



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

# Memorandum

Subject: **ACTION:** Program Guidance Letter 14-04

Date: **JUN 18 2014**

From:  Manager, Airports Financial Assistance Division,  
APP-500

Reply to  
Attn. of: Kendall L. Ball

To: PGL Distribution List

## 1. PURPOSE

We are issuing this Program Guidance Letter (PGL) to clarify guidance on the eligibility of Automated Weather Observing Systems (AWOS). This guidance is effective immediately.

This PGL replaces Paragraph 572 of FAA Order 5100-38C, the Airport Improvement Program Handbook, which PGL 08-05 replaced. PGL 08-05 is canceled.

This PGL, through the changes in Paragraph 572:

- a. Outlines the steps sponsors must take to complete an AWOS project using AIP grant funds;
- b. Explains the technical and coordination requirements for AWOS equipment under the AIP;
- c. Explains the justification requirements for AWOS equipment under the AIP, including the preparation of a Benefit Cost Analysis (BCA); and
- d. Explains the FAA determination that certain limited airports are not required to prepare a BCA.

## 2. FAA OFFICES INVOLVED IN NON-FEDERAL AWOS INSTALLATIONS

There are three primary offices involved in the installation, commissioning, and recurring inspection of AIP funded AWOS. They are the:

FAA Office of Airports (ARP),  
FAA Office of Technical Operations, Spectrum Engineering Group (AJW-1C), and  
FAA Office of Technical Operations, NAS Integration and Support Group, NAS  
Policy and Services Planning Team (AJW-137).

## 3. BACKGROUND ISSUES ASSOCIATED WITH NON-FEDERAL AWOS INSTALLATIONS

There are a number of issues that this PGL will help address. These issues are:

**a. Ensuring Proper Coordination with all impacted FAA Lines of Business.**

Early and complete coordination with the impacted FAA office will help the AWOS project run smoothly.

**b. Ensuring Availability of Radio Spectrum.**

The FAA has a finite number of air traffic control radio frequencies available for assignment in the VHF band. AJW-1C is responsible for engineering these assignments to ensure interference free air-to-ground communications.

While an AWOS A, A/V, I, or II does not require a frequency assignment, an AWOS III or IV does.

Many parts of the United States are experiencing frequency congestion in the VHF band. In some cases, AJW-1C has to change the frequency of existing FAA facilities to accommodate a proposed AWOS. Therefore it is critical that requests for radio spectrum assignments be timely, only requested for justified AWOS installations, and be properly coordinated.

**c. Ensuring that Systems are Commissioned.**

AWOS commissioning is required for all installations. Operating a non-commissioned system would be risky to an airport operator because the airport operator would be transmitting information using unverified equipment. Further, failure to conduct required yearly inspections also risks that systems are broadcasting inaccurate weather information.

**d. Ensuring that only Justified Systems with a Passing BCA are Funded**

In some cases, airports that do not meet a BCA for an AWOS III or IV have asked whether it can install an AWOS A, A/V, I or II using AIP and then upgrade to the AWOS III or IV with its own funds.

Because all commissioned AWOS become part of the NAS, the FAA retains certain responsibilities for the continuing use of the AWOS. Airport sponsors may not always be aware of these FAA costs, and may not consider the long-term FAA costs of an AWOS as part of the overall cost of the AWOS.

When an airport installs an AWOS III or IV, in addition to commissioning costs, the FAA incurs yearly costs for system inspections, as well as the costs and the difficulties associated with assigning radio frequencies. These costs and efforts can be substantial, which is why the ADO may only fund an AWOS III or IV that has received a passing BCA from APP-500. The ADO must not fund an AWOS III or IV that APP-500 has not confirmed has a passing BCA or has confirmed is exempt from the BCA requirement.

**PARAGRAPH 572. AUTOMATED WEATHER OBSERVING SYSTEM (AWOS).**

**a. AWOS Technical Requirements.**

AIP funded AWOS must meet the technical requirements of Table 1.

**Table 1 Required Technical Criteria for AWOS Projects**

<b>Equipment Requirement</b>	<b>Explanation of the Requirement</b>
<b>Must be FAA Certified</b>	The Terminal Program Operations Office, Weather Processors and Sensors Team (AJW-14A) is responsible for certifying AWOS equipment. AJW-144, the Weather Processors and Sensors team, is responsible for non-federal AWOS installations.
<b>Must meet FAA technical requirements</b>	The AWOS must meet the specific requirements of FAA Advisory Circular 150/5220-16, Automated Weather observing Systems (AWOS) for Non-Federal Applications.
<b>Must be Owned, Maintained and Operated by the Sponsor</b>	<p>AWOS are not eligible for FAA takeover. The special condition for AWOS must be included in the AWOS grant.</p> <p><b>AUTOMATED WEATHER OBSERVING SYSTEMS (AWOS):</b> The Sponsor agrees that it will:</p> <ol style="list-style-type: none"><li>1) within 60 calendar days of grant acceptance, establish a Memorandum of Agreement (MOA) with the FAA;</li><li>2) develop an Operations Maintenance Manual to more specifically describe the operational, maintenance, and documentation requirements for the AWOS;</li><li>3) within 60 calendar days of installation, take the necessary actions to initiate the AWOS commissioning by the FAA; and</li><li>4) provide for the installation, commissioning, continuous operation, and maintenance of any Non-Federal AWOS funded under this grant for the useful life of the equipment.</li></ol> <p>The Sponsor further understands that the FAA will not take over the ownership, operation, or maintenance of any Sponsor-acquired equipment.</p>
<b>Must Meet Radio Transmission and Communications Requirements</b>	<p>AWOS may broadcast via the Unicom frequency or over a dedicated radio frequency. Different manufacturers of FAA-certified AWOS may use Unicom or radio transmission. Airport sponsors may not limit a bid for an AWOS based on the method of radio transmission.</p> <p>Automatic telephone answering systems or radio transmitters are eligible as an allowable cost to an AWOS.</p> <p>Weather Message Switching Center Replacement (WMSCR) equipment and the first 60 days of reporting service are eligible as an allowable cost to an AWOS III or IV.</p>

## **b. AWOS Selection and Justification Requirements**

All AWOS installations, including the relocation or rehabilitation of existing equipment, must meet all of the following criteria in Table 2:

**Table 2 Required Justification Criteria for AWOS Projects**

<b>Requirement has been met</b>	<b>Explanation of the Requirement</b>
<b>Benefit Cost is Greater Than 1.0.</b>	<p>Proposed AWOS III or IV projects (all configurations) must meet or exceed a BCA ratio of 1.0, using the new computer program (Excel based) to complete the BCA developed by the Office of Airports, Airports Financial Assistance Division, APP-500.</p> <p>Proposed replacement, relocation, and/or rehabilitation of existing AWOS III or IV projects must meet or exceed a BCA ratio of 0.50.</p> <p>Upgrades of existing AWOS to an AWOS III or IV must meet or exceed a BCA ratio of 1.0.</p> <p>An AWOS "A", "A/V" or AWOS I or II do not require a BCA.</p> <p>In parts of the country where radio congestion is a problem, the FAA may have to change the frequency of existing FAA facilities to accommodate a proposed AWOS. The costs and workload associated with these reassignments is part of the BCA calculation.</p>
<b>AJW-1C Concurrence.</b>	<p>The FAA Office of Technical Operations, Spectrum Engineering Group (AJW-1C) must have concurred with the request and assigned a Very High Frequency (VHF) assignment.</p>
<b>AJW-137 has agreed to participate.</b>	<p>The FAA Office of Technical Operations, NAS Integration and Support Group, NAS Policy and Services Planning Team (AJW-137) must have agreed to participate in the inspection, commissioning and approval process for the proposed AWOS.</p>

## **c. Prohibition Against Upsizing or Alternate BCA Scenarios or Values**

In some cases, airports that do not meet a BCA for an AWOS III have asked whether it can install an AWOS A, A/V, I or II using AIP and then upgrade to the AWOS III with its own funds. This is not allowed because while the airport bears the cost of the upgrade to the AWOS III, the FAA would then be required to bear the enduring costs associated with including an unjustified system into the National Airspace System (NAS).

Because a commissioned AWOS III or IV becomes part of the NAS, the FAA retains certain responsibilities for the continuing use of the AWOS. Airport sponsors may not always be aware of these FAA costs, and may not consider the long-term FAA costs of an AWOS III or IV as part of the overall cost of the AWOS.

When an airport installs an AWOS III or IV, in addition to commissioning costs, the FAA incurs yearly costs for system inspections, as well as the costs and the difficulties associated with assigning radio frequencies. These costs and efforts can be substantial,

which is why the ADO may only fund an AWOS III or IV that has received a passing BCA from APP-500. The ADO must not fund an AWOS III or IV that APP-500 has not confirmed has a passing BCA or has confirmed is exempt from the BCA requirement.

The Airports District Office/Regional Office (ADO/RO) **must** advise airports that do not qualify for an AWOS III, that even if the airport intends to upgrade to an AWOS III with its own funds, the FAA **will not** commission the system as an AWOS III or better and will not accept the system into the National Airspace System.

#### **d. Limitation on Equipment and Data Service Costs**

A functioning connection to the NAS through the Weather Messaging Switching Center Replacement is necessary for the AWOS III and IV. The Air Traffic Organization (ATO) recently improved the security of these data connections to the NAS. ATO has limited the companies that can connect to the NAS, and allows these companies to charge a data connection or subscription fee to the users. Therefore, airports installing an AWOS must enter into a subscription agreement with one of the companies. It is the airport's responsibility to pay these subscription services, as these costs are not AIP eligible. (In order to commission an AWOS, the subscription cost for the first 60 days can be included in the AIP grant as an allowable cost of the project.)

#### **4. SPONSOR REQUIRED STEPS FOR ALL PROPOSED AWOS PROJECTS.**

A sponsor must follow the required steps in Table 3:

**Table 3 Required Steps for AWOS Projects**

<b>Step</b>	<b>Explanation of the Requirement</b>
<b>Step 1. Sponsor Obtain List of Certified AWOS</b>	The FAA Weather Office, AJW-14 keeps the list of certified AWOS equipment. The sponsor must contact AJW-14 for the current list.
<b>Step 2. Sponsor Prepares BCA Data and Submit to ADO/RO. ADO/RO Submits BCA Data to APP-500</b>	<p>To gain approval for an AWOS III or IV, the sponsor must submit the information needed by APP-500 to the ADO/RO (See Attachment 1) APP-500 will then conduct a BCA using the FAA Office of Airports criteria.</p> <p>The sponsor must submit the Office of Airports BCA data sheets to the ADO/RO. The ADO/RO must only forward BCA data submittals that are complete. If the ADO/RO determines that the BCA data is complete, the ADO/RO will forward the data to APP-500.</p> <p>The ADO/RO must allow at least 30 days for APP-500 BCA calculation once the data is submitted to APP-500.</p> <p>The BCA submittal for airports that are classified as "National" or "Regional" airports in the latest copy of the FAA's General Aviation Airports: A National Asset, is streamlined. This is because these airports have been determined to meet the minimum operational</p>

**Table 3 Required Steps for AWOS Projects**

Step	Explanation of the Requirement
	<p>levels to achieve a passing BCA.</p> <p>However, the information on the BCA Data Sheet about project costs and coordination must be submitted for all airports.</p>
<p><b>Step 3.</b> <b>APP-500 Completes BCA and Advises ADO/RO of Determination</b></p>	<p>After the ADO/RO submits the BCA data, APP-500 will complete the BCA and advise the ADO/RO of the result.</p> <p>However, if the BCA threshold is not met, the ADO/RO must not program the project and must notify the sponsor of this. If the BCA is satisfactory, the ADO/RO must notify the sponsor that the AWOS proposal can proceed to Step 4.</p>
<p><b>Step 4.</b> <b>Sponsor Request to Move Forward</b></p>	<p>The sponsor must contact the appropriate FAA service area AJW-137 Non-Federal Program Implementation Manager (PIM) and the ADO/RO, in writing, requesting to move forward with the proposed project. Contact information for the Non-Federal PIM point of contact is listed at the end of this paragraph.</p> <p>The sponsor must receive a written notification from the PIM that the Non-Federal Facilities Program is willing to participate in the AWOS proposal before the project can proceed.</p> <p>The PIMs are:            Eastern Service Center- AJV-E36 404-389-8173, 404-389-8177            Central Service Center- AJV-C31 817-222-5347            Western Service Center- AJV-W26 425-203-4763</p>
<p><b>Step 5.</b> <b>PIM Request for Spectrum Availability</b></p>	<p>If the sponsor intends to install an AWOS that requires a VHF frequency for broadcast, the PIM will contact the Spectrum Management Group (AJW-1C) to verify spectrum availability.</p>
<p><b>Step 6.</b> <b>PIM Notification to Sponsor of Frequency Assignment or Project Cancellation</b></p>	<p>If a VHF frequency is available, the PIM will notify the sponsor in writing, and the AWOS proposal can proceed.</p> <p>If there are no VHF frequencies available, the PIM will notify the sponsor in writing, and the AWOS project will be stopped.</p>
<p><b>Step 7.</b> <b>Sponsor Enters Into 3<sup>rd</sup> Party Agreement (AWOS III or IV only)</b></p>	<p>An AWOS-III or IV system must be connected to the Weather Message Switching Center Replacement (WMSCR) via an FAA-approved 3<sup>rd</sup> party firm.</p> <p>After the sponsor has the written confirmations from FAA, the sponsor must enter into a third party agreement with an FAA-approved provider to enter the AWOS III data into the WMSCR.</p> <p>The sponsor must notify the ADO/RO and the PIM when it has entered the third party agreement.</p>
<p><b>Step 8.</b></p>	<p>An AWOS III or IV requires a Federal Communication Commission</p>

**Table 3 Required Steps for AWOS Projects**

Step	Explanation of the Requirement
<b>Sponsor initiates NRA</b>	<p>(FCC) license for transmission. The FCC licensing process requires FAA complete a non-rule making airspace case (NRA). Therefore, the sponsor must initiate a non-rule making airspace case (NRA), FAA Form 7460-1.</p> <p>Once the sponsor receives the NRA determination, the sponsor must then apply, and obtain a frequency license from the FCC. This step is required prior to broadcasting on the VHF frequency approved by the FAA.</p> <p>For an AWOS installation of an AWOS A, A/V, I, or II, the AWOS NRA process can begin earlier in the AWOS project planning.</p>
<b>Step 9. Sponsor Establishes MOU</b>	<p>Following installation, but prior to commissioning, the sponsor must establish a Memorandum of Understanding (MOU) and an Operations and Maintenance Manual (OMM) between with the Local FAA Technical Operations District Office (Tech Ops). Tech Ops will develop the MOU.</p>
<b>Step 10. FAA Schedules Tech Ops Ground Inspection</b>	<p>Following execution of the MOU, Tech Ops will then conduct a commissioning “ground” inspection and verify that the airport owner/sponsor has the resources to maintain the system in proper working order.</p>
<b>Step 11. Sponsor Requests Flight Check</b>	<p>Following a successful ground inspection the sponsor must request a flight inspection.</p> <p>AWOS are not flight inspected. However, if an instrument approach procedure is developed based on the commissioned AWOS altimeter, the procedure requires flight inspection. If an AWOS uses a NAVAID voice channel (e.g. VOR) for transmission in place of a discrete frequency, the VOR will be flight inspected.</p>
<b>Step 12. FAA Commissioning</b>	<p>The FAA will commission an AWOS to operate in the National Airspace System (NAS) only after the FAA has determined that the AWOS has been properly installed in accordance with the siting criteria and demonstrates that it meets the requirements of FAA Advisory Circular 150/5220-16.</p>
<b>Step 13. Sponsor completes AWOS installation steps</b>	<p>In order to consider the project complete, the ADO/RO must confirm:</p> <ol style="list-style-type: none"> <li>1) From the PIM that the AWOS is commissioned,</li> <li>2) That the ADO/RO has following paperwork on file: <ol style="list-style-type: none"> <li>a. MOU</li> <li>b. OMM</li> <li>c. Commissioning Ground Inspection Report</li> <li>d. Flight Inspection Report</li> <li>e. Memorandum from Tech Ops indicating the subject</li> </ol> </li> </ol>

**Table 3 Required Steps for AWOS Projects**

Step	Explanation of the Requirement
	<p>facility has been commissioned and is in service.</p> <p>f. Third party agreement/contract to enter AWOS-III data into WMSCR (if required).</p>

Canceled



Attachment 1  
**Data Requirements for an Office of Airports AWOS BCA**  
05-07-14

<b>Airport Name &amp; LocID:</b>
<b>Airport ASSET Category*:</b>

*\*From the latest copy of the FAA "General Aviation Airports: A National Asset" or NPIAS Report, whichever is most recent.*

<b>Preparer's Name and Contact info:</b>
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<b>(A) Type of AWOS with all features (e.g., AWOS III w T/P)</b>	
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<b>(B) 1<sup>st</sup> Month and Year of Operation</b>	<b>Month:</b>	<b>Year:</b>
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<b>(C) Share of GA operations operating in IFR conditions at airport</b>	%
Source:	

<b>(D) Standard Instrument Approach Procedure(S) (SIAP) (or if in queue to be published, provide estimated publication date)</b>				
	SIAP 1	SIAP 2	SIAP 3	SIAP 4
Type of Published SIAP				
Runway End				
Runway Length				
Share of operations using each SIAP	(Please provide best estimate)			
1. General Aviation	%	%	%	%
2. Air Taxi	%	%	%	%
3. Air Carrier	%	%	%	%
4. Military	%	%	%	%
SIAP Ceiling Minima	Source:			
1. Without AWOS (ft)				
2. With AWOS (ft)				
SIAP Visibility Minima	Source:			
1. Without AWOS (SM)				
2. With AWOS (SM)				

<b>(E) Equipment and Construction Costs of Proposed AWOS</b>	
Source: (ADO/Region/Engineer)	
1. Design and consulting fees	\$
2. Land acquisition (if applicable)	\$
3. Site improvements including utilities	\$
4. AWOS Equipment	\$
5. Installation/construction	\$
<b>Total</b>	\$

## Attachment 1

**Data Requirements for an Office of Airports AWOS BCA**

05-07-14

<b>(F) Recurring Annual Costs</b>	
1. Annual O&M costs, including replacement parts (provide justification if below \$5,500 annually)	\$
2. Annual third party cost upload AWOS data to FAA NADIN (required for all AWOS IIIs)	\$
3. Annual cost for the FAA to conduct inspection of the AWOS III depends on the following factors. Which best applies?	(Check One)
a. Airport has other non-Federal facilities that require annual inspection	
b. Airport does not have other non-Federal facilities requiring annual inspection	
c. The AWOS will be installed in a remote location without direct access	

<b>(G) Distance, location, LocID, and equipment type of three nearest FAA/NWS contract surface observation stations</b>				
	Location (city/state)	LocID	AWOS Type	Dist. (NM)
1.				
2.				
3.				
4.				

<b>(H) Current and forecast operations (source)</b>				
	Current	+5 yrs	+10 yrs	+15 yrs
1. Air Carrier				
2. Air Taxi				
3. Military				
4. General Aviation (Itinerant)				
5. General Aviation (local)				

<b>(I) Percent of operations for business travel (non-military)</b>	%
<b>(J) Percent of operations for personal/recreational travel (non-military)</b>	%

<b>(K) Percent General Aviation operations by aircraft category</b>	
1. Piston engine airplanes 1 to 3 seats (<=200hp)	%
2. Piston engine airplanes 1 to 3 seats (>200hp)	%
3. Piston engine airplanes 4 to 9 seats one-engine (<=200hp)	%
4. Piston engine airplanes 4 to 9 seats one-engine (>200hp)	%
5. Piston engine airplanes 4 to 9 seats multiengine	%
6. Piston engine airplanes 10 or more seats	%
7. Turboprop airplanes 1 to 9 seats one-engine	%
8. Turboprop airplanes 1 to 9 seats multiengine	%
9. Turboprop airplanes 10 to 19 seats	%

**Attachment 1**

**Data Requirements for an Office of Airports AWOS BCA**

05-07-14

10. Turboprop airplanes 20 or more seats	%
11. Turbojet/Turbofan airplanes <=12,500 lbs	%
12. Turbojet/Turbofan airplanes >12,500 lbs and <= 65,000 lbs	%
13. Turbojet/Turbofan airplanes >65,000 lbs	%
14. Rotorcraft piston <=6,000 lbs	%
15. Rotorcraft turbine <=6,000 lbs	%
16. Rotorcraft piston >6,000 lbs	%
17. Rotorcraft turbine >6,000 lbs	%
18. Other	%

<b>(L) Percent Air Taxi operations by aircraft category</b>	
1. Piston engine airplanes 1 to 3 seats (<=200hp)	%
2. Piston engine airplanes 1 to 3 seats (>200hp)	%
3. Piston engine airplanes 4 to 9 seats one-engine (<=200hp)	%
4. Piston engine airplanes 4 to 9 seats one-engine (>200hp)	%
5. Piston engine airplanes 4 to 9 seats multiengine	%
6. Piston engine airplanes 10 or more seats	%
7. Turboprop airplanes 1 to 9 seats one-engine	%
8. Turboprop airplanes 1 to 9 seats multiengine	%
9. Turboprop airplanes 10 to 19 seats	%
10. Turboprop airplanes 20 or more seats	%
11. Turbojet/Turbofan airplanes <=12,500 lbs	%
12. Turbojet/Turbofan airplanes >12,500 lbs and <= 65,000 lbs	%
13. Turbojet/Turbofan airplanes >65,000 lbs	%
14. Rotorcraft piston <=6,000 lbs	%
15. Rotorcraft turbine <=6,000 lbs	%
16. Rotorcraft piston >6,000 lbs	%
17. Rotorcraft turbine >6,000 lbs	%
18. Other	%

<b>(M) Percent Air Carrier operations per aircraft category</b>	
1. Two-Engine Narrow-Body	%
2. Two-Engine Wide-Body	%
3. Three-Engine Narrow-Body	%
4. Three-Engine Wide-Body	%
5. Four-Engine Narrow-Body	%
6. Four-Engine Wide-Body	%
7. Regional Jet under 70 seats	%
8. Regional Jet 70 to 100 seats	%
9. Turboprops under 20 seats (Part 23)	%
10. Turboprops under 20 seats (Part 25)	%
11. Turboprops with 20 or more seats	%
12. Piston Engine (Part 23)	%
13. Piston Engine (Part 25)	%

**Attachment 1**  
**Data Requirements for an Office of Airports AWOS BCA**  
**05-07-14**

**(N) Please provide a separate narrative for project justification and acknowledgement**

1. What weather conditions does the airport currently experience on a normal basis (fog, low ceilings, etc.)?
2. Have there been complaints of a lack of weather data? Has the lack of weather data caused aircraft to divert?
3. Why do they need this system over an AWOS A or A-V?
4. Any other information that justifies an AWOS (e.g., Does the airport have unique operations with a specialized contribution to the national system? If so, what are the economic impacts for flights not accommodated due to not having the proposed AWOS at the airport)?

**(O) Coordination**

1. Has the Sponsor or ADO coordinated the installation of the proposed AWOS with the Service Center non-Federal Program Implementation Manager (PIM)?
2. Has the Sponsor coordinated the installation of the proposed AWOS with the Spectrum Engineering Services Group (AJW) per FAA Order 6050.32B *Spectrum Management regulations and Procedures Manual*?
3. Explain the Sponsor's proposed arrangements to upload the AWOS III data to FAA National Airspace Data Interchange Network (NADIN) per the requirements of FAA 7110.104 *Non-Federal Automated Weather Observation System (AWOS) Connection to the Weather Message Switching Center (WMSC)*?
4. Acknowledge that the Sponsor is aware that they are required to have the AWOS properly commissioned and must operate and maintain AWOS equipment during its life cycle per FAA Order 5100.38C *Airport Improvement Program (AIP) Handbook (Appendix 7)*. FAA Order 6700.20 *Non-Federal Navigational Aids and Air Traffic Control Facilities* and FAA AC 170-11, *Amendment of FAR Part 171 – Cost of Flight & Ground Inspections*.
5. Acknowledge that the Sponsor submitted a FAA Form 7460 for the proposed installation/construction of the AWOS?

**(P) Resources**

Additional information and requirements regarding the installation, frequency, commissioning and NADIN requirements can be found in:

1. FAA AC 150/5220-16D *Automated Weather Observation Systems (AWOS) for Non-Federal Applications*.
2. FAA Resource Bulletin No. 2010-01 *General Requirements when Commissioning Airport Weather Observation Systems (AWOS)*; Airports Division, Great Lakes Region