

Appendix H

2010 Preparedness and Mitigation Survey

This Appendix shows the findings from the 2010 on-line preparedness and mitigation survey and compares it to the results of the 2003 Household survey. As part of the review and update of the Natural Hazard Mitigation Plan, the City conducted a Preparedness and Mitigation survey on line. Understanding how the community views natural hazards is an important part of the natural hazard mitigation process. Examining people's attitudes about hazards may help to identify gaps in preparedness, and ways in which public/private coordination could be improved within the City.

Methods

The City developed the survey using some of the same questions used in the original household surveys conducted in 2003 by the Oregon Natural Hazards Workshop. The 2003 survey was adapted from one that had been implemented statewide as part of the development of the Partners for Disaster Resistance Strategic Plan.

The survey and its link were published in the City's Your City newsletter that is distributed to all residents in the City. It was also posted on the City's main page for a one-month period.

The survey addressed the following topics:

- Preparedness Activities
- Risk Reduction Activities
- Community Planning Priorities

There were 106 participants in the survey and where relevant, the results are compared with the results of the 2003 Household survey.

Limitations of Sampling Methodology

This survey identifies key issues about how residents perceive their risk from natural hazards in Beaverton; however, there are limitations to the data. There were only 106 respondents to the survey and as an open on-line survey there are no guarantees that they represent a good cross-section of all Beaverton residents. Additionally, it is a snapshot of perceptions at a single point in time and as such, survey responses may reflect external issues, such as terrorism threats or recent occurrences of natural hazards, like Katrina and Haiti. Since this survey was not targeted to specific demographics within the City's population, there is the potential that those who took the time to participate are likely to be better aware of the hazards and threats than the average resident and as such are likely to be better prepared.

Survey Findings

Level of Household Disaster Preparedness Activities

The on-line survey shows a big increase in the level of household disaster preparedness activities. Part of this can be attributed to the nature of the people who would typically take such a survey. Another contributing factor could be the City's CERT program which has trained over 700 people since it began in 2002.

Table H.1.a. Level of Household Disaster Preparedness Activities

In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, are unable to do, or feel are not necessary for you to be prepared.						
	Year	Have Done	Plan to Do	Not Done	Unable to Do	Not Necessary
Attended meetings or received written information on natural disasters or emergency preparedness?	2010	81%	3%	14%	1%	1%
	2003	37%	5%	57%	2%	N/A
Talked with members in your household about what to do in case of a natural disaster or emergency?	2010	67%	14%	11%	1%	7%
	2003	46%	20%	29%	5%	N/A
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the in event of a disaster?	2010	43%	36%	15%	1%	6%
	2003	26%	26%	44%	4%	N/A
Prepared a "Disaster Supply Kit" (Stored extra food, water, batteries, or other emergency supplies)?	2010	65%	25%	7%	1%	1%
	2003	39%	23%	37%	1%	N/A
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation	2010	59%	10%	28%	0%	2%
	2003	30%	5%	63%	2%	N/A

Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

Source: ONHW/CPW, Beaverton Household Risk Perception Survey, 2003

To target effective programs that will better prepare residents for emergency events, the amount of time a person is willing to commit to activities is important to understand. The 2003 survey results show that residents were not willing to spend a lot of time (more than 8 hours) preparing for natural hazards, nearly half of the respondents would be willing to spend between two and seven hours only. In the 2010 survey 55% of the respondents indicated that they are willing to spend more than 8 hours a year preparing for natural hazards and emergencies. Table H.2 shows a comparison of the two surveys.

Table H.2.

How much time (per year) are you willing to spend on preparing yourself and/or household for a natural disaster or emergency event?	2010* Survey	2003^ Survey
0 – 1 hour	3%	18%
2 – 3 hours	19%	35%
4 – 7 hours	14%	18%
8 – 15 hours	26%	13%
16+ hours	29%	11%
Other	8%	5%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

Table H.3 shows a comparison of the two surveys, of the most common steps that households have taken to prepare for natural disasters. Between the two surveys, smoke detectors, flashlights, batteries, fire extinguishers, and medical supplies were the top 4 common items stored among respondents. *Preparing a Disaster Supply Kit* moved up in the order in the 2010 survey; however, *Developed a reconnection plan* remained at the bottom. Other steps provided by respondents in the 2010 survey included:

- CERT Training
- HAM radio training/certification
- Pet plans and supplies
- Alternate plans and resources
- Disaster preparedness training

Table H.3.

Steps Respondents have taken to prepare for natural disaster	2010*	2003^
Developed a reconnection plan: Where to go and who to call	42%	21%
Discussed utility shutoffs	58%	28%
Have installed a smoke detector on each level of the house	95%	90%
Have stored a battery-powered radio	73%	57%
Have stored a fire extinguisher	73%	69%
Have stored batteries	80%	74%
Have stored flashlight(s)	92%	83%

Have stored food - enough for at least 3 days	75%	54%
Have stored medical supplies (First aid kit)	85%	63%
Have stored water - enough for at least 3 days	72%	49%
Made a fire escape plan	51%	33%
Other (please explain)	12%	3%
Prepared a Disaster Supply Kit	62%	21%
Received First Aid/CPR Training	68%	38%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003



Property and Financial Recovery

The need to have adequate provisions for financial and property recovery when natural disasters do occur is a necessary component of natural hazard preparedness. In the 2003 survey over 56% of respondents have earthquake insurance and in 2010 it was 58%. Only 87% of 2010 respondents indicated that they had fire insurance. Fire insurance was not a question asked in the 2003 survey.

Natural Hazard Risk Reduction

Risk reduction activities are those actions you can take to protect your home from natural hazard events, such as earthquakes, floods or wildfires. These can be nonstructural modifications or retrofits to protect a home's contents against damage, often at minimal cost (See Table H.4). It can also be structural retrofits to strengthen a home's structure or skeleton (See Table H.5). These types of modifications to a structure tend to be quite involved and generally require the expertise of a registered design professional (engineer, architect, or building contractor).

Table H.4

What nonstructural modifications for earthquakes have you made to your home?	2010*	2003^
Anchor bookcases, cabinets to wall	30%	17%
Secure water heater to wall	71%	47%
Install latches on drawers/cabinets	8%	8%
Fit gas appliances with flexible connections	40%	28%
None	18%	35%
Others (please explain)		

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

“Other” nonstructural modifications taken by respondents included:

- Installed a dog door so dog and cats can escape
- Purchase picture hooks with clasps that lock on the wire hangers
- Separated and isolated flammables, like propane bottles
- Removed falling hazards from above our beds

Table H.5

What structural modifications for earthquakes have you made to your home?	2010*	2003^
Secure home to foundation	16%	14%
Brace inside of cripple wall with sheathing	4%	4%
Brace unreinforced chimney	0%	3%
Brace unreinforced masonry & concrete walls and foundations	3%	3%
None	73%	44%
Other	15%	2%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

It should be noted that in both the 2010 and 2003 surveys, several of the “Other” comments related to the fact that the respondents were renters which limited them on the nonstructural activities that they could do and prevented them from being able to do any structural modifications.

While the percentages were closer in the 2010 survey the majority of the respondents in both surveys indicated that they did not consider natural hazards when they bought/moved into their current home (See Table H.6). In the 2010 there was a greater difference in the percentage of respondents that indicated that they would be willing to spend more money on a home that had features that made it more disaster resistant, compared to the respondents in 2003 (See Table H.7)

Table H.6

Did you consider the possible occurrence of a natural hazard when you bought/moved into your current home?	2010*	2003^
Yes	49%	37%
No	51%	63%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

Table H.7

Would you be willing to spend more money on a home that had features that made it more disaster resistant?	2010*	2003^
Yes	50%	42%
No	12%	43%
Don't Know	38%	15%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

Incentives

In both surveys respondents indicated that insurance discounts would motivate them to take additional steps to better protect their homes from natural disasters. Only a slightly fewer number also indicated that tax breaks or incentives would be a motivator (See Table H.8).

Table H.8

Which of the following incentives, if any, would motivate you to take additional steps to better protect your home from a natural disaster?	2010*	2003^
Insurance discount	81%	72%
Low interest rate loan	34%	26%
Lower new home construction costs	24%	20%
Mortgage discount	45%	37%
Tax break or incentive	80%	71%
None	5%	9%
Other	8%	2%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

Highest Motivation	2 nd Highest	3 rd Highest	4 th Highest
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Respondents also offered other potential incentives including:

- Have a list of certified architects or contractors who do this work for a reduced rate
- Individual consultations to explain what to do and how to go about getting it done
- Grants

Preferred Sources and Formats of Information

The creation of the Disaster Mitigation Act of 2000 expanded the importance of educating and informing the public on natural hazard preparedness. Because of this, it is important to understand the mechanisms for information dissemination to develop and implement effective outreach and education activities. Both survey findings show that the majority of respondents trusted utility companies most to provide information about home and family safety. The American Red Cross and government agencies also ranked high as trusted sources of information. Table H.9 shows the most trusted information sources for survey respondents. Other potential trusted sources provided by respondents included CERT, local businesses, and Home Owner Associations.

Table H.9

Who would you most trust to provide you with information about how to make your household and home safer from natural disasters?	2010*	2003^
News media	12%	29%
Government agency	66%	42%
Insurance agent or company	36%	33%
Utility company	73%	54%
University or research institution	45%	32%
American Red Cross	65%	45%
Other non-profit organization	49%	15%
Not sure	8%	9%
Other:	8%	7%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

Highest Motivation	2 nd Highest	3 rd Highest	4 th Highest
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Table H.10 shows the preferences respondents have for 12 different methods of communication. Mail, Internet, and Fact sheet/brochure were ranked in the top 4 of both surveys, with mail by percentage being the most consistent between the two sets of findings. Other mechanisms respondents provided in the 2010 survey included:

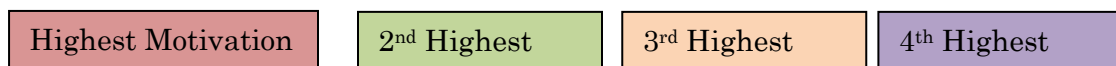
- FEMA/FEMA Courses
- Conversations with experts
- Home and Gardening shows
- City newsletter
- Small neighborhood meetings and farmers' market

Table H.10

What is the most effective way for you to receive information about how to make your household and home safer from natural disasters?	2010*	2003^
Newspaper stories	27%	44%
Newspaper ads	7%	9%
Television news	26%	53%
Television ads	16%	13%
Radio news	34%	29%
Radio ads	21%	9%
Schools	15%	13%
Outdoor advertisements (billboards, etc.)	12%	7%
Books	20%	11%
Mail	51%	53%
Fire Department/Rescue	52%	29%
Internet	77%	30%
Fact sheet/brochure	61%	42%
Chamber of Commerce	9%	5%
Public workshops/meetings	45%	13%
Magazine	13%	10%
University or research institution	23%	12%
Other (please explain)	8%	4%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003



Community-wide planning goals and implementation strategies

Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. To help Beaverton identify any changes in citizens' priorities for planning for natural hazards and with the types of strategies that they will support to reduce the communities' risk. Table H.11 illustrates generally how important respondents feel each goal statement is and provides a comparison between the two sets of survey findings. In both 2003 and 2010 "Protecting Critical Facilities" received the highest combined ranking with 99% of the respondents in 2010 and 98% of respondents in 2003 ranking it either "Very Important" or "Somewhat Important."

Table H.11

The following statements will help determine citizen priorities for planning for natural hazards. Please tell us how important each one is to you.						
	Yr	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	2010	39%	39%	18%	4%	1%
	2003	58%	30%	8%	4%	1%
Protecting critical facilities (e.g. transportation networks, hospitals, fire stations)	2010	93%	6%	2%	0%	0%
	2003	86%	12%	2%	1%	0%
Preventing development in hazard areas	2010	56%	29%	14%	1%	0%
	2003	45%	35%	17%	2%	1%
Enhancing the function of natural features (e.g. streams, wetlands)	2010	36%	32%	26%	5%	2%
	2003	35%	33%	25%	6%	2%
Protecting historical and cultural landmarks	2010	17%	38%	30%	10%	4%
	2003	23%	38%	28%	9%	3%
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	2010	75%	21%	4%	0%	0%
	2003	42%	38%	16%	2%	2%
Protecting and reducing damage to utilities	2010	75%	21%	4%	0%	0%
	2003	65%	27%	7%	1%	0%
Strengthening emergency services (e.g. police, fire, ambulance)	2010	66%	23%	9%	1%	0%
	2003	68%	23%	8%	1%	1%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

There are a number of activities that a community can undertake to reduce the risk from natural hazards. These activities can be both regulatory and non-regulatory. Table H.12 shows respondents' general level of agreement regarding the community-wide strategies included in the survey.

The following statements will help determine citizen priorities for planning for natural hazards. Please tell us how important each one is to you.							
	Yr	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not Sure
a. I support a regulatory approach to reducing risk	2010	14%	37%	30%	11%	5%	4%
	2003	15%	38%	24%	13%	5%	6%
b. I support a non-regulatory approach to reducing risk	2010	23%	38%	25%	8%	2%	5%
	2003	19%	38%	26%	10%	1%	6%
c. I support a mix of both regulatory and non-regulatory approaches to reducing risk	2010	35%	44%	18%	1%	0%	2%
	2003	22%	42%	21%	7%	3%	5%
d. I support policies to prohibit development in areas subject to natural hazards	2010	42%	36%	15%	5%	1%	2%
	2003	32%	43%	18%	4%	2%	2%
e. I support the use of tax dollars (federal and/or local) to compensate land owners for not developing in areas subject to natural hazards	2010	5%	21%	28%	26%	13%	7%
	2003	6%	18%	25%	30%	17%	3%
f. I support the use of local tax dollars to reduce risks and losses from natural disasters	2010	18%	55%	21%	2%	4%	1%
	2003	7%	51%	27%	9%	4%	2%
g. I support protecting historical and cultural	2010	8%	43%	34%	13%	2%	0%

structures	2003	10%	39%	39%	8%	4%	0%
h. I would be willing to make my home more disaster-resistant	2010	36%	52%	9%	0%	0%	3%
	2003	13%	59%	23%	1%	1%	3%
i. I support steps to safeguard the local economy following a disaster event	2010	40%	49%	9%	1%	1%	0%
	2003	16%	62%	19%	2%	1%	1%
j. I support improving the disaster preparedness of local schools	2010	59%	36%	5%	1%	0%	0%
	2003	33%	52%	12%	3%	0%	0%
k. I support a local inventory of at-risk buildings and infrastructure.	2010	31%	59%	7%	3%	0%	0%
	2003	17%	53%	23%	4%	2%	2%

* Source: City of Beaverton, Preparedness and Mitigation Survey, 2010

^Source: ONHW/CPW, Beaverton Household Risk Perception Survey, January 2003

Table H.12 illustrates that in 2003 85% of the respondents strongly agree or agree that they support improving the disaster preparedness of local schools (j.) and in the 2010 survey it was 95%. Strong support was also shown in both surveys for:

- Policies to prohibit development in areas subject to natural hazards
- Respondents making their homes more disaster-resistant
- Steps to safeguard the local economy following a disaster event
- Local inventory of at-risk buildings and infrastructure.

