

# Appendix E:

## Interview Summary

### Background

In March and April of 2005, ONHW conducted telephone interviews with 28 communities across Oregon. The purpose of the interviews was to gain a better understanding of how GIS is used to support local government efforts to complete the risk assessment component of the natural hazard mitigation plans. The ability to use GIS data can greatly enhance natural hazard mitigation planning.

In addition to the need to become more disaster resistant, natural hazard planning is important because the Disaster Mitigation Act of 2000 (DMA2K) requires that communities prepare a natural hazards mitigation plan to remain eligible for certain pre- and post-disaster funding programs. A key component of DMA2K is the risk assessment requirement. The risk assessment process identifies hazards, profiles hazard events, provides an inventory of community assets, and estimates potential losses from hazards.

This report includes a summary of key issues identified in the interviews, a summary of "yes" and "no" questions, and a transcript of open-ended responses. Stakeholder input will be used to identify recommendations on how the project partners can better assist local communities in developing and improving risk assessments in the future.

### Methodology

ONHW identified communities across the state based on the following criteria.

1. **Geographic Dispersion.** Stakeholders from at least one county and one city in each of the State's Natural Hazard Regions were selected to participate, with the exception of Region 6, where stakeholders from two cities were selected to participate.
2. **Population.** A region's population was taken into account in selecting the number of communities to be interviewed. Regions with higher populations had more communities interviewed than those with lower populations.
3. **Specific hazard vulnerability.** Communities with diverse hazard vulnerability were invited to participate in the interviews, ensuring that information on the use of GIS for a variety of hazards was included in the interviews. Community hazard vulnerability was determined using the State Natural Hazard Mitigation Plan's Regional Risk Profiles for Counties.

City vulnerability was generalized based on the County Risk Profiles in the State Plan.

4. **Status of mitigation plans.** Selection of communities was designed to strike a balance between interviewing communities with FEMA approved plans, those in the process of approval, and those without approved plans.
5. **Steering committee input.** The project Steering Committee also identified potential communities based on experience working in communities around the State.

ONHW sent an introductory e-mail, which explained the project and its purpose, to the person most likely to be involved in natural hazard planning in each selected community.

Some questions were modified slightly or not asked at all, depending on their relevance to the community. Each interview lasted between 30 and 45 minutes. Interviews were either transcribed by hand during the interview and entered into a computer template afterwards, or entered into the computer template during the interview. Following completion of the interviews, all of the answers were documented and then analyzed for common themes.

## Participants

- Albany -- Darrel Tedisch, Retired Fire Chief and Emergency Planner
- Bandon -- Jason Locke, Community Development Director
- Burns -- David Fine, City Manger
- Corvallis -- Fred Towne, Senior Planner
- Elkton -- Linda Higgins, City Clerk
- Eugene -- Fred McVey, Engineering Data Service Manager
- Grants Pass -- Craig Clausen, City Surveyor
- Jackson County – Keith Massie, GIS Manager
- John Day -- Peggy Carey, City Manager
- Josephine County -- David Kellenbeck, Assistant Planning Director
- Klamath Falls -- Erik Nobel, Senior Planner
- Lane Council of Governments – Bill Clingman, GIS Senior Analyst
- Lincoln County -- Matt Spangler, Planning and Development Director

- Malheur County -- Craig Smith, Emergency Services Lieutenant, EMS Coordinator
- Maupin -- Dan Meader, Planning Consultant
- Pendelton -- Tim Simmons (City Engineer), Wayne Green, Associate Engineer and George Clough, Building and Planning Technician
- Portland -- Bill Freeman, Supervising Engineer
- Prairie City -- Bob Titus, Public Works Director
- Roseberg – Les Wilson, Community Planner
- Salem -- John Smith, GIS Supervisor, Salem Public Works Department and Susan Blohm, Lead GIS Analyst
- Sandy -- Tracy Brown, Planning Director
- Seaside -- Kevin Cupples, Planning Director
- Sisters -- Brian Rankin, Planner
- Tillamook -- Dave Mattison, City Planner
- Wallowa County -- Dawn Smith, GIS Coordinator and Mathew Marmoor, Emergency Manager
- Wasco County -- Dawn Baird, Associate Planner
- Washington County -- Richard Crucchiola, GIS Supervisor

## Summary of Themes

Below is a summary of themes from the interviews. The themes are separated into the following five areas:

- **Geospatial data:** The interview began by asking about the availability of geospatial data for the natural hazards that the community is vulnerable to.
- **Flood map modernization:** This series of questions focused on the use and accuracy of the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRMs).
  - **Public outreach:** ONHW asked communities how they inform the public about flood hazards. These questions also assessed whether the community would be interested in federal or state help in conducting public outreach and education about flood hazards.
  - **Collaboration:** These questions focused on whether the community had interest in and the ability to collaborate

with FEMA on flood map modernization or flood hazards public awareness projects.

- **Risk assessment:** These questions assessed the community's ability to complete a natural hazards risk assessment. The risk assessment includes three components: the identification of hazards, the identification of vulnerable assets, and the estimation of potential losses. This section of the interview asked questions about the sources of data, as well as the availability of and ability to use GIS.

A summary of all interview responses can be found at the end of this chapter.

## Geospatial Data

Most jurisdictions interviewed have geospatial data about floods. More than half of the jurisdictions have geospatial information about earthquakes and landslides/debris flows. Fewer than half of the jurisdictions had geospatial information about other natural hazards, such as wildland/urban interface fire, drought, windstorm, and severe winter storm. All participating coastal communities had geospatial information about tsunamis and half had geospatial data about coastal erosion. About half of the communities had used their geospatial data to develop a natural hazard mitigation plan.

## Flood Map Modernization

Nearly all jurisdictions have identified the geographic extent of the flood hazard, often with the help of their FIRMs. Most jurisdictions, however, reported that there are inaccuracies with their FIRMs. More than half of the jurisdictions interviewed indicated that the FIRMs have a variety of inaccuracies and problems with data features. More than two-thirds indicated that the FIRMs adequately reflect floodplain impacts.

The following are problems with the FIRMs for at least half of the jurisdictions interviewed:

- Inaccurate flood data
- Current flood data is not reflected in the maps
- Base flood elevations are inaccurate or undetermined
- Floodway locations are problematic

The following data features are inaccurate or incomplete for at least half of the jurisdictions interviewed:

- The street network
- Floodplain boundaries
- Current jurisdictional boundaries.

Twenty of the 26 jurisdictions indicated that they would need State or Federal assistance to adequately map flood hazards. About half of the

jurisdictions have previously worked with FEMA to update the flood maps. Eight communities had performed updates or contracted to update hydraulic or hydrological studies for flood hazard mapping. Five of the eight communities said the new information was reflected in an updated FIRM.

While jurisdictions would like to work with the State or FEMA to update flood maps, most jurisdictions have obstacles to doing so. Obstacles include:

**Funding and staff time:** The most common obstacle is lack of resources, including funding and staff time. One-third of communities said they would be able to provide matching funds to participate in a mapping project and another one-third said they might be able to provide matching funds.

On the other hand, 24 of 25 jurisdictions indicated that they could provide in-kind contributions for a mapping project.

**GIS capabilities:** Eleven jurisdictions interviewed thought that limits in local GIS capabilities would be obstacles to participating in a mapping project.

**Political Will:** Nine jurisdictions interviewed thought that issues related to political will would be obstacles to participating in a mapping project.

## Outreach

Most jurisdictions estimated that public awareness about flood hazards is “fair”, with several reporting that it is “good”, and fewer indicating that flood awareness is “poor” in their community.

The most common forms of outreach used by jurisdictions include: use of GIS or websites, presentations, and brochures. Only one jurisdiction used signs. While few jurisdictions used public service announcements or newspapers for outreach, several jurisdictions indicated that they use them in a flooding event. Some jurisdictions indicated that they discuss flood hazards during the permitting or development process. The information used in outreach was most frequently developed in-house or by Federal agencies.

Jurisdictions indicated that the following methods could be used to increase awareness of flooding:

- Use mailings to educate people about flooding dangers and the National Flood Insurance Program;
- Increase use of signs to alert people to the location of the flood plain;
- Increase public education about flood hazards; and
- Update the FIRMs so that jurisdictions are able to give precise information about the location of the flood plain.

## Collaboration

Twenty of 26 jurisdictions 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

Several communities indicated that they are not concerned about flood hazards because flooding is infrequent. Other communities indicated that FEMA is doing a good job of providing content about flood hazards.

## Digital FIRMs

Two-thirds of jurisdictions are not familiar with the digital FIRM. But 20 of 26 communities report that they have the GIS capacity to use a digital FIRM and nearly all communities would like to have access to a digital FIRM.

The majority of jurisdictions reported that they would benefit from training specific to FEMA flood mapping and digital FIRMs. The preferred type of training was one-day onsite training. Some jurisdictions indicated a willingness to attend training if it was located within their region.

## Risk Assessment

A risk assessment includes three components: identification of hazards, identification of vulnerable assets, and estimation of potential losses.

Most communities have completed some part of a risk assessment. Nearly all communities have identified hazards and more than half have identified vulnerable assets. But only two communities have estimated potential losses in their community.

The vulnerable assets most frequently identified were public buildings and infrastructure. These included schools, hospitals, fire and police stations, transportation system, and infrastructure such as power, water, and sewer lines. Of the few jurisdictions that included human populations in their vulnerable assets, elderly and special needs populations were most frequently identified.

The data sources used by more than half of communities to identify natural hazards included: FEMA, in-house generated data, Department of Geology and Mineral Industries, and U.S. Geologic Survey. Few jurisdictions reported being unable to find data for the hazards identification.

All of the fifteen jurisdictions that completed a vulnerability assessment used in-house generated data. Information from the State

and tax records were also frequently used. U.S. Census data was used by about one-third of jurisdictions. Fewer than one-third of jurisdictions were unable to find data for the vulnerability assessment.

Jurisdictions used a variety of methods for presenting the results of risk assessments. The most common methods were text and maps. Some jurisdictions also used tables and graphs. A few jurisdictions used photographs, graphics, and other types of maps.

## **Completing risk assessment**

Most jurisdictions reported having issues in completing the risk assessment. Many jurisdictions indicate that lack of resources is the biggest hurdle to completing the risk assessment. The most common problem is administrative, such as availability of funding and staff time. Technical issues, such as availability and quality of data and maps were also identified. More than half of jurisdictions indicated that they need staff, better funding, and more training to complete the risk assessment. Nearly half of jurisdictions indicated that they need more accurate and precise data, such as updated FIRMs. Additional technology, such as hardware and software, was identified as a need by about one-third of communities. Few communities said that legal concerns are an issue.

## **GIS Use**

About half of the jurisdictions interviewed used GIS in the completion of the risk assessment.

**GIS Work:** Most jurisdictions did the GIS work in-house and only one jurisdiction used a private consultant. In several cases, GIS work was done by the county or another agency such as the U.S. Forest Service, The Bureau of Land Management, or the Oregon Department of Fish and Wildlife.

**GIS Users:** Planning and public works departments are the most frequent users of GIS data. Nearly all jurisdictions that have GIS make GIS data freely available to other departments within their organization. Some of the participating jurisdictions are moving to cost recovery GIS programs, where individual departments within the jurisdiction pay for access to GIS services.

**GIS Uses:** Most jurisdictions use GIS for basic mapping, presenting results, and overlaying multiple data sources. Fewer jurisdictions use it for advanced computations.

**Mapping Problems:** Few jurisdictions reported problems with mapping. The problems that were most frequently reported included data availability and integrating data.

Seventeen of twenty-six jurisdictions plan to use GIS to complete future risk assessments. Most jurisdictions will perform the GIS work in-house and more than half may use private consultants. A few jurisdictions indicated that the GIS work will be performed by another

agency, such as the county or a Federal agency. Some jurisdictions indicated that GIS work is likely to be done through a combination of these methods.

## Additional Comments

There were a series of related additional comments about lessons learned in the risk assessment process and the assistance that State and Federal agencies could give communities for completing risk assessments. These comments had three main focuses: need for more and better data, the need for collaboration, and need for additional funding.

**Better Data:** Communities expressed a need for better data to perform a risk assessment and update the FIRMs

**FIRMs Lack Detail:** The most common problems with the FIRMs are their lack of detail and precision. Several jurisdictions indicated that their FIRMs are too general and need more detail and better precision to determine which properties are in the flood plain.

**FIRMs Are Outdated:** The other common problem with the FIRMs is their age. This is especially a problem for smaller cities, many of which are using FIRMs that are more than 20 years old. Many communities have developed significantly since the FIRMs were last updated.

**Need More Data About Local Hazards:** Another common theme is the need for additional data about local hazards and related topics. Several communities indicated that they need additional information about local exposure to hazards, such as volcanoes or wild fires. Other communities would like more information about related topics such as vegetation type, water courses, prevailing winds, and flood plains.

**Collaboration:** Several communities indicated that collaboration is important in completing a risk assessment. Coordination between agencies is essential. Allowing for and encouraging public input in the process is also very important. The person leading the risk assessment should understand community concerns and have a connection to the community.

**Funding:** Communities frequently commented that they need help funding risk assessments. Many communities need to devote a significant amount of staff time for the risk assessment, as well as training staff to do the assessment. State or Federal agencies could help communities perform a risk assessment by providing additional funding.

## **Interviewee Experience**

On average, the people we interviewed had worked for their jurisdiction for 10.8 years. They had about 5.4 years of GIS experience.

## **Conclusions**

The stakeholder interviews provided candid information on local community's ability to complete risk assessments and their ability to participate in FEMA's Flood Map Modernization program. The following are key conclusions gleaned from the interview process.

- Communities lack accurate data, such as up-to-date Flood Insurance Rate Maps, for phase one of the risk assessment(Hazard ID) but generally have the data needed to conduct phase two (Vulnerability Assessment)
- Communities identified staff, funding, and training as obstacles to completing risk assessments and participating in FEMA's Flood Map Modernization program.

## Results by Question

**How many years have you worked for your jurisdiction?**

10.8 years on average

**How many years of GIS experience do you have**

5.4 years on average

**For the hazards that could impact your community, which do you have geospatial data for?**

<b>Hazard</b>	<b>Yes</b>	<b>Percent</b>	<b>Total</b>
Flooding	20	77%	26
Earthquake	15	58%	26
Landslide/Debris Flow	13	50%	26
Wildland-Urban Interface Fire	9	35%	26
Tsunami	5	19%	26
Coastal Erosion	2	8%	26
Severe Winter Storm	2	8%	26
Drought	1	4%	26
Windstorm	1	4%	26
Volcanic Eruption	1	4%	26

**Other:**

- Slope hazard, used for development for geotechnical report

**For those hazards that your community has geospatial data for, was this data used to develop a natural hazard mitigation plan?**

13 of 26 (50%) answered yes

**Have you identified the geographic extent of the flood hazard?**

25 of 26 (96%) answered yes

**Do any of the following issues apply to the FEMA flood hazard map(s), also known as Flood Insurance Rate Maps (FIRMs), issued for your jurisdiction?**

<b>FIRM Issues</b>	<b>Yes</b>	<b>Percent</b>	<b>Total</b>
Inaccurate flood data from FEMA	18	69%	26
Street Network	18	69%	26
Current Jurisdiction Boundaries	16	62%	26
Current flood data not reflected in map(s)	15	58%	26
Floodplain Boundaries	15	58%	26
Base Flood Elevations Inaccurate	14	54%	26
Floodway(s) location problematic	14	54%	26
Base Flood Elevations Undetermined	13	50%	26
Other Reference Features	10	38%	26
Waterways	9	35%	26
Coastal Flooding/Erosion hazards	9	35%	26
Significant changes in land use within watershed or community	8	31%	26
New/altered bridges or culverts	8	31%	26
New/altered streambank stabilization projects	7	27%	26
New/altered flood control projects	6	23%	26
Increased public ownership/open space	6	23%	26

**Other comments include:**

- The scale of the map is such that the floodplain boundaries have a lot of limitations
- Have digitized FIRM flood hazard information to overlay with more accurate local data on waterways, etc.

**What outreach methods do you use to inform the public where flood hazard areas are in your community? Do you use:**

<b>Public Information Methods</b>	<b>Yes</b>	<b>Percent</b>	<b>Total</b>
GIS/Websites	12	46%	26
Brochures	10	38%	26
Presentations	8	31%	26
Mailings	7	27%	26
Public Service Announcements	5	19%	26
Newspaper	5	19%	26
Signs	1	4%	26

**Other:**

- The permit review process informs applicants of flood issues
- In the case of a storm event that caused floods - would make use of radio station and police, etc.
- Discussion with land developers as the land is developed near/on the flood plain
- In the planning/zoning process - for permitting
- A map in city hall shows floodplains

- Hazard mitigation plan
- People come in and ask about it - in relation to the planning commission
- Use the permitting process
- Permitting process
- Work with local builders, training with home builders

**For each of the outreach methods you listed, could you tell me whether the material was developed by federal agencies such as FEMA, a state agency such as the Department of Land Conservation and Development, or whether the material was developed in-house.**

Eleven participants indicated that the materials were developed in-house, three used federal sources, and four indicated they used a combination of several sources.

**How would you generally rate public awareness in your jurisdiction about flood hazards?**

<b>Rating</b>	<b>Number</b>	<b>Percent</b>
Fair	11	42%
Good	9	35%
Poor	6	23%

**Can you provide any suggestions on how the public's level of awareness of flood hazards could be improved? Or maintained over time?**

- Another flood event would remind people of the dangers. Signage of where flood extent is.
- Distribute hazard plan to residents
- Can't think of anything
- None
- Accurate mapping by FEMA. They could use that to plan industrial and commercial development. Could reduce/eliminate flood insurance premium. This would get people's attention and boost awareness about flood issues.
- More accurate FIRM and they would feel more confident in using the information. Then they would/should do more of the outreach methods in #7.
- Major problem is that the FIRM's level of accuracy - it is too general and does not provide people with an accurate portrayal of the flood hazard areas.
- No

- If there was more education about the entire Federal Flood Insurance program, including the need and the risks of not taking part in it, this would be helpful to provide information. The information should best be provided by the home insurance agent or at the time of home purchase. The fact that houses located in non-flood plains but in the tsunami inundation zone - their insurance may not cover flooding caused by tsunami. There needs to be education of homeowners and insurance company providers.
- Most effective outreach has been through direct mailings - for the properties within the flood plain. Those mailings generated a lot of response
- Education such as mailings
- Flyers sent out to people
- Field signage
- Increased public information
- Web education and GIS data available. Funding. Technical advisory committee would be helpful.
- Signs would help to inform public about floodway
- Better outreach- sending out notices about storm drains before rainy season and conditions that contribute to flooding
- Agencies need to work together, work more with feds and state. This is happening to some degree already
- Possibly with using signs.
- No
- Updated flood plain. Use public hearings to discuss findings on the map (and maybe accuracy of the map).
- Provide ongoing information about flooding but the problem is that floods happen infrequently. Providing the public with constant reminders about flooding when there is none is not going to work.
- Cost is an issue. Targeted mailings would be good. More frequent outreach and notification. Education with neighborhood groups
- Programs to educate people about hazards. FEMA should do more outreach about flooding. FEMA needs to provide the educational materials. FEMA needs to update its maps first though to ensure they are accurate/credible.
- Public service announcement on the radio

- Billboard media campaign, chamber activities for new people who move into the area

**How could FEMA or the state best support local education/outreach efforts regarding local flood hazards, including efforts related to flood map updates.**

**Outreach content?**

- Target people who live in floodplain and send them flood information including a flood map of area.
- Have current flood data
- Good succinct explanation about flood insurance - how you get it, rates, etc.
- State and FEMA are meeting needs
- Yes, there currently isn't an outreach program.
- Work with property owners to improve FIRMs
- FEMA needs to work closer with the jurisdiction to find out about local issues
- Awareness
- Training sessions FEMA has done with DLCDC have been good. Community rating system.
- Improve web information. Quality of geographic map data. Registered up to more local accurate data.
- content is good but people don't really want to look at it. Council wouldn't even look at it.

**Outreach format?**

- Mailings / signage
- Not sure.
- Could be
- New/updated GIS layer would be useful
- They provide maps, flyers might help
- Neighborhood meetings
- Don't know
- Work through GIS dept. Digitized format to put on website
- Mailing, update website

- Training sessions FEMA has done with DLCD have been good. Community rating system.
- Television video, flood insurance

**How should the state or FEMA efforts supplement/support local efforts?**

- Funding- pay for outreach materials and work with local jurisdiction to develop it.
- Not sure
- Accurate mapping
- By doing regular, accurate map updates when requested by local agency.
- Remapping is most important and effective use of the money. FEMA in the LCD do a good job in making useful and user friendly materials available.
- Update the FEMA maps more frequently
- 1) Put together packaged power point presentations or a scripted performance that local planners/others could use. 2) State/fed could make presentations available to local governments for local presentation. 3) Provide funding to local governments to create and put those presentations on. 4) Paying for public service announcements. 5) Making the process simple for reimbursement/payments for public service announcements and funding for local meetings.
- The importance of having flood insurance. People are relatively ignorant about flood experience.
- Update the FIRMs. Provision of outreach content could be helpful
- Funding for mailings
- Assistance in the CRS Application process
- Funding, staff
- Work with property owners to improve FIRMs
- FEMA needs to work closer with the jurisdiction to find out about local issues. More consistent data updates. Additional funding.
- Coordinate better with communities to inform the public
- Not sure because there is not much flooding

- Not sure - because flooding is not a big issue. The Feds or State could provide flyers or public service announcements.
- Finance updates or do the updates of the FIRMs. Technical assistance would be helpful.
- Do the flood map updates. Some communities don't have a large potential for flooding, so it is less important.
- FEMA does a good job of providing content from their website. Not sure that they could do too much more, aside from reminding jurisdictions to contact the public.
- FEMA does a good job through NFIP and community rating system. Keep doing this. Provide more financial incentives. Incentivize CRS program. Community rating system
- FEMA need to make it easier to update maps, fewer forms to fill out and fewer hoops to jump through. Would like to share LIDAR data but it is just too cumbersome to do what FEMA wants. Don't have the staff to just spend time updating maps. We have the data to update the maps now. FEMA needs to get rid of the paper maps. Allow communities to use their own electronic data that is more accurate. FEMA is 30 years behind with their technology. Need to trust local communities.
- Education about hazards needs to start at grade school. Older folks can be set in there ways.
- more accurate maps, inch to 100 scale, accuracy can make or break people who need to get flood insurance.

**Would your jurisdiction be interested in partnering with the State or FEMA to improve flood hazard awareness/conduct outreach?**

20 of 26 (77%) said yes

**Has your jurisdiction previously worked with the State or FEMA to update flood maps? (Or are you currently working with...)**

13 of 26 (50%) said yes

**Does your jurisdiction need State or Federal assistance to adequately map flood hazards in your community?**

20 of 26 (77%) said yes

**Has your jurisdiction performed or contracted for any updated hydraulic or hydrological studies for flood hazard mapping?**

8 of 26 (31%) said yes

**If yes, has this information been reflected in updated FEMA FIRMs?**

Of the 8 who said yes to the previous question, 5 said yes to this question.

**Are you familiar with FEMA’s digital FIRM format?**

9 of 26 (35%) said yes

**Does your jurisdiction have the GIS capacity to use a digital FIRM?**

20 of 26 (77%) said yes

**Does your jurisdiction want to have digital FIRMs?**

24 of 26 (92%) said yes

**Can your jurisdiction provide matching funds, if needed to participate in a mapping project?**

<b>Answer</b>	<b>Number</b>	<b>Percent</b>
Yes	9	35%
Maybe	8	31%
No	6	23%
Don't Know	3	12%

**Can your jurisdiction provide in-kind contributions (e.g. data, staff time) if needed to participate in a mapping project?**

25 of 26 (96%) said yes

**Are there other, potential obstacles to your jurisdiction participating in a mapping project that we need to know about?**

<b>Obstacle</b>	<b>Yes</b>	<b>Percent</b>	<b>Total</b>
Staffing	21	81%	26
Limits in Local GIS capabilities	10	38%	26
Political will/support	9	35%	26

**Other**

**Ten participants mentioned that financial resources were an obstacle to participation.**

- Difficulty in working with FEMA
- Funding, staffing, limits in local GIS capability, and political will could all be issues

- Fear over what might come out over FEMA's remapping. This fear is shared by the government, residents, and business owners.
- Most communities have developed wisely before FEMA flood mapping, so not a lot of older homes at risk. New developments are moving into floodplains. Floods are getting bigger.

**Would your jurisdiction benefit from training specific to FEMA flood hazard mapping, including both technical aspects of digital FIRMs and mapping process?**

Answer	Number	Percent	Total
Yes	20	77%	26
No	4	15%	26
No answer or don't know	2	8%	26

**If YES – What kind of training would you prefer? ( 1-day, 3-day, on-site workshop, off-site, content?)**

Training Preferences	Number
On-site	15
1-day	12
Regional	5
3-day	3
Content	1

**Have you identified hazards in your community?**

25 of 26 (96%) said yes

**Have you identified vulnerable assets in your community?**

15 of 26 (58%) said yes

**What vulnerable assets have you addressed? E.g. Schools, hospitals, police stations, fire stations, sewer, water, power, low income populations, elderly, minorities?**

Common assets identified include: schools, police stations, fire stations, sewer, transportation system, large employers, and elderly populations.

**Have you estimated potential losses in your community?**

2 of 26 (8%) said yes

**What hazard source data did you use to complete the risk assessment?**

<b>Data Source</b>	<b>Yes</b>	<b>Percent</b>
Federal Emergency Management Agency	17	65%
Generated in-house data	16	62%
Department of Geology and Mineral Industries	13	50%
United State Geological Survey	13	50%
State GIS Clearinghouse	7	27%
Oregon Department of Forestry	7	27%
National Oceanic and Atmospheric Administration	5	19%
Oregon Department of Fish and Wildlife	3	12%

**Other (Specify)**

- Five participants indicated they used local data
- Two participants indicated they used US Forest Service or Bureau of Land Management data
- Use inventories, zoning maps, tax lot maps, as built improvements, aerial photos
- Crew, NRCS, State Fire Marshall hazmat site
- 

**Was there any information you wanted to include but couldn't find data for?**

7 of 25 (28%) said yes

**Information wanted includes:**

- Building footprint, ground floor elevations, current data
- Telephone switching stations, rail trestles, overpass and underpass- difficult to get accurate data.
- Potential LOMA data was not available
- Severe storm, wind, severe wind
- Volcanic impacts
- Wetlands, maps were not real accurate
- Social data

**What data sources did you use to either identify vulnerable assets or estimate potential losses?**

<b>Data Source</b>	<b>Yes</b>	<b>Percent</b>
Generated in-house data	15	58%
State	10	38%
Tax records	9	35%
U.S. Census	5	19%

**Other (specify)**

- Zoning maps
- Metro, private consulting firms, local utilities for water, natural gas, and power, telephone book, co dept of aging, disabilities and vet services, shelter facilities

**Was there any information you wanted to include but couldn't find data for?**

4 of 15 (27%) said yes

**Information wanted includes:**

- Do not have a database that indicates what types of subsidence or reaction the ground surface would have in certain areas based on a near shore event.
- Facilities with dense populations,
- Would have liked better utility data
- Would like to know about the type of building - nonreinforced masonry - so that they can accurately estimate the effect of the hazard event.

**How did you present your findings?**

<b>Findings</b>		
<b>Presented With:</b>	<b>Yes</b>	<b>Percent</b>
Text	16	62%
Maps	16	62%
Tables	9	35%
Graphs	5	19%

**Other:**

- In the zoning standards - for flood plain or steep slopes. Created specific maps and standards in zoning ordinances.
- Graphics
- Digital photos, and aerial photos of critical facilities

**(IF YES on #22) Did you do use GIS to complete the risk assessment?**

14 of 26 (54%) said yes

**(IF YOU USED GIS) Who did the GIS work for your jurisdiction?**

<b>GIS Done By</b>	<b>Answers</b>	<b>Percent</b>
In House	8	31%
Private Consultants	1	4%

**Other:**

- County
- Forest Service
- University of Oregon
- State
- Bureau of Land Management
- Oregon Department of Fish and Wildlife
- Lane Council of Governments

**Which department or division in the city/county uses the community's GIS services the most?**

<b>Department</b>	<b>Answers</b>	<b>Percent</b>
Planning	9	35%
Public works	9	35%
Assesor	3	12%

**Other departments include:**

- City Engineer
- Tax Assessor
- Sheriff
- Health Department
- District Attorney
- Surveyor
- Clean Water Services
- Fire Department

**Is in-house data made available free of charge to any other department within the jurisdiction?**

13 of 15 (87%) (who answered) said yes

### What was the GIS used for?

GIS Uses	Yes	Percent
Basic Mapping	17	65%
Presentation of Results	16	62%
Overlaying multiple data sources	15	58%
Advanced computations	10	38%

#### Other

- Preliminary summary data
- Service boundaries
- Internet mapping services, issuing of permits, management of special service districts
- Conceptual design - laying out planning for infrastructure
- Used as a general reference for geographically indexed data for staff

### Did you encounter problems while mapping components of the risk assessment?

4 of 26 (15%) said yes

### What were the mapping problems you experienced?

Problem	Yes	Percent
Data availability	8	31%
Integrating data	7	27%
Analysis time	4	15%
Presenting results	2	8%

### Which of the following (has been/would be) an issue in completing your jurisdiction's risk assessment?

Risk Assessment Issues	Yes	Percent
Administrative	18	69%
Technical	14	54%
Political	6	23%
Legal	3	12%

#### Administrative

- Eight participants indicated that funding was an issue in completing the risk assessment
- Six participants indicated that staff and human resources was an issue in completing the risk assessment

## **Political**

- Decision makers need to be made aware of how important this data is
- Could be but less so
- No - except for FEMA's flood mapping because of their past experience
- No - probably not a problem if the resources were available
- Yes - conflicting priorities short range vs., long range priorities
- Multi-jurisdictional issues. Getting cooperation from the different agencies coordination the plans.

## **Technical**

- Data not available
- Training
- Accuracy of data
- Have a skilled hazard management and response staff.
- Skills in the GIS realm is limited though.
- Availability and quality of data and maps is problematic, as well as technical ability to identify assets that are threatened
- Determining the best data
- Need staff, training, and GIS software

## **Legal**

- Liability can be an issue
- Could be but less so

## **Other**

- Getting feedback from people out in the field who have direct knowledge of hazards and know how the public can be impacted

**Please identify the issue that you feel presents the biggest hurdle to completing the risk assessment in your community.**

## **Administrative**

- Five participants indicated that the biggest hurdle is financial
- Four participants indicated that the biggest hurdle is staffing
- Two participants indicated that the biggest hurdle was time

## Technical

- Technical
- Technical - don't have the staff
- Training and staff time for GIS
- Accurate information

## Other

- Capacity to provide an accurate assessment and the variability of on the ground situations. The variability of the natural hazard event and the impact of the event is so great that it makes the risk assessment difficult. Likewise, the variability of the situation on the day that event happens (holiday/nonholiday, tide in or out, etc.)
- Lack of a central champion, dispersed stakeholders- different agencies
- Coordination with other depts. in the city.
- Wildfire, location of new homes, fuel loads, defensible spaces, emergency plans
- I haven't been involved in the risk assessment process. Getting the county/city jurisdictions to work together. Getting departments to work together as well.

## What are the resources you would need to complete a risk assessment in your community?

<b>Resources Needed</b>	<b>Yes</b>	<b>Percent</b>
Staff	16	62%
Finances	13	50%
Training	13	50%
Data	12	46%
Technology	8	31%

## Finances

- Eleven indicated that they needed financial resources
- Two indicated that they needed additional staff resources

## Staff

- Staff to keep data up to date
- More staff that is trained in GIS
- Always seem to be staffing problems, more people would be helpful.

- GIS dept needs its own manager. Have an IT dept that needs to merge with GIS dept.
- More staff would be helpful
- Need an intern, someone with some basic skills

**Data**

- Updated FIRM
- Yes - Access or time to improve own data. Would like more contact with people out in the field to provide local information
- Better structural data - more accurate and precise. Refining data that they have. More details - such as about the type of house construction, etc.
- Finding the right data.
- In a few areas data is incomplete or the resolution is too low.
- Better hazard data
- Just need to know where data is

**Do you plan to use GIS to complete risk assessments in the future?**

17 of 26 (66%) said yes

**Who will do the GIS work for your jurisdiction?**

<b>GIS Work Done By</b>	<b>Yes</b>	<b>Percent</b>
In-house	16	62%
Private consultant	13	50%
Other	6	23%

**Other**

- County EMS may be working on this
- Maybe Federal Agencies - USFS
- COG
- County
- Federal and state partners
- County might help as well

**Do you have any additional comments related to lessons learned or issues that could improve the mitigation planning process?**

- Count on it taking more time than you expect. Need to contact the right people in the community for feedback

- Pretty well hit most of the problems: data accuracy, availability, and precision
- Coordination between various agencies is the key
- They have learned that assessments need to be done with lots of public input and the public needs to help with the assessment because they provide information that is unobtainable any other way. The public helps in bringing up issues that you wouldn't think about.
- have the right champions -political leaders, building officials
- Required to create hazard map but another entity had already created it- USGS ODF. Better outreach and collaboration with Fed and State entities.
- Coordination of mapping projects with the different bureaus in the city.
- Hiring the right person to help develop the plan. They need to have a connection to the community.
- It would be much easier if there was more updated information. The last update of the FIRM was in 1982 and they have been trying to get the maps updated for the last several years.
- No - the process that Albany is involved in includes a 6 County grant organization. They are working with ONHW (and others) to figure out how to do the mitigation plan.
- Anyone who wants to start a GIS program needs to start with a good parcel base map. Good digital orthophotography. LIDAR is a very useful technology for making accurate maps. Don't just slap stuff together with data that might not be accurate.
- Time management- don't wait to start the process! Otherwise, it will take longer and you have to spend a lot of time to catch up. Having the proper software is important. Having people who are fully trained is important too.

**Do you have any suggestions on assistance that state and federal agencies could provide communities that would make the risk assessment process easier?**

- A flood loss form from FEMA would be useful...it might already exist.
- Better and more current data for hazard areas. More support for developing in-house data, especially financial assistance
- Not really

- Most of the smaller jurisdictions are using 20 year old maps with limited detail. Most of the small cities have the old maps that require a survey/engineer is hired to estimate the extent of the flood plain on the property, using the flood plain map to estimate the elevation. Having cross sectional information would be helpful because it would provide known bench marks. The jurisdictions that Dan works with have not done risk assessments.
- Technical information like reports or geospatial data or hard copy maps. If Fed and state agencies had a comprehensive list of potential hazards, they could do the rest of the work for the City for the assessments. Their area include state and Federal lands.
- Better explanation of the requirements for completing it
- The updating process for the FIRM should collaborative, working closely between the community and FEMA. Also, the state or feds could provide a bulleted guide to doing an assessment that is clear and concise. They could include an assistance guide that provides an explanation of each bullet or part of the process.
- Proving financial assistance
- Additional funding
- Training and funding
- State did a good job providing assistance and information. Provide a calendar for training and other informational opportunities. Better communication from the state to inform county what the FEDS and State are doing. Communication issues. "every jurisdiction for themselves" Who is doing what. Data is only made for the West side of the state. The East side is often forgotten by the rest of the state.
- Plan relied on cooperation from state ,fed and local agencies, good process
- Informational paper about risk assessment. Ideas of how much the risk assessments cost and how much matching funds would be necessary.
- More data about DTMs, vegetation type, flood plains/ways, water courses, prevailing winds, grassland fires.
- Help finance this process.
- Give more detail on the FIRM, especially with the street network. It becomes difficult to use them with the public because the maps are so vague.

- Additional and more accurate data on regional and local risks, such as volcano
- Education. GIS mapping folks need to be involved in this process. People higher up need to know more about federal programs and their consequences
- No, don't really understand what a risk assessment process entails
- Money. This can help drive the federal and state agendas.

**Is there anything else you would like to share?**

- It may not be able to be helped, but many of the questions seem to be redundant when going over the risk assessment questions.
- Dan works for Dufer, Antelope, Culver, Metolious, Wasco, Arlington, Condom, Fossil, Spray and other small cities that are located on a water way. They all have a 1984 flood plain map. None of them have GIS capability. Having more detailed maps would be extremely useful
- Readily available technical information in a digitized form is very useful for small jurisdictions that do not have the capabilities or budgets to develop those data sets themselves. This would be very helpful.
- They would like to collect more information locally on fire hydrant and other EMS equipment locations.
- There is a strong need to get their maps updated. They have had a lot of changes to the river since the maps were updated. Having inaccurate maps negatively affects the City's ability to develop areas that are no longer in the flood plain. This has an economic impact on the City.
- The FIRMs are not detailed enough to tell the street level detail about which properties are subject to flooding.
- Similar survey done about 3 years ago, I think it was federal... paper survey. (Maybe FEMA?)