

Draft Virtual USA National Information Sharing Agreement

This document may be cited as the Virtual USA (vUSA) National Information Sharing Agreement (herein referred to as “Agreement”) Version 1.0.

SECTION I – PURPOSE

The purpose of this Agreement is to govern the nationwide access to and usage of the vUSA information sharing capability (vUSA-ISC) and to establish basic terms of use. This agreement provides a framework to govern multi-jurisdictional and multi-disciplinary information-sharing within the vUSA-ISC, regardless of the type of data or imagery that is shared. Core principles of the National Information Sharing Agreement include:

- Simplicity
- Practitioner/user-driven
- Creating a trusted environment
- Creating a “culture of collaboration”
- Respecting stakeholder parity
- Respecting data owner rights; data providers maintain ownership and control of their data

These basic principles are central to the establishment of a vUSA-ISC trusted environment as required by practitioners from across the Nation and from a broad array of disciplines.

In the future, the users may decide to grant limited access to the citizenry, reflecting the spirit of the principles that government be transparent, participatory, and collaborative as first espoused in the Obama Administration’s Open Government Initiative.

SECTION II – AUTHORITIES AND GENERAL IMPLEMENTATION

Any prospective organizational user of the vUSA-ISC trusted environment is required to become a signatory to this Agreement, including any federal, state, regional, tribal, or local governments, as well as private sector and non-governmental organizations that request access to the vUSA-ISC. The vUSA Strategic Resource Group (SRG) or its designee will serve as the governance body that seeks to maintain the trusted environment and ensure signatories abide by the terms of use set forth in this Agreement. Each agency or organization that becomes a signatory to the vUSA-ISC and is thus granted access permission will designate an Authorized Representative who will be responsible for formulating the organization’s own internal policies and procedures for the administration of their entity’s membership and activities related to the vUSA-ISC. This administration will be tailored by each organizational user. The data and information accessible to the vUSA-ISC will be derived from each contributing party’s or participant’s own legally maintained data sources or records systems, and the vUSA-ISC is not in any manner intended to be an official repository of original records, or to be used as a substitute for one, nor is the information in the system intended to be accorded any independent record system status. Rather, this electronic system is merely a means to provide timely access for the parties and participants to information that replicates existing files, data sources or records systems.

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SECTION III – AUTHORIZED REPRESENTATIVE RESPONSIBILITIES

The vUSA participating member shall, insofar as practical, acquire and develop information sharing capabilities (e.g., a centralized visualization tool, de-centralized information sharing practices, etc.) that best meet the needs of their organization and maintain reliable data sources.

The vUSA participating member may request assistance of other vUSA participating members by contacting them directly at any time.

The participating member shall notify the SRG or its designee of any change to its authorized representative.

SECTION IV - INFORMATION REQUIREMENTS

Information Assurance: Each vUSA participating member will provide information assurance to verify, to the extent possible, that all shared data is derived from an authoritative data source. vUSA participating members and their approved users shall not interfere with another vUSA participating member's authoritative data provider, hereinafter referred to as the Custodial Owner, but will agree to work through the vUSA participating member for follow-up information. Users will share information in accordance with the vUSA-ISC architecture, which requires a minimum-level of required metadata, as well as particular file formats, insofar as practical.

Parties and participants will use any information or technical assistance provided by other parties or participants at their own risk.

SECTION V – ARCHITECTURE

vUSA participating members will be responsible for developing the respective internal information sharing architectures within their agencies or organizations necessary to support information sharing across disparate users and capabilities. vUSA participating members will, within their respective architectures, identify and work to solve technical challenges that hinder or prevent information sharing. At a minimum, vUSA participating members will assist in governing the terms of use for the vUSA-ISC, how to share data files, security requirements and identity management standards for all participants as outlined hereafter.

vUSA-ISC: Insofar as practical, users shall agree to share information directly with other users on the basis of the terms outlined in this Agreement and may provide access to the layers that they choose to share through the vUSA-ISC. Users can share information upon their discretion by granting access to select users through the vUSA-ISC.

Data: Insofar as practical, users agree to use open standards and publish their data files in the data file extensions permitted by the vUSA information sharing capability.

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Security: Users and Authorized Representatives will adhere to baseline system security requirements for information to be shared across all jurisdictions within vUSA once established by the vUSA program.

Identity Management: vUSA participating members will vet users through their own internal process. vUSA participating members will sponsor individual user participation and grant access to the vUSA-ISC according to their discretion. vUSA participating members may enter into agreements with other non-vUSA participating agencies or organizations to facilitate the use of the prototype to support ongoing preparedness, planning or operations at the discretion of the vUSA participating member. In instances where a vUSA participating member has facilitated the use of the prototype for another agency or organization and that agency or organization becomes a vUSA participating member, the users will be realigned as such. There shall be no mandate made by a vUSA participating member that users of another agency or organization must rely on them for access to the vUSA-ISC and cannot become a vUSA participating member in their own right.

SECTION VI - PERMISSIONS TO SHARE

Due to the potential sensitivity of information shared relative to a multi-jurisdictional incident, users agree to adhere to information sharing permissions in accordance with each user's freedom of information laws or similar guidelines. Users must obtain the permission of the vUSA Participating Member prior to sharing information with third parties as outlined in Section V. This may be performed on a case-by-case basis, or through a formal mechanism (e.g., memorandum of understanding).

SECTION VII - IMPLEMENTATION

This Agreement is for the sole benefit of the user, and no third party is intended to be a beneficiary thereof or have any rights as a consequence except when being used for incident response and/or planning through a participating member. Any participating member may withdraw from this Agreement by submitting a written request to the SRG or its designee. Vetted users permitted access by their agency or organization interested in terminating their access to the vUSA-ISC should notify their Authorized Representative of the decision to do so in order to enable the organization to oversee the administration of their organization's usage. Users who withdraw from the vUSA-ISC continue to be responsible for the provisions in this Agreement until they receive notice from their Authorized Representative that their withdrawal is effective.

The vUSA-ISC host will, in conjunction with the vUSA Strategic Resource Group or designee, be responsible for the adjudication of issues ensuing from user withdrawal or a non-adherence to this agreement.

SECTION VIII – VALIDITY

This Agreement shall be construed to effectuate the purposes stated in Section I. If any provision of this Agreement is declared unlawful, or its applicability to any person or

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circumstances is held invalid, the legality of the remainder of this Agreement and its applicability to other persons and circumstances shall not be affected.

Jurisdictions that have established governance agreements granting them access to the vUSA-ISC prior to XXXDATEXXX shall be deemed signatories of this agreement and shall be subject to all of the terms of this agreement, and shall enjoy all the rights and privileges afforded by this agreement without being required to sign below. As of the date of this agreement, those jurisdictions include the states of Alabama, Florida, Louisiana, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Virginia and the Wal-Mart Corporation with a fully executed copy of their governance agreement being attached hereto and made a part hereof as Appendix IV, and the states of Idaho, Montana, Oregon, and Washington with a fully executed copy of their governance agreement being attached hereto and made a part hereof as Appendix V.

The signatory of this agreement shall be the authorized agent of a jurisdiction's organization charged to coordinate and manage emergency response. Said signatory shall possess legal authority to bind the jurisdiction to this agreement as a participating member. The signatory shall appoint the participating member's Authorized Representative.

(The plan is for the signature to be electronic and built into the vUSA-ISC)

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Appendix I – Metadata and File Formats

Members agree to provide data layers with the metadata listed below using the following metadata guiding principles:

Virtual USA - Metadata Guiding Principles

1. **Do not** create a new standard or practice. Instead **utilize an existing standard or practice to the extent possible**. The Metadata standards below are a subset of the FGDC Metadata Standard which is consistent with established documentation practices in the geospatial community.
2. **Do not attempt to force compliance**. Instead accept what metadata may exist for any particular dataset and work to improve associated metadata over time
3. **Encourage utilization of adopted vUSA Metadata Standards** and practice for current and future metadata documentation. Further encourage the inclusion of an expanded set of metadata fields toward full compliance with the FGDC metadata standard over time.

Virtual USA - Metadata Standards

Fields	vUSA Pacific NW Pilot Metadata Standards (Aligned with FGDC Metadata Standard)	PNW Pilot – “Metadata Light”	SE ROPP – “Metadata Light”
1	Title	Required	
2	Originator	Required	<i>Originator</i>
3	Description	Required	<i>Description</i>
4	Update Frequency	Required	<i>Update Frequency</i>
5	Use Constraints	Required	
6	Contact Organization (Contact Information)	Required	<i>Data Coordinator (Point of Access)</i>
7	<i>Format *</i>	<i>Required for Gen II/III Upload</i>	
8	<i>Online Linkage (Published Access Point) *</i>	<i>Required for Gen II/III Upload</i>	<i>Published Access</i>
9	<i>Bounding Coordinates</i>	<i>Highly Desirable</i>	
10	<i>Entity Attributes</i>	<i>Highly Desirable</i>	
11	<i>Theme Keyword(s)</i>	<i>Highly Desirable</i>	

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*** Note: Format (i.e. KML, XML GeoRSS, REST, ATOM, etc.) and Published Access Point (Data Location – i.e. URL)** will be required metadata fields during the upload process to the Generation II/III Prototype Information Sharing Environment but will not be required metadata within the dataset/file being shared.

Virtual USA Pacific Northwest Pilot - Metadata Glossary V1.0

Fields	Metadata Fields	Metadata Field Definitions *
1	Title	The name by which the data set is known.
2	Originator	The name of an organization or individual that developed the data set.
3	Description	A characterization of the data set, including its intended use, limitations, and descriptive spatial extent of the data.
4	Update Frequency	The frequency with which changes and additions are made to the data set after the initial data set is completed.
5	Use constraints	Restrictions and legal prerequisites for using the data set after access is granted. These include any use constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on using the data set.
6	Contact Organization (Contact Information)	<p>Identity of, and means to communicate with, person(s) and organization(s) associated with the data set. The information below should be provided if available and applicable.</p> <ul style="list-style-type: none"> • Contact_Person_Primary • Contact_Organization_Primary • Contact_Position • Contact_Address • Contact_Voice_Telephone • Contact_TDD/TTY_Telephone • Contact_Facsimile_Telephone • Contact_Electronic_Mail_Address • Hours_of_Service • Contact_Instructions
7	Format **	The file format(s) in which the data set is provided. For the vUSA PNW Pilot – members have agreed to provide/share data in one (1) or more of the following formats- KML, XML, KMZ, GeoRSS, REST Services, WMS, and ATOM.

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Fields	Metadata Fields	Metadata Field Definitions *
8	Online Linkage (<i>Published Access Point</i>)	The name of an online computer resource that contains the data set. Entries should follow the Uniform Resource Locator convention of the Internet.
9	Bounding Coordinates	The limits of coverage of a data set expressed by latitude and longitude values in the order western-most, eastern-most, northern-most, and southern-most.
10	Entity Attributes	Details about the information content of the data set, including the entity types, their attributes, and the domains from which attribute values may be assigned.
11	Theme Keyword(s)	Common-use word or phrase used to describe the subject of the data set.

* *Federal Geographic Data Committee FGDC-STD-001-1998*

Content Standard for Digital Geospatial Metadata

** *Definition used in the vUSA PNW Pilot*

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Appendix II – DEFINITIONS

Term	Definition
vUSA-ISC	The national information sharing capability iteratively developed in collaboration with practitioners; currently the Generation II Prototype.
User	Any person granted access to the vUSA-ISC by an agency or organization that is a signatory to this Agreement.
Authorized Representative	A representative who has been officially designated by the agency or organization as their authorized signatory for the vUSA National Information Sharing Agreement and will ensure that all agency or organizational users abide by this agreement.
Custodial Owner	A provider or owner of data or information.
Organizational User	The signatory of this vUSA National Information Sharing Agreement
Host	The super-administrator of the vUSA-ISC; currently SRA International, as sponsored by the U.S. Department of Homeland Security.
Strategic Resource Group	The Strategic Resource Group (SRG) is an established group of practitioners dedicated to development and operation of the Virtual USA initiative. The SRG will serve as the governance body for use of the vUSA-ISC.

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APPENDIX III - VIRTUAL USA INFORMATION SHARING ENVIRONMENT

Overview

The vUSA Information-Sharing Environment (<https://web.vusa.us>) enables registered partners (including state, tribal, Federal, and private sector entities) to securely share emergency-related information between geospatial viewers.

The vUSA Information-Sharing Environment is available to entities that have signed the vUSA National Agreement¹. Organizations that are in the process of signing the National Agreement may participate on a provisional basis.

Participating agencies web-enable data such as evacuation status, damage reports, traffic congestion, or approaching storm intensity and make the data feeds discoverable on the vUSA Information Sharing Environment. A partner can then see and display the information in its own native information sharing environment, typically a map viewer.

The vUSA approach is a blend of process and technology, assisting agencies in developing relationships and agreements among partners while providing the data pipeline that allows these agencies to easily share information. The success of vUSA rests not only on improving technical capabilities, but on encouraging trusted relationships among the community at all levels.

Secure, Customized, and Controlled Data Sharing

Through its interactions with users, S&T has learned that agencies are more comfortable sharing important information when they maintain constant control over their own data. In the vUSA solution, agencies decide what information they want to post, with whom they want to share it, for how long, and in what format(s). Agencies can elect whether to share information with a select subset of system users or make the links available to all users as part of the “Common Data” library. The system further includes an alerting function, allowing agencies to announce when new information is available.

Registered users can customize their participation by configuring their catalog view (“My Library”). Notification settings allow a user to passively search and receive a notification based on user-specified criteria, such as emergency support function, geographic areas, or specified keywords. Users can adjust their individual preferences at will, allowing them to customize the dynamic vUSA solution to support and meet their needs.

¹ The Virtual USA Information-Sharing Environment is also open to states that have signed either the Southeast Regional Operations Platform Pilot (SE ROPP) Memoranda of Agreement (MOA) or the Pacific Northwest (PNW) Pilot MOA prior to the existence of the National MOA.

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Agencies are generally encouraged to share web-enabled data feeds, rather than the data itself, allowing them to maintain data ownership while ensuring that users have access to the most up to date information. vUSA encrypts and proxies all links: the recipient does not receive the true address of a shared link, but rather a masked or proxied link which is translated back to the true address when used.

Administration and User Access

Once a state or other organization has joined vUSA, it is solely responsible for signing up its own users. The vUSA Administration capability allows users designated as “Admins” to perform the management and administrative functions of their respective entities (state, Federal or private organization). Admins can:

- (1) Establish user accounts within their respective entities;
- (2) Assign roles to users;
- (3) Modify the content of the interface for users within their respective entities; and
- (4) Designate other users within their entities as “admins” as well.

This functionality allows each entity to maintain its sovereignty and govern itself within the vUSA Environment. Sub-organizations within a partner organization (a county or city within a state, or a department within an agency, etc.) can be given control to manage its own users, at the discretion of the immediately superior organization.

Data Sources: Links versus Files

Rather than exchanging full sized data files, vUSA participants exchange web-enabled links, which allow users access data feeds and visualize the information in their local viewers.

For instance, information regarding the location of an incident can be sent directly from a data server to a browser-based viewing tool by simply sharing the URL or Web address of the data feed, rather than emailing a full-sized, stand alone data file.

Although the system does support the exchange of traditional data files as well, modern emergency response visualization tools and analytics strongly prefer data sharing via links because:

- The information received is always the most up-to-date available on the originating source.
- The sharing process is “light weight,” since it exchanges addresses rather than full geospatial files, which can be extremely large.
- The data owner retains complete control of the sharing process and can disconnect at will.

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vUSA encourages agencies to make data available as one or more of the standard data feeds prescribed by the Open Geospatial Consortium (OGC) including KML/KMZ, XML, GeoRSS, RSS, ArcGIS REST, ATOM, WMS, HTML.

Relationship to Other Information-Sharing Initiatives

The vUSA Information-Sharing Environment is compatible with other DHS data-sharing solutions, including the Homeland Security Information Network (HSIN); Unified Incident Command and Decision Support (UICDS); and Next-Generation Incident Command System (NICS)). vUSA uses standard Web technology and can integrate with existing solutions that utilize standard Web services and service oriented architectures (SOAs).

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APPENDIX VI – Virtual USA Regional Information Sharing Memorandum of Agreement

SECTION 1. This document may be cited as the Virtual USA Regional Information Sharing Memorandum of Agreement (MOA) Version 1.2.

ARTICLE I - PURPOSE AND AUTHORITIES

This MOA is made and entered into by and between participating stakeholders, which enact this agreement, hereinafter called Members. The purpose of this MOA is to provide a governance framework for information sharing between the Members entering into this MOA and any Member designee, herein referred to as an authorized representative who participates in the information sharing or consumption of said information.

ARTICLE II - GENERAL IMPLEMENTATION

The prompt, full, and effective utilization of shared information among participating Members, including any information on hand or available from participating stakeholders or any other source, that are essential to the safety, care, and welfare of the people in the event of any incident affecting a party Member, shall be the underlying principle on which all articles of this MOA shall be understood.

Each party Member entering into this MOA recognizes the following:

- Many incidents transcend jurisdictional boundaries;
- Intergovernmental information sharing and coordination is essential in managing these and other incidents under this agreement;
- There will be incidents which require immediate access to information in another jurisdiction;
- Sharing information during incidents is critical to other Members' prevention, protection, response and recovery efforts; and
- There is a need for information to be timely and accurate.

On behalf of the authorizing body for each Member participating in the agreement, the authorized representative who is assigned responsibility for incident management will be responsible for formulation of the appropriate multi-jurisdictional prevention, protection, response and recovery procedures necessary to implement this MOA.

ARTICLE III - PARTY MEMBER RESPONSIBILITIES

It shall be the responsibility of each party Member to formulate internal procedural plans and programs for multi-jurisdictional prevention, protection, response and recovery activities to support the performance of the responsibilities listed in this article. In formulating such plans, and in carrying them out, the party Members, insofar as practical, shall acquire and develop information sharing capabilities (e.g., a centralized visualization tool, de-centralized information sharing practices, etc.) that best meet their needs and maintain reliable data sources.

A Member's authorized representative may request assistance of another Member's authorized representative by contacting them directly. The provisions of this agreement shall only apply to requests for information made by and to authorized representatives. Requests may be verbal or

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in writing. If verbal, the request shall be confirmed in writing within 30 days of the verbal request. Requests shall provide a description of the information request and the point of contact.

ARTICLE IV - INFORMATION REQUIREMENTS

Information Sharing: Party Members agree to pre-identified types or categories of data layers to share from a pre-identified list of priority data sources as needed and as noted in the MOA appendices. Members agree that all information will only be shared using the information sharing structure provided by the U.S. Department of Homeland Security (DHS) as described in Article V and no copies of the source data will be posted or distributed in any form.

Information Assurance: Each Member will provide information assurance to verify that all shared data is derived from an authoritative data source (custodial owner). Members shall not directly contact another Member's data source, but will agree to work with the data coordinator (Member) for any follow-up required from the information provided. Members, insofar as practical, will provide data layers with the metadata requirements identified in the MOA appendices.

Requests for Information: Members, insofar as practical, agree to automate requests for information and handle such transactions between relevant members on a case-by-case basis.

ARTICLE V - ARCHITECTURE

Members will be responsible to develop their respective internal information sharing architectures needed to support information sharing between disparate Member visualization tools. Members will, within their respective architectures, identify and solve technical challenges that hinder or prevent the necessary sharing of information. At a minimum, Members agree upon an information sharing structure, how to share data files and analytical services, cyber security requirements and information protection standards for all participants as outlined hereafter.

Information Sharing Structure: Insofar as practical, Members shall agree to share information directly with other Members on the basis of the terms outlined in this MOA and/or provide access to each of their available data layers through the DHS-supplied information sharing structure described in the MOA appendices. Members will share information by granting access to the relevant data layer streams from their servers to other Members.

Data Files and Analytical Services: Insofar as practical, Members agree to use open-source standards and publish their data files in the pre-identified data file extensions identified in the MOA appendices. States will work toward producing a feed so that all Members may consume the information using a technology agnostic platform if technically feasible.

Cyber Security: Participants will adhere to baseline system security requirements for information to be shared across all jurisdictions. Member system security protocols will adhere to standard industry best practices.

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Identity Management: Members will vet users through their own internal process wherein Member's information coordinators will sponsor individual participation and third party access to information. Only Members' information coordinators will have access to the DHS-supplied information sharing structure.

Information Protection: Members will agree to only share information in accordance with its classification including, but not limited to, Protected Critical Infrastructure Information and law enforcement sensitive information. Members will agree to the roles and levels of security and data sensitivity that are used in the DHS-supplied information sharing structure identified in the MOA appendices.

ARTICLE VI - PERMISSIONS TO SHARE

Due to the sensitive nature of information shared relative to a multi-jurisdictional incident, Members agree to adhere to information sharing permissions, to the extent permitted by Members' freedom of information laws. Members must obtain the permission of the data provider prior to sharing information with non-Members. This may be performed on a case-by-case basis or through a memorandum of understanding.

ARTICLE VII - LIABILITY

Officers or employees of party Members rendering support or technical assistance to another Member pursuant to this MOA shall be considered agents of the requesting Member for tort liability and immunity purposes; and no party Member or its officers or employees rendering support or assistance to another Member pursuant to this MOA shall be liable on account of any act or omission in good faith on the part of such forces while so engaged. Good faith in this article shall not include willful misconduct, gross negligence, or recklessness.

Members will use any information or technical assistance provided by other Members at their own risk. Inasmuch as Members adhere to the information assurance process, no Members shall hold others liable and all Members acting in good faith will be indemnified from any liability claims to the extent permitted by the Member's laws, assuming also that the source will be responsible for the quality, accuracy, and scoring of their data.

ARTICLE VIII - IMPLEMENTATION

This MOA shall become operative immediately upon its endorsement by any two (2) Members; thereafter, this MOA shall become effective as to any other Member upon its endorsement. This document is for the sole benefit of the signatory parties, and no third party is intended to be a beneficiary thereof or have any rights as a consequence of this document. Any party Member may withdraw from this MOA, but no such withdrawal shall take effect until 30 days after the authorized representative of the withdrawing state has given notice in writing of such withdrawal to all other party Members. Such action shall not relieve the withdrawing Member from provisions assumed hereunder prior to the effective date of withdrawal.

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Duly authenticated copies of this MOA and of such supplementary agreements as may be entered into shall, at the time of their approval, be deposited with each of the party Members and with the Department of Homeland Security and other appropriate agencies of the United States Government.

ARTICLE IX - VALIDITY

This MOA shall be construed to effectuate the purposes stated in Article I hereof. If any provision of this MOA is declared unconstitutional, or the applicability thereof to any person or circumstances is held invalid, the constitutionality of the remainder of this MOA and the applicability thereof to other persons and circumstances shall not be affected thereby.

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APPENDIX - Virtual USA Regional Information Sharing Memorandum of Agreement

The Virtual USA Regional Information Sharing MOA appendix serves as a living document designed to reflect the current state of agreement based upon the technological, governance and operational capabilities of the Members.

I. Information Sharing Guidance

Participating Members identified the following regional information sharing principles and guidelines:

- A. File format – Members agree to share files in Keyhole Markup Language (KML), Compressed Keyhole Markup Language (KMZ), Web Map Service Interface Standard (WMS), Geographically Enabled Really Simple Syndication (GeoRSS), Extensible Markup Language (XML) or Representational State Transfer (REST) formats.
 - a. XML - is a set of rules for encoding documents in machine-readable form.
 - b. KML - is an XML language focused on geographic visualization, including annotation of maps and images.
 - c. KMZ - consists of a main KML file and zero or more supporting files that are packaged using a Zip utility into one unit, called an archive. The KMZ file can then be stored and shared/accessed as a single entity.
 - d. GeoRSS - is a family of web feed formats used to publish frequently updated content (in this case, geographically referenced content). There are currently two encodings of GeoRSS: GeoRSS Simple and GeoRSS Geography Markup Language (GML), which is an XML grammar for expressing geographical features.
 - e. WMS - provides a simple HTTP interface for requesting geo-registered map images from one or more distributed geospatial databases.
 - f. REST Services - supports various formats, including: KML, HTML, LYR (layer file), NMF (ArcGIS Explorer map file), JSAPI (JavaScript), VE (Virtual Earth), and GMaps (Google Maps).
- B. Metadata – Members agree to provide data layers with the following metadata requirements:
 - 1. Data Source – originator
 - 2. Type of data – description, abstract and purpose
 - 3. How often updated – maintenance and update frequency
 - a. Periodicity or “as needed”
 - 4. Data coordinator – point of contact
 - 5. Published Access to Information – URL, etc.
- C. Roles – Members agree to categorize user groups according to the following roles: Contractor, Security, Emergency Response, and Executive.
- D. Priority Indicators and Status Variables – Members have identified priority indicators, categories of information, and status variables (figure 1) that they have deemed important to share regionally with other relevant Members, when appropriate, based upon operational needs as determined by each Member. When sharing information designated as a priority indicator, members will designate that information accordingly by selecting

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the “priority” button when uploading/sharing the web link through the vUSA environment (currently the Generation II Prototype). The regional priority indicators and status variables identified in May 2010 are as follows:

1. County/Parish Emergency Operations Center Status
2. Local State of Emergency Status
3. Evacuation Status
4. Shelter Capacity Status
5. Schools Status
6. Electrical Power Status
7. Water Status
8. Communications Status
9. Debris Status
10. Major Highways Status
11. Emergency Services Status
12. Search and Rescue Status
13. Medical/Health Status
14. Re-entry: Post Evacuation Status
15. Major Retailer Operations Status
16. Emergency Fuel Supplies Status
17. Gas Stations Status
18. Generating Capacity Status

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Regional Priority Indicators	Red	Yellow	Green
County/Parish EOC Status			
Status	<i>Level 1 – Full activation</i>	<i>Level 2 – Partial activation</i>	<i>Level 3 – Operational/ Monitoring</i>
Local State of Emergency			
Status	<i>Declared</i>	<i>Previously declared, now rescinded</i>	<i>None</i>
Evacuation			
Status	<i>Mandatory</i>	<i>Voluntary / Phased</i>	<i>None</i>
Shelter Capacity			
Status	<i>Less than 50% capacity remaining</i>	<i>More than 50% capacity remaining</i>	<i>Closed</i>
Schools			
Status	<i>Closed</i>	<i>District open, some schools closed</i>	<i>Open</i>
Electrical Power			
Status	<i>Less than 80%</i>	<i>Between 80% and 90%</i>	<i>More than 95%</i>
Water			
Status	<i>No water / Low pressure</i>	<i>Boil water notice</i>	<i>Operational</i>
Communication			
Status	<i>Emergency communication failed or limited</i>	<i>Emergency communication up, commercial failed or limited, including cellular</i>	<i>Normal operations</i>
Debris			
Status	<i>Emergency debris clearance</i>	<i>Emergency debris removal</i>	<i>Debris management plan implemented and/or normal operations</i>
Major Highways			
Status	<i>Closed</i>	<i>Limited use /Emergency use only</i>	<i>Open</i>
Emergency Services			
Status	<i>Mutual aid required</i>	<i>Emergency staffing plans implemented</i>	<i>Normal operations</i>

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Search and Rescue			
Status	<i>Primary search required / Ongoing OR Search required/limited or no resources available</i>	<i>Secondary required / Ongoing OR Search required/ongoing</i>	<i>All clear</i>
Medical / Health			
Status	<i>DMAT required / On scene</i>	<i>Limited services / DMAT not required / Released</i>	<i>Normal operations</i>
Re-entry – Post Evacuation			
Status	<i>No entry</i>	<i>Qualifiers – No electrical, water, limited time, etc.</i>	<i>No restrictions</i>
Major Retailer Operations			
Status	<i>Stores closed</i>	<i>Stores open / Limited operations or supplies</i>	<i>Stores open</i>
Emergency Fuel Supplies			
Status	<i>1-2 days supplies on hand</i>	<i>3-7 days supplies on hand</i>	<i>8+ days supplies on hand</i>
Gas Stations			
Status	<i>Widespread closures of gas stations</i>	<i>Limited fuel / Isolated station out of fuel</i>	<i>Normal operations</i>
Generating Capacity (power generating capacity within a state)			
Status	<i>Generating capacity emergency</i>	<i>Generating capacity alert</i>	<i>Generating capacity advisory / Normal operations</i>

Figure 1

E. Virtual USA Information Sharing Environment

The Virtual USA (vUSA) information sharing environment, also currently known as the Generation II Prototype, is web-based and has four common layers and one administrative layer: (1) a data registration, search, discovery, and alert system (search server); (2) a data download and exchange engine (exchange server); (3) a viewer layer; (4) a collaboration forum; and (5) an administrative layer for managing the environment's use and access.

The search server addresses the on-line catalogs of participating Members, polling each catalog constantly or at short intervals to detect new data offerings and send notifications

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based on a user's preferences. Each Member will register with the search server, which defines user groups by roles (Contractor, Security, Emergency Response, and Executive). Individual users register under one of the aforementioned roles and are approved by their state administrator. Once registered, users will customize their participation by configuring their catalog view ("My Library") and requested notifications. Notification settings allow a user to passively search and receive a notification based on user-specified criteria, which include: general data domains or data types (such as alerts for creation of new EOCs), particular Members, geographical areas, or specified keywords. Users are also given the option to select their preferred notification method (e-mail or text message). Users logged onto the system are able to adjust their individual preferences at will, allowing them to customize the vUSA environment to support and meet their needs in a dynamic environment.

The system constantly polls the various catalogs, listening for any feeds that are available at a given time. During polling, the system queries the participating systems for a number of attributes or descriptors based on common elements, such as date/time posted, keywords, data domain types, and role relevance types. Based on protocols and user preferences, the search server sends notifications as required based on roles and individual preferences. It will also allow system administrators to broadcast alerts and messages to specified groups.

The prototype search server is built around GeoFinder for the Environment (GFE). GFE is a federated search tool capable of interfacing on command with multiple catalogs across users on the prototype. The Generation II Prototype expands the functionality of GFE by integrating open source tools with the required polling, registration, and alert capabilities, always using Open Geospatial Consortium (OGC) standards to the extent possible and as appropriate.

The data download and exchange server allows users to share web links to locally-held data, and to label that link with the required metadata as defined in the information sharing guidance section above. The exchange server allows users to view information being shared through a web link on one of the prototype's viewers, or to copy the link directly into their native system for usage in an operational environment. Additionally, the exchange server allows users to upload files to the prototype should they so choose. An example of a case when a user would wish to *upload a file* rather than *share a web link* is when the demands on a user *sharing a web link* compromise the bandwidth of a user's infrastructure, such as in the case of a large imagery file depicting an affected area. Therefore if the user chooses to do so, these large files can be uploaded, and hence viewed on a viewer within the prototype or downloaded to a user's native environment.

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The Generation II Prototype provides a selection of viewers to allow users to visualize information at will and as needed. Both ESRI (Adobe Flex) and Google viewers will be available, so that the myriad of capabilities resident in both platforms can be leveraged. As more visualization tools become available (i.e., Bing Maps), users may identify those as new requirements and the tools will then be evaluated for integration into the prototype. Most importantly, this multi-viewer approach will enable users to work within the environment that they are most familiar and comfortable with.

vUSA's Generation II Prototype also provides a forum for users to collaborate and share best practices, lessons learned, and technical innovations that pertain to information sharing initiatives. The forum also provides a place for users to request information from each other, and to work together on data development, share code, and collaborate on data management. The forum was designed to be flexible enough to allow the practitioners to collaborate in a rapidly changing environment where their needs and requirements may change unexpectedly.

The prototype's administrative layer allows designated users, herein referred to as "admins", to perform the management and administrative functions of their respective entity, whereas entity is defined as a state, federal or private organization designated access by the signatory to this core MOA. Through the administrative layer, "admins" can: (1) establish user accounts within their respective entity; (2) assign roles to users; (3) modify the content of the interface for users within their respective entity; and (4) designate other users within their entity as "admins" as well. This layer's functionality is important because it allows each entity to maintain its sovereignty and govern itself within the vUSA environment.

As the number of entities with access to the vUSA environment expands, the architecture will have to expand accordingly. Based on load testing data, more "prototype-like" systems will be fielded in a linear fashion in order to support the expanding community. These platforms will all be load balanced with each other in order to provide a seamless, redundant, and resilient capability for all users.

This appendix was last amended on July 7, 2010.

For more information about Virtual USA, please visit www.firstresponder.gov/virtualusa.

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Appendix V – Pacific Northwest MOA

Memorandum of Agreement Among the Pacific Northwest Regional Parties Participating as the Virtual USA – Pacific Northwest Regional Information Sharing Initiative

ARTICLE I – PURPOSE

1. This Memorandum of Agreement (MOA) is entered into by the signatory State parties (herein referred to as party or the parties) participating in an information sharing initiative for incident and emergency management operations known as the Virtual-USA Pacific Northwest Regional Information Sharing Initiative, which includes access to information through the inter-regional Virtual USA Information Sharing Environment as described in Appendix B (herein referred to as the vUSA PNW RISI). The purpose of this MOA is to set forth the policy and procedures for participation in, and use of, the vUSA PNW RISI by the parties, including ownership, access and control of the information available through the vUSA PNW RISI.
2. The vUSA PNW RISI will be available for use by each party, each party's designees, and participants for emergency and incident management operations and activities to mitigate, respond to and more effectively manage natural or manmade disasters, identified threats to public safety, as well as provide for enhanced protection of critical assets and resources in the greater PNW region of the United States.
3. The Virtual USA Information Sharing Environment described in Appendix B is in use by other states, federal agencies, private sector information sharing partners and their authorized representatives and/or designees. It will be the decision of each party of the vUSA PNW RISI to individually determine when and whether they will share information with those individuals, entities, or organizations under this MOA.

ARTICLE II – PARTIES AND PARTICIPANTS

1. Parties of the vUSA PNW RISI, as referenced herein, are those state agencies in the PNW region of the United States whose authorized representatives have signed this MOA.
2. Participants, as referenced herein, include any political subdivision or local government entity authorized to exist under law in a party state; any tribe in a party state recognized as such by the federal government; and any other public or private entity authorized to exist under law in a party state; that has joined with a party as a participant of the vUSA PNW RISI by executing Appendix A, attached hereto.
3. Subject to applicable laws which may apply to information sharing, the parties agree that maximum participation and contribution of information by the parties and participants will strengthen the effectiveness of this MOA. The parties will equally participate in the Executive Steering Group which will consist of the policy making executives or heads of each of the parties or their authorized designees.

ARTICLE III – AUTHORITY

1. Authority for the participation of the State of Idaho is included in Idaho Code 46-1003.

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2. Authority for participation in this Agreement by the State of Oregon is included in the Oregon Revised Statutes (ORS) 396.315 and 401.052. Information sharing executed under this agreement shall be in alignment with Oregon Public Records Law – ORS Chapter 192.
3. Authority for the participation of the State of Washington is included in the Revised Code of Washington Section 38.52.

ARTICLE IV – MISSION / OBJECTIVES

1. The vUSA PNW RISI seeks to make available information among all parties and participants within the PNW Region and other participating vUSA Regions in a manner which maximizes the benefits of information sharing to mitigate, respond to and more effectively manage natural or manmade disasters, identified threats to public safety, as well as provide for enhanced protection of critical assets and resources in the greater PNW region. Specific objectives of the vUSA PNW RISI are to:

- a) Provide access to information and data using any vUSA PNW RISI technical solution and/or the inter-regional Virtual USA Information Sharing Environment described in Appendix B, and the functionality contained therein.
- b) Reduce the time required for operational, emergency and incident management personnel to search and retrieve relevant information and data by providing query and analytical tools to access and retrieve the information made available by all parties and participants while increasing the reliability of the information or data.
- c) Promote the regional stewardship of the information made available within the vUSA PNW RISI system for sharing among the parties and participants, with participation dependent upon maintaining continued ongoing access and availability to information included by all parties.
- d) Provide the means to develop informational products to support emergency and incident management operations, activities, exercises and planning for emergency response.
- e) Provide the means to produce analytical products to better enable the decision-making processes.
- f) Provide the means for participants to engage in information sharing using their State's membership to the vUSA PNW RISI.

ARTICLE V – CONCEPT

1. The vUSA PNW RISI is a cooperative initiative between the parties in which each party is participating and operating under its own individual legal status, jurisdiction, and authorities.
2. The vUSA PNW RISI will only provide access to information and data that each party and participant has determined it has legal authority to share with the other parties and participants under the MOA. Each party and participant will be responsible to provide its own means (which includes but is not limited to providing its own hardware, software and network connectivity), for accessing and visualizing information and data available through the vUSA PNW RISI.
3. All parties and participants under this MOA will have equal opportunity to access the vUSA PNW RISI technical solution known as the inter-regional Virtual USA Information Sharing Environment as described in Appendix B.

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- a) The parties and participants agree to use open-standards and publish their data files in pre-identified data file extensions as specified in Appendix B.
- b) Each party is responsible for establishing its own internal processes to access the vUSA PNW RISI consistent with policies and procedures agreed to by the Executive Steering Group.

ARTICLE VI – OWNERSHIP, ENTRY, AND MAINTENANCE OF INFORMATION

1. Each party and participant retains exclusive control and responsibility over all of the information it contributes or makes available through the vUSA PNW RISI. As such, any party or participant may at any time, at its sole discretion, update, correct or delete any information or data that the party or participant has made available through the vUSA PNW RISI.
2. Each party or participant, insofar as practical, shall acquire and develop its own information sharing capabilities (e.g., a centralized visualization tool, supporting a de-centralized information sharing practice.)
3. Each party or participant contributing information and data to the vUSA PNW RISI is solely responsible and accountable for making reasonable efforts to ensure the accuracy upon entry, and continuing accuracy thereafter, of information made available through the vUSA PNW RISI technical solution.
4. Information and data shall not be altered or changed in any way, except by the contributing party.
 - a) Each party and participant will, as available provide pre-identified types or categories of data layers for a pre-identified list of priority data sources as specified in Appendix B attached hereto.
 - b) In so far as practical, each party and participant will provide information assurance to verify the authoritative source of the information provided by that contributing party and participant, and, in so far as practical, will provide data layers and associated metadata as specified in Appendix B attached hereto.
5. The data and information contributed to the vUSA PNW RISI will be mirrored information derived from each contributing party's or participant's own legally maintained data sources or records systems, and the vUSA PNW RISI is not in any manner intended to be an official repository of original records, or to be used as a substitute for one, nor is the information in the system to be accorded any independent record system status. Rather, this electronic system is merely a means to provide timely access for the parties and participants to information that replicates existing files, data sources or records systems.
6. This agreement is solely for the purpose of establishing a cooperative relationship and does not create any legal entity, including a partnership, joint venture, corporation, limited liability company or public body, either federal or state.
7. A party or participant that desires to access, manipulate or incorporate in its own independent records management system(s) information or data contributed to the vUSA PNW RISI system by another party or participant, including any analytical products based on another party's or participant's information or data, must first obtain the contributing party's or participant's express written permission, unless information sharing is appropriate based on the public records laws that may exist within each of the member states.

ARTICLE VII – ACCESS TO AND USE OF INFORMATION

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1. Each party or participant is responsible for determining that its contribution of information to the vUSA PNW RISI complies with any applicable law concerning information sharing. Each party or participant agrees to permit access to and/or use of such information contributed to the system, by each other party and participant under the provisions of this MOA (and any other applicable agreements that may be established for the vUSA PNW RISI). The contributing party or participant has the capability to control their information and determine which of the other (or all) of the parties or participants may have access to it at any time by designating that party's or participant's access within the vUSA PNW RISI system. The contributing party or participant has the sole responsibility and accountability for ensuring that it is not constrained from permitting access by other parties or participants, by any law, rule, regulation, policy, or procedure applicable to the contributing party or participant or information/data being shared.

2. Parties and participants shall designate one or more authorized representatives with the authority to directly contact another party's or participant's authorized representative for assistance. Requests for assistance may be verbal or in writing. All verbal requests will be confirmed in writing within 30 days of the verbal request.

ARTICLE VIII – DISCLOSURE OF THIRD-PARTY INFORMATION

1. Each party and participant recognizes that information shared through the vUSA PNW RISI may be subject to the public disclosure law of any party or participant.

2. When addressing any request for the disclosure of third-party information where that information was obtained through the vUSA PNW RISI, the parties and participants shall comply with the following:

- a) In all cases, the party or the participant that contributed the data or information will be immediately notified of a request for sharing or disclosure of information from any non-party.
- b) All parties and participants agree to assist and cooperate with any other party in protecting information from harmful or inappropriate disclosure consistent with applicable law.

ARTICLE IX – SECURITY

1. Each party and participant acknowledges that access to the vUSA PNW RISI should be on an official need basis, and that information therein may be considered subject to each party's or participant's state public records laws.

2. Each party and participant agrees to use the same degree of care in protecting information accessed under this MOA as it exercises with respect to its own sensitive information, consistent with its applicable public records laws.

3. Each party and participant is responsible for training its authorized users of the vUSA PNW RISI regarding system access, security, and use of any information/data made available within the system.

ARTICLE X – PROPERTY

1. Ownership of all property, equipment, hardware, software, data, customized code, and networks purchased or originated by any parties or participants will remain the property of the purchaser or originator.

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2. Maintenance of any equipment purchased, procured, originated or obtained by any party or participant shall be the responsibility of the purchasing or originating party or participant unless provided for in separate written agreements between parties/participants.

ARTICLE XI – COSTS

1. Unless otherwise provided for herein or in any supplementary written agreement, each party and participant shall bear its own costs and expenses in relation to this MOA. If any party or participant agrees to assume any specific financial responsibility related to this MOA, that party's or participant's express written approval must be obtained before the incurring by another party or participant of each expense associated with the responsibility. All obligations of and expenditures by the parties and participants will be subject to their respective budgetary and fiscal processes and subject to availability of funds pursuant to all laws, regulations, and policies applicable thereto. The parties and participants acknowledge that there is no intimation, promise, or guarantee that funds will be available in current or future years.

ARTICLE XII – LIABILITY

1. The vUSA PNW RISI is not a separate legal entity capable of maintaining an employer-employee relationship and, as such, all personnel assigned by a party or participant to perform vUSA PNW RISI related functions shall not be considered employees of the vUSA PNW RISI or of any other party or participant for any purpose. The assigning party or participant thus remains solely responsible for supervision, work schedules, performance appraisals, compensation, overtime, vacations, retirement, expenses, disability, and all other employment-related benefits incident to assignment of its personnel to Virtual-USA vUSA PNW RISI program activities.

2. Parties and participants will use any information or technical assistance provided by other parties or participants at their own risk. No participating party or participant or its officers, employees, agents or subcontractors rendering support or assistance to another party or participant pursuant to this MOA, shall be liable to another party or participant resulting from any act or omission in good faith on the part of such officer, employee agent or subcontractor while so engaged. Good faith in this article shall not include willful misconduct, gross negligence, or recklessness.

ARTICLE XIII – GOVERNANCE

1. The parties recognize that the success of this project requires close cooperation on the part of all parties. To this end, the vUSA PNW RISI program will be overseen by the vUSA PNW RISI Executive Steering Group under a shared management concept in which the parties will be involved in formulating operational and technical policies and procedures. The vUSA PNW RISI Executive Steering Group will consist of the executive head (or designee) of each party.

2. Each member of the Executive Steering Group shall have an equal vote and voice on all vUSA PNW RISI Governance decisions.

3. Disagreements among the parties or participants arising under or relating to this MOA shall be resolved only via consultation at the lowest practicable level by and between the affected parties or participants and their sponsoring agencies (or as otherwise may be provided under any separate ordinances, laws, rules, regulations or documented governance procedures). All unresolved vUSA PNW RISI matters will be addressed by the Executive Steering Group.

4. The Executive Steering Group may establish additional procedures and rules for the governance of the vUSA PNW RISI, and in furtherance thereof may enter into one or more separate formal or informal agreements among the parties and participants, provided that any such agreement does

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not conflict with the spirit, intent, or provisions of this MOA, and is sufficiently memorialized to meet the business purposes of vUSA PNW RISI governance (including adequately informing current and future parties and participants). Such governance agreement(s) may include, but are not limited to, the following: organizational structure and control; executive management and administration; delegation of authority; standard operating policies, procedures, rules of operation, and practices; procedures for authorization of new parties and participants; meetings, quorums, and voting procedures; audits; and sanctions (including involuntary termination of a party's or participant's membership in this MOA and the vUSA PNW RISI Program).

ARTICLE XIV – NO RIGHTS IN NON-PARTIES

1. This MOA is an agreement among the parties and is not intended, and should not be construed, to create or confer on any person or entity any right or benefit, substantive or procedural, enforceable by law or otherwise against the United States, a party, or any state, county, municipality, organization or other sponsor under whose auspices a party is participating in the vUSA PNW RISI; or the officers, directors, employees, detailees, agents, representatives, contractors, subcontractors, consultants, advisors, successors, assigns or other agencies thereof.

ARTICLE XV – EFFECTIVE DATE / DURATION / MODIFICATION / TERMINATION

1. As among the original parties, this MOA shall become effective when the duly authorized representative(s) of no less than two parties have signed it.

2. This MOA shall continue in force until terminated by the parties, or until there are no longer at least two participating parties, provided however, that each party's continued participation in this MOA shall be contingent upon approval and availability of necessary funding for that party.

3. This MOA may be modified through addendum upon the mutual written consent of the duly authorized representatives of all parties. However, the parties may, without the need of formal MOA modification, cooperatively address and resolve administrative, technical, and operational details relating to this MOA, provided that any such resolution does not conflict with the spirit, intent, or provisions of this MOA; could not reasonably be viewed as particularly sensitive, controversial, or objectionable by one or more parties; and is sufficiently memorialized to meet the business purposes of the vUSA PNW RISI program governance procedures (including adequately informing current and future parties).

4. A party's or participant's duly authorized representative may also terminate the party's participation in the MOA upon written notice to all other parties of not less than thirty (30) days. A party's or participant's participation may also be terminated involuntarily as may be provided in the applicable governance agreement(s).

5. Upon termination of this MOA, all property (e.g. hardware, software, software code, data, etc.) being used under its purview will be returned to the respective supplying party or participant. Similarly, if an individual party's or participant's participation in this MOA is terminated, the party will return any property to supplying parties, and the remaining parties and participants will return any property supplied by the withdrawing party or participant.

6. Any information made available to the vUSA PNW RISI Program by a terminating party or participant will be deleted from the vUSA PNW RISI.

7. As to information contained in the vUSA PNW RISI during a party's or participant's participation under this MOA, the rights, obligations, responsibilities, limitations, and other understandings with respect to the disclosure and use of such information shall survive any termination. This applies

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both to a terminating party's or participant's information, and to the disclosure and use of a terminating party's or participants information.

8. For participants, this MOA shall become effective when Appendix A (attached and incorporated herein) has been completed and signed by the participant's duly authorized representative and countersigned by the member of the vUSA PNW RISI Executive Steering Group authorized to do so under the approved governance procedures applicable at the time of joining.

9. For parties who subsequently join the vUSA PNW RISI, this MOA shall become effective when the MOA has been executed by the party's authorized representative and countersigned by the member of the vUSA PNW RISI Executive Steering Group authorized to do so under the approved governance procedures applicable at the time of joining.

ARTICLE XVI – APPENDICES

- A. Form for participants to join this MOA;
- B. Regional Technical and Data Sharing;
- C. Any written Governance Provisions included as Addenda to this MOA (added at the direction and discretion of the Executive Steering Group);
- D. Written System Security Policy (added at the discretion of the Executive Steering Group).
- E. Written Rules of Operation (added at the discretion of the Executive Steering Group).

IN WITNESS WHEREOF, the parties have individually executed this MOA by the signatures of the duly authorized representative of each participating party below, and incorporated herein as part of this MOA.

For the State of Idaho:

Signature: _____ Date: _____

Name: _____

Title: _____

Agency: _____

Signature: _____ Date: _____

Name: _____

Title: _____

Agency: _____

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- B. Regional Technical and Data Sharing;
- C. Any written Governance Provisions included as Addenda to this MOA (added at the direction and discretion of the Executive Steering Group);
- D. Written System Security Policy (added at the discretion of the Executive Steering Group).
- E. Written Rules of Operation (added at the discretion of the Executive Steering Group).

IN WITNESS WHEREOF, the parties have individually executed this MOA by the signatures of the duly authorized representative of each participating party below, and incorporated herein as part of this MOA.

For the State of Oregon:

Signature: _____ Date: _____

Name: _____

Title: _____

Agency: _____

Signature: _____ Date: _____

Name: _____

Title: _____

Agency: _____

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- B. Regional Technical and Data Sharing;
- C. Any written Governance Provisions included as Addenda to this MOA (added at the direction and discretion of the Executive Steering Group);
- D. Written System Security Policy (added at the discretion of the Executive Steering Group).
- E. Written Rules of Operation (added at the discretion of the Executive Steering Group).

IN WITNESS WHEREOF, the parties have individually executed this MOA by the signatures of the duly authorized representative of each participating party below, and incorporated herein as part of this MOA.

For the State of Washington:

Signature: _____ Date: _____

Name: _____

Title: _____

Agency: _____

Signature: _____ Date: _____

Name: _____

Title: _____

Agency: _____

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APPENDIX A – PARTICIPANTS MEMORANDUM OF AGREEMENT

Virtual-USA – PACIFIC NORTHWEST REGIONAL INFORMATION SHARING INITIATIVE

PURPOSE: This document effects the joining by the:

as a participant in the Memorandum of Agreement for an information sharing initiative known as the Virtual-USA Pacific Northwest Regional Information Sharing Initiative (vUSA PNW RISI).

AUTHORITY AND CONDITIONS: Authority and conditions for the joining participant to enter into this MOA includes:

_____.

AGREEMENT: The joining participant agrees to abide by all provisions and assume all obligations and responsibilities of the MOA, including any formal changes and any administrative, technical, and operational resolutions in effect at the time of execution (as to which by signature hereto the Joining participant acknowledges being provided copies or other adequate notice). In return, the Joining participant shall also be considered a participant and shall have the same rights and privileges as the original participants.

POINT OF CONTACT: The joining participant's designated representative point of contact is:

Name and Title: _____

Office Phone: _____ Cell: _____ Fax: _____

Agency: _____

Address: _____

Email/Other: _____

COSTS: Unless otherwise agreed in writing, the Joining Participant shall bear its own costs in relation to the MOA and any provisions therein.

EFFECTIVE DATE/DURATION/TERMINATION: This document shall take effect when completed and signed by the Joining Participant's duly authorized representative and countersigned by the member of the vUSA PNW RISI Executive Steering Group authorized to do so under vUSA PNW RISI governance procedures applicable at the time of joining. Thereafter, duration and termination of the Joining Participant's participation in the MOA shall be as provided for in the MOA.

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APPENDIX A - PARTICIPANTS MEMORANDUM OF AGREEMENT Virtual-USA – PNW-REGIONAL INFORMATION SHARING INITIATIVE

FOR THE JOINING PARTICIPANT:

Signature: _____ Date: _____

Name: _____

Title and Agency: _____

FOR THE vUSA PNW RISI:

Chairperson (or Designee):

Signature: _____ Date: _____

Name: _____

Title and Agency: _____

Co-Chairperson (or Designee):

Signature: _____ Date: _____

Name: _____

Title and Agency: _____

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APPENDIX B

MEMORANDUM OF AGREEMENT

Virtual-USA – PACIFIC NORTHWEST REGIONAL INFORMATION SHARING INITIATIVE

PURPOSE: This Appendix B for the vUSA PNW RISI MOA establishes the inclusion and nature of file formats, metadata, and information types and categories other technical standards agreed to by all participating agencies and participants, to be provided by participating parties and participants for access through the vUSA PNW RISI technical sharing environment described below . This will include, but not be limited to:

1. File Formats agreed to and incorporated herein as Attachment One.
2. Metadata agreed to and incorporated herein as Attachment Two.
3. Regionally identified priority information types and categories agreed to and incorporated herein as Attachment Three.
4. Description of the Virtual USA Information Sharing Environment is incorporated herein as Attachment Four.

AGREEMENT: The parties as signatories to this vUSA PNW RISI MOA have unanimously agreed to abide by and honor the provisions of this Appendix B to the vUSA PNW RISI MOA.

The attachments to this Appendix B to the vUSA PNW RISI are subject to amendment or change by adding or removing specific referenced information at the discretion of and upon approval of the parties and participants participating in the vUSA PNW RISI.

APPROVAL: This Appendix B, by unanimous approval of the parties to the vUSA PNW RISI as of this ____ day of _____, 20____, has been incorporated as Appendix B to the vUSA PNW RISI MOA as indicated by the signature of the authorized representative for the vUSA PNW RISI Executive Steering Group.

Name: _____

Title: _____

EFFECTIVE DATE: This Appendix B shall take effect when unanimously agreed to by the parties and signed by the authorized representative for the vUSA PNW RISI Executive Steering Group, authorized to do so under documented vUSA PNW RISI governance procedures applicable at the time of introduction. Changes, amendments or termination of this Appendix B shall be accomplished at the discretion of the vUSA PNW RISI Executive Steering Group and subject to established approved vUSA PNW RISI governance procedures.

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APPENDIX B

ATTACHMENT ONE – FILE FORMATS

Members agree to provide/share data in one (1) or more of the following formats:

1. XML - (Extensible Markup Language) - is a set of rules for encoding documents in machine-readable form
2. KML – (formerly Keyhole Markup Language) - KML is an XML language focused on geographic visualization, including annotation of maps and images.
3. KMZ – A KMZ file consists of a main KML file and zero or more supporting files that are packaged using a Zip utility into one unit, called an archive. The KMZ file can then be stored and shared/accessed as a single entity
4. GeoRSS – Geo RSS (Really Simple Syndication) is a family of web feed formats used to publish frequently updated content (in this case - Geographically referenced content). There are currently two encodings of GeoRSS – GeoRSS Simple and GeoRSS Geography Markup Language (GML) which is an XML grammar for expressing geographical features.
5. WMS - Web Map Service Interface Standard (WMS) provides a simple HTTP interface for requesting geo-registered map images from one or more distributed geospatial databases
6. REST Services – Representational State Transfer (REST) Services Application Programming Interface (API) supports various formats, including KML, HTML, lyr (layer file), nmf (ArcGIS Explorer map file), jsapi (JavaScript), ve (Virtual Earth), and gmaps (Google Maps)
7. ATOM - The Atom Syndication Format is an XML language used for web feeds.

Note: If the primary file format of the dataset is KML or KMZ, members agree to provide/share data in at least one additional alternative file format listed above. In addition, members agree to develop a common protocol/approach for providing access to data using secure and non secure http (https:// and http://) as appropriate.

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APPENDIX B

ATTACHMENT TWO – METADATA

Members agree to provide data layers with the metadata listed below using the following metadata guiding principles:

Virtual USA Pacific Northwest Pilot - Metadata Guiding Principles

1. **Do not** create a new standard or practice. Instead **utilize an existing standard or practice to the extent possible**. The Metadata standards below are a subset of the FGDC Metadata Standard which is consistent with established documentation practices in the geospatial community.

2. **Do not attempt to force compliance**. Instead accept what metadata may exist for any particular dataset and work to improve associated metadata over time

3. **Encourage utilization of adopted vUSA PNW Pilot Metadata Standards** and practice for current and future metadata documentation. Further encourage the inclusion of an expanded set of metadata fields toward full compliance with the FGDC metadata standard over time.

Virtual USA Pacific Northwest Pilot - Metadata Standards

Fields	vUSA Pacific NW Pilot Metadata Standards (Aligned with FGDC Metadata Standard)	PNW Pilot – “Metadata Light”	SE ROPP – “Metadata Light”
1	Title	Required	
2	Originator	Required	<i>Originator</i>
3	Description	Required	<i>Description</i>
4	Update Frequency	Required	<i>Update Frequency</i>
5	Use Constraints	Required	
6	Contact Organization (Contact Information)	Required	<i>Data Coordinator (Point of Access)</i>
7	<i>Format *</i>	<i>Required for Gen II/III Upload</i>	
8	<i>Online Linkage (Published Access Point) *</i>	<i>Required for Gen II/III Upload</i>	<i>Published Access</i>
9	<i>Bounding Coordinates</i>	<i>Highly Desirable</i>	
10	<i>Entity Attributes</i>	<i>Highly Desirable</i>	
11	<i>Theme Keyword(s)</i>	<i>Highly Desirable</i>	

* **Note:** **Format (i.e. KML, XML GeorSS, REST, ATOM, etc.) and Published Access Point (Data Location – i.e. URL)** will be required metadata fields during the upload process to the Generation II/III

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Prototype Information Sharing Environment but will not be required metadata within the dataset/file being shared.

Virtual USA Pacific Northwest Pilot - Metadata Glossary V1.0

Fields	Metadata Fields	Metadata Field Definitions *
1	Title	The name by which the data set is known.
2	Originator	The name of an organization or individual that developed the data set.
3	Description	A characterization of the data set, including its intended use, limitations, and descriptive spatial extent of the data.
4	Update Frequency	The frequency with which changes and additions are made to the data set after the initial data set is completed.
5	Use constraints	Restrictions and legal prerequisites for using the data set after access is granted. These include any use constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on using the data set.
6	Contact Organization (Contact Information)	<p>Identity of, and means to communicate with, person(s) and organization(s) associated with the data set. The information below should be provided if available and applicable.</p> <ul style="list-style-type: none"> • Contact_Person_Primary • Contact_Organization_Primary • Contact_Position • Contact_Address • Contact_Voice_Telephone • Contact_TDD/TTY_Telephone • Contact_Facsimile_Telephone • Contact_Electronic_Mail_Address • Hours_of_Service • Contact_Instructions
7	Format **	The file format(s) in which the data set is provided. For the vUSA PNW Pilot – members have agreed to provide/share data in one (1) or more of the following formats- KML, XML, KMZ, GeoRSS, REST Services, WMS, and ATOM.
8	Online Linkage (Published Access Point)	The name of an online computer resource that contains the data set. Entries should follow the Uniform Resource Locator convention of the Internet.

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Fields	Metadata Fields	Metadata Field Definitions *
9	Bounding Coordinates	The limits of coverage of a data set expressed by latitude and longitude values in the order western-most, eastern-most, northern-most, and southern-most.
10	Entity Attributes	Details about the information content of the data set, including the entity types, their attributes, and the domains from which attribute values may be assigned.
11	Theme Keyword(s)	Common-use word or phrase used to describe the subject of the data set.

* Federal Geographic Data Committee FGDC-STD-001-1998

Content Standard for Digital Geospatial Metadata

** Newly created definition for use in the vUSA PNW Pilot

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ATTACHMENT THREE – REGIONAL INFORMATION SHARING NEEDS

Members will, when possible, share the regionally identified priority types and categories of information listed below with other relevant Members when appropriate based upon operational needs as determined by each Member.

Information Needs Cited By All PNW Pilot States

- Emergency Operations Center (EOC) Status
- Situational reports from affected areas
- Requests for assistance and status
- Available resources and location
- Shelter locations and status
- Emergency Management Assistance Compact (EMAC) requests and status
- Weather Forecasts
- Severe storm warnings
- Flooding projections
- Stream Gauge readings
- Seismic monitoring and tsunami warnings
- Lightning strikes
- Fire Warnings
- Regional events (date, time, size, Location)
- Who, what, when, where of any incident of significance
- Demographics at the county level
- Infrastructure (location, status, at risk)
- Road conditions/restrictions/limitations
- Road construction and detours
- Traffic cameras/imagery
- Power outage areas
- Medical/Public Health notices
- Airports & Airport Status
- Volcano Status
- Ports & Port Status

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- Railroads and Railroad Status
- Telecommunications Status of PSAPs (e.g. Phone, Cell, Internet)

Information PNW Pilot States Indicated They Would Share

- State EOC activations
- Situation reports
- EMAC request/status
- Status on shared infrastructure (location, at risk)
- All information on events/threats near state borders
- Shared/common roadway conditions/restrictions/detours
- Medical/Public Health Notices
- Power Outage areas

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ATTACHMENT FOUR – VIRTUAL USA INFORMATION SHARING ENVIRONMENT

The Virtual USA (vUSA) information sharing environment, also currently known as the Generation II Prototype, is web-based and has four common layers and one administrative layer: (1) a data registration, search, discovery, and alert system (search server); (2) a data download and exchange engine (exchange server); (3) a viewer layer; (4) a collaboration forum; and (5) an administrative layer for managing the environment's use and access.

The search server addresses the on-line catalogs of participating Members, polling each catalog constantly or at short intervals to detect new data offerings and send notifications based on a user's preferences. Each Member will register with the search server, which defines user groups by roles (Contractor, Security, Emergency Response, and Executive). Individual users register under one of the aforementioned roles and are approved by their state administrator. Once registered, users will customize their participation by configuring their catalog view ("My Library") and requested notifications. Notification settings allow a user to passively search and receive a notification based on user-specified criteria, which include: general data domains or data types (such as alerts for creation of new EOCs), particular Members, geographical areas, or specified keywords. Users are also given the option to select their preferred notification method (e-mail or text message). Users logged onto the system are able to adjust their individual preferences at will, allowing them to customize the vUSA environment to support and meet their needs in a dynamic environment.

The system constantly polls the various catalogs, listening for any feeds that are available at a given time. During polling, the system queries the participating systems for a number of attributes or descriptors based on common elements, such as date/time posted, keywords, data domain types, and role relevance types. Based on protocols and user preferences, the search server sends notifications as required based on roles and individual preferences. It will also allow system administrators to broadcast alerts and messages to specified groups.

The prototype search server is built around GeoFinder for the Environment (GFE). GFE is a federated search tool capable of interfacing on command with multiple catalogs across users on the prototype. The Generation II Prototype expands the functionality of GFE by integrating open source tools with the required polling, registration, and alert capabilities, always using Open Geospatial Consortium (OGC) standards to the extent possible and as appropriate.

The data download and exchange server allows users to share web links to locally-held data, and to label that link with the required metadata as defined in the information sharing guidance section above. The exchange server allows users to view information being shared through a web link on one of the prototype's viewers, or to copy the link directly into their native system for usage in an operational environment. Additionally, the exchange server allows users to upload files to the prototype should they so choose. An example of a case when a user would wish to *upload a file* rather than *share a web link* is when the demands on a user *sharing a web link* compromise the bandwidth of a user's infrastructure, such as in the case of a large imagery file depicting an affected area. Therefore if the user chooses to do so, these large files can be uploaded, and hence viewed on a viewer within the prototype or downloaded to a user's native environment.

The Generation II Prototype provides a selection of viewers to allow users to visualize information at will and as needed. Both ESRI (Adobe Flex) and Google viewers will be available, so that the myriad of capabilities resident in both platforms can be leveraged. As more visualization tools become available (i.e., Bing Maps), users may identify those as new requirements and the tools will then

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be evaluated for integration into the prototype. Most importantly, this multi-viewer approach will enable users to work within the environment that they are most familiar and comfortable with.

vUSA's Generation II Prototype also provides a forum for users to collaborate and share best practices, lessons learned, and technical innovations that pertain to information sharing initiatives. The forum also provides a place for users to request information from each other, and to work together on data development, share code, and collaborate on data management. The forum was designed to be flexible enough to allow the practitioners to collaborate in a rapidly changing environment where their needs and requirements may change unexpectedly.

The prototype's administrative layer allows designated users, herein referred to as "admins", to perform the management and administrative functions of their respective entity, whereas entity is defined as a state, federal or private organization designated access by the signatory to this core MOA. Through the administrative layer, "admins" can: (1) establish user accounts within their respective entity; (2) assign roles to users; (3) modify the content of the interface for users within their respective entity; and (4) designate other users within their entity as "admins" as well. This layer's functionality is important because it allows each entity to maintain its sovereignty and govern itself within the vUSA environment.

As the number of entities with access to the vUSA environment expands, the architecture will have to expand accordingly. Based on load testing data, more "prototype-like" systems will be fielded in a linear fashion in order to support the expanding community. These platforms will all be load balanced with each other in order to provide a seamless, redundant, and resilient capability for all users.