						
147	KCLM	10/16/98	Port Angeles	WA	FAA						
148	KCLT	07/01/98	Charlotte	NC	NWS						
149	KCMA	09/29/99	Camarillo	CA	FAA						
150	KCMH	02/01/96	Columbus	OH	NWS						
151	KCMI	04/24/97	Champaign	IL	FAA						
152	KCMX	09/14/00	Hancock	MI	FAA						
153	KCNK	09/01/92	Concordia	KS	NWS						
154	KCNM	11/29/00	Carlsbad	NM	FAA						
155	KCNO	05/21/98	Chino	CA	FAA						
156	KCNU	05/16/96	Chanute	KS	FAA						
157	KCNY	07/16/98	Moab	UT	FAA						
158	KCON	03/01/96	Concord	NH	NWS						
159	KCOS	11/01/92	Colorado Springs	CO	NWS						
160	KCOU	09/01/95	Columbia	MO	NWS						
161	KCPR	04/01/96	Casper	WY	NWS						
162	KCPS	05/29/97	Cahokia/St Louis	IL	FAA						
163	KCQC	05/27/98	Clines Corners	NM	NWS						
164	KCQT	06/24/99	Los Angeles - USC	CA	NWS						
165	KCQX	06/14/95	Chatham	MA	FAA						
166	KCRE	06/16/99	North Myrtle Beach	SC	FAA						
167	KCRG	11/25/97	Jacksonville (Craig)	FL	FAA						
168	KCRP	12/01/95	Corpus Christi	TX	NWS						
169	KCRQ	02/18/98	Carlsbad	CA	FAA						

170	KCRS	05/20/97	Corsicana	TX	FAA						
171	KCRW	10/01/94	Charleston	WV	NWS						
172	KCSG	05/01/94	Columbus	GA	NWS						
173	KCSM	10/15/96	Clinton	OK	FAA						
174	KCSV	10/04/00	Crossville	TN	FAA						
175	KCTY	02/27/98	Cross City	FL	NWS						
176	KCUB	10/15/98	Columbia	SC	FAA						
177	KCUT	04/09/99	Custer	SD	NWS						
178	KCVG	10/01/95	Cincinnati/Covington	KY	NWS						
179	KCXO	12/10/96	Conroe	TX	FAA						
180	KCXY	10/11/00	Harrisburg	PA	FAA						
181	KCYS	11/01/95	Cheyenne	WY	NWS						
182	KCZZ	08/26/97	Campo	CA	NWS						
183	KD07	05/21/98	Faith	SD	NWS						
184	KDAB	06/01/95	Daytona Beach	FL	NWS						
185	KDAG	08/23/00	Barstow-Daggett	CA	FAA						
186	KDAL	11/19/97	Dallas (Love Field)	TX	FAA						
187	KDAN	08/16/00	Danville	VA	FAA						
188	KDAW	01/19/00	Rochester	NH	FAA						
189	KDAY	11/01/95	Dayton	OH	NWS						
190	KDBQ	09/01/95	Dubuque	IA	NWS						
191	KDCA	02/01/98	Washington National	VA	NWS						
192	KDCU	10/23/96	Decatur	AL	FAA						
193	KDDC	09/01/92	Dodge City	KS	NWS						
194	KDDH	12/09/98	Bennington	VT	FAA	5B5					
195	KDEC	11/29/00	Decatur	IL	FAA						
196	KDEN	02/01/94	Denver	CO	NWS						
197	KDET	10/19/00	Detroit (City)	MI	FAA						
198	KDEW	11/05/98	Deer Park	WA	FAA	07S					
199	KDFI	01/07/98	Defiance	OH	FAA						
200	KDFW	12/01/95	Dallas/Fort Worth	TX	NWS						
201	KDGW	05/28/98	Douglas	WY	FAA						
202	KDHT	09/20/00	Dalhart	TX	FAA						
203	KDKK	12/11/96	Dunkirk	NY	FAA						
204	KDLH	04/01/96	Duluth	MN	NWS						

205	KDLN	05/14/97	Dillon	MT	FAA						
206	KDLS	10/26/00	The Dalles	OR	FAA						
207	KDMH	04/29/98	Baltimore (Downtown)	MD	NWS						
208	KDMN	08/30/00	Deming	NM	FAA						
209	KDMO	10/24/95	Sedalia	MO	FAA						
210	KDNL	12/05/95	Augusta (Daniel Field)	GA	FAA						
211	KDPA	04/24/97	DuPage	IL	FAA						
212	KDRA	07/01/96	Mercury	NV	NWS						
213	KDRO	05/23/96	Durango	CO	FAA						
214	KDRT	04/01/96	Del Rio	TX	NWS						
215	KDSM	12/01/95	Des Moines	IA	NWS						
216	KDSV	03/01/00	Dansville	NY	FAA						
217	KDTN	05/01/97	Shreveport	LA	FAA						
218	KDTO	07/26/95	Denton	TX	FAA						
219	KDTS	11/06/96	Destin	FL	FAA						
220	KDTW	07/01/95	Detroit	MI	NWS						
221	KDUG	09/27/00	Douglas-Bisbee	AZ	FAA						
222	KDUJ	06/14/00	Du Bois	PA	FAA						
223	KDVN	04/17/96	Davenport	IA	FAA						
224	KDVT	09/02/98	Phoenix (Deer Valley)	AZ	FAA						
225	KDWH	12/09/97	Houston (Hooks)	TX	FAA						
226	KDXR	05/13/98	Danbury	CT	FAA						
227	KDYL	07/28/99	Doylestown	PA	FAA						
228	KEAT	11/30/00	Wenatchee	WA	FAA						
229	KEAU	08/24/00	Eau Claire	WI	FAA						
230	KECG	03/25/98	Elizabeth City	NC	FAA						
231	KEEO	02/27/97	Meeker	CO	FAA						
232	KEET	06/17/98	Alabaster	AL	FAA						
233	KEKN	05/01/96	Elkins	WV	NWS						
234	KELD	11/01/00	El Dorado	AR	FAA						
235	KELM	12/17/97	Elmira	NY	FAA						
236	KELN	07/30/98	Ellensburg	WA	FAA						
237	KELP	06/01/95	El Paso	TX	NWS						
238	KELY	06/01/94	Ely	NV	NWS						
239	KELZ	02/02/00	Wellsville	NY	FAA						

240	KEMP	02/15/96	Emporia	KS	FAA						
241	KENW	10/09/97	Kenosha	WI	FAA						
242	KEQY	01/27/99	Monroe	NC	FAA						
243	KERI	10/01/95	Erie	PA	NWS						
244	KESF	04/30/96	Alexandria	LA	FAA						
245	KEST	12/14/95	Estherville	IA	FAA						
246	KEUG	09/01/95	Eugene	OR	NWS						
247	KEVV	02/01/96	Evansville	IN	NWS						
248	KEVW	07/29/99	Evanston	WY	FAA						
249	KEWB	03/20/96	New Bedford	MA	FAA						
250	KEWN	09/12/97	New Bern	NC	FAA						
251	KEWR	07/01/96	Newark	NJ	NWS						
252	KEYE	02/15/96	Indianapolis(Egle Crk)	IN	FAA	I14					
253	KEYW	03/01/96	Key West	FL	NWS						
254	KFAR	11/01/95	Fargo	ND	NWS						
255	KFAT	09/01/95	Fresno	CA	NWS						
256	KFAY	04/15/98	Fayettevile	NC	FAA						
257	KFCA	02/01/94	Kalispell	MT	NWS						
258	KFCM	10/02/97	Minneapolis (Flg Cld)	MN	FAA						
259	KFDR	01/28/98	Frederick	OK	FAA						
260	KFDY	08/16/00	Findlay	OH	FAA						
261	KFFC	09/26/95	Peachtree City	GA	FAA						
262	KFFT	12/14/95	Frankfort	KY	FAA						
263	KFHR	12/18/97	Friday Harbor	WA	FAA						
264	KFIG	01/26/00	Clearfield	PA	FAA						
265	KFIT	09/17/97	Fitchburg	MA	FAA						
266	KFLD	07/29/96	Fond Du Lac	WI	FAA						
267	KFLG	07/01/94	Flagstaff	AZ	NWS						
268	KFLL	09/09/98	Ft. Lauderdale	FL	FAA						
269	KFLO	04/23/99	Florence	SC	FAA						
270	KFMN	12/10/97	Farmington	NM	NWS						
271	KFMY	06/10/98	Fort Meyers (Page)	FL	FAA						
272	KFNB	08/30/00	Falls City	NE	FAA						
273	KFNT	06/01/95	Flint	MI	NWS						
274	KFOE	11/19/97	Topeka (Forbes Field)	KS	FAA						

275	KFOK	07/22/98	Westhampton Beach	NY	FAA						
276	KFPR	07/28/99	Fort Pierce	FL	FAA						
277	KFRG	08/04/99	Farmingdale	NY	FAA						
278	KFSD	04/01/96	Sioux Falls	SD	NWS						
279	KFSM	08/01/94	Fort Smith	AR	NWS						
280	KFST	12/06/95	Fort Stockton	TX	FAA						
281	KFTW	09/23/97	Meacham Field	TX	FAA						
282	KFTY	10/28/98	Atlanta (Fulton Cty)	GA	FAA						
283	KFUL	07/01/98	Fullerton	CA	FAA						
284	KFVE	05/31/95	Frenchville	ME	FAA						
285	KFWA	07/01/96	Fort Wayne	IN	NWS						
286	KFWN	10/25/00	Sussex	NY	FAA						
287	KFXE	06/24/98	Ft. Lauderdale (Exec.)	FL	FAA						
288	KFYV	05/13/97	Fayetteville	AR	FAA						
289	KFZY	03/20/96	Fulton	NY	FAA						
290	KGAG	10/31/96	Gage	OK	FAA						
291	KGCC	07/16/98	Gillette	WY	NWS						
292	KGCK	12/17/96	Garden City	KS	FAA						
293	KGCN	12/01/93	Grand Canyon	AZ	FAA						
294	KGDP	06/15/99	Pine Springs	TX	NWS						
295	KGED	10/08/97	Georgetown	DE	FAA						
296	KGEG	09/01/95	Spokane	WA	NWS						
297	KGEY	10/15/98	Greybull	WY	FAA						
298	KGEZ	06/25/98	Shelbyville	CO	FAA	3SM					
299	KGFK	12/18/97	Grand Forks	ND	FAA						
300	KGGG	05/20/98	Longview	TX	FAA						
301	KGGW	04/01/94	Glasgow	MT	NWS						
302	KGIF	06/30/95	Winter Haven	FL	FAA						
303	KGJT	04/01/96	Grand Junction	CO	NWS						
304	KGKJ	01/22/97	Meadville	PA	FAA	2G6					
305	KGKY	07/22/97	Arlington	TX	FAA	F54					
306	KGLD	09/01/92	Goodland	KS	NWS						
307	KGLR	03/26/98	Gaylord	MI	FAA						
308	KGLS	11/29/96	Galveston	TX	FAA						
309	KGMU	04/28/99	Greenville	SC	FAA						

310	KGNA	07/30/98	Grand Marais	MN	NWS						
311	KGNR	03/04/98	Greenville	ME	NWS						
312	KGNT	10/01/97	Grants	NM	NWS						
313	KGNV	08/12/98	Gainesville	FL	FAA						
314	KGOK	04/09/98	Guthrie	OK	FAA						
315	KGON	12/08/99	Groton	CT	FAA						
316	KGPT	08/12/98	Gulfport	MS	FAA						
317	KGRB	07/01/96	Green Bay	WI	NWS						
318	KGRD	05/24/00	Greenwood	SC	FAA						
319	KGRI	10/01/92	Grand Island	NE	NWS						
320	KGRR	08/01/95	Grand Rapids	MI	NWS						
321	KGSH	09/26/96	Goshen	IN	FAA						
322	KGSO	10/01/95	Greenboro	NC	NWS						
323	KGSP	04/01/96	Greer (Grnvl-Spartbg)	SC	NWS						
324	KGTF	08/01/94	Great Falls	MT	NWS						
325	KGUP	10/11/00	Gallup	NM	FAA						
326	KGUY	12/01/98	Guymon	OK	NWS						
327	KGVL	10/17/95	Gainesville	GA	FAA						
328	KGVW	08/28/97	Richards-Gebaur	MO	FAA						
329	KGWO	06/03/97	Greenwood	MS	FAA						
330	KGZH	03/31/97	Evergreen	AL	FAA						
331	KHAO	05/15/97	Hamilton	OH	FAA						
332	KHBG	05/10/00	Hattiesburg	MS	FAA						
333	KHBR	07/31/96	Hobart	OK	FAA						
334	KHDO	03/15/96	Hondo	TX	FAA						
335	KHEI	03/13/96	Hettinger	ND	FAA						
336	KHFD	05/15/97	Hartford	CT	FAA						
337	KHGR	10/01/98	Hagerstown	MD	FAA						
338	KHHR	11/10/98	Hawthorne	CA	FAA						
339	KHIB	08/24/00	Hibbing	MN	FAA						
340	KHIE	05/24/95	Whitefield	NH	FAA						
341	KHIO	06/18/98	Portland (Hillsboro)	OR	FAA						
342	KHJO	02/19/98	Hanford	CA	FAA	S18					
343	KHKA	10/28/98	Blytheville	AR	FAA						
344	KHKS	07/20/00	Jackson	MS	FAA						

345	KHKY	09/05/97	Hickory	NC	FAA						
346	KHLC	05/16/96	Hill City	KS	FAA						
347	KHLG	03/25/98	Wheeling	WV	FAA						
348	KHLN	11/01/94	Helena	MT	NWS						
349	KHON	11/01/96	Huron	SD	NWS						
350	KHOT	12/20/00	Hot Springs	AR	FAA						
351	KHOU	08/12/98	Houston (Hobby)	TX	FAA						
352	KHRI	03/13/98	Hermiston	OR	FAA	S22					
353	KHRL	11/25/96	Harlingen	TX	FAA						
354	KHRO	09/13/00	Harrison	AR	FAA						
355	KHSE	07/01/95	Hatteras	NC	NWS						
356	KHSI	05/30/95	Hastings	NE	FAA						
357	KHSV	08/01/94	Huntsville	AL	NWS						
358	KHTL	04/01/96	Houghton Lake	MI	NWS						
359	KHTS	09/01/96	Huntington	WV	NWS						
360	KHUF	03/05/98	Terre Haute	IN	FAA						
361	KHUL	09/13/00	Houlton	ME	FAA						
362	KHUT	06/20/96	Hutchinson	KS	FAA						
363	KHVR	04/01/94	Havre	MT	NWS						
364	KHWD	09/23/98	Hayward	CA	FAA						
365	KHWO	04/21/99	Hollywood	FL	FAA						
366	KHWV	09/29/99	Shirley	NY	FAA						
367	KHYA	02/19/97	Hyannis	MA	FAA						
368	KHYR	11/14/95	Hayward	WI	FAA						
369	KHZY	12/02/98	Ashtabula	OH	FAA						
370	KIAD	05/01/96	Washington (Dulles)	VA	NWS						
371	KIAH	06/01/96	Houston	TX	NWS						
372	KICT	11/01/92	Wichita	KS	NWS						
373	KIDA	02/05/98	Idaho Falls	ID	FAA						
374	KIEN	06/11/97	Pine Ridge	SD	FAA						
375	KIGM	09/01/95	Kingman	AZ	NWS						
376	KIGX	07/14/99	Chapel Hill	NC	FAA						
377	KIJD	04/28/95	Willimantic	CT	FAA						
378	KILG	10/01/94	Wilmington	DE	NWS						
379	KILM	11/01/95	Wilmington	NC	NWS						

380	KILN	04/01/98	Wilmington	OH	NWS						
381	KIML	06/29/00	Imperial	NE	FAA						
382	KIMT	10/10/96	Iron Mountain	MI	FAA						
383	KIND	01/01/96	Indianapolis	IN	NWS						
384	KINK	11/29/00	Wink	TX	FAA						
385	KINL	11/01/96	International Falls	MN	NWS						
386	KINT	12/02/98	Winston Salem	NC	FAA						
387	KINW	07/01/95	Winslow	AZ	NWS						
388	KIOW	03/01/95	Iowa City	IA	FAA						
389	KIPL	08/16/00	Imperial	CA	FAA						
390	KIPT	09/01/95	Williamsport	PA	NWS						
391	KIRK	06/11/98	Kirksville	MO	NWS						
392	KISN	04/01/96	Williston	ND	NWS						
393	KISP	08/01/99	Islip	NY	FAA						
394	KISW	11/14/95	Wisconsin Rapids	WI	FAA						
395	KITR	04/10/97	Burlington	CO	FAA						
396	KIWI	04/28/95	Wiscasset	ME	FAA	9B9					
397	KIXD	04/10/97	Olathe	KS	FAA						
398	KIZG	12/06/95	Fryeburg	ME	FAA	B20					
399	KJAN	07/01/93	Jackson	MS	NWS						
400	KJAX	03/01/96	Jacksonville	FL	NWS						
401	KJBR	10/28/98	Jonesboro	AR	FAA						
402	KJCT	12/02/96	Junction	TX	NWS						
403	KJDN	08/14/97	Jordan	MT	NWS						
404	KJEF	04/10/97	Jefferson City	MO	FAA						
405	KJER	12/26/96	Jerome	ID	FAA						
406	KJFK	05/01/96	New York (Kennedy)	NY	NWS						
407	KJKL	12/01/95	Jackson	KY	NWS						
408	KJLN	02/26/98	Joplin	MO	FAA						
409	KJMS	10/05/00	Jamestown	ND	FAA						
410	KJST	08/30/00	Johnstown	PA	FAA						
411	KJXN	10/12/00	Jackson	MI	FAA						
412	KLAA	05/18/95	Lamar	CO	FAA						
413	KLAF	01/15/98	Lafayette	IN	FAA						
414	KLAN	06/01/96	Lansing	MI	NWS						

415	KLAR	09/28/00	Laramie	WY	FAA						
416	KLAS	09/01/95	Las Vegas	NV	NWS						
417	KLAW	09/13/96	Lawton	OK	FAA						
418	KLAX	03/01/97	Los Angeles	CA	NWS						
419	KLBB	09/01/95	Lubbock	TX	NWS						
420	KLBF	02/01/96	North Platte	NE	NWS						
421	KLBT	09/16/98	Lumberton	NC	FAA						
422	KLBX	05/13/98	Angleton	TX	FAA						
423	KLCH	01/01/96	Lake Charles	LA	NWS						
424	KLEB	05/13/98	Lebanon	NH	FAA						
425	KLEE	08/07/96	Leesburg	FL	FAA						
426	KLEX	03/01/96	Lexington	KY	NWS						
427	KLFK	08/23/00	Lufkin	TX	FAA						
428	KLFT	08/25/98	Lafayette	LA	FAA						
429	KLGA	05/01/96	New York (La Guardia)	NY	NWS						
430	KLGB	09/01/96	Long Beach	CA	NWS						
431	KLGU	10/01/98	Logan	UT	FAA						
432	KLHQ	03/20/96	Lancaster	OH	FAA	I15					
433	KLHX	02/06/96	La Junta	CO	FAA						
434	KLIC	12/14/95	Limon	CO	NWS						
435	KLIT	10/28/98	Little Rock	AR	FAA						
436	KLLJ	09/22/98	Challis	ID	NWS	U15					
437	KLLQ	10/22/98	Monticello	AR	FAA						
438	KLMT	10/15/97	Klamath Falls	OR	FAA						
439	KLND	12/01/96	Lander	WY	NWS						
440	KLNK	11/01/92	Lincoln	NE	NWS						
441	KLNR	10/19/00	Lone Rock	WI	FAA						
442	KLNS	03/17/99	Lancaster	PA	FAA						
443	KLOL	12/06/00	Lovelock	NV	FAA						
444	KLOU	09/06/00	Louisville	KY	FAA						
445	KLOZ	09/18/96	London	KY	FAA						
446	KLPR	04/25/97	Lorain/Elyria	OH	FAA	22G					
447	KLSE	10/05/00	La Crosse	WI	FAA						
448	KLUK	08/13/97	Cincinnati (Lunken)	OH	FAA						
449	KLVJ	04/10/97	Houston (Clover Field)	TX	FAA	T02					

450	KLVK	03/31/98	Livermore	CA	FAA						
451	KLVM	10/25/00	Livingston	MT	FAA						
452	KLVS	10/11/00	Las Vegas	NM	FAA						
453	KLWC	04/17/96	Lawrence	KS	FAA						
454	KLWD	09/01/97	Lamoni	IA	NWS	0Y7					
455	KLWM	05/15/97	Lawrence	MA	FAA						
456	KLWS	07/01/95	Lewiston	ID	NWS						
457	KLWT	12/14/00	Lewiston	MT	FAA						
458	KLWV	09/18/96	Lawrenceville	IL	FAA						
459	KLXV	07/30/98	Leadville	CO	NWS						
460	KLYH	08/01/96	Lynchburg	VA	NWS						
461	KMAE	09/02/98	Madera	CA	FAA						
462	KMAF	03/01/96	Midland	TX	NWS						
463	KMAI	04/15/97	Marianna	FL	FAA						
464	KMBG	09/01/97	Mobridge	SD	NWS						
465	KMBS	09/10/98	Saginaw	MI	FAA						
466	KMCB	09/27/00	McComb	MS	FAA						
467	KMCE	08/06/98	Merced	CA	FAA						
468	KMCI	07/01/95	Kansas City	MO	NWS						
469	KMCK	12/04/96	McCook	NE	FAA						
470	KMCN	05/01/94	Macon	GA	NWS						
471	KMCO	07/01/96	Orlando	FL	NWS						
472	KMCW	08/17/00	Mason City	IA	FAA						
473	KMDH	11/20/97	Carbondale/Murphysboro	IL	FAA						
474	KMDT	12/01/00	Harrisburg	PA	FAA						
475	KMDW	04/10/97	Chicago(Midway)	IL	FAA						
476	KMEB	06/24/98	Maxton	NC	FAA						
477	KMEH	05/07/98	Meacham	OR	NWS						
478	KMEI	07/01/95	Meridian	MS	NWS						
479	KMEM	04/30/99	Memphis	TN	FAA						
480	KMFD	02/01/96	Mansfield	OH	NWS						
481	KMFE	09/30/96	McAllen	TX	FAA						
482	KMFI	10/24/95	Marshfield	WI	FAA						
483	KMFR	01/01/98	Medford	OR	NWS						

484	KMGJ	12/17/97	Montgomery	NY	FAA						
485	KMGM	07/01/95	Montgomery	AL	NWS						
486	KMGW	01/06/99	Morgantown	WV	FAA						
487	KMGY	10/15/97	Dayton	OH	FAA						
488	KMHE	09/01/99	Mitchell	SD	FAA						
489	KMHK	02/15/96	Manhattan	KS	FAA						
490	KMHS	08/01/96	Mt. Shasta	CA	NWS						
491	KMHT	11/14/97	Manchester	NH	FAA						
492	KMIA	07/01/96	Miami	FL	NWS						
493	KMIC	09/11/97	Minneapolis (Crystal)	MN	FAA						
494	KMIE	04/29/99	Muncie	IN	FAA						
495	KMIV	02/17/99	Millville	NJ	FAA						
496	KMIW	09/04/96	Marshalltown	IA	FAA						
497	KMKC	11/13/97	Kansas City (Downtown)	MO	FAA						
498	KMKE	07/01/95	Milwaukee	WI	NWS						
499	KMKG	05/01/96	Muskegon	MI	NWS						
500	KMKL	06/03/97	Jackson	TN	FAA						
501	KMKO	07/12/96	Muskogee	OK	FAA						
502	KMLC	07/15/96	Mc Alester	OK	FAA						
503	KMLF	08/01/96	Milford	UT	NWS						
504	KMLI	07/01/95	Moline	IL	NWS						
505	KMLP	06/19/96	Mullan Pass VOR	ID	FAA						
506	KMLS	11/02/00	Miles City	MT	FAA						
507	KMLT	09/20/95	Millinocket	ME	FAA						
508	KMLU	06/24/98	Monroe	LA	FAA						
509	KMMK	08/04/99	Meriden	CT	FAA						
510	KMMV	01/29/97	McMinnville	OR	FAA						
511	KMNN	05/06/98	Marion	OH	FAA						
512	KMOB	02/01/96	Mobile	AL	NWS						
513	KMOD	05/13/98	Modesto	CA	FAA						
514	KMPO	09/29/99	Mt Pocono	PA	FAA						
515	KMPV	06/18/96	Mountpelier	VT	FAA						
516	KMQE	10/15/98	Milton (Blue Hill)	MA	NWS						
517	KMRB	11/29/00	Martinsburg	WV	FAA						

518	KMRH	04/26/00	Beaufort	NC	FAA						
519	KMRY	03/25/98	Monterey	CA	FAA						
520	KMSL	04/08/97	Muscle Shoals	AL	FAA						
521	KMSN	04/01/96	Madison	WI	NWS						
522	KMSO	09/01/96	Missoula	MT	NWS						
523	KMSP	06/01/96	Minneapolis	MN	NWS						
524	KMSS	09/13/00	Massena	NY	FAA						
525	KMSY	05/01/96	New Orleans	LA	NWS						
526	KMTH	05/14/98	Marathon	FL	FAA						
527	KMTJ	11/30/93	Montrose	CO	FAA						
528	KMTO	12/04/97	Matoon	IL	FAA						
529	KMTP	09/01/98	Montauk	NY	NWS						
530	KMVL	11/15/95	Morrisville (Stowe)	VT	FAA						
531	KMVY	06/17/97	Martha's Vineyard	MA	FAA						
532	KMWH	06/30/97	Moses Lake	WA	FAA						
533	KMWL	12/06/00	Mineral Wells	TX	FAA						
534	KMWT	03/01/99	Mount Ida	AR	NWS						
535	KMYF	02/18/98	San Diego (Montgomery)	CA	FAA						
536	KMYL	09/16/97	McCall	ID	NWS						
537	KMYV	10/04/00	Marysville	CA	FAA						
538	KN60	05/21/98	Garrison	ND	NWS						
539	KNEW	08/12/98	New Orleans (Lkfrnt)	LA	FAA						
540	KNYC	11/01/95	NYC - Central Park	NY	NWS						
541	KOAK	01/12/00	Oakland	CA	FAA						
542	KODO	12/01/98	Odessa	TX	FAA	E02					
543	KODX	08/30/00	Ord	NE	FAA						
544	KOFK	04/01/96	Norfolk	NE	NWS						
545	KOFP	03/15/95	Richmond	VA	FAA						
546	KOGB	03/20/97	Orangeburg	SC	FAA						
547	KOGD	05/06/98	Ogden	UT	FAA						
548	KOJC	06/20/96	Olathe	KS	FAA						
549	KOKB	05/12/99	Oceanside	CA	FAA						
550	KOKC	10/01/92	Oklahoma City	OK	NWS						
551	KOLF	09/17/98	Wolf Point	MT	FAA						

552	KOLM	11/01/95	Olympia	WA	NWS						
553	KOLS	07/28/99	Nogales	AZ	FAA						
554	KOMA	02/22/96	Omaha	NE	FAA						
555	KOMK	02/17/98	Omak	WA	FAA						
556	KONO	04/09/97	Ontario	OR	FAA						
557	KONT	05/27/98	Ontario	CA	FAA						
558	KOPF	05/21/98	Miami (Opa Locka)	FL	FAA						
559	KOQT	09/01/98	Oak Ridge	TN	NWS						
560	KORD	02/01/96	Chicago (O'Hare)	IL	NWS						
561	KORE	05/24/95	Orange	MA	FAA						
562	KORF	03/01/96	Norfolk	VA	NWS						
563	KORH	07/01/95	Worcester	MA	NWS						
564	KORL	06/10/98	Orlando (Executive)	FL	FAA						
565	KOSH	04/17/96	Oshkosh	WI	FAA						
566	KOSU	10/08/97	Columbus	OH	FAA						
567	KOTM	08/17/00	Ottumwa	IA	FAA						
568	KOVE	06/17/98	Oroville	CA	FAA						
569	KOVS	01/21/99	Boscobel	WI	FAA						
570	KOWD	06/03/98	Norwood	MA	FAA						
571	KOXB	09/01/99	Ocean City	MD	FAA						
572	KOXR	03/04/98	Oxnard	CA	FAA						
573	KP28	02/05/98	Medicine Lodge	KS	NWS						
574	KP38	08/07/97	Caliente	NV	NWS						
575	KP58	06/24/99	Port Hope	MI	NWS						
576	KP59	07/30/98	Copper Harbor	MI	NWS						
577	KP60	08/13/98	Yellowstone Lake	WY	NWS						
578	KP68	08/13/97	Eureka	NV	NWS						
579	KP69	12/24/96	Lowell	ID	NWS						
580	KP75	07/30/98	Manistique	MI	NWS						
581	KP92	05/05/98	Salt Point	LA	NWS						
582	KPAE	09/24/98	Everett	WA	FAA						
583	KPAH	08/01/95	Paducah	KY	NWS						
584	KPBF	09/26/00	Pine Bluff	AR	FAA						
585	KPBI	04/01/93	West Palm Beach	FL	NWS						
586	KPDK	03/18/98	Atlanta	GA	FAA						

587	KPDT	06/01/95	Pendleton	OR	NWS						
588	KPDX	11/01/95	Portland	OR	NWS						
589	KPEO	12/10/97	Penn Yan	NY	FAA						
590	KPFN	07/16/98	Panama City	FL	FAA						
591	KPGA	03/28/97	Page	AZ	NWS						
592	KPGD	09/20/96	Punta Gorda	FL	FAA						
593	KPHD	01/28/98	New Philadelphia	OH	FAA						
594	KPHF	12/13/00	Newport News	VA	FAA						
595	KPHL	12/01/95	Philadelphia	PA	NWS						
596	KPHP	06/26/98	Philip	SD	NWS						
597	KPHX	03/01/94	Phoenix	AZ	NWS						
598	KPIA	10/01/95	Peoria	IL	NWS						
599	KPIE	09/24/98	St. Petersburg	FL	FAA						
600	KPIH	03/01/96	Pocatello	ID	NWS						
601	KPIL	09/17/98	Port Isabel	TX	FAA	T31					
602	KPIR	09/07/00	Pierre	SD	FAA						
603	KPIT	07/01/96	Pittsburgh	PA	NWS						
604	KPKB	11/08/00	Parkersburg	WV	FAA						
605	KPKD	06/28/95	Park Rapids	MN	FAA						
606	KPLB	07/01/98	Plattsburg	NY	FAA						
607	KPLN	08/24/00	Pellston	MI	FAA						
608	KPMD	04/08/98	Palmdale	CA	FAA						
609	KPMP	03/12/98	Pompano Beach	FL	FAA						
610	KPNC	11/08/00	Ponca City	OK	FAA						
611	KPNE	05/01/96	Northeast Philadelphia	PA	NWS						
612	KPNS	11/25/97	Pensacola	FL	FAA						
613	KPOF	11/20/97	Poplar Bluff	MO	NWS						
614	KPOU	09/27/00	Poughkeepsie	NY	FAA						
615	KPPF	05/16/96	Parsons	KS	FAA						
616	KPQL	08/14/97	Pascagoula	MS	FAA						
617	KPRC	02/03/99	Prescott	AZ	FAA						
618	KPSC	01/29/98	Pasco	WA	FAA						
619	KPSF	01/20/99	Pittsfield	MA	FAA						
620	KPSP	02/18/98	Palm Springs	CA	FAA						
621	KPSX	10/18/00	Palacios	TX	FAA						

622	KPTK	08/20/98	Pontiac	MI	FAA						
623	KPTW	03/03/99	Pottstown	PA	FAA						
624	KPUB	10/01/92	Pueblo	CO	NWS						
625	KPUC	09/11/98	Price	UT	FAA						
626	KPUW	06/11/98	Pullman	WA	FAA						
627	KPVD	09/01/95	Providence	RI	NWS						
628	KPWA	07/31/96	OKC (Wiley Post)	OK	FAA						
629	KPWK	04/17/96	Pal-Waukee	IL	FAA						
630	KPWM	08/01/94	Portland	ME	NWS						
631	KPYM	05/12/95	Plymouth	MA	FAA						
632	KRAC	03/26/98	Racine	WI	FAA						
633	KRAL	07/23/98	Riverside	CA	FAA						
634	KRAP	09/01/95	Rapid City	SD	NWS						
635	KRBD	08/26/97	Dallas (Redbird)	TX	FAA						
636	KRBG	06/25/97	Roseburg	OR	FAA						
637	KRBL	10/01/95	Red Bluff	CA	NWS						
638	KRDD	07/01/96	Redding	CA	NWS						
639	KRDG	02/17/99	Reading	PA	FAA						
640	KRDM	04/20/00	Redmond	OR	FAA						
641	KRDU	02/01/96	Raleigh-Durham	NC	NWS						
642	KREO	03/18/98	Rome	OR	NWS						
643	KRFD	07/01/95	Rockford	IL	NWS						
644	KRHI	05/28/98	Rhinelander	WI	FAA						
645	KRIC	10/01/95	Richmond	VA	NWS						
646	KRIL	02/27/97	Rifle	CO	FAA						
647	KRIW	12/01/95	Riverton	WY	NWS						
648	KRKP	02/29/96	Rockport	TX	FAA						
649	KRMG	03/31/97	Rome	GA	NWS						
650	KRNM	04/16/98	Ramona	CA	NWS	L39					
651	KRNO	09/01/95	Reno	NV	NWS						
652	KRNT	10/08/98	Renton	WA	FAA						
653	KROA	05/01/96	Roanoke	VA	NWS						
654	KROC	07/01/96	Rochester	NY	NWS						
655	KROW	10/01/96	Roswell	NM	NWS						
656	KRQE	08/18/98	Window Rock	AZ	NWS	P34					

657	KRSL	12/14/95	Russell	KS	FAA						
658	KRST	06/01/96	Rochester	MN	NWS						
659	KRSW	05/21/98	Ft. Meyers	FL	FAA						
660	KRTN	08/27/98	Raton	NM	NWS						
661	KRUE	01/12/99	Russellville	AR	FAA						
662	KRVS	09/04/97	Tulsa (Jones/Rvrside)	OK	FAA						
663	KRWF	08/24/00	Redwod Falls	MN	FAA						
664	KRWI	10/11/00	Rocky Mount	NC	FAA						
665	KRWL	09/28/00	Rawlins	WY	FAA						
666	KRXE	02/12/98	Rexburg	ID	FAA	U11					
667	KRZZ	05/13/98	Roanoke Rapids	NC	FAA						
668	KSAC	04/15/98	Sacramento	CA	FAA						
669	KSAD	09/03/97	Safford	AZ	NWS						
670	KSAF	10/02/97	Santa Fe	NM	FAA						
671	KSAN	08/01/96	San Diego	CA	NWS						
672	KSAT	06/01/95	San Antonio	TX	NWS						
673	KSAV	04/01/96	Savannah	GA	NWS						
674	KSBA	03/04/98	Santa Barbara	CA	FAA						
675	KSBM	08/15/96	Sheboygan	WI	FAA						
676	KSBN	07/01/96	South Bend	IN	NWS						
677	KSBP	04/01/98	San Luis Obispo	CA	FAA						
678	KSCK	11/01/96	Stockton	CA	NWS						
679	KSDB	04/01/96	Sandberg	CA	NWS						
680	KSDF	08/01/94	Louisville	KY	NWS						
681	KSDM	02/01/97	San Diego(Brown Field)	CA	NWS						
682	KSEA	10/01/96	Seattle	WA	NWS						
683	KSEG	08/13/97	Selinsgrove	PA	FAA						
684	KSET	03/26/97	St. Charles	MO	FAA	3SZ					
685	KSFB	02/24/99	Orlando (Sanford)	FL	FAA						
686	KSFD	03/19/97	Winner	SD	FAA	NED					
687	KSFF	10/15/98	Spokane	WA	FAA						
688	KSFO	10/01/96	San Francisco	CA	NWS						
689	KSGF	11/01/95	Springfield	MO	NWS						
690	KSGR	12/28/00	Sugar Land	TX	FAA						
691	KSHN	05/22/98	Shelton	WA	NWS						

692	KSHR	12/01/96	Sheridan	WY	NWS						
693	KSHV	10/01/95	Shreveport	LA	NWS						
694	KSJC	07/08/98	San Jose	CA	FAA						
695	KSJN	05/26/99	St. Johns	AZ	FAA						
696	KSJT	02/01/96	San Angelo	TX	NWS						
697	KSJU	05/01/96	San Juan	PR	NWS						
698	KSLC	03/01/98	Salt Lake City	UT	NWS						
699	KSLE	07/01/95	Salem	OR	NWS						
700	KSLK	06/10/98	Saranac Lake	NY	FAA						
701	KSLN	12/14/95	Salina	KS	FAA						
702	KSMF	05/21/98	Sacramento	CA	FAA						
703	KSMO	10/05/00	Santa Monica	CA	FAA						
704	KSMP	02/15/94	Stampede Pass	WA	NWS						
705	KSMQ	06/02/99	Somerville	NJ	FAA						
706	KSMX	08/01/96	Santa Maria	CA	NWS						
707	KSNA	02/17/99	Santa Ana	CA	FAA						
708	KSNS	09/09/98	Salinas	CA	FAA						
709	KSNT	03/13/98	Stanley	ID	NWS	2U7					
710	KSNY	12/14/95	Sidney	NE	FAA						
711	KSPB	08/27/98	Scappoose	OR	FAA	1S4					
712	KSPD	06/25/98	Springfield	CO	NWS						
713	KSPG	06/17/98	St. Petersburg	FL	FAA						
714	KSPI	12/01/95	Springfield	IL	NWS						
715	KSPS	05/01/93	Wichita Falls	TX	NWS						
716	KSPW	09/19/96	Spencer	IA	FAA						
717	KSRQ	03/18/99	Sarasota/Bradenton	FL	FAA						
718	KSSF	05/13/98	San Antonio	TX	FAA						
719	KSSI	10/25/00	Brunswick	GA	FAA						
720	KSTC	06/01/95	St. Cloud	MN	NWS						
721	KSTJ	09/19/96	St. Joseph	MO	FAA						
722	KSTL	06/01/96	St. Louis	MO	NWS						
723	KSTP	06/28/96	St. Paul	MN	FAA						
724	KSTS	06/03/98	Santa Rosa	CA	FAA						
725	KSUS	01/15/98	St. Louis (Spirit of)	MO	FAA						
726	KSUX	06/01/95	Sioux City	IA	NWS						

727	KSWO	10/15/96	Stillwater	OK	FAA						
728	KSXT	12/31/92	Sexton Summit	OR	NWS						
729	KSYR	11/01/93	Syracuse	NY	NWS						
730	KTAN	11/05/97	Taunton	MA	FAA						
731	KTCC	09/06/00	Tucumcari	NM	FAA						
732	KTCL	01/07/99	Tuscaloosa	AL	FAA						
733	KTCS	09/16/96	Truth or Consequences	NM	NWS						
734	KTDZ	12/17/97	Toledo	OH	FAA						
735	KTEB	01/01/97	Teterboro	NJ	NWS						
736	KTHV	08/13/97	York	PA	FAA						
737	KTIW	01/14/99	Tacoma	WA	FAA						
738	KTKI	04/22/98	Mc Kinney	TX	FAA						
739	KTLH	04/01/96	Tallahassee	FL	NWS						
740	KTMB	06/17/98	Miami (Tamiami)	FL	FAA						
741	KTOI	10/05/00	Troy	AL	FAA						
742	KTOL	12/01/95	Toledo	OH	NWS						
743	KTOP	12/01/92	Topeka	KS	NWS						
744	KTOR	08/26/99	Torrington	WY	FAA						
745	KTPA	11/01/95	Tampa	FL	NWS						
746	KTPH	11/29/00	Tonopah	NV	FAA						
747	KTQE	05/30/95	Tekamah	NE	FAA						
748	KTRI	10/01/95	Bristol	TN	NWS						
749	KTRL	05/20/97	Terrell	TX	FAA						
750	KTRM	10/11/00	Palm Springs	CA	FAA						
751	KTTD	06/25/98	Portland (Troutdale)	OR	FAA						
752	KTTN	03/11/98	Trenton	NJ	FAA						
753	KTUL	10/01/92	Tulsa	OK	NWS						
754	KTUP	06/01/93	Tupelo	MS	NWS						
755	KTUS	01/01/96	Tucson	AZ	NWS						
756	KTVC	06/11/98	Traverse City	MI	FAA						
757	KTVL	10/18/00	South Lake Tahoe	CA	FAA						
758	KTVR	02/29/96	Vicksburg-Tallulah	MS	FAA						
759	KTWF	02/27/97	Twin Falls	ID	FAA						
760	KTXK	07/12/96	Texarkana	AR	FAA						
761	KTYR	05/20/98	Tyler	TX	FAA						

762	KTYS	10/01/95	Knoxville	TN	NWS						
763	KUAO	01/29/97	Aurora	OR	FAA						
764	KUGN	09/01/99	Chicago/Waukegan	IL	FAA						
765	KUIL	12/01/96	Quillayute	WA	NWS						
766	KUIN	09/06/00	Quincy	IL	FAA						
767	KUNO	08/15/96	West Plains	MO	FAA						
768	KUTS	02/03/97	Huntsville	TX	FAA						
769	KUUU	02/29/96	Newport	RI	FAA	2B4					
770	KUZA	01/20/99	Rock Hill	SC	FAA						
771	KVAY	11/05/97	Mount Holly	NJ	FAA						
772	KVCB	03/31/98	Vacaville	CA	FAA	O45					
773	KVCT	12/01/95	Victoria	TX	NWS						
774	KVEL	01/29/98	Vernal	UT	FAA						
775	KVGT	09/28/00	North Las Vegas	NV	FAA						
776	KVIH	11/12/96	Rolla/Vichy	MO	FAA						
777	KVNY	05/26/98	Van Nuys	CA	FAA						
778	KVPC	03/22/00	Cartersville	GA	FAA						
779	KVPZ	11/13/97	Valparaiso	IN	FAA						
780	KVSF	08/23/95	Springfield	VT	FAA						
781	KVTA	02/24/99	Newark	OH	FAA						
782	KVTN	10/01/95	Valentine	NE	NWS						
783	KVUO	06/19/96	Vancouver (Pearson)	WA	FAA						
784	KWAL	09/01/96	Wallops Island	VA	NWS						
785	KWJF	12/13/00	Lancaster	CA	FAA						
786	KWLD	12/14/95	Winfield	KS	FAA						
787	KWMC	10/01/94	Winnemucca	NV	NWS						
788	KWRL	12/20/00	Worland	WY	FAA						
789	KWST	07/28/99	Westerly	RI	FAA						
790	KWVI	07/23/98	Watsonville	CA	FAA						
791	KXNA	04/28/99	Bentonville	AR	FAA						
792	KYIP	03/11/99	Detroit (Willow Run)	MI	FAA						
793	KYKM	04/01/96	Yakima	WA	NWS						
794	KYNG	09/01/95	Youngstown	OH	NWS						
795	KZZV	09/13/00	Zanesville	OH	FAA						
796	PAAQ	09/15/97	Palmer	AK	FAA	PAQ					

797	PABE	11/01/98	Bethel	AK	NWS	BET					
798	PABI	12/15/97	Big Delta	AK	FAA	BIG					
799	PABR	06/01/98	Barrow	AK	NWS	BRW					
800	PABT	11/19/99	Bettles	AK	FAA	BTT					
801	PACD	07/01/98	Cold Bay	AK	NWS	CDB					
802	PACV	12/13/99	Cordova	AK	FAA	CDV					
803	PADE	07/27/98	Deering	AK	FAA	DEE					
804	PADQ	01/01/97	Kodiak	AK	NWS	ADQ					
805	PAEG	02/15/98	Eagle	AK	FAA	EAA					
806	PAEN	05/10/99	Kenai	AK	FAA	ENA					
807	PAFA	12/01/97	Fairbanks	AK	NWS	FAI					
808	PAGK	11/19/99	Gulkana	AK	FAA	GKN					
809	PAGY	08/22/96	Skagway	AK	FAA	SGY					
810	PAHN	06/05/98	Haines	AK	FAA	HNS					
811	PAHO	12/01/97	Homer	AK	NWS	HOM					
812	PAIL	12/01/97	Iliamna	AK	FAA	ILI					
813	PAJN	03/01/98	Juneau	AK	FAA	JNU					
814	PAKN	06/01/98	King Salmon	AK	NWS	AKN					
815	PAKT	12/09/96	Ketchikan	AK	FAA	KTN					
816	PAKV	07/07/98	Kaltag	AK	FAA	KAL					
817	PAKW	04/01/97	Klawock	AK	FAA	AKW					
818	PALH	01/22/98	Lake Hood	AK	FAA	LHD					
819	PAMC	07/01/98	McGrath	AK	NWS	MCG					
820	PAMR	10/15/97	Anchorage (Merrill)	AK	FAA	MRI					
821	PANC	06/01/98	Anchorage	AK	NWS	ANC					
822	PANN	01/01/98	Nenana	AK	NWS	ENN					
823	PANT	09/01/96	Annette Island	AK	NWS	ANN					
824	PAOM	07/01/98	Nome	AK	NWS	OME					
825	PAOR	03/20/00	Northway	AK	FAA	ORT					
826	PAOT	12/01/97	Kotzebue	AK	NWS	OTZ					
827	PAPB	09/18/96	St. George Island	EXP	NWS	PAB					
828	PAQT	07/23/98	Nuiqsut	AK	FAA	10AK					
829	PASC	06/09/99	Deadhorse	AK	FAA	SCC					
830	PASI	12/01/96	Sitka	AK	FAA	SIT					
831	PASN	01/01/97	St. Paul Island	AK	NWS	SNP					

832	PASO	05/02/97	Seldovia	AK	FAA	SOV					
833	PATA	11/19/99	Tanana	AK	FAA	TAL					
834	PATK	01/01/98	Talkeetna	AK	NWS	TKA					
835	PATO	10/15/98	Portage Glacier	AK	FAA	A21					
836	PAVL	07/07/98	Kivalina	AK	FAA	KVL					
837	PAWD	04/01/97	Seward	AK	FAA	SWD					
838	PAWI	09/15/98	Wainwright	AK	FAA	AWI					
839	PAYA	11/01/97	Yakutat	AK	NWS	YAK					
840	PGSN	01/11/00	Saipan		NWS						
841	PGUM	01/11/00	Guam		NWS						
842	PHJR	07/02/99	Barbers Point	HI	NWS	JRF					
843	PHKO	12/31/97	Kona	HI	FAA	KOA					
844	PHLI	12/01/97	Lihue	HI	NWS	LIH					
845	PHMK	06/01/99	Molokai (Kaunakakai)	HI	NWS	MKK					
846	PHNL	02/01/98	Honolulu	HI	NWS	HNL					
847	PHOG	03/01/98	Kahului	HI	NWS	OGG					
848	PHTO	01/01/98	Hilo	HI	NWS	ITO					
849	TIST	08/10/98	Charlotte Amalie	VI	FAA	STT					
850	TISX	08/08/00	Christiansted	VI	FAA	STX					