

# Appendix B

## Flood Map Modernization Communication Strategy

### Overview

This appendix outlines a communication strategy for the Department of Land Conservation and Development aimed at making a diverse audience aware of the Federal Emergency Management Agency's Flood Map Modernization Program. The following sections: describe the Flood Map Modernization Program, identify the need for updated flood maps, describe existing outreach efforts and other research, define the components of effective communication, describe key findings, and identify potential outreach activities.

### What is Flood Map Modernization?

The Flood Map Modernization Program, also known as Flood Map Mod, is being spearheaded by the Federal Emergency Management Agency to collaboratively update community Flood Insurance Rate Maps (FIRMs). This program is related to the National Flood Insurance Program and has been assigned a relatively high priority because the majority of FIRMs are out-dated and do not accurately reflect the flood hazard. New technology has made it possible to create more accurate maps of the risk and new methods of data storage and transfer allow for the distribution of electronic maps to a wider audience<sup>i</sup>

The intent of the Flood Map Modernization Program is to “cost-effectively:

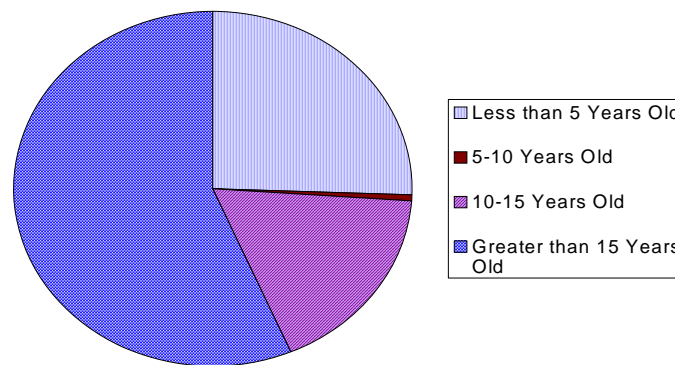
- Develop accurate flood hazard data for all flood prone areas nationwide to support sound floodplain management and prudent flood insurance decisions;
- Provide the maps and supporting data in digital format to improve the efficiency and precision with which mapping program customers can use this information;
- Integrate community and state partners into the mapping process to build on local knowledge and enhance community ownership of new products; and
- Improve customer services to speed processing of flood map orders and raise public awareness of flood hazards.”<sup>ii</sup>

## Statement of Need

The following statement of need was developed for the Flood Map Modernization Business Plan for Oregon created by the Oregon Department of Land Conservation and Development in 2004.

Flood hazard maps produced by the Federal Emergency Management Agency (FEMA) are one of the essential tools for flood hazard mitigation in Oregon, and in the United States in general. Oregon's local governments and state agencies rely on FEMA flood hazard maps to regulate floodplain development and otherwise mitigate for flood losses. The private sector also uses FEMA maps for development and insurance purposes. As shown in Figure A.1, the majority of flood hazard maps produced for Oregon's communities are more than 15 years old. Many of these maps were originally produced in the 1970s or early 1980s. Since then, Oregon's population has increased significantly, particularly in the flood-prone Willamette Valley and in some coastal communities. Flooding levels and impact areas are potentially altered by these population increases and changes in development patterns.

**Figure B.1: Age of Oregon Flood Hazard Maps**



Source: FEMA Region X, Oregon State Mapping Data, 2002

Additionally, the state suffered significant flood losses in 1996 and 1997 when 27 of the state's 36 counties were declared federal disaster areas. Among the lessons learned during the 1996 and 1997 floods was that flooding in Oregon communities was not always limited to areas shown on FEMA flood hazard maps. In many cases, flooding occurred in areas not mapped as having significant flood hazards. This demonstrates the problem of older FEMA maps sometimes reflecting outdated flood hazard information, thereby limiting map utility for floodplain management purposes.

Even where the flood hazard information represented on FEMA's flood hazard maps remains accurate, FEMA's traditional map format generates numerous challenges for Oregon communities charged with regulating floodplain development and state agencies working to mitigate flood hazards. We provide some examples here of these challenges for illustrative purposes.

- Most of the FEMA maps were prepared using road network information that is now outdated.
- The original maps were prepared using manual cartographic techniques, which make the maps difficult for state and local customers to use and expensive to maintain.
- Changes in political boundaries, such as annexations by cities, are not readily addressed on older maps.
- City and county maps were not produced in a seamless method making it difficult to use the maps for locations near jurisdiction boundaries.
- The base data used to develop the flood hazard maps, where still accessible, are not in an easy-to-use format by today's mapping standards.
- Local floodplain administrators must document by hand onto the paper maps all the site-by-site administrative changes made routinely by FEMA.
- The submission and acceptance process for updating flood maps can appear slow and complicated to potential participants.

The state of Oregon also has a relatively high number of stream miles subject to mapping for flood hazards. The Association of State Floodplain Managers (ASFPM) reports that Oregon has 107,039 total stream miles to address. ASFPM lists only nine states with more stream miles subject to flood hazard mapping, and only one of those states (Alaska) is located within Region X. This highlights the extent of flood hazards across Oregon and the potential scope of updates needed to modernize existing flood hazard maps.

## **Baseline Information**

The following section outlines the information supporting the need for a Flood Map Modernization outreach strategy. This supporting information includes a summary of existing outreach materials, responses from the hazard survey, responses from stakeholder interviews, and key findings from a technical assistance and outreach needs assessment completed by the Community Planning Workshop at the University of Oregon for the Department of Land Conservation and Development. This section concludes with key findings that will build the foundation for the recommended actions located at the end of this appendix.

## Existing Outreach Materials

The following is a summary of existing flood hazard planning outreach and education examples and materials available to planners and other professions involved in flood hazard planning. This summary is not meant to be comprehensive, but is intended to illustrate the types of information currently available.

### Federal Emergency Management Agency (FEMA)

Much of the information, available through FEMA, focuses on preparation and prevention, such as flood insurance, floodplain management, and flood hazard mapping.

The following materials were developed by FEMA for the Flood Map Modernization program:

#### Brochures

- **Multi-Hazard Flood Map Modernization:** This document describes the importance of modernizing flood maps. It describes the process and collaborative nature of the program.
- **Cooperating Technical Partners (CTP):** This brochure describes the CTP program, including the program's objectives, benefits, and available funding. It also illustrates changes in the CTP program, available tools, and training opportunities.
- **Data Capture Standards:** This brochure explains the data capture standards for flood hazards and explains how the standards are used. It also provides information about the organization of the data capture standards and where they can be obtained.
- **Want to talk to a Map Specialist about Flood Hazard Mapping?:** This document explains how to contact a map specialist and gives examples of the information available.
- **Need Information on Flood Hazard Maps?:** This brochure provides FEMA's web address for flood hazard mapping. It explains about the type of information available to the following groups: home owners, insurance professionals and lenders, engineers and surveyors, and floodplain managers and community officials.

#### Mini-CD

The mini-CD distributed by FEMA contains a multimedia presentation about the Flood Map Modernization program. The presentation provides an overview of the purpose of the program and how the program has improved flood mapping in several communities. It includes information on the background and history of the Flood Map Modernization program, as well as case studies about map modernization.

### **Multi-Year Flood Hazard Identification Plan (MHIP)**

The MHIP describes FEMA's nationwide strategy for updating Flood Insurance Rate Maps used to implement the NFIP. The Plan provides FEMA's projections for sequencing DFIRM production and how federal dollars will be spent. The Plan also addresses issues such as map quality and partnering with local, state and regional organizations. The Plan can be accessed on FEMA's website and is updated at least once per year.

### **Map Modernization PowerPoint Presentations**

The Region 10 office has worked with federal map modernization partners to develop several presentations about map modernization. The presentations explain the fundamentals of the map modernization program and the benefits of using a DFIRM. Region 10 staff have and will continue to use these presentations for trainings in Oregon.

### **Association of State Flood Plain Managers (ASFPM)**

Information provided by the Association of State Floodplain Managers focuses on floodplain management using the No Adverse Impact (NAI) method of floodplain planning. NAI provides a framework of techniques, methods, and tools for flood planning and mitigation. These materials focus on flooding hazards, rather than Flood Map Mod.

### **Department of Land Conservation and Development**

DLCD has also created PowerPoint presentations covering various elements of the state and local roles in the map modernization program. These presentations have and will continue to be used for presentations around Oregon. DLCD has not yet created presentations that could be used by local staff for presenting information about map modernization to local elected officials or community members.

### **DLCD Website**

DLCD has posted the Flood Map Modernization Business Plan for Oregon (March 2004) and the predecessor Flood Map Modernization Plan for Oregon (August 2002) on its Natural Hazards website. However, the Department has not yet integrated the plans into a webpage specific to the map modernization program.

### **NatHazNews Listserv**

DLCD uses a listserv to disseminate natural hazards related information to local, state, federal, and private sector stakeholders. The listserv was established through the Oregon State Library and is set up for one-way information dissemination from DLCD to listserv members. The Department's Natural Hazards Newsletter is also distributed through this listserv.

### **Oregon Natural Hazards Workgroup**

The Oregon Natural Hazards Workgroup developed a resource guide entitled, *Planning for Natural Hazards: Oregon Technical Resource Guide*, which provides information for Oregon communities about flood

hazards, laws relating to flood hazards, reducing the risk from flood hazards, approaches to addressing flood hazards, and community resources.

## **Other State and Special District Flood Map Modernization Websites**

A number of states and special districts have developed web sites that provide general information on the state and non-profit organization's efforts related to the Flood Map Modernization program. These web sites range in complexity from a simple one page description, to white papers, to web-based GIS platforms. The following links serve only as examples of the types of information available.

- Oklahoma Water Resources Board – <http://www.owrb.state.ok.us> – This web site provides a brief overview of the Map Modernization program and provides a list of related links.
- New Hampshire Office of Energy and Planning – <http://nh.gov/oep/programs/floodplainmanagement/modernization.htm> - This web site provides a brief overview of the Map Modernization program and language for model ordinances to amend Floodplain Development Ordinances for the purpose of adopting new FIRMS.
- Wisconsin Department of Natural Resources – <http://www.dnr.state.wi.us/org/water/wm/dsfm/flood/documents/MapModBrief.pdf> - This document describes the role of the State of Wisconsin in the Flood Map Modernization program.
- North Carolina – <http://ncfloodmaps.com> – This web site serves as a portal to the most current information about floodplain mapping in the State of North Carolina. The main intent of the web site is for education and outreach and includes links to digital flood maps, public documents, news, project status, and resources.

## **Hazard Survey**

ONHW and DLCDC worked together to develop a survey that focused on community's efforts to develop risk assessments and community needs related to FEMA FIRM maps. The following are the key findings from the survey that relate to this outreach strategy. For a full report on the Hazard Survey, see Appendix D.

Respondents were asked whether or not their jurisdiction would be interested in partnering with FEMA to complete a map modernization project. Eighty-seven percent of respondents are interested in participating in a map modernization project with FEMA. Of those who indicated they would be interested, more than half of respondents report that the most common obstacle to participation would be staffing (58%) and lack of funds (58%). Table B.1 shows the map modernization participation obstacles as perceived by survey respondents.

**Table B.1: Obstacles to Participating in Map Modernization Project with FEMA**

<b>Obstacle</b>	<b>Number</b>	<b>Percent</b>
Staffing	22	58%
Lack of funds	22	58%
Limits in local GIS capabilities	12	32%
Lack of GIS data	11	29%

Source: PlanGraphics, Natural Hazards Survey, 2005

## **Stakeholder Interviews**

Stakeholder Interviews were conducted with planners, emergency managers, and GIS technicians around the state in order to gain a better understanding of local capabilities to complete natural hazard risk assessments and to gauge interest in participating in the Flood Map Modernization program. The following are key findings from the interviews that relate to this outreach strategy. For a full report on the Stakeholder Interviews, see Appendix E.

The majority of interviewees indicated that they would be interested in participating with the state and FEMA in a flood map modernization project, but that available staffing, funding and GIS capability would most likely be obstacles to completing this work. A majority of respondents indicated that they would be interested in partnering with the State or FEMA to improve flood hazard awareness and conduct outreach. The State or FEMA could best support local education and outreach efforts in the following ways:

- Update the FIRMs and digitize them for use in GIS
- Provide funding for education and outreach
- Provide content and funding for mailings, presentations, and signs
- Work closer with communities on flood hazard planning

## **DLCD Technical Assistance and Outreach Needs Assessment**

In 2002, the Community Planning Workshop at the University of Oregon completed a needs assessment on existing technical assistance and outreach resources developed and implemented by the Department of Land Conservation and Development. The intent of the project was to determine which audiences were using the existing resources, assess the effectiveness and usefulness of the resources, and to identify gaps between the resources being provided and community needs. Although this particular needs assessment was not focused on natural hazards or the risk assessment process, it does assist in identifying potential technical assistance methods for addressing the risk assessment process. The following key findings have been taken directly from the DLCD report.<sup>iii</sup>

- **The preferred format of technical assistance and outreach materials is short brochures.** Survey respondents and focus group participants indicated that, in general, they would prefer written materials to be in the form of short brochures. Focus group respondents indicated that planning commissioners are less likely to read longer, technical documents than planning staff. However, with a planning program as complex as Oregon's, it may be unrealistic for DLCD to adequately cover many planning related items in a short brochure.
- **There is a high demand for local and regional workshops.** The survey data show that there is demand for local and regional workshops. The majority of focus group participants preferred workshops that were less than three hours and up to one hour commuting distance. According to the survey, there was more demand for local training workshops than the regional workshops. Focus group participants noted that regional workshops could be a potential medium to share examples of successful planning activities.
- **The majority of survey respondents receive new planning information from their peers, other planning staff or planning commissioners.** The survey shows that that most common sources of planning information that exist currently for the respondents are 1) planning staff or planning commissioners, 2) talking to colleagues, 3) COG staff, and 4) newspaper articles. This data highlights the potential of increasing partnerships with COGs, as well as the importance of the media in disseminating information.
- **Local planning staff and decision makers are not utilizing written and web-based technical assistance and outreach materials available through DLCD and other planning-related sources.** When survey respondents were given an extensive list of current DLCD technical assistance publications, the majority of planning staff and decision makers alike had never reviewed them. Although planning staff are more likely than decision makers to utilize DLCD resources, the underlying theme of most survey question responses indicates a lack of awareness that DLCD resources exist. Focus group participants confirmed this sentiment and explained they would use DLCD and other planning-related resources if they knew of their existence.
- **DLCD relies heavily on their website to disseminate technical assistance and outreach materials, yet the majority of respondents are not accessing it.** DLCD provides a wealth of useful information through their website, however over half of survey respondents had never visited the website. For planning staff, the Internet is the third most

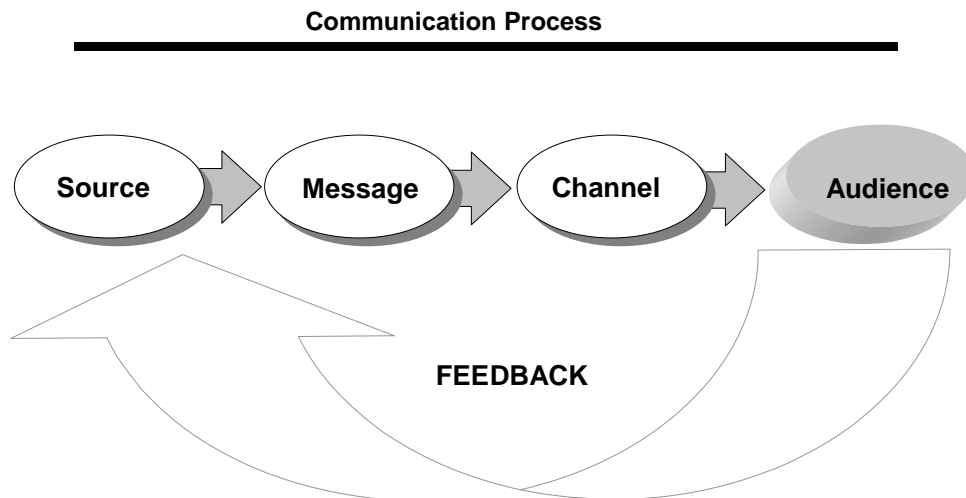
preferred format for technical assistance and outreach materials; for decision makers, the Internet is the fourth most preferred format. Focus group participants indicated that if they knew what resources were available, and resources were quick and simple to find, they would utilize Internet resources more often. Online survey respondents overwhelmingly preferred (75%) the internet as a source of technical assistance and outreach materials.

## Communication Process

Having an understanding of the basics of the communication process can help in creating an outreach campaign that is effective in reaching and connecting with the target audience. There are five essential elements for communicating effectively to a target audience. These five features are shown in Figure B.2 and include the following:

- The **source** of the message must be credible,
- The **message** must be appropriately designed,
- The **channel** for communicating the message must be carefully selected,
- The **audience** must be clearly defined, and
- The recommended action to the audience must be clearly stated with a **feedback** channel established for questions, comments and suggestions.

Figure B.2: Communication Process



Source: Adapted from the U.S. Environmental Protection Agency Radon Division's outreach program

## Key Findings

The following are key findings based on the supporting information reported above.

- There is a lot of information available about flood hazard mitigation and floodplain management but relatively little information is available about flood map modernization.
- FEMA materials on the Flood Map Modernization program are intended for a nationwide audience and as a result, provide little, if any local or state specificity.
- Communities indicate that they are interested in participating in Flood Map Modernization projects, but staffing, funding, and GIS capacity may be obstacles.
- Planners and other professions involved in flood hazard planning are most likely to get information from their peers and other planning professionals.
- It is insufficient to provide information about flood map modernization via the DLCD's website unless there is a way to inform planners and other professionals concerned with flood map modernization that the information is available.
- A majority of the outreach and communication efforts currently available on Flood Map Modernization are one-way communication tools. Communication models indicate that two-way communication models may be more effective in increasing awareness because of the availability of feedback loops.
- Previous research and the project inputs indicate that communities are interested in increased face-to-face interactions to address Flood Map Modernization, however, limitations of staff time and funding make increased physical presence difficult. Electronic and other virtual means of communication may be best for raising awareness given current staffing and funding levels available.
- An understanding of the components of communication models is essential for developing effective outreach strategies.
- An understanding of the intended outreach audience is essential for developing effective outreach strategies.

## Outreach Strategies

Because very little information is available about flood map modernization, it is important for DLCD to establish a coordinated strategy for providing communities with related resources and outreach efforts. This strategy outlines recommendations on how DLCD can raise awareness of the Flood Map Modernization program among planners, emergency managers, public works, elected officials, GIS technicians, and building officials. The following actions are based upon the background information and research completed for this project. The actions are centered around five core Flood Map Modernization messages identified by DLCD. Because the intended audiences are so

diverse, completing the following outreach activities will require the use of a number of different communication channels and outreach material formats. An analysis of available communication channels and outreach formats catalogued by the different audiences is provided at the end of the appendix. DLCD should use these tables to identify the appropriate method of reaching their intended audiences. An example of how to use the tables to complete the communication process is provided at the end of this Appendix.

### **Action #1 – Create Oregon Flood Map Modernization webpage on DLCD’s Natural Hazard website**

Currently, there is no Flood Map Modernization information on the DLCD’s natural hazard website. Creating such a site would serve as a portal for information on Flood Map Modernization and can be host to resources and materials developed to make planners, elected officials, emergency managers, public works staff, building officials, and GIS technicians aware of Flood Map Modernization. This site could also include a link to the State’s Business Plan for Flood Map Modernization. Links to this site could be placed on other frequently used natural hazard websites, such as:

- Oregon Emergency Management
- Department of Geology and Mineral Industries
- Building Codes Division
- Partners for Disaster Resistance & Resilience
- FEMA Region X

### **Action #2 – Advertise availability of Oregon Flood Map Modernization webpage**

In order for the webpage to be effective, the intended audiences need to know that it exists. DLCD should use the appropriate channels to get the word out to planners, emergency managers, elected officials, public works staff, building officials and GIS technicians. DLCD should employ the use of the specific listservs or newsletters listed in the tables at the end of this report. For example, to reach planners, an announcement could be placed in the Oregon Planner’s Journal.

### **Action #3 – Explore potential to enhance listserv functions to allow for two-way communication between end users**

Previous research and the project inputs indicate that communities are interested in increased face-to-face interactions to address Flood Map Modernization, however, limitations of staff time and funding make an increased physical presence difficult. Electronic and other virtual means of communication may be best for raising awareness given current staffing and funding levels available. The DLCD already maintains a listserv to distribute natural hazard related information, however, the current listserv only allows for one-way information

distribution and does not allow end users to share information on the list independently. The enhancement of the current listserv into a two-way means of communication will allow communities to have an open forum where local community issues and solutions can be shared.

#### **Action #4 – Create outreach materials regarding the importance of floodplain mapping**

This message is essential in moving the Flood Map Modernization program forward in Oregon. Communities must understand why floodplain mapping is important before they decide whether or not to participate in a Flood Map Modernization project. Key points to include with this message are:

- Age of current maps
- Usefulness in development and insurance decisions
- Meets federal planning requirement to identify geographic extent of flood hazard
- Meets state Goal 7 inventory requirements

This message should be broadcast to a wide audience including: planners, floodplain managers, public works, emergency managers, elected officials, and building officials. See tables below for appropriate outreach channels and formats.

#### **Action #5 – Create outreach materials regarding the importance of updating Flood Insurance Rate Maps (FIRMs)**

This message is intended to provide the foundation for the Flood Map Modernization program in the state. Communities must understand why updating FIRMs is important before they decide whether or not to participate in a Flood Map Modernization project. Key points to include with this message are:

- Older maps do not accurately reflect current development, which significantly affects the flood hazard
- FIRMS are used to make insurance premium decisions
- Accurate FIRMS can be used to ensure that future development takes place outside of flood-prone areas
- Accurate FIRMS meet state Goal 7 requirements to inventory flood hazards
- New technology is available
- Federal funding is available

This message should be broadcast to a wide audience including: planners, floodplain managers, public works, emergency managers,

elected officials, and building officials. See tables below for appropriate outreach channels and formats.

### **Action #6 – Create outreach materials regarding the advantages of having a digital FIRM (DFIRM)**

This message is intended to inform the community of the advantages of creating and maintaining digital rather than paper FIRMs. Many communities are currently working from paper maps with hand drawn map revisions and amendments. Key points to include with this message are:

- DFIRMS can be integrated into local geographic information systems (GIS)
- The ability to integrate locally allows the community to complete a level 2 risk assessment to meet federal planning requirements by overlaying community assets such as building stock and critical facilities over the floodplain boundaries
- Future map amendments and updates are accomplished easier than predecessor paper maps

This message should be broadcast to a wide audience including: planners, floodplain managers, public works, emergency managers, elected officials, GIS technicians, and building officials. See tables below for appropriate outreach channels and formats.

### **Action #7 – Create outreach materials regarding the process of Flood Map Mod**

This message is intended to inform the community of the steps involved in updating FIRMS and participating in the Flood Map Modernization program. Key points to include with this message are:

- Advanced engineering streamlines studies and improves results
- Capturing interim data throughout the process provides access to mapping products earlier in the mapping life cycle
- Data quality will be improved through refined standards
- Flood maps will be delivered in Geographic Information System format
- Spatial visualization makes it easy to view and analyze the information
- All stakeholders will have improved access to flood hazard data through the Web
- Flood maps and data may be accessed online via FEMA's Multihazard Information Platform (MIP), both during the study

as data becomes available and after map adoption as required to determine insurance rates

- MIP, the new technology platform, promotes data sharing with all mapping partners and improves interoperability with existing data sources<sup>iv</sup> (FMM Web)

This message should be broadcast to a wide audience including: planners, floodplain managers, public works, emergency managers, elected officials, GIS technicians, and building officials. See tables below for appropriate outreach channels and formats.

### **Action #8 – Create outreach materials regarding technical information and use of DFIRMs**

This message is intended to inform those who would use the DFIRM on the technical aspects of the files. Key points should be developed from FEMA's publication, *Guidelines and Specifications for Flood Hazard Mapping Partners* ([http://www.fema.gov/fhm/dl\\_cgs.shtm](http://www.fema.gov/fhm/dl_cgs.shtm)):

1. **Volume 1** explains the activities involved in the completion of Flood Map Projects and provides guidelines for performing those activities in five phases - mapping needs assessment; project scoping, topographic and flood hazard data development; map and report production, and Preliminary/Post-Preliminary processing.
2. **Volume 2** provides guidelines for conditional and final revisions and amendments to Flood Hazard Maps initiated by communities and other Mapping Partners, including conditional and final Letters of Map Amendment, conditional and final Letters of Map Revision Based on Fill, conditional and final Letters of Map Revision, and Physical Map Revisions.
3. **Volume 3** provides guidelines and specification for support activities performed for FEMA by various Mapping Partners in five general categories – program coordination, special technical and program support, public outreach activities, special correspondence support, and other program support.
4. **Appendices A through M** provide additional guidelines and specification for the processes and products associated with aerial mapping and surveying (including analyses and mapping of riverine, coastal, shallow, ice-jam, and alluvial fan flooding; evaluation and mapping of flood protection systems; scoping for Flood Map Projects; Flood Insurance Study report format guidelines and specifications; Flood Hazard Map format guidelines and specifications; Digital Flood Hazard Map database guidelines and specifications;

and technical and administrative support data preparation and processing requirements.

This message should be broadcast to GIS technicians and other planning, floodplain managers, public works, or emergency management staff that might be involved in updating the FIRMS. See tables below for appropriate outreach channels and formats.

## Implementing the Actions

The section above outlined a series of eight outreach actions that can be taken to make local staff better aware of the Flood Map Modernization program and why it is important. The following section will take one of those actions (Action #8) and plug it into the communication model to show how this outreach strategy works. For all the actions identified in this strategy, DLCDC should serve as the message source since they are the state agency with the lead on floodplain management. There are six basic steps to creating and implementing outreach campaigns. The steps include:

1. Select the intended **audience**;
2. Select the appropriate **channel** to reach target audience;
3. Create outreach **message** specialized for the selected audience;
4. Implement the outreach effort;
5. Provide opportunities for **feedback**; and
6. Revise and improve future messages based on feedback.

### Step 1 – Select the intended audience

The first step in creating and implementing an outreach effort is to answer the following question: who do I want to reach? In the example, the intended target audience will be GIS technicians.

### Step 2 – Select the appropriate channel

The channel for communicating the message must be carefully selected to reach the selected audience - local GIS technicians. The question to be asked at this step would be: through what methods and means can I best reach the intended audience? The tables located at the end of this appendix can be used for identifying potential channels based on the intended audience. The table excerpt below is an example of a potential channel that can be used to reach GIS technicians.

Audience	Channel Description	Message Format	Contact Information
GIS Technicians	Oregon Geospatial Discussion Forum	Brochure Poster Presentation Training	Oregon Geospatial Enterprise Office <a href="http://www.gis.state.or.us/coord/Discuss_Forum/Discussion_Forum.html">http://www.gis.state.or.us/coord/Discuss_Forum/Discussion_Forum.html</a>

In this example, DLCDC could prepare a presentation or training for one of the Oregon Geospatial Discussion Forums. The purpose of this

presentation and/or training will be to provide GIS technicians with technical information about how to work with DFIRMs in their local GIS systems. This channel might be particularly effective because DLCDC would be taking the message directly to the GIS technicians through a regularly scheduled meeting that is attended by the target audience.

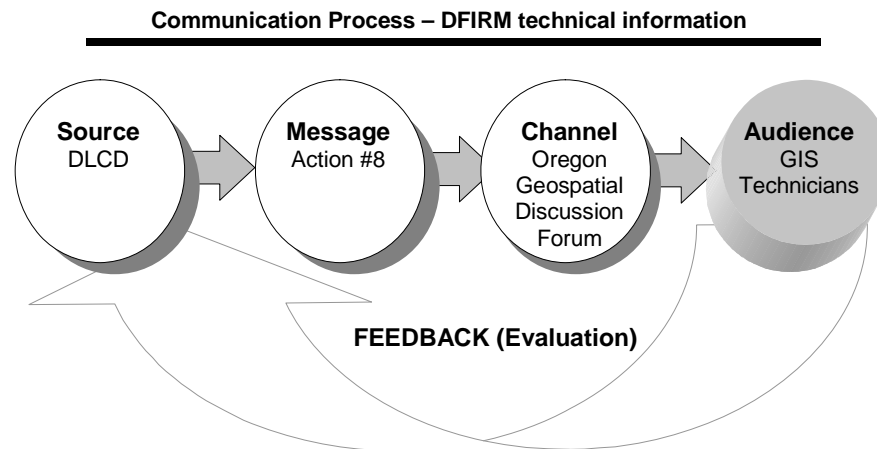
### Step 3 – Create outreach message

The message must be appropriately designed for the intended audience. The main question to ask during this step is: what do I want the audience to know? Different channels may require different message formats. For example, outreach materials developed for a newsletter article may vary greatly from materials created for a training session. For the Action #8 example, DLCDC would want DFIRM end users (GIS technicians) to understand how to use DFIRMS. Local GIS technicians who have worked with DFIRMS and experts at FEMA Region X could assist in developing the message. FEMA’s guidance document, *Guidelines and Specifications for Flood Hazard Mapping Partners* can also be used to develop this message.

### Step 4 – Implement the outreach effort

Once the audience has been selected, the message created and the channel selected, it is time to implement the outreach effort. DLCDC should work with the Oregon Geospatial Enterprise Office to coordinate the implementation of the presentation or training. Figure B.3 illustrates the selected message, channel and audience for this example action.

**Figure B.3: Action #8 Communication Model Example**



### Step 5 – Provide opportunities for feedback

The message and any associated action on the part of the audience must be clearly stated and a feedback channel must be provided for questions, comments and suggestions. DLCDC could use their website as a means of feedback for GIS technicians who attend the presentation and/or training.

## Step 6 – Revise and improve future messages

Providing means for feedback allows the source to revise and improve future outreach messages. DLCD should act on any feedback it may receive through the Forum presentation and/or training.

## Potential Outreach Channels and Formats by Audience

The tables below document the potential audiences for Flood Map Modernization outreach efforts. In addition to identifying the potential audiences, the tables also list potential channels and message formats appropriate for each of the audiences based on the communication model presented earlier in this Appendix.

Unfortunately, there is not one single method of communication that would reach all seven of the identified potential audiences - individual channels must be used to reach each of them. The following tables display potential ways in which the messages above could reach the intended audiences. The different communication approaches range from submitting articles to existing newsletters to taking the message directly to the audience through existing organization and associations.

Audience	Channel Description	Message Format	Contact Information
Planners	Natural Hazard Planner Newsletter	Article	DLCD
	Oregon Planner's Journal – quarterly newsletter	Article	Oregon Chapter of the American Planning Association 2020 SW 8 <sup>th</sup> Ave, PMB#336 West Linn, OR 97068 (T) 503-210-0860 <a href="mailto:opapa@oregonapa.org">opapa@oregonapa.org</a>
	Oregon Planners Institute – annual conference	Brochure Poster Presentation Training	Oregon Chapter of the American Planning Association 2020 SW 8 <sup>th</sup> Ave, PMB#336 West Linn, OR 97068 (T) 503-210-0860 <a href="mailto:opapa@oregonapa.org">opapa@oregonapa.org</a>

Audience	Channel Description	Message Format	Contact Information
Floodplain Managers	Department of Land Conservation and Development Natural Hazards Newsletter	Article	Department of Land Conservation and Development 635 Capitol St, NE, Suite 150 Salem, OR 97301-2540 (T) 503-373-0050 ext 250 (F) 503-375-5518 <a href="mailto:christine.valentine@state.or.us">christine.valentine@state.or.us</a>
	Northwest Regional Floodplain Managers Association Annual Conferences	Brochure Poster Presentation Training	Northwest Regional Floodplain Managers Association PO Box 2517 Kirkland, WA 98083-2517 (T) 425-827-3243 (F) 425-827-3509 <a href="mailto:editor@norfma.org">editor@norfma.org</a>
	Northwest Regional Floodplain Managers Association Newsletter - High Water Marks	Article	Northwest Regional Floodplain Managers Association PO Box 2517 Kirkland, WA 98083-2517 (T) 425-827-3243 (F) 425-827-3509 <a href="mailto:editor@norfma.org">editor@norfma.org</a>

Audience	Channel Description	Message Format	Contact Information
Public Works	APWA News – quarterly newsletter	Article	Oregon Chapter of the American Public Works Association 1298 Elm St, SW Albany, OR 97321 (T) 541-926-0044 (F) 541-926-3478

Audience	Channel Description	Message Format	Contact Information
Emergency Managers	OEMA Quarterly Newsletter	Article	Oregon Emergency Management Association PO Box 391 Gresham, OR 97030 oema@oregonemergency.com
	Regional Emergency Management Technical Committee (REMTEC)	Poster Presentation Training	Scott Porter Office of Consolidated Emergency Management (T) 503-642-0371

Audience	Channel Description	Message Format	Contact Information
Elected Officials	Association of Oregon Counties District Meetings	Brochure Poster Presentation Training	Association of Oregon Counties PO Box 12729 Salem, OR 97309 (T) 503-585-8351 (F) 503-373-7876
	Association of Oregon Counties Annual Conference	Brochure Poster Presentation Training	Association of Oregon Counties PO Box 12729 Salem, OR 97309 (T) 503-585-8351 (F) 503-373-7876
	Local Focus – quarterly newsletter	Article	League of Oregon Cities 1201 Court St, Suite 200 Salem, OR 97301 (T) 503-452-0338 (F) 503-399-4863
	League of Oregon Cities Annual Conference	Brochure Poster Presentation Training	League of Oregon Cities 1201 Court St, Suite 200 Salem, OR 97301 (T) 503-452-0338 (F) 503-399-4863
	Oregon Futures - quarterly newsletter	Article	Community Service Center 1209 University of Oregon Eugene, OR 97403-1209 (T) 541-346-2878 (F) 541-346-2040
	Partners in Action - quarterly newsletter	Article	Oregon Natural Hazards Workgroup 1209 University of Oregon Eugene, OR 97403-1209 (T) 541-346-3588 (F) 541-346-2040

Audience	Channel Description	Message Format	Contact Information
GIS Technicians	Oregon Geospatial Discussion Forum	Brochure Poster Presentation Training	Oregon Geospatial Enterprise Office <a href="http://www.gis.state.or.us/coord/Discuss_Forum/Discussion_Forum.html">http://www.gis.state.or.us/coord/Discuss_Forum/Discussion_Forum.html</a>
	GIS Info Listserv	Article	Oregon Geospatial Enterprise Office <a href="http://egov.oregon.gov/DAS/IRMD/GEO/GIS_INFO_listserver.shtml">http://egov.oregon.gov/DAS/IRMD/GEO/GIS_INFO_listserver.shtml</a>
	Oregon Geographic Information System Association Quarterly Meetings	Brochure Poster Presentation Training	Oregon Geographic Information System Association <a href="http://www.orurisa.org/ogisa/ogisa.htm">http://www.orurisa.org/ogisa/ogisa.htm</a>
	Oregon and SW Washington Urban and Regional Information System Association Annual Meeting	Brochure Poster Presentation Training	Oregon and SW Washington URISA <a href="http://www.orurisa.org/">http://www.orurisa.org/</a>
	Northwest GIS User Group, Inc Annual Conference	Brochure Poster Presentation Training	Northwest GIS User Group, Inc <a href="http://www.nwesriusers.org/default.html">http://www.nwesriusers.org/default.html</a>
	Willamette Valley GIS User Group Quarterly Meetings	Brochure Poster Presentation Training	Willamette Valley GIS User Group <a href="http://www.orurisa.org/wgisug/index.html">http://www.orurisa.org/wgisug/index.html</a>
	Portland Area GIS Users Group	Brochure Poster Presentation Training	Portland Area GIS Users Group <a href="http://www.orurisa.org/sigda/sigpda.htm">http://www.orurisa.org/sigda/sigpda.htm</a>

Audience	Channel Description	Message Format	Contact Information
Building Officials	Oregon Building Officials Association Quarterly Institutes	Brochure Poster Presentation Training	Oregon Building Officials Association PO Box 68 Silverton, OR 97381 (T) 503-873-1157 (F) 503-873-9389 <a href="mailto:aboa@teleport.com">aboa@teleport.com</a>
	Oregon Building Officials Association Quarterly Business Meetings	Brochure Poster Presentation Training	Oregon Building Officials Association PO Box 68 Silverton, OR 97381 (T) 503-873-1157 (F) 503-873-9389 <a href="mailto:aboa@teleport.com">aboa@teleport.com</a>

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<sup>i</sup> Federal Emergency Management Agency. 2004. Flood Hazard Mapping. [http://www.fema.gov/fhm/mm\\_why.shtm](http://www.fema.gov/fhm/mm_why.shtm) (28 June 2005).

<sup>ii</sup> Simmons, Eric. 2003. Modernizing Flood Maps in Point of Beginning. <http://www.pobonline.com/CDA/ArticleInformation/Article/1,9169,97656,00.html> (28 June 2005).

<sup>iii</sup> Community Planning Workshop. 2002. Department of Land Conservation and Development Technical Assistance and Outreach Needs Assessment.

<sup>iv</sup> Federal Emergency Management Agency. 2004. Flood Hazard Mapping. [http://www.fema.gov/fhm/mm\\_why.shtm](http://www.fema.gov/fhm/mm_why.shtm) (19 July 2005).