



DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric
Administration

NATIONAL WEATHER SERVICE

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SEP 18, 2008

MEMORANDUM FOR: Distribution

FROM: W/OPS2 – John Van Kuren

SUBJECT: Follow-On Operational Test & Evaluation Test (FOTE) Plan for the All Hazards Emergency Message Collection System (HazCollect), dated September 2008

Attached for your information is a copy of the subject test plan defining how the National Weather Service (NWS) will conduct the Follow-On Operational Test & Evaluation (FOTE) of the All Hazards Emergency Message Collection System (HazCollect).

The HazCollect FOTE is scheduled to start **September 17, 2008** through **December 5, 2008**. The FOTE will be conducted at the following NWS Weather Forecast Offices (WFOs):

- WFO Pittsburgh, PA (PBZ) in Moon Township, PA
- WFO Tallahassee, FL (TAE) in Tallahassee, FL
- WFO Paducah (PAH) in Paducah, Kentucky
- WFO San Francisco (MTR) in Monterey, CA
- WFO Anchorage (AFC) in Anchorage, AK
- WFO Honolulu (HFO) in Honolulu, HI

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Attachment



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FOLLOW-ON OPERATIONAL TEST & EVALUATION (FOTE) PLAN

**For the
All-Hazards Emergency
Message Collection System (HazCollect)**

September 2008

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

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Executive Summary

This plan describes the Government tests planned during the Follow-On Operational Test & Evaluation (FOTE) of the All Hazards Emergency Message Collection System (HazCollect). The FOTE is intended to monitor and confirm the successful operation of the HazCollect system at the National Weather Service (NWS) Weather Forecast Offices (WFOs) prior to nationwide deployment.

In April 1999, the Federal Emergency Management Administration (FEMA) Federal Response Plan (FRP) assigned to National Oceanic and Atmospheric Administration (NOAA), the responsibility of providing the public with the dissemination of critical non-weather information on the NOAA Weather Radio All Hazards (NWR) system. The current NWS systems process non-weather emergency messages (e.g., chemical spills, AMBER alerts, and radiological events), but they must be manually transcribed by NWS staff. While currently operational, these messages are prone to processing delays and human error.

The HazCollect system will be a comprehensive solution for the centralized collection and efficient distribution of Non-Weather Emergency Messages (NWEMs). Authorized emergency managers (EMs) will use the Disaster Management Interoperability Services (DMIS) desktop client software or third-party vendor software (OPEN API-compliant) to write NWEMs in Common Alerting Protocol (CAP) format and send them through the DMIS central processor for authentication and dissemination. The HazCollect system will utilize the existing National Weather Radio All-Hazards (NWR) network that provides the most robust Government-owned dissemination infrastructure capable of meeting the all-hazard dissemination requirements with necessary upgrades.

The HazCollect system had previously undergone an Operational Acceptance Test (OAT) from June 5, 2006 through July 21, 2006. Due to problems and issues found during the OAT, a Field Operational Demonstration Test (FOD) was performed from November 6, 2006 through November 22, 2006. After the FOD, additional problems and issues were documented. The Office of Operational Systems, Test & Evaluation Branch (OPS24) was responsible for conducting both tests. Results were recorded in test reports available on the OPS24 website:

http://www.nws.noaa.gov/ops2/ops24/documents/hazcollect_docs.htm

Due to a recent change in network connectivity using NOAA Net, the HazCollect system will need to be verified for end-to-end messaging capabilities. Prior to start of the FOTE, the HazCollect system will need to undergo a successful system test at the National Weather Service Headquarters (WSH). The Office of Science and Technology (OST) and their contractor (UACS) will be responsible for the system test. OPS24 will be responsible for the planning, conduct, and reporting of the FOTE. The HazCollect FOTE is scheduled to start on **September 17, 2008**, through **December 5, 2008**.

The FOTE will be conducted at the following NWS WFOs during the dates indicated:

- WFO Pittsburgh, PA (PBZ) at Moon Township, PA (Sept 30, 2008 - Dec 5, 2008)
- WFO Tallahassee, FL (TAE) at Tallahassee, FL (Nov 4, 2008 - Dec 5, 2008)
- WFO Paducah (PAH) at Paducah, KY (Sept 15, 2008 - Dec 5, 2008)
- WFO San Francisco (MTR) at Monterey, CA (Oct 6, 2008 - Dec 5, 2008)
- WFO Anchorage, AK (AFC) at Anchorage, AK (Oct 28, 2008 - Dec 5, 2008)

- WFO Honolulu, HI (HFO) at Honolulu, HI (Oct 21, 2008 - Dec 5, 2008)

Before the start of the FOTE, a FOTE Readiness Review meeting will be conducted by OPS24 to confirm all prerequisites listed in this test plan have been met. During the FOTE, the FOTE test team will travel to a couple of the FOTE field office test sites to conduct, witness, and oversee the operational testing of HazCollect using test Non-Weather Emergency Messages (NWEMs) messages.

A subset of the previous OAT and FOD tests will be performed to validate functionality. For the duration of the FOTE, the FOTE sites will monitor and verify that any actual NWEMs generated by their local emergency managers are successfully broadcasted in Console Replacement System (CRS), and report any problems with NWEM transmission.

During the FOTE, a Test Review Group (TRG) consisting of NWS headquarters personnel, NWS Employees Organization (NWSEO) representative, regional and FOTE site focal points, will meet weekly to discuss the status of the testing, review FOTE activities, and to adjudicate reported test trouble reports (TTRs). TTRs created during the FOTE will be tracked using the TestTrack Pro database and will be addressed during the TRG meetings for assignment and resolution. Each of the TTRs will be classified with a specific **Priority** and **Impact**.

During the previous OAT and FOD tests, Priority 2 (Include in the next build *before initial deployment*) trouble tickets were opened to improve the ease of use associated with the DMIS toolkit interface. This interface is a dependency outside the control of NWS. However, FEMA's Disaster Management (DM) program office has committed to addressing the outstanding usability issues. It is anticipated the fixes will occur and be applied during the FOTE.

At the end of the FOTE, OPS24 will provide the TRG with all the test results, including the status of all of the reported TTRs. Based on the test results and TTR status, the TRG will recommend whether to proceed with the national initial operating capability deployment of the software.

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Acronyms

ASCII	American Standard Code for Information Interchange
AWIPS	Advanced Weather Interactive Processing System
C & A	Certification and Accreditation
CAP	Common Alerting Protocol
COG	Collaborative Operations Group
CRS	Console Replacement System
CRSFM	CRS Formatted Message
DHS	Department of Homeland Security
DM	Disaster Management
DMIS	Disaster Management Interoperability Services
EM	Emergency Manager
EMWIN	Emergency Manager Weather Information Network
FOTE	Follow-On Operational Test & Evaluation
MIC	Meteorologist In Charge
NCF	Network Control Facility
NOAA	National Oceanic and Atmospheric Administration
NWEM	Non-weather emergency message
NWR	NOAA Weather Radio All Hazards
NWS	National Weather Service
NWSTG	National Weather Service Telecommunications Gateway
NWWS	NOAA Weather Wire Service
OAT	Operational Acceptance Test
OCWWS	Office of Climate, Water, and Weather Services
OPS24	Office of Operational Systems, Test & Evaluation Branch
OST	Office of Science and Technology
PAMS	Product Availability Monitoring System
POC	Point of Contact
SBN	Satellite Broadcast Network
ST	System Test
TRG	Test Review Group
TTR	Test Trouble Report
WAN	Wide Area Network
WCM	Warning Coordination Meteorologist
WFO	Weather Forecast Office
WMO	World Meteorological Organization
WSH	National Weather Service Headquarters

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1.0 Introduction

This plan describes the Government tests planned during the Follow-On Operational Test & Evaluation (FOTE) of the All Hazards Emergency Message Collection System (HazCollect). The FOTE is intended to monitor and confirm the successful operation of the HazCollect system at the National Weather Service (NWS) Weather Forecast Offices (WFOs) prior to nationwide deployment.

The HazCollect system will be a comprehensive solution for the centralized collection and efficient distribution of Non-Weather Emergency Messages (NWEMs). Authorized emergency managers (EMs) will use the Disaster Management Interoperability Services (DMIS) desktop client software or third-party vendor software (OPEN API-compliant) to write NWEMs in Common Alerting Protocol (CAP) format and send them through the DMIS central processor for authentication and dissemination.

Due to a recent change in network connectivity using NOAANet, the HazCollect system will need to be verified for end-to-end messaging capabilities. Prior to start of the FOTE, the HazCollect system will need to undergo a successful system test at the National Weather Service Headquarters (WSH). The Office of Science and Technology (OST) and their contractor (UACS) will be responsible for the system test. OPS24 will be responsible for the planning, conduct, and reporting of the FOTE. The HazCollect FOTE is scheduled to start on **September 17, 2008**, through **December 5, 2008**.

The FOTE will be conducted at the following NWS WFOs during the dates indicated:

- WFO Pittsburgh, PA (PBZ) at Moon Township, PA (Sept 30, 2008 - Dec 5, 2008)
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Before the start of the FOTE, a FOTE Readiness Review meeting will be conducted by OPS24 to confirm all prerequisites listed in this test plan have been met. During the FOTE, the FOTE test team will travel to a couple of the FOTE field office test sites to conduct, witness, and oversee the operational testing of HazCollect using test NWEM messages.

A subset of the previous Operational Acceptance Test (OAT) and the Follow-On Operational Demonstration (FOD) tests will be performed to validate functionality. For the duration of the FOTE, the FOTE sites will monitor and verify that any actual NWEMs generated by their local emergency managers are successfully broadcasted in Console Replacement System (CRS), and report any problems with NWEM transmission.

During the FOTE, a Test Review Group (TRG) consisting of NWS headquarters personnel, NWS Employees Organization (NWSEO) representative, regional and FOTE site focal points, will meet weekly to discuss the status of the testing, review FOTE activities, and to adjudicate reported test trouble reports (TTRs). TTRs created during the FOTE will be tracked using the TestTrack Pro database and will be addressed during the TRG meetings for assignment and resolution. Each of the TTRs will be classified with a specific **Priority** and **Impact**.

At the end of the FOTE, OPS24 will provide the TRG with all the test results, including the status of all of the reported TTRs. Based on the test results and TTR status, the TRG will recommend whether to proceed with the national initial operating capability (IOC) deployment of the software.

1.1 Test Plan Organization

This FOTE Plan is comprised of four sections:

- Section 1 contains introductory materials describing the purpose of the test, the test objectives, the testing strategy, and the prerequisites for the FOTE.
- Section 2 discusses the management of the FOTE including the roles and responsibilities of the personnel participating in the FOTE.
- Section 3 describes the process and procedures employed during the FOTE including the test schedule and test related activities performed at National Weather Service Headquarters (WSH) and the FOTE sites.
- Section 4 describes the final recommendation and the test report.

Included in the FOTE test plan are ten attachments:

- Attachment A lists all valid NWEM products in HazCollect
- Attachment B includes the HazCollect TTR form for use by FOTE site personnel to report problems identified during the FOTE.
- Attachment C lists all the members of the TRG.
- Attachment D lists the test sequence and corresponding descriptions.
- Attachment E displays the example test message field values.
- Attachment F displays all the valid HazCollect server modes.
- Attachment G lists information for all the FOTE sites.
- Attachment H displays the FOTE resource requirements.
- Attachment I lists the discussion agenda for the meeting between the FOTE test team and the WFO site personnel.
- Attachment J is the HazCollect FOTE site questionnaire for use by FOTE site personnel after the FOTE to evaluate and rate specific test activities.
- Attachment K is the HazCollect emergency manager questionnaire used to evaluate and rate specific test activities after the FOTE.
- Attachment L displays the FOTE Conduct Survey.

1.2 Purpose

The HazCollect FOTE will verify the end-to-end operation of the HazCollect system from the DMIS user interface client software or third party vendor software (OPEN API-compliant), the HazCollect server software, and at specified NWS dissemination infrastructure verification points [e.g., NOAA Weather Wire Service (NWWS), CRS, NOAA Weather Radio All-Hazards (NWR), and NWR "Public Alert Certified" receivers].

The FOTE will ensure the DMIS user interface client software, the HazCollect server, the National Weather Service Telecommunications Gateway (NWSTG), Network Control Facility (NCF), NOAA Weather Wire Service (NWWS), Emergency Manager Weather Information Network (EMWIN), CRS, and NWR systems will be validated for communication reliability, and availability to support

HazCollect. The FOTE will also confirm the overall HazCollect system does not adversely affect current field office operations.

The FOTE is performed after a successful System Test (ST) by OST/UACS in a simulated operational environment. Upon the successful completion of the FOTE, a recommendation for national IOC deployment will be evaluated and determined.

1.3 Test Objectives and Evaluation Criteria

A subset of the previous OAT and FOD tests will be performed to validate functionality in HazCollect. The FOTE test objectives will include the following:

a. Confirm the following setup/configurations:

- i. DMIS setup for emergency managers**
- ii. Collaborative Operations Groups (COG) setup and EM/user registration**
- iii. HazCollect server setup**
- iv. FOTE sites configured (AWIPS, CRS) for HazCollect**

CRITERIA: The setup and configurations listed above are complete and accurate.

b. Verify the operation of the HazCollect system.

CRITERIA: The HazCollect and FOTE site service operations perform successfully without adversely affecting current field office operations. The current dissemination of any existing non-HazCollect NWEMs is still fully functional.

c. Verify HazCollect products for end-to-end dissemination.

CRITERIA: HazCollect NWEM messages are successfully created and verified for end-to-end dissemination from DMIS clients (or other DMIS OPEN API compliant clients) and routed to the HazCollect server and forwarded to NWS dissemination systems (NWWS, EMWIN, CRS, NWR, etc.).

d. Verify availability of required HazCollect documents.

CRITERIA: HazCollect documentation listed in **Attachment H** is accurate and available.

e. Verify a subset of the HazCollect operational modes.

CRITERIA: The subset of HazCollect operational modes verified at FOTE is functional.

f. Verify a subset of the failover and recovery functionality of the HazCollect server.

CRITERIA: The subset of HazCollect failover and recovery functionality verified at FOTE is operational.

g. Verify the HazCollect national message functionality

CRITERIA: The HazCollect system will successfully transmit and receive national messages to all designated listening areas.

h. Demonstrate DMIS OPEN NWEM API end-to-end functionality

CRITERIA: The DMIS OPEN NWEM API end-to-end functionality is demonstrated successfully.

i. Verify user-related HazCollect performance-based test procedures (2).

CRITERIA: Performance tests are performed and meet thresholds including:

- i. Verify the transmission of single NWEM messages to dissemination systems within 2 minutes of submission from EM interfaces.
- ii. Verify the EM authentication into HazCollect within 5 seconds.

1.4 Background

Current NWS systems address non-weather emergency messages (e.g., chemical spills, AMBER alerts, and radiological events), but they must be manually transcribed by NWS staff. While currently operational, these messages are prone to processing delays and human error. Delays occur during message validation processing. Common errors occur due to the manual transcription of the EM's input. In some areas, EMs will manually create the text messages and then proceed to call their local weather forecast offices. These messages are subsequently manually entered into the WFO's broadcast schedules for NWS forecast, watches, and warning products.

The HazCollect system provides an automated capability to streamline the creation, authentication, collection, and dissemination of non-weather emergency messages in a quick and secure fashion. Using the proposed HazCollect system, in conjunction with existing NWS dissemination systems like NWR and NWWS, NWEMs can be disseminated as standard AWIPS messages.

EMs will use the DMIS client software, or other third-party vendor software (OPEN API-compliant), to compose NWEMs in the CAP format. The DMIS client software, which was developed by Battelle under the supervision of the Department of Homeland Security (DHS), will send authorized and authenticated CAP-formatted NWEM messages to the HazCollect server for conversion to the NWS World Meteorological Organization (WMO) communication format. The HazCollect server will send the WMO-formatted NWEMs to the NWSTG. The NWEMs will be disseminated through the existing NWWS and broadcasted by the CRS to the NWR transmitters. The general public will subsequently hear the NWEM messages from NOAA weather radios.

1.5 Test Strategy

The FOTE will be conducted at selected WFO sites from **September 17, 2008** through **December 5, 2008**. During the FOTE, sites will use their current AWIPS and the associated NWEM CAFÉ formatter to receive and send data products.

Figure 1 provides a quick overview of the HazCollect system data flow processing. The following steps coincide with the sequential numbered blocks within the **Figure 1** data flow scheme:

1. EMs will need valid DMIS accounts and belong to the proper Collaborative Operations Groups (COG) to log into the DMIS user interface client or other third-party vendor client.

- The DMIS client toolkit or third-party vendor software that is OPEN API-compliant will be used to create NWEMs. The resulting output NWEM message format from DMIS will be in CAP format. The message will be sent through the DMIS server and forwarded to the NWS NOAAANET.

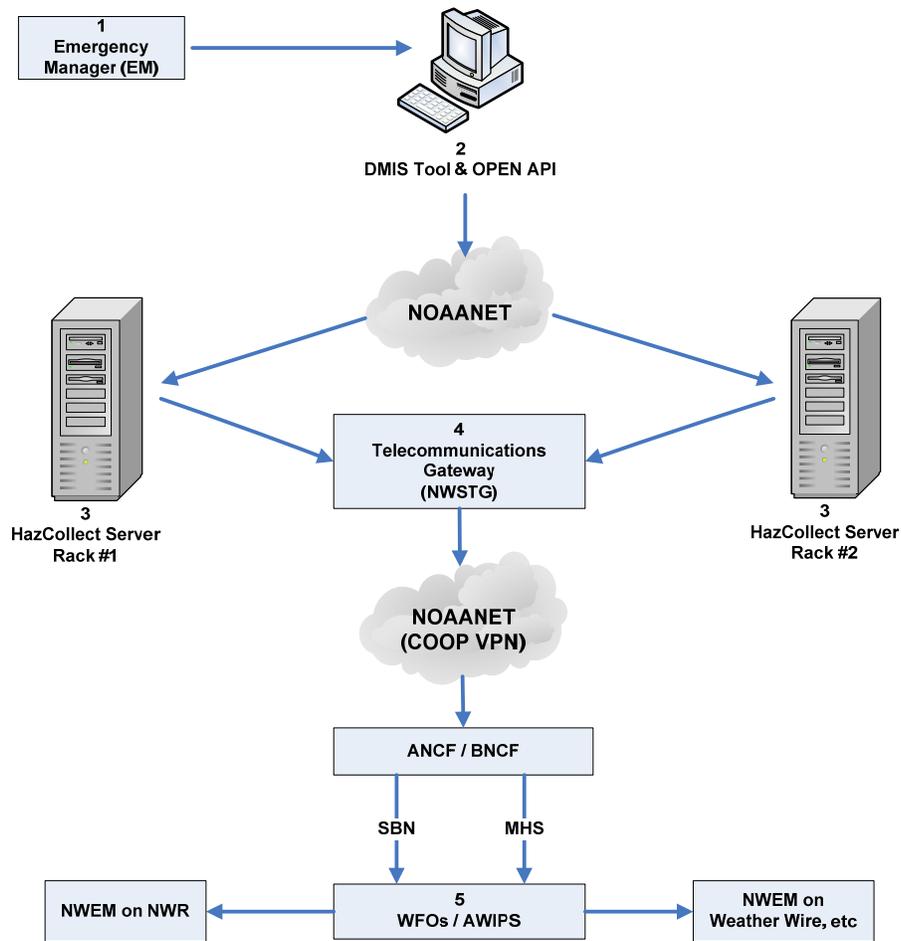


Figure 1 – HazCollect System Data Flow

- The CAP NWEM message will be routed to the HazCollect servers (on both racks). The HazCollect servers will, in addition to storing all other NWEM messages, convert incoming CAP messages to a WMO-formatted message. The converted message will be transferred to the NWSTG by a script file located on the HazCollect server.
- From the NWSTG, the message will be transferred to the NCF, via NOAAANet, where they are further sent to WFOs via the Satellite Broadcast Network (SBN) and Message Handling System (MHS).
- When the WMO-formatted message is finally received by the NWS WFO, the message is initially saved into the local AWIPS text database. The message is converted to a CRS-Formatted Message (CRSFM) via the NWEM CAFÉ formatter. The CRSFM message is sent to the CRS system. This message will be processed, saved in the CRS database, and scheduled for broadcast as an emergency message together with other weather-related products. The CRSFM message will be scheduled (based on message type product priorities

set by individual field offices), broadcasted on NWR transmitters, and is finally heard on NOAA weather radios. The output data is also sent to other dissemination infrastructure including NWWS, etc.

The list of NWEM products that are valid in the HazCollect system are listed in **Attachment A**. For the FOTE, only test **Administrative Message (ADR)** products will be used to perform tests, unless actual events occur. Before the start of the FOTE, the HazCollect system will be verified for COG, system administration, and database setup. During the FOTE, the planned tests will include:

1. Verify end-to-end dissemination – verify NWEM messages creation (local counties, state, overlapping areas) and subsequent dissemination by monitoring the NWWS, CRS, and NWR transmission (**Test Procedure #110**).
2. Verify NWEM dissemination using different HazCollect Server Modes – verify NWEM dissemination using the HazCollect **Actual**, **Test**, and **Training** HazCollect server modes, including the correction, update, and cancel processing (**Test Procedures #300, #310, #320, and #330**).
3. Verify failover and recovery processing – verify the HazCollect Server failover and recovery processing via limited tests including ‘within rack’ (primary rack at Silver Spring, MD) and ‘between racks’ (primary rack at Silver Spring, MD and backup rack at Mt. Weather, VA) failover testing. NWEM messages will be monitored for CRS and NWR dissemination (**Test Procedures #510 and #520**).
4. Verify national message processing – verify HazCollect national message functionality by generating national messages and verifying proper dissemination to NWWS, CRS, and NWR (**Test Procedure #110**).
5. Demonstrate the DMIS OPEN NWEM API end-to-end functionality – demonstrate the DMIS OPEN NWEM API end-to-end functionality by generating NWEM messages using third party client software that are DMIS OPEN API-compliant and monitor dissemination to NWWS, CRS, and NWR (**Test Procedure #600**).
6. Verify user-related HazCollect performance-based functionality – verify specific performance-based tests including:
 - a. NWEM transmission within 2 minutes (**Test Procedure #230**)
 - b. User authentication into HazCollect within 5 seconds (**Test Procedure #200**)

When the HazCollect NWEM message is input into the NWSTG, NWSTG processes it and output data are transmitted to numerous data output components. Each designated verification location will have support personnel who will assist during the FOTE. The FOTE support personnel will verify message delivery and/or system logging indicating delivery. The failover and recovery testing will be performed on the HazCollect servers and validated for operability.

During the FOTE, OPS24 will document, in addition to other FOTE test results, site resolutions regarding any problems encountered during the test. These documented resolutions will be verified and, upon TRG adjudication, disseminated by the TRG to the WFOs participating in the FOTE.

1.6 Prerequisites, Assumptions, and Risks

This section describes the actions required before the FOTE, the assumptions and limitations, and a description of the risks associated with performing the FOTE.

1.6.1 Prerequisites

Before proceeding with the HazCollect FOTE, the following prerequisites include:

- a. The HazCollect system successfully completes all System Tests.
- b. Certification & Accreditation (C & A) activities have been started and will be completed prior to the deployment.
- c. All FOTE sites will have their AWIPS and CRS setup configured and enabled for HazCollect on their respective FOTE start dates.
- d. The nine tables used in HazCollect will contain all required non-weather emergency message products and correct data including the:
 - i. A2A (afos2awips file)
 - ii. Broadcast types
 - iii. Federal information processing standards (FIPS) to WFO
 - iv. NWEM Message Categories
 - v. State FIPS Codes
 - vi. State zones and FIPS codes (correlation)
 - vii. WFO
 - viii. WMO Regions
 - ix. NWEM Categories
- e. Required HazCollect documentation listed in **Attachment H** is available and provided to the FOTE sites.
- f. A **FOTE Readiness Review** meeting is conducted by OPS24 to confirm with the HazCollect Project Manager (OST) that the HazCollect system is ready to begin the FOTE and is turned over to OPS24 for testing.
- g. Each of the participating emergency managers will have valid DMIS accounts and belong to at least one of the Collaborative Operations Group (COG) level supporting HazCollect – local, state, regional, and national level.
- h. The Dissemination Services (OS51) personnel will notify the NWS dissemination infrastructure users and other related agencies about the HazCollect FOTE by using a National public information statement (PNS) message.
- i. OS51 personnel will provide PNS message content to the FOTE sites for their use in preparation for the FOTE.

- j. The FOTE WFOs shall generate their local public information statement (PNS) messages to provide notification to the general public regarding the start of FOTE testing.

1.6.2 Assumptions and Limitations

It is assumed special training is not required for the FOTE. Additionally, most of the selected FOTE sites will have been already involved in previous Microsoft LiveMeeting training sessions to use the DMIS client software.

For third-party vendor software used to generate NWEM messages, it is assumed to be OPEN API compliant and will not also require special training to use.

1.6.3 Risks

The HazCollect system is a new addition to the existing NWS infrastructure and as such, some risks are inherent. Risks are usually minimized by rigorous system testing. However, all tests before the FOTE are performed in a *simulated* environment. During the FOTE, the HazCollect system will undergo testing in an *operational* environment, wherein existing NWS systems, to be used, are currently working under operational conditions. However, even though the FOTE testing takes place at an operational field site, it is still conducted under controlled conditions as far as practicable without impacting normal operations. The following risks currently identified for the FOTE include:

1. The testing of HazCollect at operational sites will be optimized if actual NWEM warning/watches do occur and are properly responded to by the HazCollect system. However, if non-weather emergency events do not occur, there will be no testing of actual watch and warning products and thus this capability and the HazCollect system behavior, under watch and warning conditions, will not be operationally verified.

If actual NWEM watch and warning events do occur, the emergency manager is encouraged to use the DMIS client software to format his message and send them to the HazCollect server for subsequent dissemination and broadcast. However, if actual watches and warnings do not occur, then there will be no verification of NWEM watch and warning products tested successfully for end-to-end transmission. For the list of HazCollect products, see Attachment A.

2. During the FOTE, the NWEM CAFÉ formatter will be used to format and process the incoming WMO messages and format them for CRS. However, most field offices are already using the NWRWaves formatter as their formatter for all weather products.

If the NWEM CAFÉ formatter is to be used for the FOTE and test sites are already using the NWRWAVES formatter, the sites would have to change their AWIPS configuration to route the HazCollect NWEM products. This action could possibly incur transmission errors if all required formatter redirection/changes are not performed correctly.

3. During the FOTE, the next version of the DMIS client software may be released. This version will be developed by FEMA and will address the usability issues identified in previous tests.

If the new version of the DMIS client software is released and installed by the EMs, the EMs would expect better usability and accurate results. If the newer version is released close to the end of the FOTE, there might not be enough time to thoroughly retest dissemination functionality.

4. During the FOTE, the Chief Information Office (CIO) indicated that the backup NWSTG and its functionality will not be available for use during testing.

If the backup NWSTG is not available for use during the FOTE, possible backup NWSTG redundancy needs will not be utilized for message dissemination.

Additionally, the OST IT Security Officer (ITSO) indicated the following system security risks:

“Security Certification & Accreditation (C&A) efforts will run concurrent with FOTE. The OST IT Security Officer (ITSO) will work closely with system administrators to ensure adequate safeguards are in place to protect the system and the infrastructure to which it is connected during testing. During the FOTE, UACS will be the system administrators. OST will be managing UACS.

Concurrent to the FOTE, the ITSO will conduct testing of baseline security controls prescribed in NIST Special Publication (SP) 800-53, Rev. 2, using interview and examination (reviews of documents) methods. A detailed plan for technical testing of security controls will be submitted to OCIO for review and approval. Once this test plan has been approved, the ITSO will commence technical testing. This testing will be coordinated with the FOTE Director and the TRG to ensure that the operational testing is not hindered.

If C&A related anomalous activity is detected by the test team, the ITSO, or the N-CIRT during the FOTE, the TRG will convene to discuss the cause of the activity, and mitigation actions will be put into place, to include the incident response process prescribed by NOAA. Two low impact risks haven been identified prior to the FOTE:

- *AU-9, Protection of Audit Information: Currently, system administrators can access audit logs.*
- *IA-5, Authenticator Management: There does not appear to be a mechanism in the system that forces a password change after 60 days.*

As part of C&A activities, the system will be closely monitored for exploitation of these potential vulnerabilities. A complete list of active HazCollect accounts is maintained, and system access is actively monitored. The ITSO and system administrators will work together during FOTE to develop and implement safeguards to address these risks. Any additional risks discovered during testing will be assigned an impact rating and mitigation plans will be added to the security Plan of Actions & Milestones (POA&M) for HazCollect. After the ITSO completes security testing, the C&A package (of which the POA&M is a part) will be delivered to OCIO for review and consideration for Approval to Operate (ATO). This approval will be needed before the system can be fully migrated to an operational state”.

2.0 Test Management

This section will provide descriptions of Test Review Group, including the major roles and responsibilities of FOTE test personnel.

2.1 Test Review Group

A Test Review Group (TRG) will oversee the conduct of the FOTE. The TRG is comprised of subject-matter experts selected from WSH, NWSEO, NWS Regional Headquarters, and the FOTE sites. The TRG will authorize tests of the HazCollect at selected FOTE sites and may suspend these tests at any time, should the performance of the HazCollect is found unacceptable. If FOTE tests are suspended, the TRG will authorize the resumption of tests when the appropriate corrective actions have been taken. The TRG may recommend additional regression tests prior to the resumption of the FOTE.

The TRG will meet weekly during the conduct of the operational tests. The TRG may also meet irregularly or on an emergency basis. The TRG meetings will be conducted via teleconference calls and will be coordinated by the FOTE Director.

Meetings of the TRG are conducted to review, clarify, and validate deficiencies documented by the TTRs. The TRG will evaluate each TTR and assign an **Impact** and **Priority** according to the criteria provided in Section 3.6.2. The TRG will work to resolve validated deficiencies and other test-related issues, and may recommend corrective actions to the HazCollect Project Manager.

Following the completion of the FOTE, the TRG will convene to review the findings of the test and vote to recommend whether to proceed with national deployment of the HazCollect. The decisions of the TRG are based on a simple majority among the voting members. In the event of a tie, the TRG Chair casts the deciding vote. Dissenting opinions will be recorded and reported in the test report.

The members of the TRG, including the designated voting members, are listed in **Attachment C**.

2.2 Test Personnel and Responsibilities

Test Review Group Chair (OPS24) – The Chief, Test and Evaluation Branch (OPS24) or his designated representative will chair the TRG. The Chair convenes the meetings of the TRG. The Chair works with the FOTE Director to ensure that tests are conducted efficiently and works to resolve any issues that may arise during the conduct of the FOTE.

The Test Review Group Chair is a non-voting member of the TRG except in the case of a tied vote. The TRG Chair will cast the deciding vote in the event of a tie.

FOTE Director (OPS24) – The FOTE Director will ensure that tests are performed as described in this FOTE Plan. In addition, the FOTE Director will:

- Write the HazCollect Test Plan
- Ensure all tests defined by the FOTE Plan are completed and documented.

- Coordinate meetings of the TRG.
- Collect and present TTRs to the TRG for classification, and ensure that all TTRs documented and classified during the FOTE are forwarded to the proper WSH organization or board for resolution.
- Prepare status reports summarizing TTRs, operational issues, and test completions. Status reports will be distributed to the members of the TRG prior to the weekly meetings. During on-site testing in the first two weeks, the FOTE Director will create and distribute daily status reports to the TRG.

Following the completion of the FOTE, the FOTE director will coordinate a wrap-up meeting to brief the TRG on the status of the tests conducted, summarize the TTRs submitted, and report any other test related issues. The FOTE Director will ensure that the results of the FOTE are properly documented in a FOTE Report.

The FOTE Director is a voting member of the TRG.

HazCollect Project Manager (OST) – Ensures the HazCollect system and documentation are available for the FOTE. The Project Manager will participate in the FOTE conference calls. The Project Manager will review all problems documented and classified during the FOTE and coordinate their adjudication. The Project Manager will review the FOTE test plan and report documents.

The HazCollect Project Manager is a non-voting member of the TRG.

WSH Test Support (OST, OCWWS) –The WSH test support personnel (e.g., OST) responsible for software and hardware development provide the FOTE Director with all requisite system components, (e.g., software/hardware builds, documentation) prior to the commencement of the FOTE. The Office of Climate, Water, and Weather Services (OCWWS) support can be solicited for operational services requirements and procedures, HazCollect COG administration, test participation, issues that impact policy for the NWS awareness, preparedness, external warning coordination, and technical user education.

The WSH test support personnel are non-voting members of the TRG.

FOTE Test Team (OPS24, OCWWS, EM, etc.) – The FOTE Test Team is comprised of subject-matter experts selected from WSH. Members of the Test Team are responsible for performing test support duties as assigned; assist test sites in completing TTRs when problems are observed; provide the FOTE Director with technical information, and advise on problem solutions. Test Team members will conduct site visits to perform operational testing.

The FOTE Test Team members are non-voting members of the TRG.

Information Technology Security Officer (OST) – Ensures the HazCollect system has met the required technical objectives and/or project requirements, including C&A, security and configuration management.

The Information Technology Security Officer is a voting member of the TRG.

National Weather Service Employee Organization (NWSEO) Test Support – The NWSEO test support personnel will provide perspectives on any changes that might affect working conditions at NWS operational field sites.

The NWSEO test support personnel is a voting member of the TRG.

Regional HazCollect Focal Points – The Regional HazCollect Points provide liaison between WFOs and WSH. Regional Focal Points will participate in meetings of the TRG, review plans and interim reports during the FOTE, coordinate issues, classify any problems identified during the FOTE, and work to resolve any problems discovered during tests.

The Regional Focal Points are voting members of the TRG (one vote per region).

FOTE Site Focal Points – The FOTE Site Focal Points will plan and coordinate FOTE activities with their respective Regional Focal Point and site staff members. However, the site Meteorologist in Charge (MIC) will still approve all decisions required during the FOTE including if and when to start the field testing, and ensure the FOTE site staff support as required. **The FOTE site MIC retains all management responsibility for the site including whether to continue with the FOTE.**

Additionally, the FOTE Site Focal Points will:

- Provide operational feedback to the FOTE Director during field testing
- Verify CRS and NWR operations
- Create and submit TTRs for problems found during the FOTE
- Attend and provide input in all the scheduled TRG meetings.
- Complete and return the HazCollect questionnaire (see **Attachment J**) to the FOTE Director upon completion of the FOTE.

The FOTE Site Focal Points consolidate their vote with their corresponding regional office focal point.

Emergency Managers – For each selected FOTE site, the designated EM(s) will:

- Generate the daily test Administrative messages (ADR)
- Participate in the HazCollect FOTE testing with assistance from FOTE test team.
- Provide input during FOTE at TRG conference calls.
- Complete and return questionnaire to FOTE Director (see **Attachment K**) upon completion of the FOTE.

The Emergency Managers personnel will consolidate their vote with their corresponding local weather forecast office.

3.0 Test Conduct

The FOTE starts on **September 17, 2008**. The HazCollect primary server rack #1 and its corresponding HazCollect server software will reside in the NWSTG. The backup HazCollect server rack #2 will reside at the Mt. Weather, VA facility. The FOTE site locally-based EM(s) will already have valid DMIS accounts, belong to appropriate COGs at different levels, and have access to the DMIS user interface client software or third-party vendor software (OPEN API-compliant).

During the FOTE, each emergency manager, and FOTE site point of contact will be responsible for providing verification and for performing specific test procedural duties. **The FOTE site MIC retains control over the operations of the FOTE site including whether to halt or postpone the FOTE during severe weather conditions.**

If an actual non-weather emergency occurs, EMs are encouraged to use the DMIS client or their third-party vendor client software (OPEN API compliant). This action will send the alert and at the same time, test the capability and stability of the DMIS client or verify their third-party vendor software OPEN API compliance. Additionally, the DMIS software will allow the EMs to create and distribute incident and emergency information to the other COGS that are allowed to receive the emergency message.

If the NWEM message fails dissemination via HazCollect, EMs should use their previous process of sending NWEMs to the WFO (e.g., phone messages and/or faxes to WFO) as a backup method.

To promote usability and track repeated dissemination, EMs are encouraged to create and disseminate daily test ADR NWEMs (no more than once per day) for the duration of the FOTE, on weekdays, barring any emergency, workload, or schedule restrictions.

For all disseminated test messages during the FOTE (those NOT involving actual emergencies), the headline and body of the NWEM message text should always be prefaced and completed with **TEST** phrases to remind weather radio listeners of the test nature of the broadcasted messages. For the same scenarios, the EMs are instructed to only use the approved text contents from the test procedures and to refrain from using critical watch and warnings text descriptions when composing the message contents.

For EMs using the DMIS client software, the following setup used for the test ADR NWEM messages is listed in **Attachment E**. The list of values shown in **Attachment E** is intended to actually disseminate a test ADR NWEM for broadcast by the local WFO. If the intended test does not require dissemination, the **Status** (CAP Status) field should be set to **‘Test’**. Other than during actual HazCollect mode testing where the server mode could be changed, the HazCollect Server mode would always be set to **‘Active’**. See **Attachment F** for the different NWEM dissemination per selected Server modes and CAP status values.

During the FOTE, the test team will be verifying the end-to-end dissemination of the NWEM messages, including tests of national message(s). Additionally, NWEM messages will be also verified for correction and update/cancel handling.

The HazCollect failover and recovery processing will also be performed during the FOTE. The failover and recovery processing will include within HazCollect server rack and between racks failovers. These tests will verify generated test messages are transmitted and received during failover scenarios, with no messages lost and/or corrupted.

HazCollect server modes (Active, Training, and Test) will be randomly validated for functionality. The server modes will be verified for proper dissemination and/or non-dissemination depending on selected mode. The NWEM dissemination processing matrix, including all HazCollect Server modes and DMIS CAP status, is described in **Attachment F**. **Attachment D** lists all the test sequences and their corresponding descriptions, including the server modes for each test performed.

Additionally, specified log files from the HazCollect Server, NCF, AWIPS, etc. may be collected, during the duration of the FOTE, for use by the Product Acquisition Monitoring System (PAMS) for verifying message transmission start and end times. PAMS is a tool developed by OPS24 to quantify the effectiveness of the AWIPS communication networks in delivering messages from NCF to CRS, via AWIPS.

3.1 Test Sites

The selected HazCollect FOTE test sites and their corresponding starting and ending test dates, including their corresponding field office points of contacts, and emergency managers are listed in **Attachment G**.

The FOTE will begin at each site per stated starting date. All testing and/or monitoring will end **December 5, 2008**.

3.2 Resource Requirements

The resource requirements, including software, hardware, and documentation, for the FOTE are listed in **Attachment H**.

3.3 Pre-FOTE Activities

Before the start of the FOTE, WSH and FOTE site personnel will be required to perform specified activities to ensure efficient and orderly conduct of the FOTE.

3.3.1 National Weather Service Headquarters

WSH test personnel (and their contractor) will complete the following actions prior to commencement of the FOTE:

- a. Perform HazCollect server database setup (*OST*)
- b. Perform HazCollect server administration setup (*OST*)
- c. Successfully perform and conclude the HazCollect System Test (*OST*)
- d. Perform HazCollect COG administration and setup for participating EM/users for the FOTE (*OS51*)
- e. Prepare and distribute all documentation listed in **Attachment H** (*OST*)

- f. Convene a FOTE Readiness Review meeting with WSH personnel, region focal points and their WFO sites, to decide if the HazCollect system is ready for the FOTE (*OPS24*).
- g. Prepare the PAMS to track log files for NWEM verification and tracking. (*OPS24*)
- h. Notify NWS dissemination infrastructure user community of the upcoming FOTE (*OS51*).
- i. Provide FOTE sites with message contents for each of the FOTE site local PNS messages (*OS51*).

The organizational unit responsible for completion of each item is shown in parentheses.

3.3.2 FOTE Sites

Prior to conducting the FOTE, the FOTE sites will complete the following actions:

- a. The FOTE sites will ensure AWIPS, NWWS, and CRS systems are operational.
- b. The FOTE sites will confirm the required documentation is available.
- c. The FOTE sites will ensure the NWEM CAFÉ formatter and the **afos2awips.txt** file contain all non-weather emergency products required for local NWS operations.
- d. The FOTE sites shall ensure that their CRS database is setup to schedule and broadcast the HazCollect NWEM products.
- e. The FOTE site personnel will ensure any required local public information messages will be disseminated prior to the start of the FOTE. These messages shall inform the public of the operational testing mode is being performed on the systems and any possible failure will be immediately mitigated and/or fixed.

3.3.3 Emergency Managers

Prior to conducting the FOTE, the emergency managers will complete the following actions:

- a. Install the latest DMIS client software (if not already done) and create COGs (if not already created) for use during the FOTE.
- b. Able to use the DMIS client to use for generating and/or editing NWEM messages. EMs can also use other third-party client per DMIS OPEN API verification. During the FOTE, there will be no scheduled training for EMs on how to use the DMIS.

3.4 Test Readiness Review Meeting

The TRG Chair will convene a Test Readiness Review Meeting on **September 12, 2008**. The Test Readiness Review Meeting is held to confirm with the HazCollect Project Manager (OST) that the HazCollect system is ready to begin the FOTE and is turned over to OPS24 for testing. The prerequisites listed in Section 1.6.1 will be verified by the TRG for completion.

3.5 FOTE Tests

The planned FOTE tests will consist of test sequences listed in **Attachment D**. These tests will include end-to-end dissemination tests, failover tests, HazCollect Server mode tests (randomly performed), and performing DMIS OPEN API verification. Any other additional testing at the site, not specified in this FOTE Plan, will need to be discussed with the FOTE Director.

3.5.1 Installation

There will be no software installation at the FOTE sites. All required HazCollect server and application software will have already been installed and verified before the start of the FOTE. All EMs will have already downloaded and/or installed the latest DMIS client software (Version 2.3.3.) or their DMIS OPEN API compliant software.

During the FOTE, FEMA's Disaster Management (DM) program office plans to improve the DMIS toolkit's usability issues identified from previous testing. When the newer version of the DMIS client software is released, specific EMs will be identified and advised to install the newer version. This will enable testing to concurrently use the older and current versions, and help better identify any issues related with a specific version.

If the new version of the DMIS client software is released close to the end of the FOTE, then the new DMIS version installation could be precluded depending on possible FOTE retest time constraints.

At the start of the FOTE, the required software that will have already been pre-installed are the following:

- HazCollect server software (**Version 1.1**)
- DMIS client software (**Version 2.3.3**)
- CRS database/AWIPS setup

3.5.2 Test Conduct – FOTE Test Team at Site

The FOTE test team will travel to a couple of FOTE sites and perform specific FOTE tests based on the test sequences listed in **Attachment D**.

Typical test conduct at a FOTE test site:

1. WFO will disseminate the local PNS message regarding upcoming FOTE.
2. A kickoff meeting, with the FOTE site personnel and any EMs in attendance, will be convened.
3. The testing will start with test procedures outlined in **Attachment D**.
4. The FOTE site will continue to run their normal routine weekly tests.
5. A TRG teleconference meeting will be convened on **Wednesdays (2:00 PM EDT)** of the test week to discuss current status and any problems found.

The agenda for the kickoff meeting is listed in **Attachment I**. Other planned tests not conducted at the sites during initial travel will be performed at WSH for the duration of the FOTE. Successful completion of the test procedures, especially the verification of the end-to-end NWEM dissemination, will involve active participation and coordination between the FOTE test team and the WSH test support personnel. The NWSTG Point of Contact (POC) will verify, upon request from the FOTE test team, for incoming messages and their subsequent transfers. The AWIPS and CRS POCs will monitor message storage, transmit (including by NWWS), scheduling, and broadcast via weather radios. Additionally, PAMS will track all disseminated NWEM messages to CRS, NWWS, and NWSTG for verification.

At the end of each day, during FOTE testing at a particular WFO, the FOTE test team will verify the current HazCollect server mode is set to **Active** in the event an actual emergency does occur and the EMs need to disseminate their actual NWEMs over to NWS dissemination systems. Constant communication between resources, each staffing their respective verification point, will be needed.

Phone bridges, including the use of GoToMeeting teleconferencing software, during testing can be employed to provide communication between resources. Staggered test times can be utilized for each of the FOTE sites to verify outgoing data and minimize confusion as to who sent a NWEM.

3.5.3 Test Conduct – FOTE Test Team Not at Site

The FOTE continues even as the FOTE test team leaves a FOTE site. **The HazCollect Server mode will remain in Active mode.**

For the duration of the FOTE, the EMs are *encouraged* to do the following activities:

1. **Perform actual non-weather emergency message creation as described in Section 3.0 in the event of an actual emergency.**
2. Create daily test ADR NWEM messages (no more than once per day) on weekdays for the duration of the FOTE, using the DMIS or third-party client software which is OPEN API compliant.
3. Report any problems found (see **Attachment B**).
4. Participate at the TRG conference call meetings every **Wednesdays (2:00 PM EDT)** for the duration of the FOTE.

For the duration of the FOTE, the FOTE site will continue to perform the following tasks:

1. Perform the normal WFO routine weekly tests.
2. Monitor any actual emergency and/or daily test ADR NWEM messages from the EM and report any problems found (see **Attachment B**).
3. Participate at the TRG conference call meetings every **Wednesdays (2:00 PM EDT)** for the duration of the FOTE.

For the duration of the FOTE, the FOTE test team will continue to perform the following tasks:

1. Host and coordinate scheduled and/or any emergency TRG meetings.
2. Perform tests per **Attachment D**.
3. Monitor NWEM message traffic log files, using the Product Availability Monitoring System (PAMS).
4. Participate at the TRG conference call meetings every **Wednesdays (2:00 PM EDT)** for the duration of the FOTE

Any problems observed during the FOTE should be documented via the TTR Form (see **Attachment B**) and subsequently emailed to the FOTE Test Director. The FOTE Test Director will enter the test defects into the TestTrack Pro database and present the defects to the TRG for further action. Additionally, specified log files from the HazCollect Server, NCF, AWIPS, etc. may be collected, during the duration of the FOTE, for use by the PAMS for verifying message transmission start and end times. PAMS is a tool developed by OPS24 to quantify the effectiveness of the AWIPS communication networks in delivering weather-related products from NCF to CRS, via AWIPS.

3.6 Test Reporting and Analysis

3.6.1 Reporting

FOTE site focal points will provide comments on the performance of their dissemination systems operations for any degradation. Additionally, the FOTE site focal points will also document any problems discovered during the FOTE by completing the attached Test Trouble Report Form, **Attachment B**.

The completed TTR form, together with any supporting documentation, should be submitted by email or fax message to the FOTE Director. The FOTE Director will collect the TTRs and add them to the TestTrack database. The FOTE Director will provide the TTRs to the TRG for adjudication (see **Section 2.1**).

3.6.2 Analysis

The FOTE Director will collect the TTRs, maintain the TestTrack database, and provide the TTRs to the TRG for adjudication (see Section 2.1). The database allows the assignment of an **Impact** and **Priority** for each TTR.

The **Impact** ranks the severity of the problem and can be assigned (in ascending severity):

a. **Impact 1 – Malfunction of required functionality, no workaround**

This impact describes a problem that severely impacts the HazCollect system operations and there are NO acceptable workarounds.

***ACTION:** The TRG recommends suspension of the test to the NWS HazCollect Project Manager. If suspended, the FOTE resumes when the HazCollect Project Manager approves a proposed corrective action. When an approved corrective action is implemented, regression testing may be required.*

b. **Impact 2 – Malfunction of required functionality with reasonable workaround**

This impact describes a problem that severely impacts the HazCollect system but has a reasonable workaround.

***ACTION:** The test continues with the current system using the acceptable workaround until a permanent fix is available. Once the NWS HazCollect Project Manager approves the fix, only those areas affected by the problem will be retested.*

c. **Impact 3 – Less critical; loss of minimum capability**

This impact describes a minor problem that does not significantly impact HazCollect system.

***ACTION:** The test continues with the current system; approved workarounds maybe*

implemented. Routine deficiencies are submitted by the TRG to the NWS HazCollect Project Manager for adjudication.

d. Impact 4 – Watch item

This impact describes a random problem with potentially significant impact on HazCollect system.

***ACTION:** The TRG monitors test activities for recurrence of the problem; if recurrence is documented, the TRG will consider re-categorizing the problem.*

e. Impact 5 – Minimum to no impact; nice to have

This impact describes problems that have little to no impact to the HazCollect service operations. This impact will also include potential enhancements.

***ACTION:** The TRG will document the minor problem for tracking and future re-categorization. The TRG forwards the potential enhancement to the NWS HazCollect Project Manager for adjudication. The HazCollect Project Manager may then forward the potential enhancement as a Request for Change.*

The **Priority** addresses how the problem is to be resolved and can be assigned (in ascending severity):

- Priority 1 – Need immediate fix
- Priority 2 – Include in the next build *before initial deployment*
- Priority 3 – Include in the next build *after deployment*
- Priority 4 – Include in a future build
- Priority 5 – Undetermined

TTRs that are assigned Impact 1 mandate the immediate suspension of the FOTE. The TRG will work to resolve problems identified during the FOTE.

3.7 Schedule

The FOTE schedule is listed on the table below. Any changes to the schedule should be brought to the immediate attention of the FOTE Director. The FOTE Director will notify the members of the TRG of any required schedule changes and coordinate the timely completion of the FOTE.

Dates	Event
September 4, 2008	FOTE Sites / EM Kickoff Meeting (2:00 PM EDT)
September 12, 2008	FOTE Readiness Review Meeting (2:00 PM EDT)
September 17	Start of the FOTE @ WFO PAH
September 17	TRG Meeting
September 24	TRG Meeting
September 30	Start of the FOTE @ WFO PBZ

Dates	Event
October 1	TRG Meeting
October 6	Start of the FOTE @ WFO MTR
October 8	TRG Meeting
October 15	TRG Meeting
October 21	Start of the FOTE @ WFO HFO
October 22	TRG Meeting
October 28	Start of the FOTE @ WFO AFC
October 29	TRG Meeting
November 4	Start of the FOTE @ WFO TAE
November 5	TRG Meeting
November 12	TRG Meeting
November 19	TRG Meeting
November 26	TRG Meeting
December 3	TRG Meeting
December 5	End of the FOTE
December 10	Wrap-Up Meeting (2:00 PM EDT)
December 17	Questionnaires/Surveys due

3.8 Help during the FOTE

Questions regarding the FOTE should be directed to:

1. For DMIS related questions, contact
DMIS Help Desk
Website: http://www.dmi-services.org/contact_us.htm
(866) 916-8306

2. For AWIPS related questions, contact
NCF Help Desk
(301) 713-9433

3. For CRS Help Desk questions, contact
CRS Help Desk
Website: <http://www.weather.gov/ops2/crs/crshelp.html>
(301) 713-0191

4. For NWSTG questions, contact
NWSTG Tech Control
Email: toc.nwstg@noaa.gov
(301) 713-0902

For all other questions regarding the FOTE:

Bert Vioria, FOTE Director

Phone: (301) 713-0326 x131

Fax: (301) 713-0912

Email: Bert.Vioria@noaa.gov

Jae Lee, Test & Evaluation Branch

Phone: (301) 713-0326 x158

Fax: (301) 713-0912

Email: Jae.Lee@noaa.gov

3.9 Post-FOTE Activities

3.9.1 FOTE Questionnaires

The Site Focal Point will complete the site questionnaire, **Attachment J**, upon the conclusion of the FOTE. The Site Focal Point should coordinate the completion of the questionnaire with site management and other staff members.

Similarly, the participating Emergency Managers will complete their questionnaire, **Attachment K**, upon conclusion of the FOTE. The completed questionnaires, together with any additional comments, should be returned to the FOTE Director no later than **December 17, 2008**.

3.9.2 FOTE Conduct Survey

An FOTE Conduct Survey (see **Attachment L**) will be distributed by OPS24 to the TRG. This survey will allow TRG members to rate the performance of OPS24 during the FOTE and provide recommendations on how to make the operational testing process better. While the completion of this survey is optional, it should be returned to the FOTE Director no later than **December 17, 2008**.

4.0 Test Recommendations and Report

The TRG Chair will convene a wrap-up meeting of the TRG on **December 10, 2008**, following the conclusion of the FOTE. The FOTE Director will review and present to the TRG, the activities conducted to date including a summary of TTRs found, other findings, and recommendations. The TRG will review the materials presented and vote to recommend whether to proceed with national IOC deployment of HazCollect.

At the conclusion of the FOTE and per voting guidelines, the HazCollect system must meet the following criteria for national deployment:

- All TTRs assigned **Impact 1 or 2** must be resolved and closed.
- All problems resolved by an **operationally accepted** workaround must be properly documented.

As stated in Section 2.1, this voting is based on a simple majority among the voting members. In the event of a tie, the TRG Chair will cast the deciding vote. Dissenting opinions will be recorded and reported in the test report

The FOTE Report will be prepared, by OPS24, upon completion of the FOTE. The FOTE Report provides a complete record of the FOTE including details and status of all FOTE TTRs, findings, and recommendations. The FOTE Report will be made available on the OPS24 website at:

http://www.nws.noaa.gov/ops2/ops24/documents/hazcollect_docs.htm

Attachment A – Non-Weather Emergency Message Products in HazCollect

Event Code	AWIPS Priority	Event (Product) Name
AVW	Warning/Exclusive	Avalanche Warning
CDW	Warning/Exclusive	Civil Danger Warning
CEM	Warning/Exclusive	Civil Emergency Message
EQW	Warning/Exclusive	Earthquake Warning
EVI	Warning/Exclusive	Immediate Evacuation Warning
FRW	Warning/Exclusive	Fire Warning
HMW	Warning/Exclusive	Hazardous Materials Warning
LEW	Warning/Exclusive	Law Enforcement Warning
NUW	Warning/Exclusive	Nuclear Power Plant Warning
RHW	Warning/Exclusive	Radiological Hazard Warning
SPW	Warning/Exclusive	Shelter In Place Warning
VOW	Warning/Exclusive	Volcano Warning
AVA	Watch/High	Avalanche Watch
CAE	Watch/High	Child Abduction Emergency
LAE	Watch/High	Local Area Emergency
TOE	Watch/High	911 Telephone Outage Emergency
ADR	Other/General	Administrative Message/Follow up Statement
DMO	Configurable	Practice/Demo Warning
NIC*	Other/General	National Information Center
NPT*	Configurable	National Periodic Test
RMT**	Configurable	Routine Monthly Test
RWT**	Configurable	Routine Weekly Test

* Not yet defined and implemented in HazCollect at this time.

** Not implemented in HazCollect at this time.

Attachment B – HazCollect Test Trouble Report Form

HazCollect FOTE TEST TROUBLE REPORT				
Title/Summary:				
Originator:		AWIPS:		Phone :
Location:		Date/Time:		Email:

Priority	Impact	Subsystem/ Component	Frequency
1. Need immediate fix	1. Malfunction of required functionality; NO workaround	Software	Always
2. Include in next build before initial deployment	2. Malfunction of required functionality; Reasonable workaround	Hardware	Sometimes
3. Include in next build after deployment	3. Routine deficiency; loss of minimum capability	Documentation	One-time occurrence
4. Include in future build	4. Watch Item	Other	See description
5. Undetermined	5. Minimum to no impact; nice to have	Unknown	Unknown

Problem Description:	
Recommended Solution:	
Authorizing Signature:	Date:

Please send an email to Bert.Viloria@noaa.gov or Jae.Lee@noaa.gov with this form as an email attachment.

Call Bert Viloria at 301-713-0326 x131 or Jae Lee at 301-713-0326 x158 if you have any questions and/or comments.

Attachment C – Test Review Group Members

Name (Organization)	Function	Phone	Voting Member
Jerald Dinges (OPS24)	Test Review Group Chair	(301) 713-0326 x160	✓*
Bert Vilorio (OPS24)	FOTE Director	(301) 713-0326 x131	✓
Jae Lee (OPS24)	FOTE Test Team	(301) 713-0326 x158	
Joel Williams (OST11)	HazCollect Project Manager	(301) 713-3400 x114	
Timothy Hopkins (OST31)	WSH Test Support	(301) 713-1570 x129	
Steve Pritchett (OST11)	WSH Test Support	(301) 713-3557 x172	
Herb White (OS51)	WSH Test Support	(301) 713-0090 x146	
Arthur Kraus (OS51)	WSH Test Support	(301) 713-0090 x161	
Allan Darling (CIO13)	WSH Test Support	(301) 713-0882 x114	
Odon Dario (CIO14)	WSH Test Support	(301) 713-0510 x172	
Jeremiah Dewey (OST31)	Information Technology Security Officer	(301) 713-1570 x127	✓
David Manning (ER) John Guiney (ER1)	Eastern Region Focal Point	(631) 244-0107 (631) 244-0121	✓
Mike Mach (SR11)	Southern Region Focal Point	(817) 978-1100 x108	✓
Gregory Noonan (CR4)	Central Region Focal Point	(816) 891-7734 x301	✓
Craig Schmidt (WR1)	Western Region Focal Point	(801) 524-4000 x266	✓
Jeffrey Osiensky (AR1)	Alaska Region Focal Point	(907) 271-5132	✓
Bill Ward (PR)	Pacific Region Focal Point	(808) 532-6415	✓
Richard Kane (WCM – WFO PBZ)	FOTE Site Focal Point	(412) 262-2170 x223	
Robert Goree (WCM – WFO TAE)	FOTE Site Focal Point	(850) 942-8834 x223	
Rick Shanklin (WCM – WFO PAH)	FOTE Site Focal Point	(270) 744-6440 x726	
Dave Reynolds (MIC – WFO MTR)	FOTE Site Focal Point	(831) 656-1710 x222	
Sam Albanese (WCM – WFO AFC)	FOTE Site Focal Point	(907) 266-5102	
Ray Tanabe (WCM – WFO HFO)	FOTE Site Focal Point	(808) 973-5275	
Dave Gagetta (EM – Allegheny County, PA)	Emergency Manager	(412) 473-2588	
John Fleming (Florida DCA) Ben Nelson (FL State Meteorologist)	Emergency Manager State Meteorologist	(850) 413-9888 (850) 413-9885	
Walter Atherton (EM – Daviess County, KY)	Emergency Manager	(270) 685-8448	

Art Botterell (EM – Contra Costa County, CA)	Emergency Manager	(925) 313-9627	
Vince McCoy (EM – Anchorage, AK)	Emergency Manager	(907) 343-1403	
George Burnett Tom Simon	Emergency Manager Emergency Manager	(808) 733-4301 x530 (808) 733-4300 x541	
Michael Dion	NWSEO Test Support	(301) 713-1792 x142	✓

* TRG Chair only votes in the event of a tied vote.

Attachment D – FOTE Test Sequence and Description

Test #	Procedure #	Description	HazCollect Server Mode	DMIS CAP status	Disseminated?
1	110	This test will verify NWEM message generation using different areas for local, state, and NATIONAL messages using only the ADR product.	Active	Actual	YES
2	300	This test will verify that the HazCollect Active Operations mode is operational using the DMIS client Status = Actual, System, Exercise, and Test .	Active	Actual, System, Exercise, Test	NO for System & Test YES for Actual & Exercise
3	510	This test will verify, <u>WITHIN THE RACK #1 @ Silver Spring, MD</u> , that the failover and recovery in the HazCollect server is functional	Active	Actual	YES
4	520	This test will verify, <u>BETWEEN racks (@ Silver Spring & Mt. Weather, WV)</u> , that the failover and recovery in the HazCollect server is functional.	Active	Actual	YES
5	310	This test will verify that the HazCollect Test Operations mode is operational using the DMIS 'Actual' CAP status. Will verify Corrected, Update/Cancel functionalities.	Test	Actual	NO
6	320	This test will verify that the HazCollect Test Operations mode is operational for the DMIS CAP status of System, Exercise, and Test .	Test	Test, Exercise, System	YES for Test, NO for Exercise, System
7	330	This test will verify that the HazCollect Training Operations mode is operational for CAP status System, Exercise, and Test .	Training	Actual, System, Exercise, Test	NO
8	200	This test will verify the EM authentication into HazCollect within 5 seconds .	Active	Actual	YES
9	230	This test will verify the transmission of NWEM message to dissemination systems within 2 minutes of submission from EM interfaces.	Active	Actual	YES
10	600	This test will verify the NWEM message from a third-party vendor client is transmitted through HazCollect server and out to designated listening area.	Active	Actual	YES

Attachment E – Sample DMIS NWEM Field Values

DMIS Client Field	Value
Name:	< <i>some meaningful name</i> >
*Status:	Actual
Scope:	Public
Type:	Alert
Event:	Administrative Message
Headline:	THIS MESSAGE IS FOR TEST PURPOSES ONLY.
Description:	THIS IS A TEST MESSAGE. THIS IS A TEST OF THE CAPABILITY TO RELAY EMERGENCY MESSAGES FROM NON-NATIONAL WEATHER SERVICE SOURCES USING DEPARTMENT OF HOMELAND SECURITY AND NWS SYSTEMS. THIS TEST MESSAGE MAY BE RELAYED BY EMERGENCY ALERT SYSTEM PARTICIPATING STATIONS IN ACCORDANCE WITH LOCAL AND STATE EAS PLANS. THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.
Duration:	30 minutes
Urgency:	Immediate
Severity:	Severe
Certainty:	Unknown
Language:	ENGLISH
Category:	Other
Areas:	< <i>select areas</i> >

- * If server mode is **Active** and **Status** value of *Actual* = message is disseminated.
- * If server mode is **Active** and **Status** value of *Test* = message is NOT disseminated.

Attachment F – HazCollect Server Modes

HazCollect Server Mode	CAP Status	NWEM Format	NWEM Disseminated?	FOTE Test Procedure/Event
Active	Actual	Normal	Yes	Test Procedure #300 / ADR
	System	Training	No	
	Exercise	Exercise	Yes	
	Test	Test	No	
Training	Actual	Normal	No	Test Procedures #110 and #330 / ADR
	System	Training	No	
	Exercise	Exercise	No	
	Test	Test	No	
Test	Actual	Normal	No	Test Procedures #320 / ADR
	System	Training	No	
	Exercise	Exercise	No	
	Test	Test	Yes	

The HazCollect server is capable of being switched into three different operational modes:

1. The **Active Mode** is the normal mode when the system is operationally functioning. This mode allows the EM to enter active operational mode providing all functionality and performance necessary for the EM to disseminate emergency messages whenever required.
2. The **Training Mode** is used to replicate EM user functionality of creating NWEM messages while inhibiting the routing and dissemination of any data from the HazCollect server to the NWS infrastructure. There will be no NWEM dissemination using this HazCollect server mode.
3. The **Test Mode** provides the capability for system administrators to place elements of the system in test mode to verify proper operation, communication, and performance without jeopardizing alert dissemination functions.

Attachment G – HazCollect FOTE Test Sites

Region	FOTE Site	Test Dates	MIC / POC / EM
Eastern	WFO Pittsburgh, PA (PBZ) 192 Shafer Road Moon Township, PA 15108 (412) 262-1591	09/30/08 – 12/10/08	William Comeaux (MIC) (412) 262-1591 x222 william.comeaux@noaa.gov Richard Kane (WCM) (412) 262-2170 x223 richard.kane@noaa.gov Dave Gagetta (EM) Allegheny County Emergency Services 400 N. Lexington St. Pittsburgh, PA 15208-2521 (412) 473-2588 dgagetta@county.allegheny.pa.us
Southern	WFO Tallahassee, FL (TAE) 7955 Airport Rd Santa Teresa, NM 88008 (505) 589-4088	11/4/08 – 12/10/08	Paul Duval (MIC) (850) 942-8831 paul.duval@noaa.gov Robert Goree (WCM) (850) 942-8834 x223 (850) 322-3250 (cell) bob.goree@noaa.gov John Fleming Florida DCA/DEM (850) 413-9888 john.fleming@dca.state.fl.us Ben Nelson Florida State Meteorologist (850) 413-9885 ben.nelson@dca.state.fl.us
Central	WFO Paducah, KY (PAH) 8250 KY Highway 3250 West Paducah, KY 42086-6440 (270) 744-6440	09/15/08 – 12/10/08	Beverly Poole (MIC) (270)744-6440 x642 beverly.poole@noaa.gov Rick Shanklin (WCM) (270)744-6440 x726 ricky.shanklin@noaa.gov Walter Atherton, Daviess Co. KY EM/ Comms Supervisor 212 St Anne Street Room 3 Owensboro, KY 42301 270.685.8448 Office/EOC 270.929.4257 Cell atherton@daviessky.org

Region	FOTE Site	Test Dates	MIC / POC / EM
Western	WFO San Francisco, CA (MTR) 21 Grace Hopper Ave, Stop 5 Monterey, CA 93943-5505 (831)-656-1725	10/06/08 – 12/10/08	David Reynolds (MIC) (831)656-1710 x222 david.reynolds@noaa.gov Tom Evans (WCM) tom.evans@noaa.gov Art Botterell CWS Manager 50 Glacier Drive Martinez, CA 94553 (925) 646-4461 (Main) (925) 313-9627 (925) 383-6415 (Cell) ABott@so.co.contra-costa.ca.us
Alaska	WFO Anchorage AK (AFC) 6930 Sand Lake Road Anchorage, AK 99502-1845 (907) 266-5102	10/28/08 – 12/10/08	Robert Hopkins (MIC) (907) 266-5120 bob.hopkins@noaa.gov Sam Albanese (WCM) (907) 266-5117 sam.albanese@noaa.gov Vince McCoy Municipality of Anchorage Emergency Coordination Mgr. (907) 343-1403 McCoyVG@ci.anchorage.ak.us
Pacific	WFO Honolulu, HI (HFO) 2525 Correa Rd, Suite 250 Honolulu, HI 96822 (808) 973-5286	10/21/08 – 12/10/08	James Weyman (MIC) 808-973-5272 james.weyman@noaa.gov Raymond Tanabe (WCM) (808) 973-5275 raymond.tanabe@noaa.gov George Burnett State of Hawaii Civil Defense Agency (808) 733-4301 x530 gburnett@scd.hawaii.gov Tom Simon Hawaii State Civil Defense (Emergency Mgt) (808) 733-4300 x541 (Office) (808) 620-5411 (Cell) tsimon@scd.hawaii.gov

Attachment H – HazCollect FOTE Resource Requirements

Resource	Description
Hardware	A fully configured HazCollect system; primary rack at Silver Spring, MD, and the backup rack at Mt. Weather, VA.
Software	<ul style="list-style-type: none"> a. HazCollect Version 1.1 b. HazCollect Database Version 0.4 tables including: <ul style="list-style-type: none"> i. A2A (afos2awips file) ii. Broadcast types iii. Federal information processing standards (FIPS) to WFO iv. NWEM Message Categories v. State FIPS Codes vi. State zones and FIPS codes (correlation) vii. WFO viii. WMO Regions ix. NWEM Categories c. DMIS client V2.3.3
Documentation	<ul style="list-style-type: none"> a. FOTE Plan (OPS24) b. HazCollect User's & Operations Manual (OST) c. HazCollect System Administration Manual (OST) d. HazCollect Version Description Document (OST) e. HazCollect ILS Plan (OST) f. DMIS Operator's Guide (OST) g. Draft NWS HazCollect Policy Directive (OS51) h. NWEM Guidelines (OS51) i. Draft NWS Instruction 10-1708 (OS51) j. Draft NWS Instruction 10-518 (OS51) <p>The FOTE Plan will be available on the OPS24 web site at:</p> <p style="text-align: center;">http://www.nws.noaa.gov/ops2/ops24/documents/hazcollect_docs.htm</p>

Attachment I – Agenda for FOTE Site Visit

1. Introduction of test team Test Coordinator
2. The Test Structure Test Coordinator
 - Overview of HazCollect
 - Test schedule
3. Test Team Responsibilities Test Coordinator
 - Hours working on-site
 - Activities
4. Site Management and Staff Responsibilities Test Coordinator/MIC
 - ESA Responsibilities
 - Focal Point Responsibilities
 - Reporting/documenting problems
5. Test Team Office Needs Test Coordinator
 - E-mail, PC with Internet connection, modem phone lines, copying, phones, work space, etc.
6. Other Expected Visitors Test Coordinator
7. Discussion of Questions and Concerns Site Management

Attachment J – HazCollect Site Questionnaire

(This survey is to be completed by the FOTE site at the end of FOTE, coordinating responses with the test site management and staff).

Test Site:		Date:	
Name:		Title:	
Test Start Date:		Test End Date:	
AWIPS Build:			

Respond to the statements below by checking the rating box that best describes your opinion according to the following code:

1 Excellent Performed in a manner that could not be improved	2 Good Performed well, met field needs and offered some improvements	3 Satisfactory Performed in a manner that meets basic field needs	4 Deficient Performed in unsatisfactory manner, does not fully meet field needs, may be workarounds	5 Unsatisfactory Performed in a wholly unsatisfactory manner, does not meet field needs and negatively impacts field operations	N/A Does Not Apply
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Statement	1	2	3	4	5	N/A
HazCollect documentation, including any training materials, is adequate and accurate.						
HazCollect NWEM dissemination under non-severe weather conditions.						
HazCollect NWEM dissemination under severe weather conditions.						
HazCollect effect on existing NWS infrastructure/dissemination systems						
HazCollect effect on WFO operators or forecasters workload.						
HazCollect is suitable for general implementation.						

Please comment on any item that received **a rating of 4 or 5**. Include any comments received concerning maintenance. You may provide other comments, as desired.

Attachment K – HazCollect Emergency Manager Questionnaire

(This survey is to be completed by the Emergency Manager at the end of the FOTE).

Test Site:		Date:	
Name:		Title:	
Test Start Date:		Test End Date:	
COG Name:			

Respond to the statements below by checking the rating box that best describes your opinion according to the following code:

1 Excellent Performed in a manner that could not be improved	2 Good Performed well, met field needs and offered some improvements	3 Satisfactory Performed in a manner that meets basic field needs	4 Deficient Performed in unsatisfactory manner, does not fully meet field needs, may be workarounds	5 Unsatisfactory Performed in a wholly unsatisfactory manner, does not meet field needs and negatively impacts field operations	N/A Does Not Apply
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Statement	1	2	3	4	5	N/A
DMIS documentation, including any training materials, is adequate and accurate.						
HazCollect authentication and authorization processing.						
DMIS software user interface ease of use.						
DMIS software dissemination of CAP formatted NWEM.						
HazCollect alert response and/or any error notification back to DMIS.						
DMIS effect on emergency manager workload.						
DMIS software is suitable for general implementation.						
DMIS OPEN API interoperability with HazCollect (if demonstrated)						
HazCollect is suitable for general implementation.						

Please comment on any item that received **a rating of 4 or 5**. Include any comments received concerning maintenance. You may provide other comments, as desired.

Attachment L – FOTE Conduct Survey

Submit by Email

Print Form



Follow-On Operational Test & Evaluation (FOTE) Conduct Survey

Name:

Date:

Title:

Organization:

Thank you for taking the FOTE Conduct Survey. This survey will rate the performance of the Test & Evaluation Branch (OPS24) during the FOTE. After completing the form, submit the file using email via the 'Submit by Email' or print the form and fax using the number 301-713-0912.

Please rate your satisfaction level with each of the following statements.

1 = Very Satisfied

3 = Neutral

5 = Very Dissatisfied

2 = Somewhat Satisfied

4 = Somewhat Dissatisfied

N/A = Not Applicable

Test Conduct

	1	2	3	4	5	N/A
1. Rate your satisfaction with the FOTE documentation (plans, minutes, etc.)	<input type="radio"/>					
2. How satisfied are you with the notifications of changes in FOTE schedule (if any)?	<input type="radio"/>					
3. Rate the timeliness, coordination, and execution of the FOTE tests	<input type="radio"/>					
4. Rate your overall satisfaction with the FOTE.	<input type="radio"/>					

Test Team Support

5. How satisfied are you with the responsiveness of the FOTE test team support?	<input type="radio"/>					
6. How satisfied are you with the FOTE test team expertise with the test process?	<input type="radio"/>					
7. Rate your overall satisfaction with the FOTE test team support.	<input type="radio"/>					

FOTE Process

8. Rate the Test Trouble reporting process (test trouble forms, etc.)	<input type="radio"/>					
9. Rate the Test Review Group process (meetings, problem analysis and adjudication, voting, etc.)	<input type="radio"/>					

10. How can OPS24 improve the operational testing experience?

Test & Evaluation Branch (OPS24)
 1325 East West Highway, Bldg 55MC-2, Silver Spring, MD 20910 Phone: 301-713-0326 Fax: 301-713-0912

www.nws.noaa.gov/ops2/ops24/index.htm