

**OFFICE OF EMERGENCY MANAGEMENT  
DISASTER & EMERGENCY PREPAREDNESS SURVEY**

**April 13, 2006**

**Table of Contents**

<b>Introduction.....</b>	<b>3</b>
<b>Research Objectives.....</b>	<b>4</b>
<b>Methodology .....</b>	<b>6</b>
<b>Survey Area .....</b>	<b>10</b>
<b>Respondent Profile.....</b>	<b>11</b>
<b>Overall Level of Comfort of Residents with Emergency or Disaster .....</b>	<b>13</b>
<b>Type of Disaster that Concerns Residents the Most .....</b>	<b>16</b>
<b>Resident Perception of Preparedness for Natural or Man-Made Disaster .....</b>	<b>17</b>
<b>Resident Perceptions of Worst Possible Type of Emergency.....</b>	<b>18</b>
<b>Resident Frequency of Engaging in Basic Preparation Activities.....</b>	<b>20</b>
<b>Reasons for Lack of Engaging in Basic Preparation Activities .....</b>	<b>21</b>
<b>Resident Preparedness Analysis-- Ability to Shelter in Place.....</b>	<b>22</b>
<b>Preparedness Analysis—Number of Days Resident can Shelter in Place .....</b>	<b>23</b>
<b>Preparedness Analysis-- Perception of the Ability to Shelter in Place .....</b>	<b>25</b>
<b>Preparedness Analysis-- Ability to Evacuate .....</b>	<b>27</b>
<b>Preparedness Analysis-- Perception of the Ability to Evacuate .....</b>	<b>28</b>
<b>Perception of Greatest Difficulty – Sheltering in Place or Evacuating.....</b>	<b>30</b>
<b>Preparedness Analysis-- Workplace Emergency Preparedness.....</b>	<b>32</b>
<b>Preparedness Analysis-- Perception of Workplace Preparedness.....</b>	<b>33</b>
<b>Comfort Level with Child Remaining at School during an Emergency .....</b>	<b>35</b>
<b>Emergency Preparedness at Child’s School.....</b>	<b>37</b>
<b>Awareness of Programs for Reuniting Parents with Children.....</b>	<b>38</b>
<b>Plan to Pick up Children .....</b>	<b>39</b>
<b>Incidence of Pet Ownership .....</b>	<b>40</b>
<b>Planning for Pet Care .....</b>	<b>41</b>
<b>Home Evacuation Pet Planning .....</b>	<b>43</b>
<b>Neighborhood Evacuation Pet Planning.....</b>	<b>45</b>
<b>Community Disaster Preparedness Participation.....</b>	<b>47</b>
<b>Perceived County Preparedness beyond Police and Fire Services.....</b>	<b>48</b>
<b>Awareness of Community, Neighborhood, or Church Preparedness Activities.....</b>	<b>49</b>
<b>Type of Information that Makes Respondents Feel Prepared .....</b>	<b>51</b>
<b>Availability of Preparedness Materials and Information .....</b>	<b>52</b>
<b>Interest in Receiving an Emergency Preparedness Kit.....</b>	<b>54</b>
<b>Preparedness Promotion and Advertising Recall .....</b>	<b>56</b>
<b>Preparedness Action Drivers and Motivators.....</b>	<b>58</b>
<b>Identification of Leaders within the Household.....</b>	<b>59</b>
<b>Awareness of 3 Days, 3 Ways.....</b>	<b>60</b>

**Likelihood to Utilize 3 Days, 3 Ways..... 61**  
**Conclusions..... 63**  
**Phase II Research Appendix..... 65**  
**Phase III KCOEM Survey Questionnaire ..... 75**

## *Introduction*

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With the intention of understanding the nature and scope of citizen preparedness, King County OEM in conjunction with Pierce and Snohomish Counties retained Hebert Research to design a research plan which would identify current preparedness activities and areas of preparedness opportunity.

While previous research efforts established overall preparedness benchmarks, the current phase aims to update those benchmarks and identify new initiatives to increase resident awareness of basic preparedness activities.

Specifically, the previous research identified area residents who felt at least somewhat comfortable when considering the possibility of disaster or emergency. Research findings indicated three primary causes for the relative comfort residents experienced: First, some respondents report that they felt prepared for disaster or emergency and thus have no reason to fear one. Second, some respondents stated they don't worry about events that they feel are beyond their control. Finally, some residents have the "out of sight, out of mind" perspective in which they are unconcerned because they simply don't think about disaster.

Phase III research will track overall preparedness and identify additional insight which can be used to create and disseminate messaging that compels area residents to plan for natural or man-made disasters and emergencies. By acting as a guide for preparedness initiatives this research may help county and city managers plan for future emergencies.

### Study Sponsors



*Office of Emergency Management  
Pierce, King, Snohomish Counties*

*Emergency Preparedness Research  
Phase III- 2006 Report*

## *Research Objectives*

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Phase III research sought to update or address the following objectives during the course of research and analysis:

1. Update from previous phases the level of evacuation preparedness within the tri-county area and determine whether this level of preparedness is consistent with resident perceptions of preparedness
2. Continue to define and understand the degree to which residents of King, Snohomish and Pierce Counties were prepared to *shelter in place* in the event of an emergency and compare this level of preparedness with their perception of *shelter in place* preparedness
3. Update previously established benchmarks designed to track evacuation preparedness, workplace preparedness and *shelter in place* preparedness
4. Identify how many days residents within the tri-county area are able to *shelter in place* without assistance
5. Update workplace preparedness benchmarks and determine whether there are significant differences between Pierce, King, and Snohomish Counties
  - a. Understand how comfortable parents are with their children sheltering in place at school in the event of an emergency
  - b. Measure parent awareness of emergency procedures and policies at school
6. Measure levels of preparedness amongst pet owners
7. Update what residents have done to prepare to *shelter in place* or evacuate in the event of an emergency
8. Determine respondent interest in receiving an emergency kit when buying a new home
9. Continue to define and better understand ideal locations for educational information regarding disaster and emergency preparedness
  - a. Identify the message elements and communication channels that residents cite when they think of where to go to get preparedness information and what they should know to be prepared
  - b. Identify specific segments of the tri-county population that are especially in need of preparedness education

- c. Measure the likelihood of the 3 Days, 3 Ways website to motivate planning activities

## *Methodology*

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The following is a detailed description of the methodologies used to update the Phase III tri-county study and the techniques that were applied during the course of analysis.

Phase III research consisted of updating previously conducted quantitative research and identifying and examining points of convergence and tension between citizens within each geographical area surveyed.

The balance of this method section describes procedures that were applied to the telephone survey of Pierce, King, and Snohomish County residents conducted during March of 2006.

### **Sample Frame and Sampling Procedure**

Following the previously established sampling frame, a stratified probability sampling procedure was applied to identify residents of Pierce, King, and Snohomish Counties to participate in the survey. Residents were selected from the total population of households that had listed telephone numbers. Hebert Research interviewed a total of 529 residents between February 23rd and March 7th, 2006. The response rate—the proportion of those who were invited to participate that actually did so—was 46.7%.

### **Research Controls**

Hebert Research applies a variety of controls to help ensure that the research and analysis offered is of the highest quality that can be provided within the research budget. The primary research controls that were employed in this study include the following:

#### *Internal Peer Review*

Hebert Research uses a “CERA” process—similar to academic peer review—to ensure that each study meets or exceeds rigorous quality control standards. Through this process, both junior and senior analysts review each analysis and offer critical feedback designed to reduce error and heighten the ability of the research findings to be generalized across any given segment.

#### *Statistical Weighting*

Statistical weighting is a technique that is commonly used in survey research to compensate for sampling and response error. Statistical tests were run to identify demographic factors that were associated with variance and then appropriate sample parameters were compared with known population parameters. Because very recent demographic data was not available through the U.S. Census, demographic data from Claritas, Inc. (an established and widely used vendor of demographic data) were relied upon to identify population parameters. Demographic sample parameters were compared with population parameters and adjustments were made to account for response bias. In this survey—and as is typically the case with survey research—women and those above 55 responded to the request to participate in the survey at a rate that exceeded their actual presence in the population. Following preliminary analysis, it was concluded that such

weighting was especially important given the fact that a significant amount of variance was associated with age and gender. In other words, responses often varied between men and women, age segments, and sub-regions within the tri-county area. To compensate for potential sampling bias, “strata weights” were created and applied to the sample to ensure that men and women as well as residents of various age groups were properly represented within each of the geographic strata that are compared in the analysis. This helps ensure that the overall sample is representative of the tri-county area but also that each sub-region (i.e., the City of Seattle, King County (excluding Seattle), Pierce County and Snohomish County) is properly and proportionately representative. Such a procedure allows for a high level of statistical precision and comparison. In the final weighting analysis, it was concluded that the sample was representative of the population within the following critical parameters:

1. Region and sub-region
2. Gender
3. Age

#### *Research Assistant Training and Internal Controls*

Hebert Research uses experienced Research Assistants to conduct telephone interviews. Each Research Assistant is trained when they begin working with the firm and they receive additional project-specific training at the beginning of each study. This helps to ensure that experienced and competent staff is involved in all phases of the project, thereby reducing the probability of error.

Research Assistants are supervised by a highly experienced interviewer who oversees them throughout the data collection process. All data collection activities are overseen by the Director of Operations who keeps the Senior Research Analyst, Research Director, and President apprised of the status of the project. A Research Analyst regularly reviews incoming data to ensure that they are accurate to the best of the firm’s knowledge and are being gathered in a manner that is consistent with quality control standards.

Moreover Research Assistants, Junior Analysts, and others within the firm remain “blind” (i.e., unaware) to hypotheses that have been developed by Senior Analysts, Directors and the President. This ensures that conscious and unconscious bias does not have an effect on the data-collection process.

#### **OEM Preparedness Measures**

During Phase II research, three sets of questions were created to benchmark and track the degree to which residents were able to [1] shelter-in-place [2] evacuate or [3] stay safe in the workplace during disaster or emergency. Values between 1 and 3 were pre-assigned to specific behaviors by OEM staff. The scores for each respondent were aggregated into an index to be categorized and used to compare *actual* preparedness to ratings of *perceived* preparedness in each question following activity participation.

Phase III research seeks to update these preparedness measures and identify any trends or data consistent with previous study findings.

### **Multivariate Analysis**

Statistical analysis is commonly conducted using multivariate techniques. The Senior Analyst relied primarily on three statistical tests, the Chi Square, ANOVA (i.e., Analysis of Variance) and Pearson Correlation coefficient to identify statistically reliable differences between segments and variables. The Chi-square test was used with categorical variables such as place of residence. By contrast, the ANOVA test was used with continuous data such as the three preparedness indexes that were created for the analysis. Multivariate analysis was conducted to [1] identify differences between individuals within the following groups and [2] associations between these groups and variables of interest.

- Geographic area
- Gender
- Age
- Level of preparedness to *shelter in place*
- Level of evacuation preparedness
- Level of workplace preparedness

When differences between groups or variables were significant, the level of significance was reported as a “P” value. These values are the statistics that are commonly used in hypothesis testing and are relied upon to determine the reliability (i.e., the degree to which one can be certain) of a given finding or difference. This value describes the probability that an effect—for instance a difference between gender—occurred due to chance or error. Thus, *low P values (i.e., those at or below .05) are indicative of high levels confidence and establish that the effect being observed can be relied upon in decision-making.* P values of .000 are the lowest commonly reported in the social sciences and thus are indicative of a very high level of decision-making reliability.

### **A Note on Correlations and Measures of Association**

“Cramer’s V” is a statistical test that measures the degree of association between variables. Where significant and appropriate, Cramer’s V coefficients are referenced to describe the strength of the relationship between variables (e.g., preparedness actions and county of residence). Such tests are similar to the Pearson correlation coefficient which is also utilized in this analysis. The higher the coefficient of association or correlation, the stronger the relationship between variables and, therefore, the greater the probability that one of the variables being examined is causing an effect on the other.

### **Margin of Error**

The margin of error for the resident survey, as a whole, is  $\pm 4.3\%$  at the 95% confidence level.

Hebert Research has made every effort to produce the highest quality research product within the agreed specifications, budget and schedule. The client understands that Hebert Research uses those statistical techniques which, in its opinion, are the most accurate possible. However, inherent in any statistical process is a possibility of error, which must be taken into account in evaluating the results. Statistical research can predict resident



reaction and external conditions only as of the time of the sampling, within the parameters of the project, and within the margin of error inherent in the techniques used.

Evaluations and interpretations of statistical research findings and decisions based on them are solely the responsibility of the client and not Hebert Research. The conclusions, summaries and interpretations provided by Hebert Research are based strictly on the analysis of the data gathered, and are not to be construed as recommendations; therefore, Hebert Research neither warrants their viability nor assumes responsibility for the success or failure of any client actions subsequently taken.

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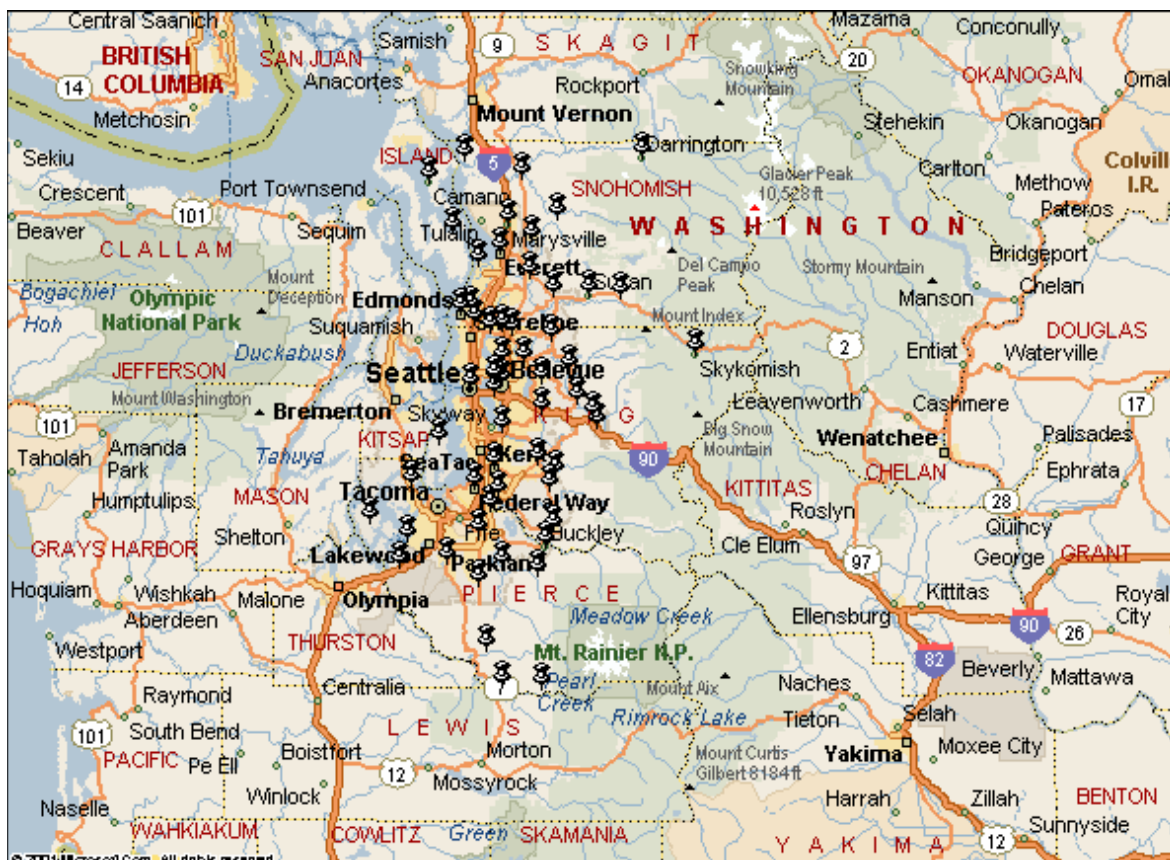
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## Survey Area

The map below indicates the study area. Each marker represents one zip code that was included in the study. Note that residents of each of these zip codes are included in the sample and that statistical weighting was applied to ensure that the four primary regional strata (City of Seattle, Pierce, King, and Snohomish Counties) are proportionately represented in the overall sample.



## *Respondent Profile*

The following tables describe the demographic profile of survey respondents. All respondents live within Pierce, King and Snohomish Counties. As noted in the methodology section, statistical analysis was conducted to determine whether the sample was representative of the population and statistical weighting was used to make adjustments where appropriate. The weighted age, region, and gender sample parameters are compared with population parameters to illustrate the fact that the sample is representative of the population within these critical parameters. The population proportions within each table represent the distribution within the overall sample frame of Pierce, King, and Snohomish counties (i.e., the “tri-county” area).

Region	Population	Sample
Pierce County	22.7%	22.5%
Snohomish County	19.3%	19.5%
Seattle	21.1%	25.5%
King County (excluding Seattle)	37.0%	32.5%

Age	Population	Sample
18-24	12.2%	12.9%
25-34	18.9%	17.9%
35-44	21.6%	21.8%
45-54	20.3%	20.6%
55-64	13.3%	13.5%
65+	13.7%	13.3%

Gender	Population	Sample
Male	49.9%	49.7%
Female	50.1%	50.3%

Marital Status	
Single (include divorced/widowed)	29.2%
Married (include committed relationship)	65.6%
Refused	5.2%

Ethnicity	
White/Caucasian	80.0%
Hispanic or Latino	1.6%
Asian American/Pacific Islander	3.0%
Native American	4.0%
African American	1.1%
Other	2.2%
Don't know	1.0%
Refused	7.0%

Type of Residence	
Single Family detached home	73.2%
Apartment, condo, or town house	18.6%
Mobile/manufactured home	2.5%
Other/Refused	5.7%

Live In A High Rise Building	
Yes	2.7%
No	97.3%

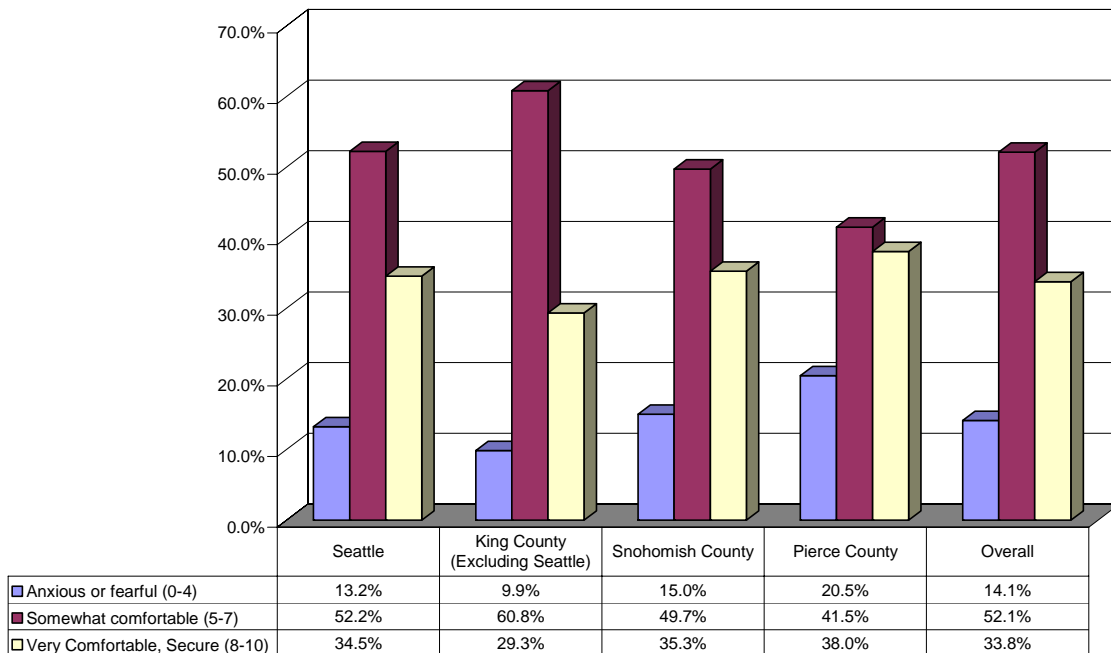
Employment Status	
Employed	65.3%
Unemployed	18.2%
Retired	16.0%
Refused	0.5%

Type of Work Facility	
Free standing building	57.6%
A building containing multiple businesses	16.4%
Mostly work outside, not in a building	9.0%
Work at home	6.8%
A manufacturing plant	4.9%
A high-rise office building	4.5%
A temporary or portable structure	0.7%

## *Overall Level of Comfort of Residents with Emergency or Disaster*

Respondents were asked to rate their overall comfort or anxiety level when thinking of a general disaster or emergency. Responses were categorized using a scale of 0 to 10, where 0 meant *extremely anxious or fearful* and 10 meant *extremely comfortable or secure*. As indicated below, the majority (52.1%) of respondents gave ratings of 5 to 7, indicating that they are at least *Somewhat comfortable*. The most frequently given rating by the respondents overall was a 7, encompassing almost a quarter (22.0%) of the respondents. The overall average (mean) rating was 6.52. These findings indicate that tri-county residents are relatively comfortable with the possibility of a major event.

**Overall Level of Comfort**



### **Statistical Analysis**

With the exception of preparedness to *shelter in place*, statistical testing established that there are no significant differences between demographic segments. There were significant differences between the preparedness groups “not prepared”, “somewhat prepared”, and “very prepared” concerning the ability to *shelter in place* ( $p = .000$ ). The mean scores of each level of preparedness are described in the following table. Note that the “not prepared” group has the lowest mean score, therefore, is the most anxious of the three groups.

Level of Preparedness to "Stay in Place"	Mean
Not prepared (0 to 3)	6.16
Somewhat prepared (4 to 7)	6.24
Very prepared (8 to 10)	7.06

### **Qualitative Analysis**

Respondents who gave ratings between 0 and 4 (indicating anxiety and fear) and 8-10 (indicating comfort and a sense of security) were asked to elaborate on why they had given this rating response.

#### **Anxious or Fearful (0-3)**

Respondents who had given a 0 to 3 most often responded that their geographic location is one fostering earthquakes, volcanic eruptions, and flooding. Many of these responses were reflective on past natural disasters of this sort and relayed a feeling that similar events are due in the near future.

- *Even the earthquake we had back then, four or five years ago was not that big but it was startling and we're supposed to have a bigger one.*
- *If you follow the news at all, 6 or 7 magnitudes on the richer scale earthquakes have been presented along with what might happen with Mt. Rainier, Mt. Baker and Mt. Saint Helens and the possibility of those mountains erupting could happen in another 500 years and we have to be prepared.*
- *Recent earthquakes. Lack of Rainier blowing within the past 2,000 years. The flood possibilities coming through the Orting Valley.*

In addition, some of the respondents indicated feeling unprepared for a disaster or emergency. In coordination with the previously mentioned theme, a majority of these respondents were more concern with *natural* disasters and emergency situations.

- *Because I don't think my family and my whole neighborhood is prepared.*
- *Because with an earthquake I'm not sure if one would happen in this lifetime, but we should be prepared.*
- *Because we're not as prepared as we ought to be; we don't have all the supplies that we ought to have.*

### **Comfortable or Secure (8 to 10)**

Those who had given an 8 to 10 response to their feelings when thinking of a disaster or emergency most commonly replied that being prepared for these situations was the cause for their comfort and security.

- *I have an emergency kit in the car, house, and work. I work at a hospital so I am well prepared.*
- *Because disasters are bound to happen. We as a community have made some level of preparation.*
- *Because I am prepared to a degree; I have food, water, medical and I live in the country, not in an apartment building.*

Other common responses to this question are that the respondent is simply not afraid, or feels no justification in causing concern for these types of events. Some remark that the ultimate consequences are out of hand and that preparation can only do so much.

- *I don't live here in fear. I am a Christian and I don't think about it daily, regardless if we live in a high risk attack area. If it comes, it just comes and sometimes you can't do anything to really prepare for it.*
- *I'm not very fearful in disaster emergencies.*
- *I'm not all that all concerned about a disaster or emergency. Why worry about it, it's not going to make any difference.*

## *Type of Disaster that Concerns Residents the Most*

Respondents were introduced to two types of disasters or emergencies – *natural* or *man-made* – and were given examples of each in order to standardize meaning amongst respondents. Concerning these two types of disasters, respondents were then asked which causes them the most concern. As the following table indicates, respondents are slightly more concerned with natural than man-made disasters.

Disaster Type	Seattle		King County (excluding Seattle)		Snohomish County		Pierce County		Overall	
	2006	2005	2006	2005	2006	2005	2006	2005	2006	2005
Natural	43.7%	44.3%	56.5%	26.7%	46.8%	27.2%	40.6%	24.4%	47.6%	30.0%
Man-made	50.5%	43.6%	30.4%	56.9%	42.6%	55.1%	49.7%	59.4%	42.4%	54.4%
Both concern me equally	2.4%	6.7%	11.3%	12.2%	6.9%	11.8%	8.3%	11.9%	7.5%	10.8%
Neither one concerns me	3.4%	5.4%	1.8%	4.2%	3.7%	5.9%	1.4%	4.4%	2.5%	4.7%

### **Statistical Analysis**

There were statistically significant differences between Seattle, Pierce, King and Snohomish Counties ( $p = .003$ ; Cramer's  $V = .124$ ). Seattle residents are significantly more concerned about *man-made* disasters than residents in other areas. The Cramer's  $V$  of .112 is a relatively strong association, suggesting that geographic location is a cause of variance in responses.

There is also a significant difference between age groups. The 18-24 segment shows a higher level of concern about *man-made* events than the others, whereas the 25-34 age group shows greater concern than others about *natural* occurrences. The Cramer's  $V$  of .159 is strong, indicating that concern can be attributed to age.

Type of Disaster	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 or older
Natural	32.3%	64.8%	53.8%	48.1%	41.2%	40.9%
Man-Made	67.7%	25.3%	35.6%	42.3%	45.6%	47.0%



# *Resident Perception of Preparedness for Natural or Man-Made Disaster*

## **Qualitative Analysis**

Respondents were asked if they feel more prepared to deal with a natural or man-made disaster and “why”. Similar to the responses found elsewhere in this report, a majority of the respondents feel more prepared to deal with a *natural* disaster. The most frequently stated reason for these feelings is the ability to prepare for such a disaster or emergency.

- *I have the equipment and am ready for such as an earthquake or power outage or floods*
- *I'm best prepared for a natural disaster. This household has an emergency food and water supply. We could hold up here for several days. The emotional level is more comfortable with a natural one. You don't have the whole repercussion and anger issues, if you had a terrorist attack.*
- *I'm well prepared with an earthquake. We have earthquake insurance which is a 10% deductible and I live in a condo and if that building gets destroyed as a result, or gets totally damaged from a disaster, that insurance covers the whole building.*
- *It would probably be a flood or earthquake because I can escape somewhere and I have a box with all types of stuff in it like a can opener and flashlights and I live in a wood built like home so I don't worry about my house falling down.*
- *We'd been making preparations. We have emergency supplies in the house and done emergency preparation in the neighborhood.*

Responses citing *both* and *neither* comprised about a quarter of the responses. Those who feel prepared for both seem to feel that preparation for natural and man-made disasters is similar and attainable. Most of those who feel prepared for neither feel overwhelmed by the unknown and consider preparation to be useless.

- *Neither one. We haven't really prepared ourselves for either one. It's so unpredictable, it's hard to know.*
- *Both of them; I have a 72 hour pack if I have to leave, a stockpile of wood, a year's supply of groceries and I always keep my tank half full.*
- *I'm not prepared for either because it's an unknown and I don't think you can prepare for either one of those.*

Those respondents feeling prepared for *man-made* disasters were seldom, however a theme of controllability with this type was frequent. Many of these respondents viewed the power of nature to be overwhelming, while man-made disasters or emergencies could be controlled or managed more successfully.

- *Man-made because we have more control over it. We have the National Guard and the police.*
- *Man-made; you can't do anything about a natural disaster. You can't stop it. You can't stop floods, earthquakes and tornados*
- *I would guess man-made. I suppose it would be on a smaller scale with more options to avoid involvement.*

## *Resident Perceptions of Worst Possible Type of Emergency*

A list of possible emergencies was introduced to respondents before they were asked which they considered to be the worst possible type. As indicated below, earthquakes are considered to be the worst possible type of emergency by residents of each county. Other responses included fires and a bomb or nuclear explosion due to warfare.

Event	Seattle		King County (excluding Seattle)		Snohomish County		Pierce County		Overall	
	2006	2005	2006	2005	2006	2005	2006	2005	2006	2005
Earthquake	41.9%	56.7%	63.0%	39.2%	48.5%	43.1%	44.0%	25.0%	50.5%	40.5%
Terrorist attack	25.0%	16.7%	4.5%	23.9%	8.6%	19.3%	14.8%	15.6%	12.8%	19.6%
Chemical spill or other type of industrial accident	10.9%	5.0%	8.3%	3.3%	5.9%	9.2%	4.2%	8.6%	7.6%	6.0%
Winter storm	0.0%	0.0%	1.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.3%	0.2%
Flooding	0.0%	0.0%	0.4%	2.9%	0.5%	2.8%	6.2%	2.3%	1.6%	2.1%
Disease outbreak or epidemic	0.0%	1.7%	0.4%	2.4%	5.1%	1.8%	1.6%	1.6%	1.5%	1.9%
Tsunami	2.6%	0.0%	0.0%	1.9%	3.1%	1.8%	2.3%	0.0%	1.8%	1.1%
Meth lab in neighborhood	2.9%	0.0%	0.0%	1.0%	0.0%	0.9%	0.0%	1.6%	0.7%	0.9%
Volcanic eruption	1.0%	2.0%	6.7%	4.8%	2.5%	0.9%	11.6%	18.8%	5.5%	6.5%
Other	12.4%	14.0%	15.2%	12.4%	18.8%	13.8%	9.3%	15.6%	13.9%	13.3%
Don't know	3.3%	8.0%	0.4%	4.8%	7.0%	4.6%	5.9%	7.0%	3.7%	5.7%
None	0.0%	0.0%	0.0%	2.9%	0.0%	1.8%	0.0%	3.9%	0.0%	2.3%

### **Statistical Analysis**

There were statistically significant differences between geographic segments ( $p = .000$ , Cramer's  $V = .267$ ). King County respondents are more likely to feel that an *earthquake* is the worst possible type of emergency (63.0%) while Seattle residents were more likely than those of other geographic areas to cite *Terrorist Attacks* as the worst type of disaster (25.0%).

In addition to differences in geography, respondents of different ages also reported statistically significant different opinions concerning the worst type of emergency. As indicated in the following table, respondents between the ages of 18 and 24 were significantly less likely to feel that an earthquake is the worst type of disaster. A Cramer's  $V$  value of .190 and a P Value of .000 suggest a strong probability that these differences can be attributed to age.

Type of Emergency	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 or older
Earthquake	28.8%	55.6%	55.0%	54.3%	52.9%	49.3%

Differences in responses can also be caused by differences in gender. By utilizing categorical analysis, the following differences between male and female respondents have been identified. Females are significantly more likely to name an earthquake as the worst type of emergency, while males are more likely to name a terrorist attack. A Cramer's V of .237 and P Value of .000 suggest a very strong relationship between gender and feelings about the worst type of emergency.

Type of Emergency	Male	Female
Earthquake	46.1%	53.9%
Terrorist Attack	63.8%	36.2 %

Those whose households are *not prepared* to evacuate to another location are significantly more likely to mention an earthquake as the worst type of emergency (Cramer's V = .283; P = .000).

Type of Emergency	Not Prepared (0 to 3)	Somewhat Prepared (4 to 7)	Very Prepared (8 to 10)
Earthquake	54.9%	53.1%	40.7%

Those who consider their place of work to be *very prepared* for a man-made disaster are more likely to consider an earthquake to be the worst type of emergency (Cramer's V = .253; P = .000).

Type of Emergency	Not Prepared (0 to 3)	Somewhat Prepared (4 to 7)	Very Prepared (8 to 10)
Earthquake	45.0%	43.3%	60.3%

## ***Resident Frequency of Engaging in Basic Preparation Activities***

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In question 12 of the resident survey, respondents were asked which activities they had implemented or dedicated to preparedness. As indicated in the table, most respondents (69.6%) indicated having gathered home supplies such as water, food, and blankets. Ninety-five percent (95.1%) of the respondents had participated in at least one preparedness activity.

<b>Preparedness Activities</b>	<b>Percentage</b>
Gathered home supplies such as water, food, and blankets	69.6%
A home emergency escape route	62.6%
A household communications plan	55.0%
A workplace escape route	51.2%
Have secured household items from falling	47.1%

**Note:** Percentages do not sum to 100% due to multiple responses possible for each respondent.

## *Reasons for Lack of Engaging in Basic Preparation Activities*

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Those respondents who had reported implementing none of the preceding activities toward disaster preparedness were asked the following question.

### **What has kept you from accomplishing any of these plans?**

Although the responses as to why respondents have refrained from accomplishing disaster preparedness varied in nature, the most common response related to a lack of concern that something like this is going to happen. Some respondents remarked as having no fear, while others feel that something like this is simply not going to happen. These responses all had the idea that the prioritization of disaster preparedness is low compared to other things one might be concerned with on a daily basis.

- *Because I don't think it's going to happen; I don't think we'll have a disaster of that magnitude. If it's that big, it really doesn't matter how prepared you are. You could never be prepared enough.*
- *I've just not been very concerned about a disaster happening.*
- *Lazy. It's just inertia. There are other things that take priority.*
- *Well we don't pay attention to this; nothing ever happens. We should pay attention but I don't.*
- *A false sense of security...because we've had the power go out before, and we have utilized our wood stove. We also feel somewhat prepared because we stocked up on a variety of lights, like Coleman lamps and kerosene lamps.*
- *Because we've been through earthquakes here, you know, you just roll with the flow.*
- *Well, I should have kept up with it, like I was doing. When I was working, they told us to be prepared for anything. I was completely prepared for anything. I had everything ready, right there by the door. Btu like I said, since I moved here, I lost track of it. I know it's no excuse for it, because you never know when it's going to happen.*
- *Being unprepared and unknowledgeable of what could happen.*
- *Denial and procrastination.*
- *Effort. I'm too lazy. I don't have a list. I would like a brochure.*
- *I am not worried about it. I'm old and am going to die anyways.*
- *Lack of concern; I don't think there's a disaster that will affect me that I cannot handle.*
- *We never think about it. It slips our mind. We don't live in an area of natural disaster, so we don't have to think about it. We don't really have a need for it. There are no floods....*
- *I've never had a problem. It's easier to watch on TV than to do yourself. I don't live in fear. I'm not a Republican.*

## ***Resident Preparedness Analysis-- Ability to Shelter in Place***

Residents were asked what actions they had undertaken within their household to be prepared to *shelter in place* in the event of an emergency or disaster. Each response had a pre-assigned value between 1 and 3 established by OEM staff. Activities with a 1 are considered to be consistent with a low level of preparedness while those with a 2 are associated with a mid-level of preparedness and those with a 3 are indicative of a high level of preparedness. Note that the activities with high index values are also low incidence behaviors and the more common activities are associated with lower index scores.

OEM Value	Preparedness Activity for "Sheltering in Place"	2006 Percentage	2005 Percentage
1	Taken a class for training on first aid, CPR or disaster preparation	74.3%	66.5%
1	Know how to turn off utilities	60.9%	71.8%
2	Discussed disaster or emergency preparedness with household members	66.1%	53.4%
2	Have out of area contact for all household members to contact when separated	60.7%	57.0%
1	Developed a household escape plan	56.9%	53.5%
3	Have an accessible household remaining in place supply kit containing water, food, radio and personal need items	25.4%	23.6%
2	Have secured household objects from falling	45.0%	43.1%
3	Have designated a particular room in the dwelling to stay in during a disaster or emergency	20.3%	19.9%
3	Have an All Hazard Tone Alert radio	11.9%	9.9%

**\*Percentages may equal more than 100% due to the acceptance of multiple responses**

## ***Preparedness Analysis—Number of Days Resident can Shelter in Place***

Respondents were asked how many days their household could *shelter in place* without assistance with water, food, or basic needs. The majority (60.2%) reported that they could *shelter in place* for between three and seven days, while a total of 90.6% said they could last three days or longer. The average number of days that respondents stated they could *shelter in place* was 11.27.

Number of Days	Percentage
0 to 2	9.4%
3 to 7	60.2%
8 to 14	14.8%
15 to 21	4.3%
22 to 30	6.7%
31 +	4.6%

### **Statistical Analysis**

Analysis of Variance established there are statistically significant differences between regions ( $p=.023$ ). Consistent with other measures described in this report, King County residents and, in particular, Seattle residents are less prepared than the residents of Pierce and Snohomish Counties. Note, however that all of the means are well above the critical three day threshold.

Residents by Region	Average (mean) number of days
Seattle	8.0
King County (Excluding Seattle)	11.5
Snohomish County	12.7
Pierce County	13.6

There were also significant differences found between age segments ( $p= .028$ ). Consistent with other measures, younger residents appear to be less prepared.

Age	Average (mean) number of days
18 to 24	9.4
25 to 34	7.8
35 to 44	14.6
45 to 54	9.6
55 to 64	12.2
65 or older	12.7

In addition to geographic location and age, differences were also found between female and male respondents. As indicated in the following table, males reported their household's ability to stay in place longer on average, than women (p=.034).

Gender	Average (mean) number of days
Male	12.7
Female	9.8

Differences were also found in the average number of days able to *shelter in place* by the type of dwelling occupied by the respondent. As indicated below, those living in a single family dwelling report an ability to *shelter in place* longer than those living in an apartment, condo, or town-house (p=.004).

Type of Dwelling	Average (mean) number of days
Single Family attached home	11.9
Apartment, Condo, or Town-house	7.5

Further analysis was conducted in order to compare respondents who live in a single family attached home to those living in an apartment, condo, or town-house. Analysis shows that respondents who live in a single family home tend to be over the age of 35 (75.2%), married (74.7%), and non-Hispanic white (83.6%). Respondents who live in an apartment, condo, or town-house tend to be under the age of 45 (75.8%), single (52.5%), and non-Hispanic white (88.9%).

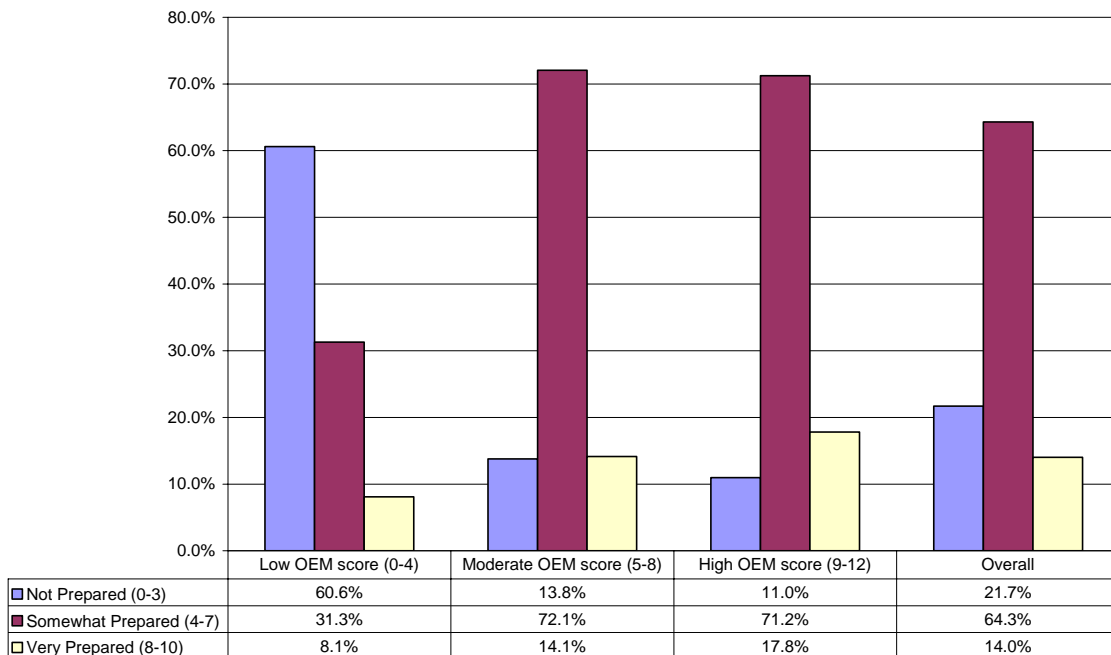


## *Preparedness Analysis-- Perception of the Ability to Shelter in Place*

To benchmark the degree to which area residents are prepared to *shelter in place*, the values were integrated into a scoring system that allowed each respondent to be ranked along a preparedness continuum. The highest score any survey respondent attained was 12.

Analysis of question 7 and the *shelter in place* benchmark shows a strong statistical relationship between the perception of being prepared (listed vertically) and the degree to which one is actually prepared (shown horizontally) to *shelter in place* at home in the event of a disaster or emergency. Note that a majority of those in the high preparedness condition (i.e., those who have engaged in a variety of preparation activities) perceive themselves to be somewhat prepared. Given the fact that the OEM benchmark scores in the highly prepared condition are between 9 and 12 it can be concluded that the attitudinal measure is in line with the behavioral index measure. The relationship between attitudes and behavior can also be observed in the low and mid segments of the model. This is important as it shows that a majority of perceptions are consistent with reality on the question of preparedness.

**Relationship Between the Perception of Preparedness and the Degree to Which Residents are Truly Prepared to Shelter in Place**



The following table illustrates the proportion of the overall sample that fall within each of the three segments. A majority can be considered to be at a mid-level of readiness.

Level of Preparedness -Sheltering in Place	Percent
Low level of preparedness (0-4)	18.4%
Mid level of preparedness (5-8)	54.3%
High level of preparedness (9-12)	27.3%

### **Statistical Analysis**

The degree of *sheltering in place* varies statistically between age segments (p=.000). Note that respondents who are 34 and below have engaged in fewer preparation activities than those in higher age segments.

Age	OEM Mean
18 to 24	4.4
25 to 34	6.0
35 to 44	6.6
45 to 54	6.2
55 to 64	6.5
65 or older	6.4

The degree of *sheltering in place* also varies statistically by the type of dwelling the respondent occupies (p=.000). As indicated in the table, those respondents living in single family homes report a higher average than those living in apartments, condos, or town-houses.

Type of Dwelling	OEM Mean
Single Family attached home	6.4
Apartment, Condo, or Town-house	4.9

## *Preparedness Analysis-- Ability to Evacuate*

Question 9 presented respondents with a list of possible preparedness actions taken in planning for evacuating from their dwelling within 15 minutes of receiving such a command. The most frequent answers were having water and snack food set aside (63.0%) and having set aside a small amount of cash (50.6%). Note that making photocopies of identification and credit cards has been given an OEM value of 3, indicating a greater level of preparedness, and has been mentioned as being done by 29.5% of the respondents.

OEM Value	Preparedness Activity for Evacuation	2006 Percentage	2005 Percentage
1	Water and snack food set aside	63.0%	69.7%
2	Have set aside a small amount of cash	50.6%	56.6%
2	Have grab 'n go kit with eyeglasses, medications toiletries	35.9%	39.1%
3	Made photocopy of identification and credit cards	29.5%	28.6%
1	Pet necessities taken into account	23.2%	24.8%
2	Prepared a checklist of items to take	20.6%	21.3%
3	Have grab 'n go kit with entertainment items	20.4%	18.5%
3	Have set aside supplies for special needs of infants/elderly	14.9%	18.5%

**\*Percentages may equal more than 100% due to the acceptance of multiple responses**

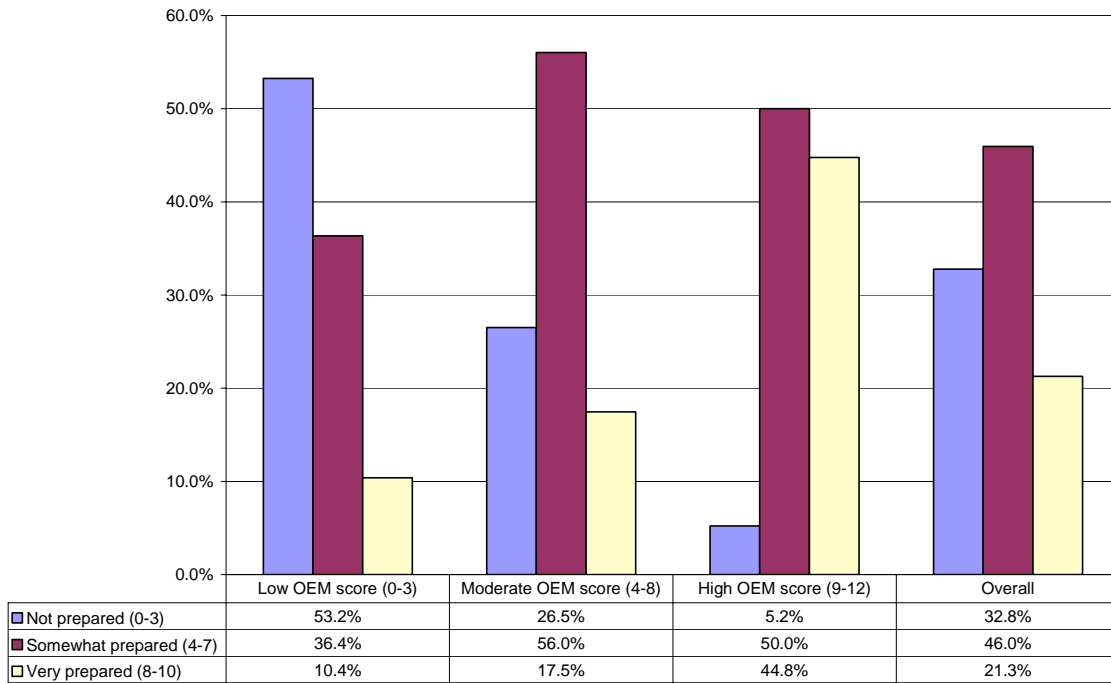
The highest respondent score for Phase III was 11; however, categories were kept from Phase II for comparability purposes. The three preparedness segments are described in the following table.

Level of Preparedness - Evacuation	Percent
Low level of preparedness (0-3)	43.3%
Mid level of preparedness (4-8)	38.4%
High level of preparedness (9-12)	18.3%

## ***Preparedness Analysis-- Perception of the Ability to Evacuate***

In question 10, respondents were asked how they would rate their household's level of preparation if told to evacuate within 15 minutes. Using a 0-10 scale where 0 is *Not at all prepared* and 10 is *Extremely well prepared*, most residents (46.0%) felt that they were at least *Somewhat prepared*. The average rating was a 4.95, indicating a moderate level of perceived preparedness. The chart below shows a strong linear relationship between perceptions (listed vertically) and behaviors (shown horizontally) suggesting that behaviors are driving perceptions. Respondents with the highest OEM benchmark scores show the higher level of perceived preparedness.

**Relationship Between Perception of Preparedness and Ability to Evacuate**



### **Statistical Analysis**

The difference in mean perception scores between the evacuation preparedness segments is highly significant ( $p=.000$ ) and the relatively high level of association between the behavioral benchmark and perception measures (Cramer's  $V= .311$ ) indicates that evacuation preparedness behavior can be viewed as a significant cause for the perception of being well-prepared. No statistically significant differences were found between geographic areas ( $p=.131$ ).

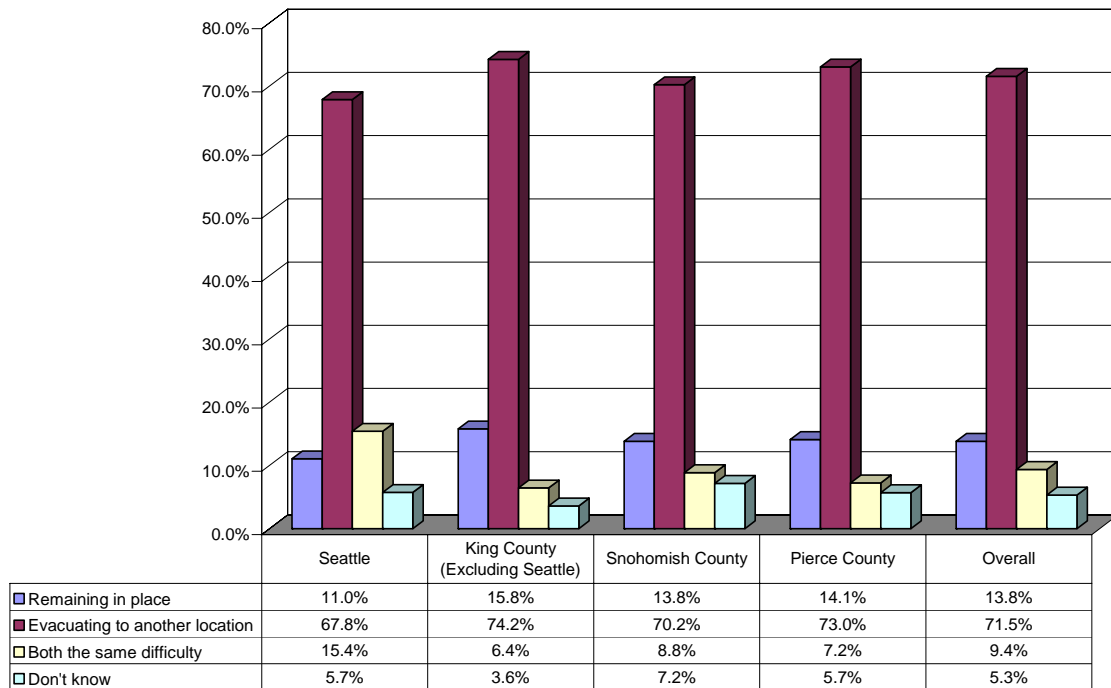
While there were no statistically significant differences between age groups however, there was a difference in the preparedness levels of men and women. Overall, men report having engaged in more preparedness activities than women ( $p=.000$ ).

<b>Gender</b>	<b>OEM Mean</b>
Male	5.4
Female	4.5

## *Perception of Greatest Difficulty – Sheltering in Place or Evacuating*

When respondents were presented with the two basic types of responses to disaster or emergency situations, the majority believed *Evacuating to another location* (71.5%) was more difficult. These results suggest that tri-county residents would be receptive to information about evacuation procedures and locations, as evacuation is clearly an area of concern throughout geographic segments.

**Emergency Situation Preparedness Difficulty**



### **Statistical Analysis**

Differences between regions were not statistically significant; however differences in age can be used to explain differences in perception of the difficulty in *evacuating to another location* (Cramer's  $V=.173$ ;  $p=.000$ ). As indicated below, those between 45 and 54 are more likely to consider evacuating to another location to present the most difficulty.

Situation Presenting the Greatest Difficulty	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 or older
Evacuating to Another Location	50.8%	67.8%	76.4%	79.8%	73.5%	73.1%

In addition to age, significant differences can be attributed to gender. As indicated below, females are more likely to consider evacuating to another location to be the most difficult when compared to men (Cramer's V: .140; p = .015).

Situation Presenting the Greatest Difficulty	Male	Female
Remaining in place	14.7%	13.0%
Evacuating to another location	66.2%	76.7%

Factors of dwelling type can also attribute to variances in opinion about situations presenting the greatest difficulty. As the following table indicates, those living in a single family home (78.0%) are more likely to consider *evacuating* as the most difficult when compared to those living in an apartment, condo, or townhouse (42.4%). The relationship between type of dwelling and perceptions of the most difficult situation are particularly strong, yielding a Cramer's V value of .201 and a P value of .000

Situation Presenting the Greatest Difficulty	Single Family detached home	Apartment, Condo, or townhouse
Remaining in place	11.3%	26.3%
Evacuating to another location	78.0%	42.4%

## Preparedness Analysis-- Workplace Emergency Preparedness

Respondents were presented with a list of workplace preparedness activities in question 22. As described in the table below the majority of respondents (75.4%) had “Discussed what to do in the event of a fire or earthquake”. More than half (57.4%) of respondents indicated their employers have “Assigned employees and co-workers responsibilities”, while 56.8% have “dedicated emergency flashlights, batteries, and radio”. It should be noted that these top three activities were also considered prepared (OEM Value of 2 or 3) by OEM predetermined standards.

OEM Value	Workplace Preparedness Activity	2006 Percentage	2005 Percentage
2	Discussed what to do in the event of a fire or earthquake	75.4%	73.6%
3	Employees and co-workers have been assigned responsibilities	57.4%	56.2%
2	Dedicated emergency flashlights, batteries, and radio	56.8%	44.3%
3	Practiced drills on specific procedures for emergencies such as drop, cover, and hold during an earthquake	54.1%	56.2%
1	Instructed on exit routes from work area to outside building	43.4%	36.2%
3	Dedicated provisions such as water, food, and blankets	43.1%	36.9%
2	Heavy objects have been secured	41.7%	23.8%
-1	My place of work does not have a specific plan for dealing with emergencies	8.7%	13.9%

**\*Percentages may equal more than 100% due to the acceptance of multiple responses**

The three preparedness levels are described in the following table. Note that the response “My workplace does not have a specific plan for dealing with emergencies” was assigned a negative value (-1). This determination was made based on the reasoning that a workplace can have the supplies needed to deal with emergency or disaster, but without a plan the chaos of the moment or a worker’s lack of knowledge about where to go to get supplies can cancel out the effect of having engaged in other preparedness activities. Note also, that the range of the low preparedness segment is different than *evacuate* and *shelter in place* low preparation segments, but consistent with Phase II categories for comparison purposes. The highest score any respondent received was 13.

Level of Preparedness - Workplace	Percent
Low level of preparedness (-1-0)	10.0%
Mid level of preparedness (1-8)	31.7%
High level of preparedness (9-13)	58.3%

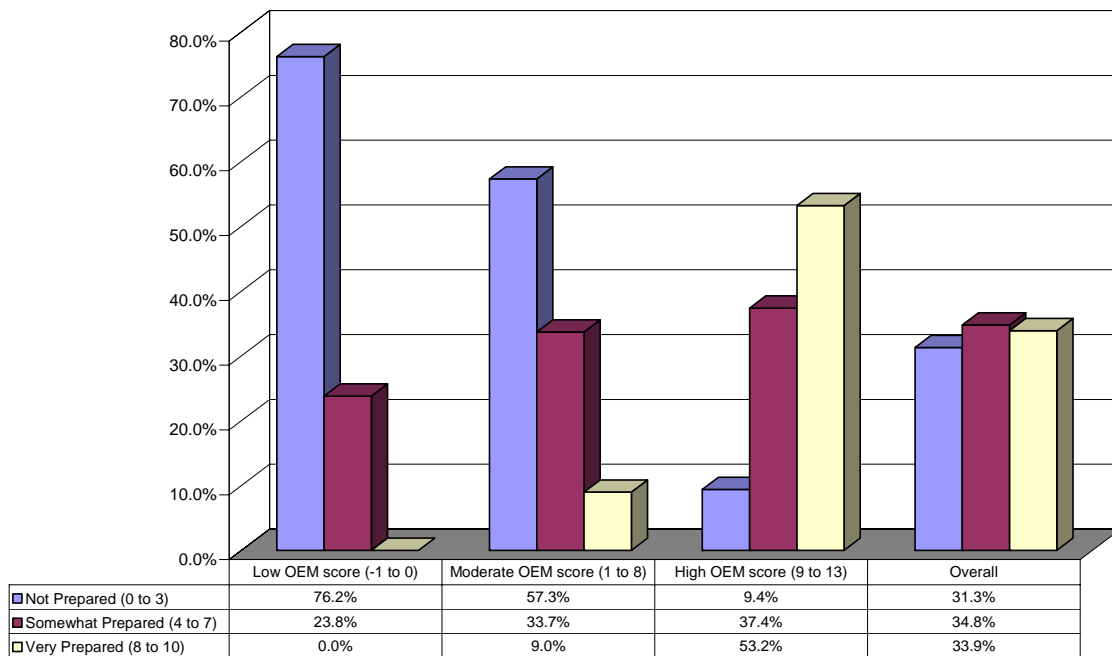


## Preparedness Analysis-- Perception of Workplace Preparedness

Respondents were asked to rate the degree to which they felt prepared, while at the workplace, for *man-made* emergencies such as a chemical spill or terrorist act in question 23. Responses were given on a scale of 0-10 with 0 being *Not at all prepared* and 10 being *Extremely well prepared*. As indicated below, most respondents indicated that they feel their workplace is at least *somewhat prepared* (34.8%).

The chart below illustrates the level of perceived preparedness (Q23; tabled horizontally) within each of the three behavioral benchmark segments (Q22; tabled vertically). As was the case with the other two comparisons of perception and behavior, there is a strong relationship between the perception of preparedness and the degree to which one is truly prepared. The difference between preparedness segments is statistically significant ( $p=.000$ ) and the relatively high level of association between the measures (Eta Squared=.386) indicates that engaging in preparedness activities makes one feel prepared. As indicated in the table, as behavioral levels increase, so do average ratings of preparedness perception.

Relationship Between Perception of Preparedness and Actual Workplace Preparedness



Behavioral Index Category	Average (Mean) response to Q23
Low OEM score	1.9
Moderate OEM score	3.6
High OEM score	7.1

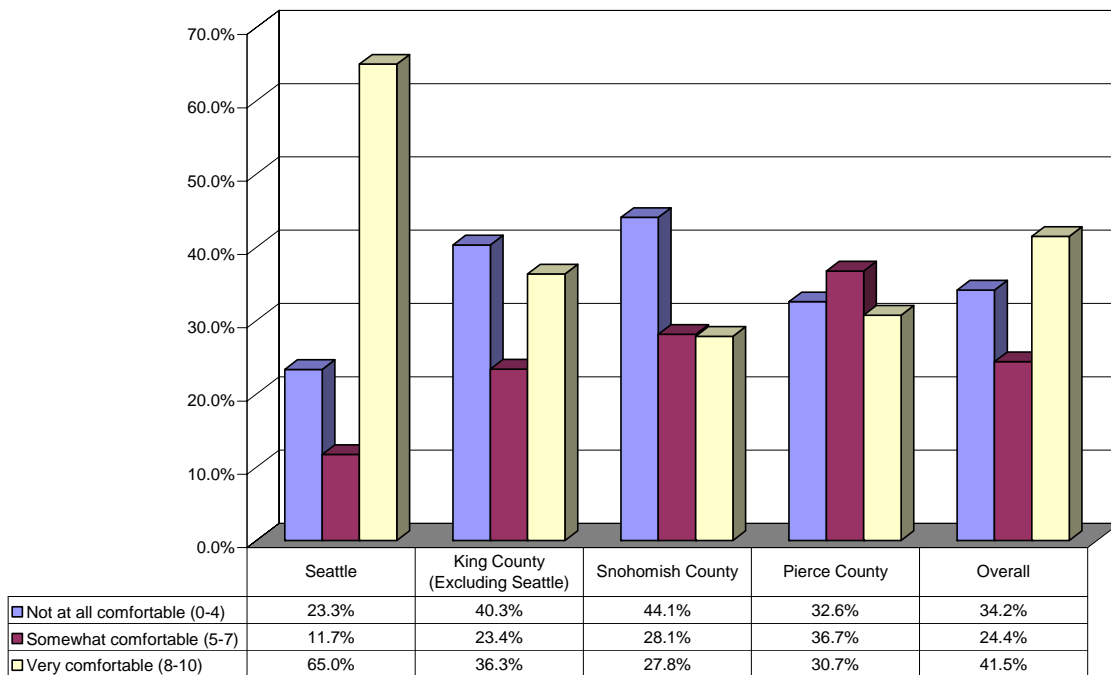
There are also significant differences between age segments. The 18-24 and 65 or older segment have much lower average ratings of workplace preparedness in comparison to other age segments.

<b>Age</b>	<b>OEM Mean</b>
18 to 24	4.2
25 to 34	6.3
35 to 44	5.6
45 to 54	5.2
55 to 64	5.4
65 or older	4.0
<b>P= .010</b>	

## *Comfort Level with Child Remaining at School during an Emergency*

Respondents who reported having dependent, school attending children (30.1%) were asked to rate their comfort level with leaving children at school between 24 and 72 hours in the event of an emergency. On a scale of 0 to 10 where 0 is *Not at all comfortable* and 10 meant *Extremely comfortable*, 41.5% gave a comfort level of 8-10, or were very comfortable with the idea. Of those who reported being *very comfortable* with the idea, 23.0% gave a specific rating of 8. The average rating was 5.75, indicating that responses are skewed slightly to the high end of the scale. Although the following illustration is designed to give insight into response differences, the reader should understand that the observed differences yielded a P Value of 0.10, therefore differences in geographic segment cannot be considered legitimate causes for differences in rating response.

**Comfort level of children remaining at school for 24-72 hours due to a disaster or emergency**



### **Statistical Analysis**

ANOVA testing revealed that there were significant differences between genders. On average, males (6.6) gave a significantly higher rating than females (5.0) concerning their level of comfort with leaving their children at school during an emergency ( $p = .000$ ).

There were also significant differences between ratings of workplace preparedness and the comfort levels of leaving children at school during an emergency.

As indicated in the following table, those who perceive their place of work to be less prepared for a disaster or emergency also have less comfort with leaving their children at school between 24 and 72 hours (p=.001).

<b>Levels of Workplace Preparedness</b>	<b>Mean</b>
Not Prepared (0 to 3)	4.0
Somewhat Prepared (4 to 7)	5.9
Very Prepared (8 to 10)	6.3

## *Emergency Preparedness at Child's School*

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Respondents who indicated having children were asked what types of emergency preparedness procedures they were aware had taken place in their child's school. They frequently cited *Evacuation procedures* (39.4%) and *Fire Drills* (32.5%). More than a quarter (29.2%) of the respondents surveyed *don't know*, or are not aware, of any preparedness activities occurring in the school.

<b>Knowledge of Preparedness at Child's School</b>	
Evacuation procedures	39.4%
Fire drills	32.5%
Drop, cover and hold earthquake drills	27.5%
Parent/Child reunion procedures	5.0%
Other	43.7%
Don't know	29.2%

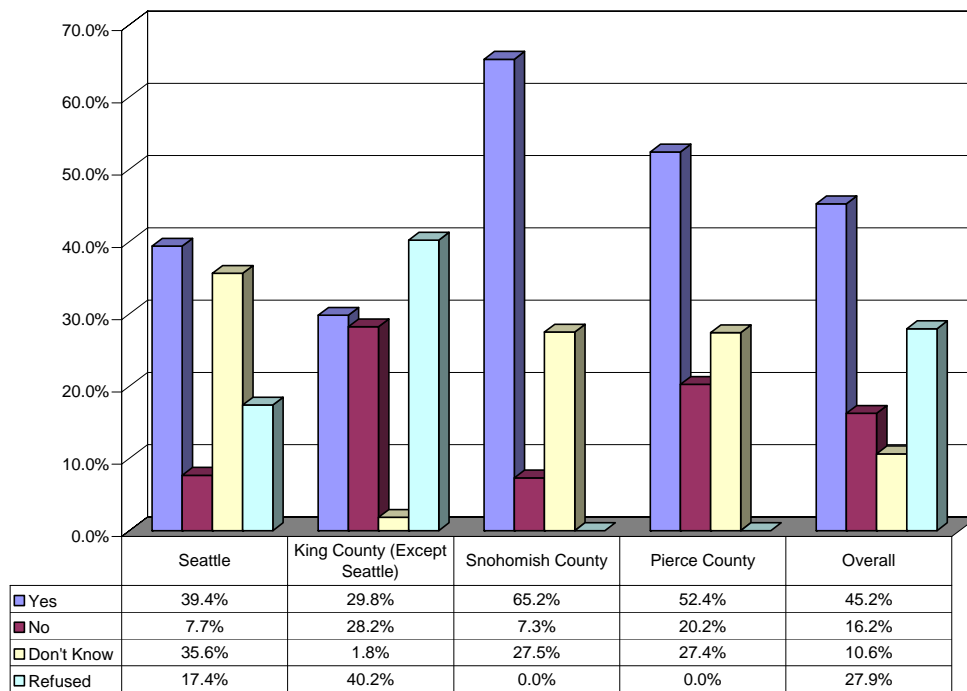
**Note:** Due to the acceptance of multiple responses, percentages may not sum to 100%

Frequently cited *other* responses included preparation kits/supplies (41.1% of *other* responses) and lock down drills/procedures (19.6% of *other* responses).

## *Awareness of Programs for Reuniting Parents with Children*

Respondents with children were asked if they knew about emergency policies and procedures for reuniting parents with children at their child’s school. As indicated below, 45.2% said they were aware of such policies at their child’s school. As this question was based upon a contingent, (those respondents with children only) differences between geographic segments should be viewed with caution due to a smaller set of respondents.

**Awareness of School Policies and Procedures**



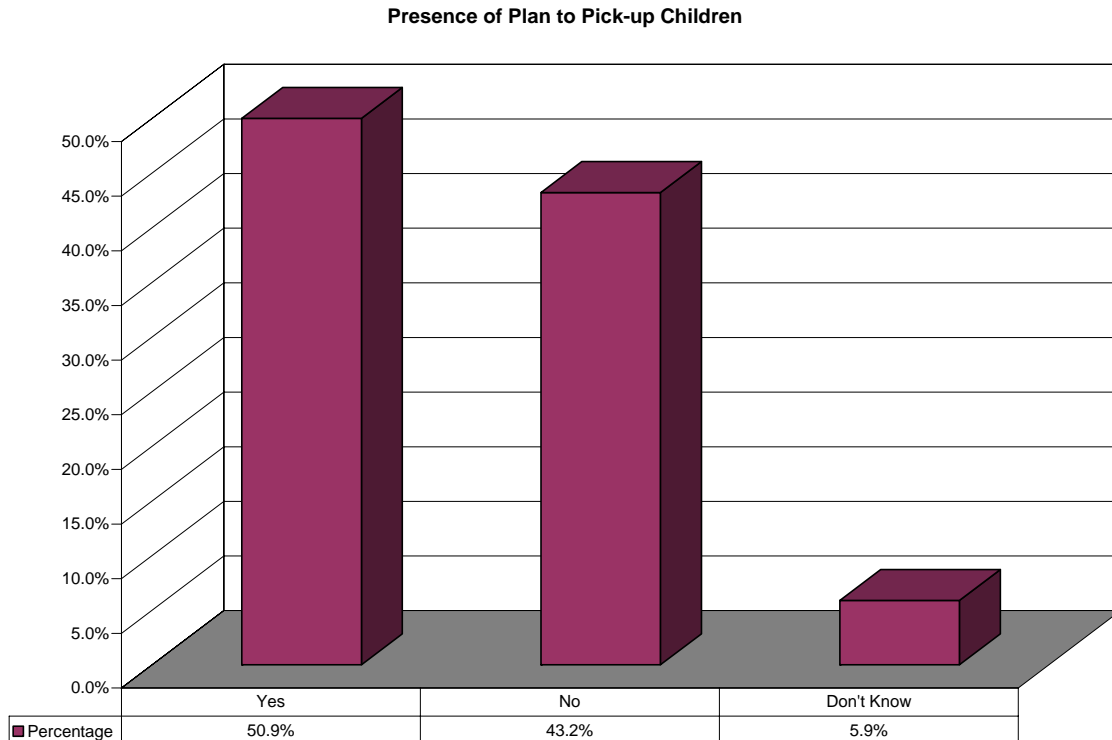
### **Statistical Analysis:**

As indicated below, males were significantly more likely to have knowledge of emergency policies at their children’s school when compared to females (Cramer’s V: .359; p = .000).

	Male	Female
Knowledge of School Emergency Policies and Procedures for Reuniting Parents with Children	48.1%	42.9%

## *Plan to Pick up Children*

Of those respondents with school attending children under the age of 18, slightly more than one half (50.9%) stated having a plan for someone else to pick up their child in the event of an emergency.



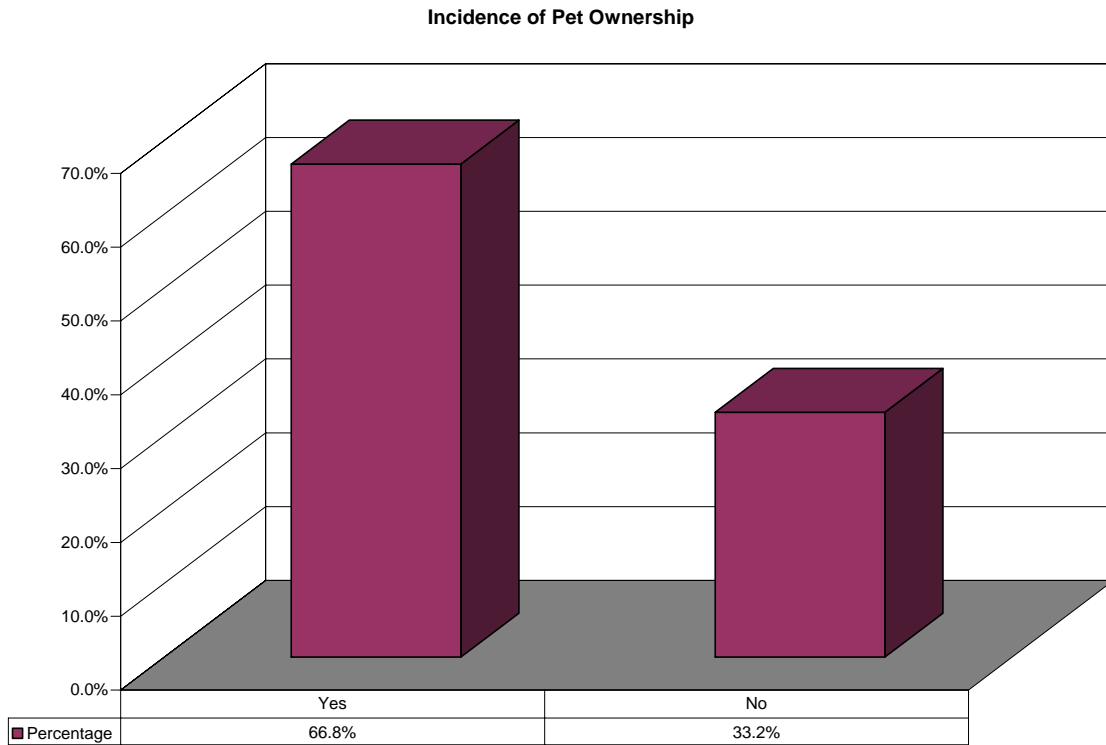
### **Statistical Analysis:**

Differences in the presence of a plan to pick up children from school after a regional disaster were found between men and women. As indicated below, females are statistically more likely to have a plan to pick up children during these circumstances when compared to men (Cramer's  $V = .352$ ;  $p = .000$ ).

Plan to Pick up Children	Male	Female
Yes	35.1%	65.5%
No	61.0%	26.2%

## *Incidence of Pet Ownership*

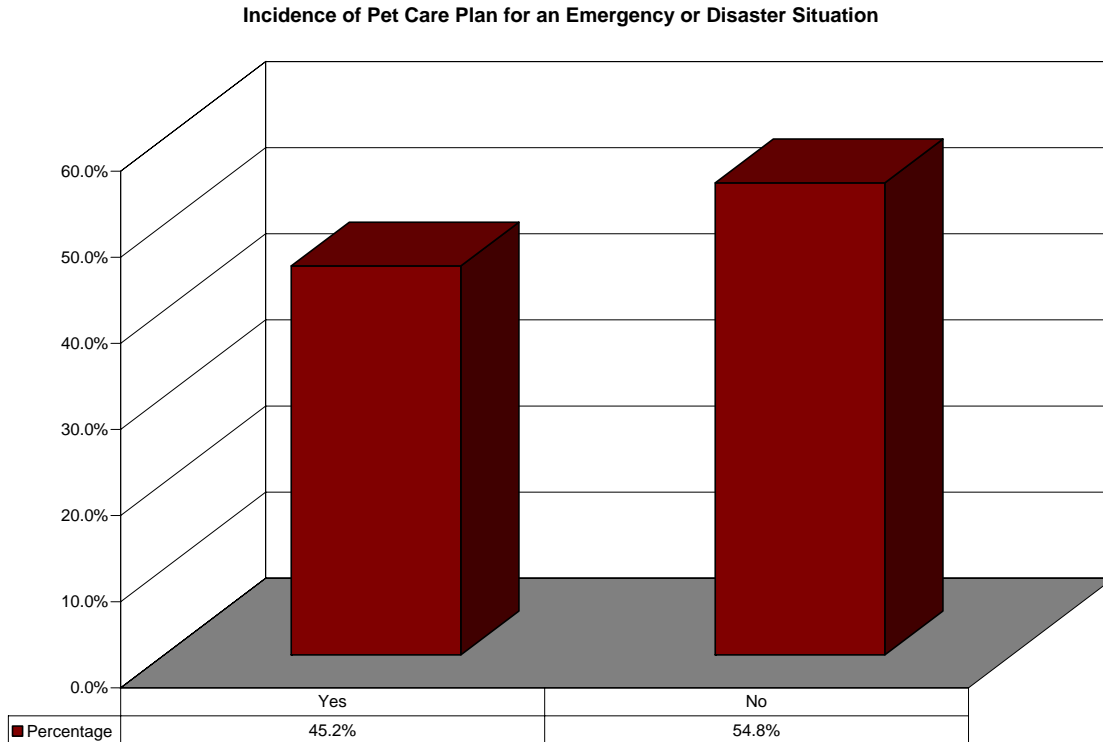
In order to establish incidence for further questioning, survey respondents were asked if they were pet owners. As indicated, 66.8% of the respondents were indeed pet owners.





## *Planning for Pet Care*

Pet owners were asked if they have a plan in place to take care of pets during a disaster or emergency. As illustrated below, slightly over half (54.8%) of the respondents do **not** have such a plan in place.



### **Statistical Analysis**

As indicated below, statistical differences in the incidence of a pet care plan can be attributed to variance in age. As age increases, so does the incidence of the respondent to have a plan to care for pets in the event of a disaster or emergency (Cramer's  $V=.227$ ;  $p=.004$ )

Incidence of a Pet Care Plan	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 or older
Yes	20.4%	44.4%	47.9%	49.4%	54.8%	60.6%
No	79.6%	55.6%	52.1%	50.6%	45.2%	39.4%

Differences in the incidence of a pet care plan can also be attributed to gender. As shown in the following table, females are more likely to have an established pet care plan for a disaster or emergency than males (Cramer's  $V=.117$ ;  $p=.028$ )

Incidence of a Pet Care Plan	Male	Female
Yes	39.2%	50.8%
No	60.8%	49.2%

In addition to age and gender, significant differences were found between respondents who reported different levels of preparedness in the workplace. As indicated in the following table, those who said that their place of work was *not prepared* are *more likely* to have a plan in place to care for their pet during an emergency or disaster situation. The relationship between these two variables is relatively strong (Cramer's  $V=.244$ ;  $p=.000$ ).

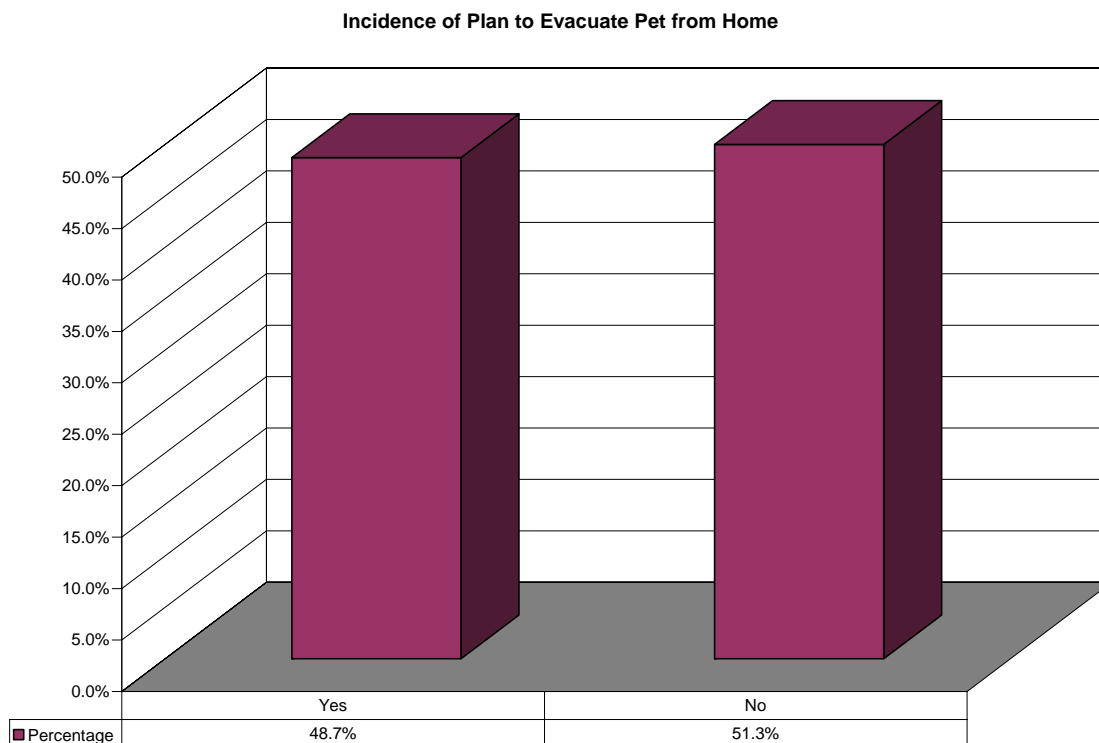
Incidence of a Pet Care Plan	Not Prepared (0 to 3)	Somewhat Prepared (4 to 7)	Very Prepared (8 to 10)
Yes	54.8%	25.6%	44.9%
No	45.2%	74.4%	55.1%

Further analysis shows that there is a significant difference between pet ownership and ways in which respondents have prepared to evacuate their home (Cramer's  $V=.209$ ;  $p=.009$ ). Only 11.5% of pet owners have done something to prepare for evacuation, while 14.5% of respondents who do not own a pet have done nothing. Among those who have pets, 23.0% have a grab 'n go kit set aside, compared to 14.0% of respondents who do not own a pet. Additionally, 16.8% of pet owners have water and snack food set aside, compared to 10.1% of those who do not own a pet.

There are also significant differences between pet ownership and types of assistance that would make a respondent feel prepared for an emergency (Cramer's  $V=.300$ ;  $p=.000$ ). More than half of pet owners (54.3%) reported that a checklist for emergency supplies would make them feel prepared to handle an emergency, while only 36.9% of respondents who do not own a pet believe this type of assistance would make them feel prepared to handle an emergency.

## *Home Evacuation Pet Planning*

Those respondents who had reported having a pet were then asked if they had a plan in place to evacuate the pets from the home during a disaster or emergency. As indicated below, the prevalence of a plan to evacuate the pet from home is close to half and half (48.7% Yes; 51.3% No).



### **Statistical Analysis:**

Differences in the incidence of a home pet evacuation plan were found between the types of respondent dwelling. As shown below, those respondents living in a single family home are more likely to have a plan in place in the event of an emergency than those living in an apartment, condo, or town-house. The correlation between these two variables is relatively strong, yielding Cramer's  $V=.253$  with a P value of  $.000$ .

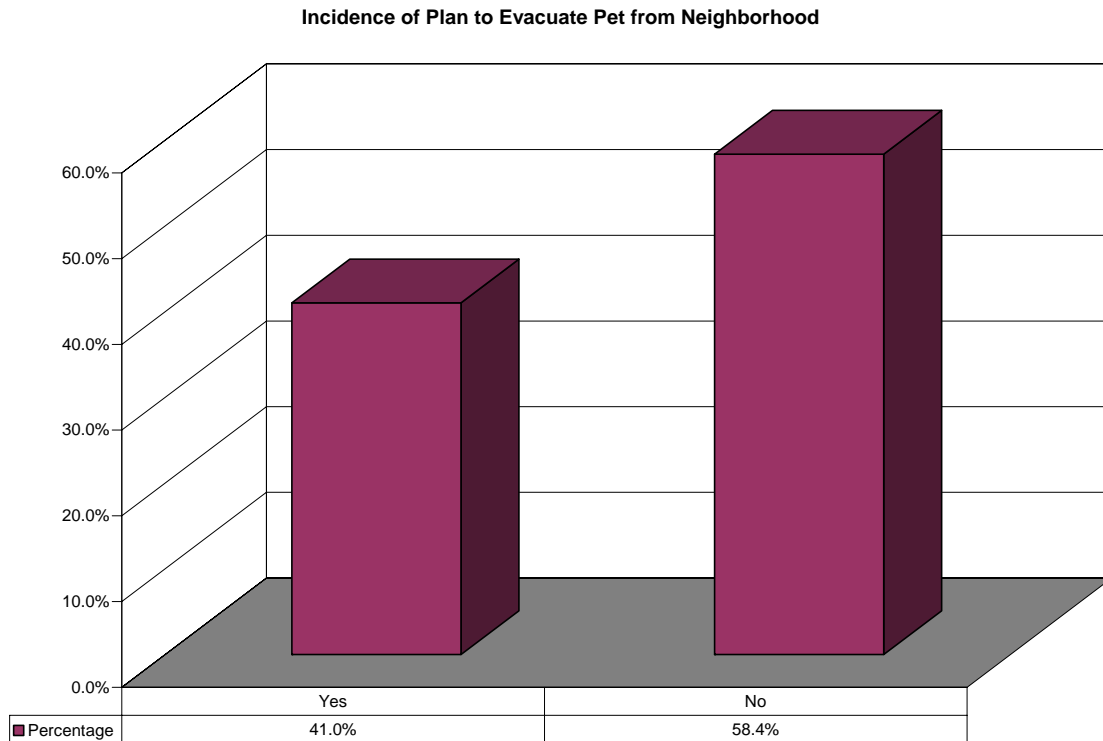
Incidence of a Plan to Evacuate Pets from Home	Single Family detached home	Apartment, Condo, or town-house
Yes	55.1%	20.8%
No	44.9%	79.2%

There are also significant differences in the incidence of a pet home evacuation plan between respondents feeling prepared in the workplace. As indicated, those respondents who do not feel prepared for a disaster in their place of work are more likely to have a plan to get their pet out of the home in the event of an emergency. The relationship between these two variables is strong, yielding correlation measurements of Cramer's  $V=.279$  and  $p=.000$ .

<b>Incidence of a Plan to Evacuate Pets from Home</b>	<b>Not Prepared (0 to 3)</b>	<b>Somewhat Prepared (4 to 7)</b>	<b>Very Prepared (8 to 10)</b>
Yes	68.5%	33.7%	47.7%
No	31.5%	66.3%	52.3%

## *Neighborhood Evacuation Pet Planning*

Finally, pet-owning respondents were asked if they had a plan in place to evacuate their pet from the neighborhood or city during a disaster or emergency. Over half of these respondents (58.4%) stated they did not have such a plan in place.



### **Statistical Analysis:**

Chi Square categorical testing reveals significant differences between the geographical segments and the incidence of a plan to evacuate pets from the neighborhood or city. As indicated in the table below, Seattle residents are less likely to have a plan established for care of their pet during a disaster or emergency situation (Cramer's  $V=.152$ ;  $p=.001$ ).

Incidence of a Plan to evacuate a Pet from the Neighborhood or City	Seattle	King County (Excluding Seattle)	Snohomish County	Pierce County
Yes	26.1%	44.4%	51.4%	43.6%
No	73.9%	53.8%	48.6%	56.4%

As shown below, those who do not consider their workplace prepared for a disaster or emergency are more likely to have a plan in place to evacuate pets from the neighborhood or city. A strong correlation was found between these two variables and can be considered as reason for variance (Cramer's  $V=.244$ ;  $p=.000$ )

Incidence of a Plan to Evacuate Pets from the Neighborhood or City	Not Prepared (0 to 3)	Somewhat Prepared (4 to 7)	Very Prepared (8 to 10)
Yes	54.8%	25.6%	44.9%
No	45.2%	74.4%	55.1%

## *Community Disaster Preparedness Participation*

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Respondents were presented with a list of disaster preparedness actions associated with the community and asked which they had participated in. Among those that have engaged in preparedness activities, a clear majority mentioned *First aid training* as the activity they engaged in.

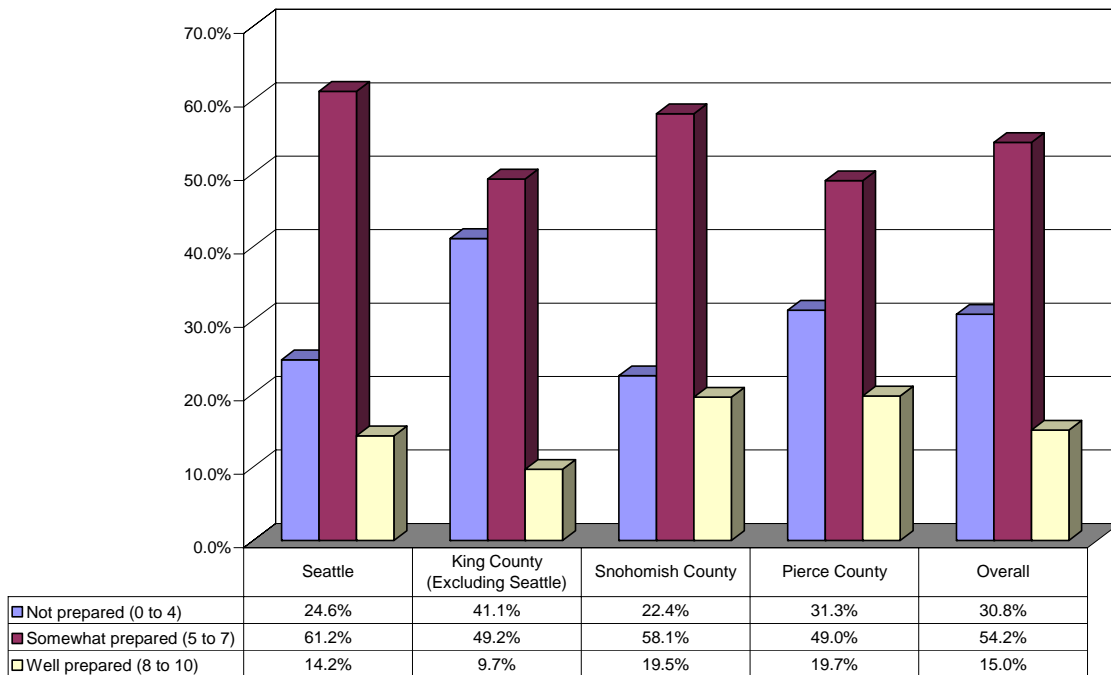
<b>Actions taken by Residents to Prepare for Disaster</b>	<b>Percent of Response</b>
First aid training	76.3%
Neighborhood or Block Watch program	20.5%
Talking or planning w/ neighbors	19.9%
None	16.2%
Received Community Emergency Response Team Training	15.4%
Joined Citizen Corps	3.3%

**Note:** Due to the acceptance of multiple responses, percentages may not sum to 100%

## *Perceived County Preparedness beyond Police and Fire Services*

Respondents were asked how prepared their county is beyond police and fire services to deal with either a natural or man-made disaster or emergency. Ratings were given on a 0 to 10 point scale with 0 meaning “Not at all prepared” and 10 meaning “Extremely well prepared”. As indicated below, over half of the respondents (54.2%) agreed their county was *Somewhat prepared* to deal with these disasters and emergencies. It should be noted that only 15.0% gave ratings between 8 and 10, indicating that few feel that their county is prepared beyond the police and fire department. The mean rating was 5.24. The differences in average (mean) scores between regions is statistically non-significant. Clearly a majority of area residents believe that their county is *Somewhat prepared* for disaster.

**County Preparedness Levels**





## *Awareness of Community, Neighborhood, or Church Preparedness Activities*

Awareness of disaster preparation within communities, neighborhoods or church's was identified by asking the following question:

**Are you aware of any actions your community, neighborhood, or church has taken to be prepared in case of a natural or man-made disaster?**

Only about one third of the respondents are aware of any actions taken by their community, neighborhood, or church. Most of the respondents could not think of any instances or refused the question. Of those who could recall actions taken by these organizations, community and neighborhood organizations, municipal departments, schools, and churches were all mentioned to have taken some action in preparation. Those reported being aware of these actions generally connected their awareness with some preparation activity. Although most reporting awareness were also participants, many could not cite the specific organization of origin, other than general source (ie. Church, city, community, neighbors). Specific national organizations such as Red Cross and Salvation Army were mentioned as sources, however infrequently.

- *At the community center they have free classes on emergency preparedness.*
- *Church; they have given us a list of what to have at home, they've told us to have a list of contacts and someone out of state that the family can call to keep in touch, to keep some cash and water. I am working on doing all that!*
- *I know that the fire departments run drills and the schools run evacuation drills...*
- *Yes neighborhood crime watch and were going to set up an emergency situation and we will be practicing what we would do if something like a natural disaster were to happen. We would be prepared.*
- *Our church has earthquake preparedness supplies and evacuation procedures like blankets, medical supplies and a radio and exit procedures, and stored materials like a crowbar and sledge hammer to help people if they get physically stuck in a room inside.*
- *Snohomish County has emergency response teams.*
- *The emergency drill on highway 99 by the fire department...and wasn't it also held on a ferry by the Coast Guard? The Winslow-Bainbridge ferry.*
- *We have the lunar system, which is a whistle that they blow if a volcano erupts and they make sure the whole community and neighborhood can hear it at the moment of an eruption so everybody can escape when it happens. The creation of this device is from the State of Washington.*
- *We've had discussion groups passing out flyers, just heightening awareness. Oh, things like King County emergency numbers, pamphlets on what to do, earthquake drills, having someone in the house trained in First Aid.*
- *We have a neighborhood committee and a disaster committee. They've done training in things like CPR.*
- *Drills for fires and earthquakes mentioned in the newspaper.*
- *At church, I know who I'm responsible for and who I report to. I've formulated a plan with emergency contact, and know everything I need to know.*

- *At church, they have given us a list of what to have at home. They've told us to have a list of contacts and someone out of state that the family can call to keep in touch...to keep some cash and water. I am working on doing all that.*
- *Especially at church we talk about that. We hold practices and*
- *Fire district has Community Emergency Response classes and exercises regularly.*
- *From the radio, but I don't remember what it said because it was four years ago...as well as in the newspaper there was something, too, but I don't remember what they were doing at the time.*
- *I know here, we live in an over fifty five mobile home park, they have a generator and we have a generator...they have food and so do we, but we usually stay at home and do not use the center. We personally are set up for a natural disaster.*
- *I know that the city fire department and the police department do their earthquake drills and that type of stuff.*
- *I know the county has CERT training to train people in the community to deal with disasters and how to use a ham radio.*
- *I know what my church is doing. What was passed on was that the church would be providing a place or centralized location for families to go.*
- *It's a little community we live in. We have blankets and first aid equipment with cups. Yes. We got together things we'd need in an emergency: cell phones, candles, water and packaged food.*

## ***Type of Information that Makes Respondents Feel Prepared***

Participants were asked for the types of assistance that would make them feel satisfied that their household is prepared for dealing with disasters or emergencies. Although respondents were allowed to provide multiple responses to this question, the table below indicates the first response only. As shown in the following table, the first response that respondents provided most frequently was a checklist for home supplies (48.6%), followed by television messages (11.7%) and a form to enter names and numbers (6.5%).

Frequent *other* responses included offering classes in preparedness and holding community or neighborhood meetings.

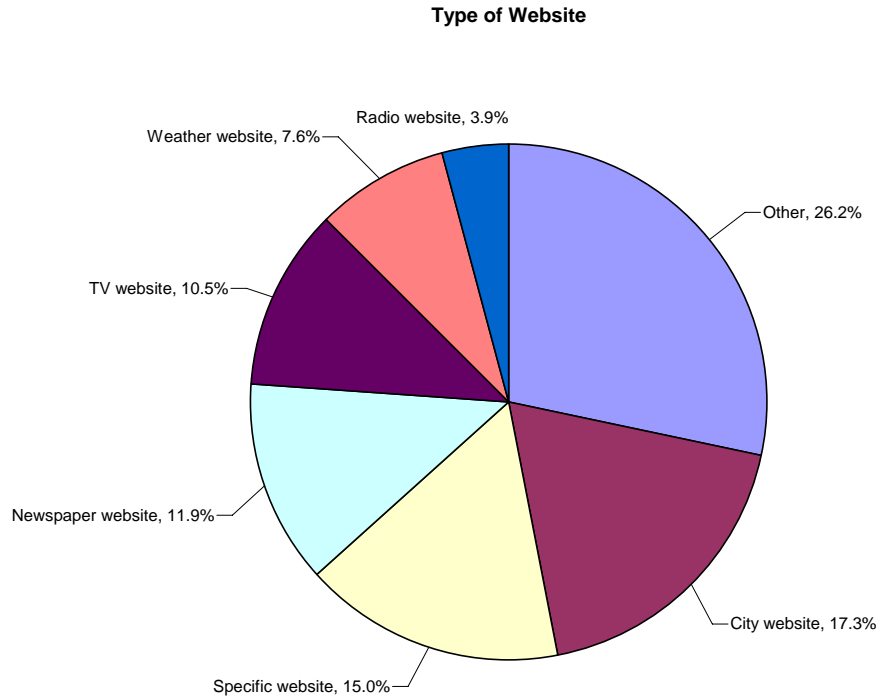
<b>Type of Assistance</b>	<b>Percentage</b>
Checklist for home supplies	48.6%
Television messages giving you information	11.7%
A form to enter names and numbers for a communication plan	6.5%
Radio messages giving you information	5.4%
Information in a neighborhood or community club newsletter	5.2%
Information with monthly utility bill	3.1%
Information in a newspaper	1.7%
Other	11.6%
Don't Know	5.1%
Refused	1.0%

## ***Availability of Preparedness Materials and Information***

Respondents were asked what distribution channels would be most useful to them. While respondents were allowed to provide multiple responses to this question, the table below indicates the results of respondents' first response. As the table indicates, most of the respondents said that a grocery store or drugstore would be the most useful distribution channel (44.3%). This is followed by the library (12.5%) and on a website (11.2%). Frequent *other* responses included posting this information at a fire department/station, police office, post office, and city hall.

<b>Type of Material or Information</b>	<b>Percentage</b>
At the grocery or drugstore	44.3%
At a library	12.5%
On a website	11.2%
Place of worship	7.3%
At a hardware or home improvement store	3.8%
Neighborhood or community center	2.1%
When buying a home (from the realtor)	1.9%
Civic center of satellite office	0.6%
Other	13.5%
Don't Know	2.0%
Refused	0.8%

Those respondents who indicated that a *website* would be a useful place to get preparedness information (43.3%), were asked what type of website would be ideal. As indicated below, the City website was mentioned by 17.3%.

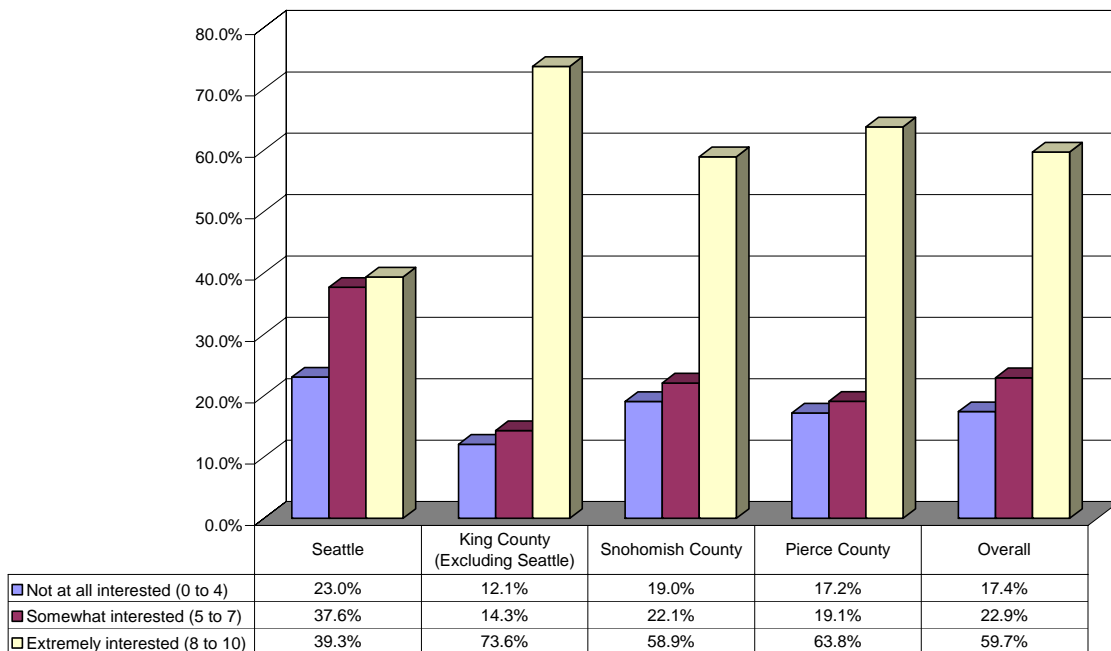


As shown in the graph, the *other* response category was mentioned most frequently (26.2%). The most frequent specific responses given by those who chose the *other* category were state and county government websites and an emergency preparedness website. A few mentions of FEMA or a federal emergency website were also given.

## *Interest in Receiving an Emergency Preparedness Kit*

Just under two-thirds of the respondents surveyed indicated they were very interested in receiving an emergency preparedness kit as a welcoming gift when purchasing a new home from their realtor or from the city in which they live (59.7%). Seattle respondents were the least likely to indicate they were interested in receiving an emergency preparedness kit (39.3%). The following differences between geographic location were found to be statistically significant (p=.000).

**Level of Interest in Receiving an Emergency Preparedness Kit as a Welcoming Gift to a New Home**



### **Statistical Analysis**

Significant differences were also found between age segments. As indicated in the following table, the average level of interest in an emergency kit as a welcoming gift to a new home decreases with age (p=.004).

Age Segments	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 or older
Average Level of Interest	8.0	7.9	7.6	7.0	7.4	6.0

In addition to geographic location and age, gender was also found to cause significant differences in the average level of interest. As shown below, females had a higher average level of interest than males ( $p=.005$ ).

<b>Gender</b>	<b>Mean</b>
Male	6.8
Female	7.7

## *Preparedness Promotion and Advertising Recall*

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Respondents were asked the following question to measure awareness of preparedness advertising that they had seen or heard.

**Do you recall having seen or heard any messages on TV, radio, or in publications about where to look for information about preparedness, or about things you should do to prepare your household?**

Most of the respondents could recall seeing messages concerning sources of preparedness information and actions. When probed for the source of these messages, respondents cited television, newspapers, radio, web (usually mentioned as secondary source stemming from a television message), postings at work, and organizations such as the Fire Department and the Red Cross. Television and newspapers were the most frequently responded sources of these messages. The recollection rate of specific stations and newspapers by respondents was very high in comparison to other forms of media. Multiple mentions for television sightings were: Kiro, Komo, Channel 2, Channel 5, Channel 9, Channel 11, King 5, Channel 7, and Fox News. Multiple mentions of newspapers were: Seattle Times, Seattle PI, Everett Herald, and News Tribune. Of the respondents citing a television source, many mentioned the Emergency Broadcast Service testing as the content of the message.

When respondents were probed for the content of these messages, recollection was found to be about half and half throughout. Of those who could recall information from messages, creating a contact list, creating a preparedness list, preparing an emergency kit, sources for additional information, places to find emergency shelter, temporary housing sources, and emergency contacts were all mentioned.

In most cases, those who could recall the content of the message, also mentioned having done something as an effect of being exposed to the message. Most of these respondents mentioned ensuring food and water supplies and being able to know what immediate actions to take in case of an emergency. Other behaviors caused by the messages as indicated by respondents were: creating contact and preparedness lists, discussing topics with family and friends, moving or stabilizing furniture, kit preparation, and obtaining a generator and flashlights. The following sample of quotations is representative of the themes indicated in this analysis. Responses are kept in their purest form, as to clearly express language used by respondents.

- *Channel 9 KCTS has a program that has a household checklist-it's all dealing in emergency preparedness. I just reviewed everything. We always rotate water in the household and have a supply of strapping material to tether objects.*
- *I do recall reading something in the Seattle Times now and then, but nothing specific.*
- *Just what to do with windows, doors, having an escape route, food preparation for kids. I heard it on King 5. It's made me more aware.*
- *Newspaper; Seattle PI, there several articles that have checklists.*



- *I have seen some things on public TV; things like getting somebody out of state to call, emergency kits, short wave radios, have toilet paper, shelf food like peanut butter, having a flashlight and water.*
- *Mainly on TV, when 911 happened, they pushed utilizing websites. TV covered it too. Also in my workplace there's a lot of talk about emergencies. As a result from hearing about it at my workplace, I have out of town contact organizations written down to call.*
- *I've heard TV or radio spot ads. No, I don't remember. Yes, we put our food and water supplies together.*
- *A weekly thing on TV which is called the emergency broadcast system.*
- *Newspaper article reminding people to have supplies and things to have like they needed after Katrina, like having so many gallons of water per day.*
- *On television and in the newspaper that showed there a notice and a checklist of what to do in the case of an emergency such as an earthquake or flood.*

## *Preparedness Action Drivers and Motivators*

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Respondents were asked the following question in order to identify and understand the motivators in preparing for a disaster or emergency.

**In your opinion, what could be the key drivers or motivators that would enable people to take action to prepare for different types of emergencies?**

The most common response to this question is exposure, both indirect and direct, to actual emergency situations is the best motivator for preparedness action. Although direct exposure was cited as yielding the best motivational results, indirect exposure to events such as Hurricane Katrina, 911, and the recent Indonesian Tsunami were mentioned as having a motivational effect on people everywhere. Also mentioned frequently were increasing educational programs at multiple levels and increasing awareness using popular news media sources such as television and newspapers.

- *Notices on TV or newspapers, you know, just reminders.*
- *The biggest motivator is an earthquake. After the last one, then there was a lot of information out there. There was information in newspapers and in publications. That's when I got my food supply, flashlight, and generator. I've tried to maintain a reasonable preparedness situation.*
- *I think maybe a workshop where neighbors get together, sort of a block watch. The kind of thing where neighbors get together on such a day for a barbeque. You look out for us and we'll look out for you.*
- *A heck of a good earthquake or a volcanic eruption or another terrorist attack might make people take notice of this.*
- *Education like have someone talk about it on the radio and on television and emphasize heightened awareness.*
- *Going thru it, or knowing someone who has gone thru one, for instance Hurricane Katrina or a tsunami that could happen here, my family years ago came from that area where the tsunami took place. Someone having a connection to the possible hazard would more likely to do something about being prepared.*
- *I don't know, maybe some kind of free mini classes at the library or somewhere really accessible on emergency prep where people can go to little seminars.*
- *An emergency; it's almost like you don't see family till someone dies. People take for granted their daily freedom. Disaster wakes us up, when it comes closer to home.*

## *Identification of Leaders within the Household*

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In order to designate members of the household who would lead in emergency preparation, the following question was asked.

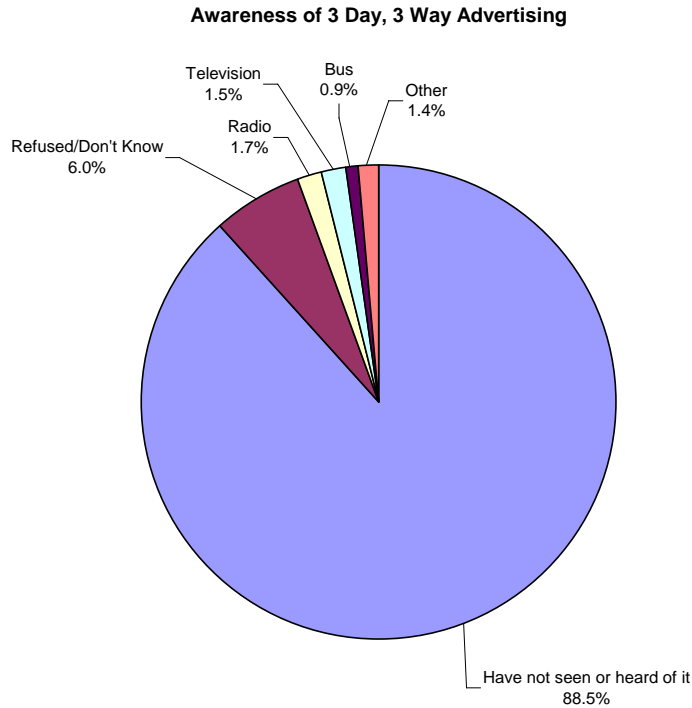
**Who in your household would most likely take charge of preparing for emergencies?**

Although responses to this question differed by state of reference, most responded with the term “head of household” in regard to who would take charge in this situation. Both male and female head of households were similar in response frequency, while a few mentioned both members working cooperatively and others mentioned a son or daughter. It should be noted that over half of the responses to this question credited the participant him/herself with the likelihood of taking charge when preparing for emergencies, regardless of gender. The following quotations provide reference and should be used to supplement these ideas.

- *Both- myself and my husband.*
- *Female, Head of Household.*
- *I would prepare what I could.*
- *Me, Male Head of Household, Husband*
- *The younger of the two sisters.*
- *Myself.*

## Awareness of 3 Days, 3 Ways

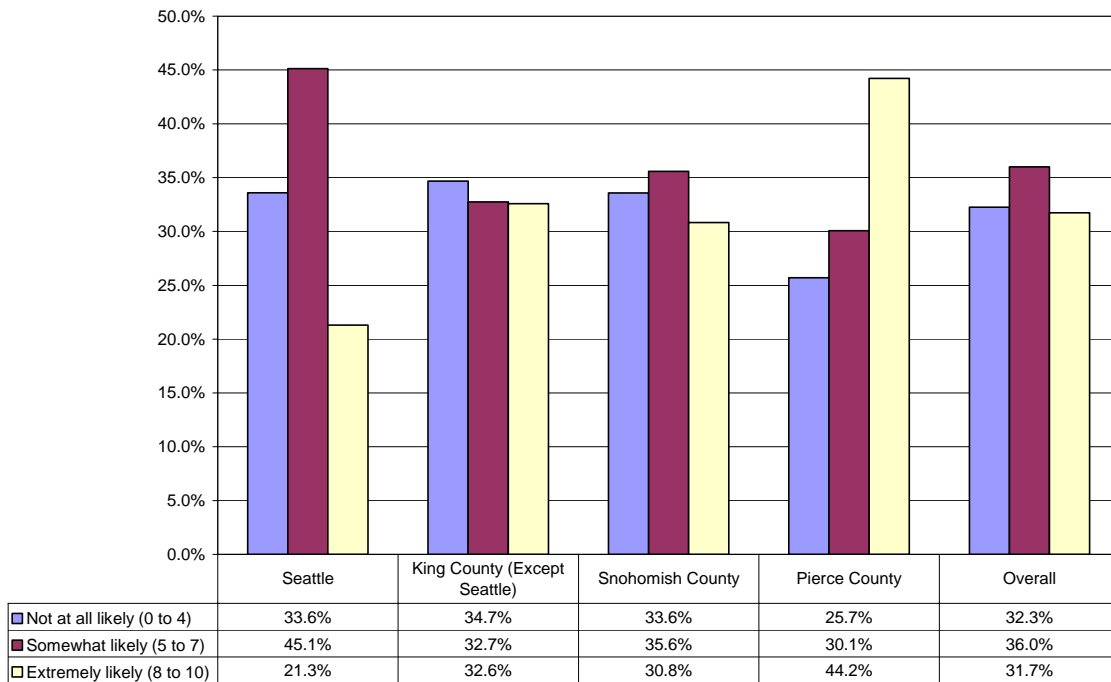
When respondents were asked if they were aware of the “3 Days, 3 Ways” advertising campaign, nearly nine in ten indicated they had not seen or heard of the campaign (88.5%). In fact, approximately 5.5% of respondents surveyed recalled having heard of the “3 Days, 3 Ways” advertising messages.



## *Likelihood to Utilize 3 Days, 3 Ways*

Little variability was evident in respondents' likelihood of using the "3 Days, 3 Ways" messaging to create and develop a plan for preparedness. Approximately one-third of respondents surveyed reported being not at all likely (32.3%), somewhat likely (36.0%), or extremely likely (31.7%) to use the "3 Days, 3 Ways" advertising messaging to create and develop a plan for preparedness.

**Likelihood to use 3 Days, 3 Ways to develop a Plan for Preparedness**



### **Statistical Analysis**

Although the differences between geographic segment were not found to be statistically significant ( $p=.234$ ), the average ratings of likelihood were found to vary statistically by age. As indicated below, the 65 or older age group gave the lowest average rating of likelihood to use 3 Days, 3 Ways to create a plan for preparedness.

Age Segments	18 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 or older
Likelihood to Develop a Plan Using the 3 days, 3 ways Website	5.5	5.9	6.3	6.0	5.6	3.7

There were also significant differences found between average likelihood to use 3 Days, 3 Ways and different levels of preparedness to *shelter in place* ( $p=.001$ ). As shown in the table, those who are somewhat prepared to *shelter in place* give the highest average rating in likelihood to use 3 Days, 3 Ways.

<b>Level of Preparedness to Shelter in Place</b>	<b>Average (Mean)</b>
Not Prepared (0 to 3)	4.5
Somewhat Prepared (4 to 7)	6.0
Very Prepared (8 to 10)	5.7

## Conclusions

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- 1) The level of overall comfort residents of King, Snohomish, and Pierce Counties are reported at by more than half of the survey respondents is at a rating level of 5 to 7, or *somewhat comfortable*. Over one third of the respondents surveyed were very comfortable (8 to 10), which were found in further qualitative analysis to be caused by emergency preparation.
- 2) Forty-eight percent of the respondents are concerned with natural disasters instead of man-made. Within geographic segments, Seattle and Pierce County residents were more concerned with man-made disasters, while King County-excluding Seattle and Snohomish County residents fear natural disasters or emergencies. Qualitative research shows that most respondents feel more prepared to deal with a natural disaster for reasons of perceived preparedness ability.
- 3) Respondents were asked how many days their household could *shelter in place* without assistance with water, food, or basic needs. The majority of respondents reported that they could *shelter in place* between three and seven days, while over nine in ten respondents indicated they could last three days or longer. The average number of days that respondents stated they could *shelter in place* was just over eleven days.
- 4) A strong statistical relationship exists between the perception of being prepared and the degree to which one is actually prepared to *shelter in place* at home in the event of a disaster or emergency. Note that a majority of those in the high preparedness condition (i.e., those who have engaged in a variety of preparation activities) perceive themselves to be somewhat prepared.
- 5) Respondents were presented with a list of possible preparedness actions taken when planning for evacuating from their dwelling within 15 minutes of receiving such a command. The most frequent actions taken included having water and snack food set aside and having set aside a small amount of cash.
- 6) Respondents were asked how they would rate their household's level of preparation if told to evacuate within 15 minutes. Using a 0-10 scale where 0 is *Not at all prepared* and 10 is *Extremely well prepared*, most residents felt that they were at least *Somewhat prepared*.
- 7) The survey shows that parents are moderately comfortable with their children remaining at school for 24 to 72 hours after an event; analysis suggests that this comfort level might be due to parents' knowledge of emergency preparedness

procedures such as evacuation procedures, fire drills, drop, cover and hold drills, and the availability of preparation kits and supplies.

- 8) Slightly over half of the respondents do **not** have a plan in place to take care of a pet during a disaster or emergency. A minority of respondents have a plan to evacuate the pet from the home during a disaster or emergency. Even fewer respondents have a plan in place to evacuate their pet from the neighborhood or city during a disaster or emergency.

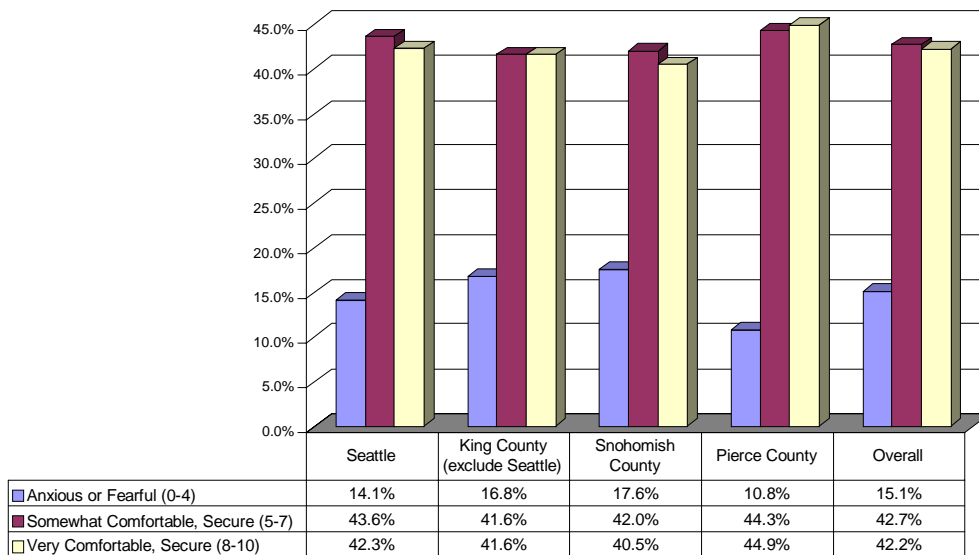


## Phase II Research Appendix

### Q1. Overall Level of Comfort of Residents with Emergency or Disaster-

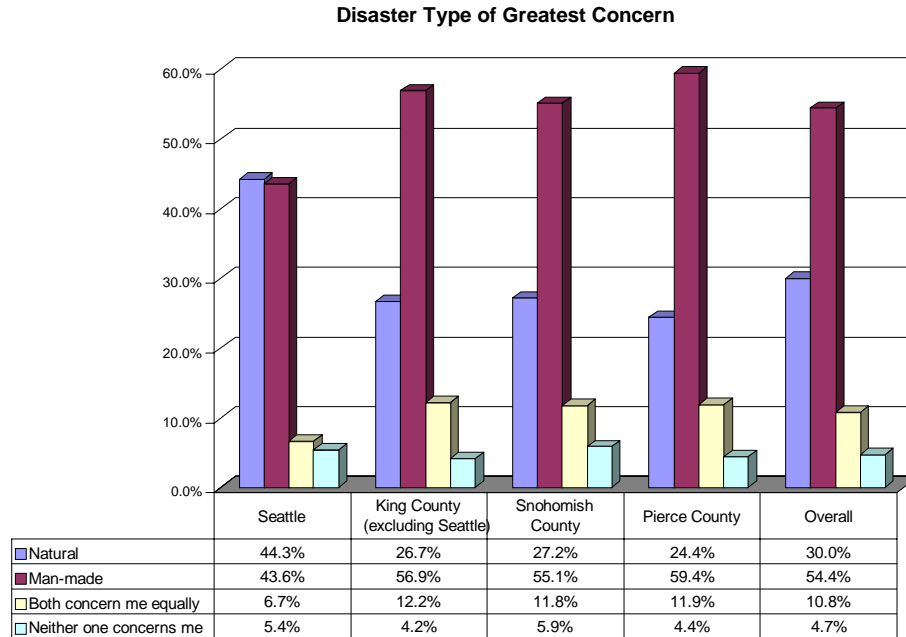
Respondents were asked to rate their overall comfort or anxiety when thinking of a disaster or emergency (event/occurrence), using a scale of 0 to 10, where 0 meant *Extremely anxious, fearful* and 10 meant *Extremely comfortable, secure*. The majority of respondents gave ratings of 5 or greater, indicating that they are at least *Somewhat comfortable*.

**Overall Level of Comfort**



### Q3. Type of Disaster that Concerns Residents the Most

Respondents were introduced to two types of disasters or emergencies – *natural* or *man-made* – and asked to identify which one most concerned them the most. As the following graph shows, overall the majority of respondents indicated *man-made* events (54.4%) caused them more concern than *natural* occurrences (30.0%).



### Q4. Resident Perceptions of the Worst Possible Type of Emergency

Respondents indicated that *Earthquakes* are the event most on the minds of tri-county residents.

Event	Seattle	King County (excluding Seattle)	Snohomish County	Pierce County	Overall
Earthquake	56.7%	39.2%	43.1%	25.0%	40.5%
Terrorist attack	16.7%	23.9%	19.3%	15.6%	19.6%
Volcanic eruption	2.0%	4.8%	0.9%	18.8%	6.5%
Chemical spill or other type of industrial accident	5.0%	3.3%	9.2%	8.6%	6.0%
Flooding	0.0%	2.9%	2.8%	2.3%	2.1%
Disease outbreak or epidemic	1.7%	2.4%	1.8%	1.6%	1.9%
Tsunami	0.0%	1.9%	1.8%	0.0%	1.1%
Meth lab in neighborhood	0.0%	1.0%	0.9%	1.6%	0.9%
Winter storm	0.0%	0.5%	0.0%	0.0%	0.2%
Other	14.0%	12.4%	13.8%	15.6%	13.3%
Don't know	8.0%	4.8%	4.6%	7.0%	5.7%
None	0.0%	2.9%	1.8%	3.9%	2.3%

**Q12. Resident Frequency of Engaging on Basic Preparation Activities**

Respondents were asked about what preparedness activities they had implemented or dedicated to preparedness. Most respondents indicated they had *Gathered home supplies* (75.6%), created an *Escape route at home* (65.6%) and/or developed a *Household communication plan* (52.3%).

Preparedness Activities	
Have gathered home supplies such as water, food and blankets	75.6%
Have a home escape route	65.6%
Have a household communication plan	52.3%
Have secured household items from falling	47.9%
Have an workplace escape route	38.8%

**Q6. Resident Preparedness Analysis – Ability to Shelter in Place**

Residents were asked which of a list of behaviors they have done in their household in an effort to be prepared to *shelter in place* in the event of an emergency or disaster.

OEM Value	Preparedness Activity for "Sheltering in Place"	% of Sample
1	Know how to turn off utilities	71.8%
1	Taken a class for training on first aid, CPR or disaster preparation	66.5%
2	Have out of area contact for all household members to contact when separated	57.0%
1	Developed a household escape plan	53.5%
2	Discussed disaster or emergency preparedness with household members	53.4%
2	Have secured household objects from falling	43.1%
3	Have designated a particular room in the dwelling to stay in during a disaster or emergency	19.9%
3	Have an accessible household "remaining in place" supply kit containing water, food, radio and personal need items	23.6%
3	Have an All Hazard Tone Alert radio	9.9%

### Q8. Preparedness Analysis – Number of Days a Resident can Shelter in Place

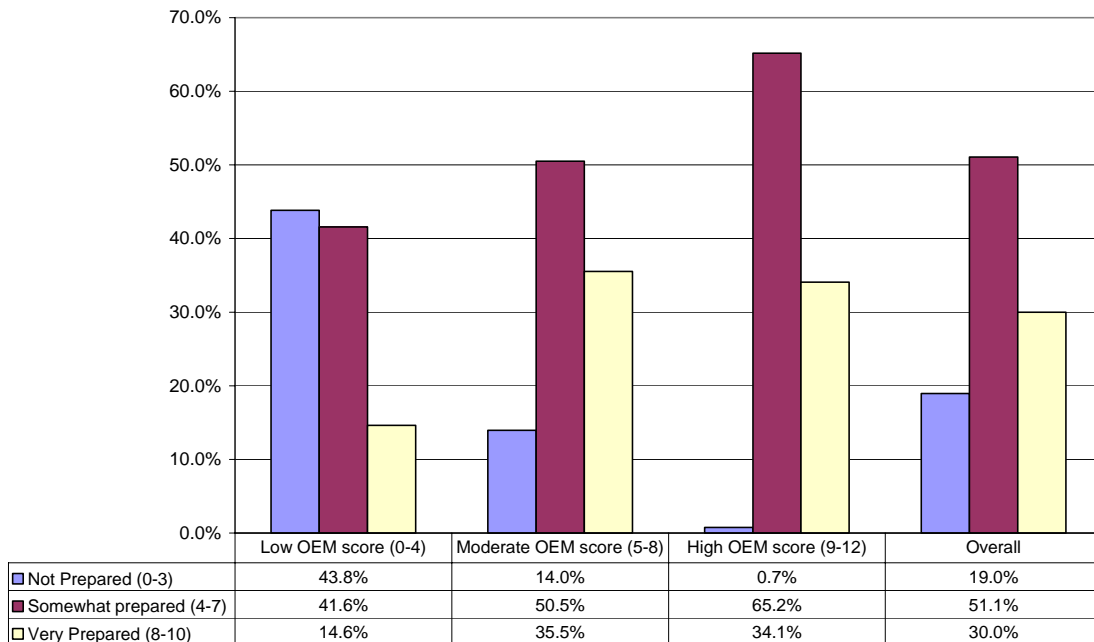
Respondents were asked how many days they could *shelter in place* at their home without assistance with water, food, or basic needs. The vast majority (90.1%) reported that they could *shelter in place* for more than three days.

Number of days	Percent
0-2	9.9%
3-7	61.2%
8-14	16.8%
15-21	3.8%
22-30	5.9%
31+	2.4%

### Q7. Preparedness Analysis – Perception of the Ability to Shelter in Place

The shelter-in-place benchmark shows a strong statistical relationship between the perception of being prepared (listed vertically) and the degree to which one is actually prepared (shown horizontally) to *shelter in place* at home in the event of a disaster or emergency.

Relationship Between the Perception of Preparedness and the Degree to Which Residents are Truly Prepared to Shelter in Place



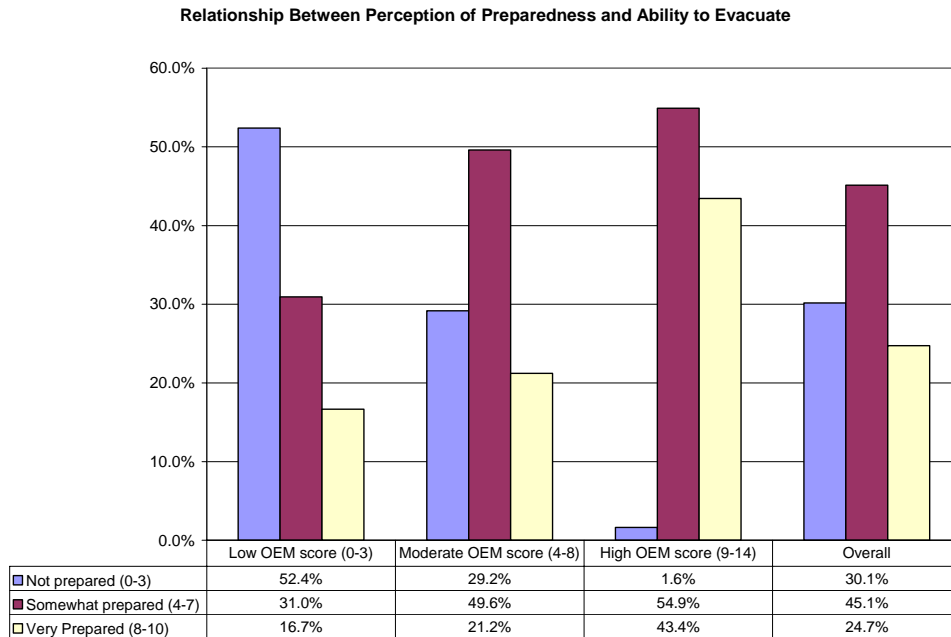
### Q9. Preparedness Analysis – Ability to Evacuate

Respondents were presented with a list of preparedness actions taken in planning for evacuating from their dwelling within 15 minutes of receiving such a command. The most frequent answers included having water and snack food set aside (69.7%) and having set aside a small amount of cash (56.6%).

OEM Value	Preparedness Activity for Evacuation	% of Sample
1	Water and snack food set aside	69.7%
2	Have set aside small amount of cash	56.6%
2	Have grab 'n go kit with pair of eyeglasses, necessary medications, toiletries	39.1%
1	Made photocopy of identification and credit cards	28.6%
3	Pet necessities taken into account	24.8%
2	Prepared a checklist of items to take	21.3%
3	Have grab n' go kit with entertainment items for household members	18.5%
3	Have set aside supplies for special needs of infants or elderly	18.5%

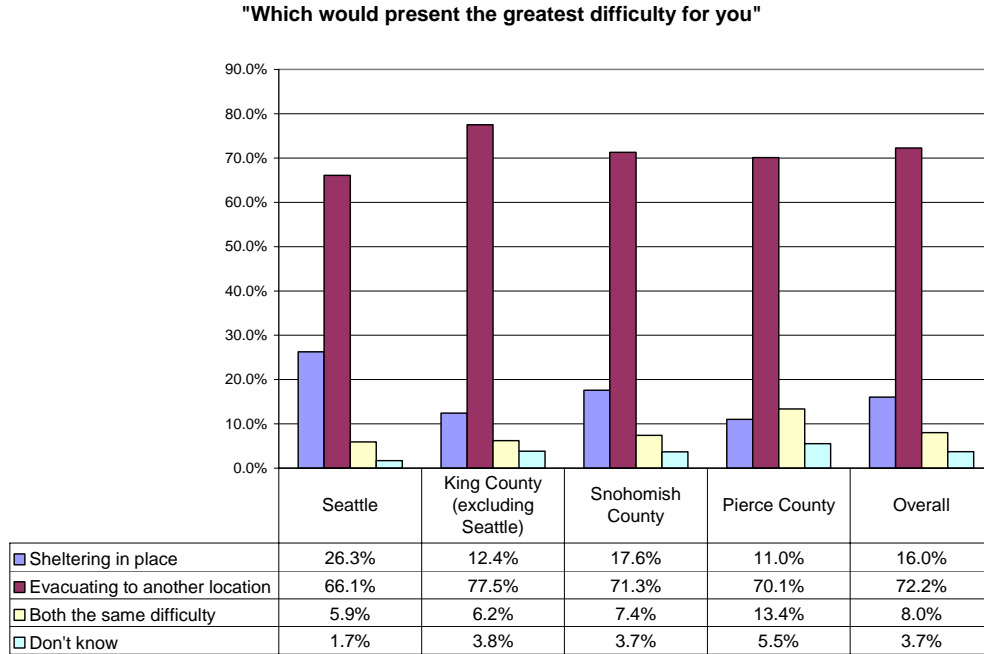
### Q10. Preparedness Analysis – Perception of the Ability to Evacuate

Respondents were asked in question 10 how they would rate their level of preparation if told to evacuate within 15 minutes. Most residents (69.8%) felt that they were at least *Somewhat prepared*.



### Q11. Perception of Greatest Difficulty – Sheltering in Place or Evacuating

When respondents were presented with the two basic types of responses to disaster or emergency situations, the majority believed *Evacuating to another location* (72.2%) was the most difficult.



### Q16. Preparedness Analysis-- Workplace Emergency Preparedness

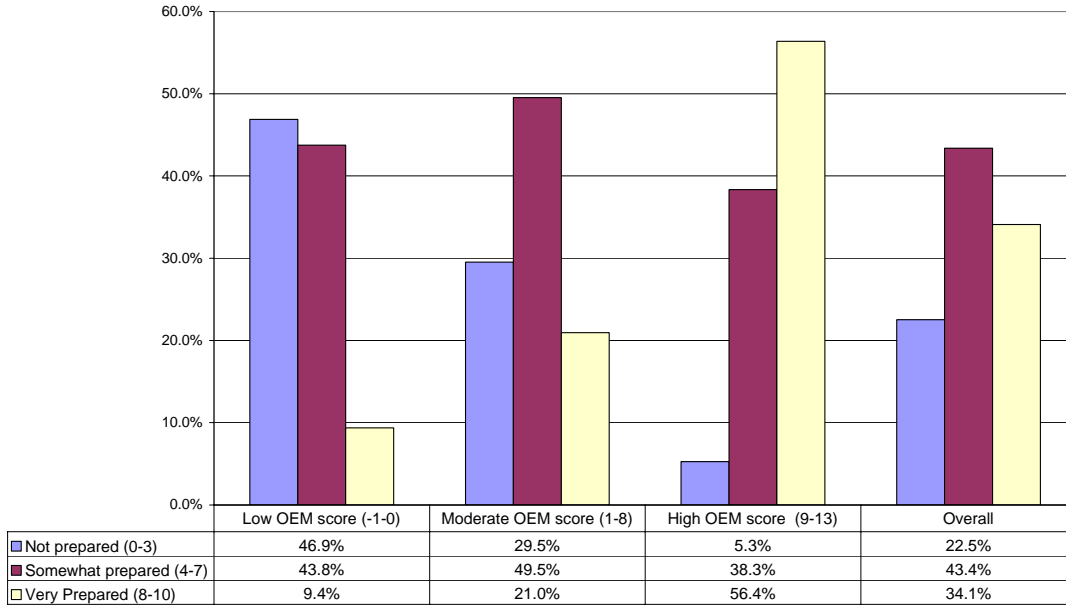
Surveys respondents were presented with a list of workplace preparedness activities. The majority of respondents “Discussed what to do in the event of a fire or earthquake” (73.6%) while relatively few (13.9%) said that they did not have any “Specific plan in place to deal with emergencies”.

OEM Value	Workplace Preparedness Activity	% of Sample
2	Discussed what to do in the event of a fire or earthquake	73.6%
3	Employees and co-workers have been assigned responsibilities	56.2%
3	Practiced drills on specific procedures for emergencies such as drop, cover, and hold during an earthquake	56.2%
2	Dedicated emergency flashlights, batteries, and radio	44.3%
3	Dedicated provisions such as water, food, and blankets	36.9%
1	Instructed on exit routes from work area to outside building	36.2%
2	Heavy objects have been secured	23.8%
-1	My place of work does not have a specific plan for dealing with emergencies	13.9%

## Q17. Preparedness Analysis-- Perception of Workplace Preparedness

Respondents were asked to rate the degree to which they felt prepared, while at the workplace, for specific *man-made* emergencies such as a *Chemical spill* or *Terrorist act* on a scale of 0-10 with 0 being *Not at all prepared* and 10 being *Extremely well prepared*. The majority (77.5%) indicated that they feel their workplace is at least somewhat prepared.

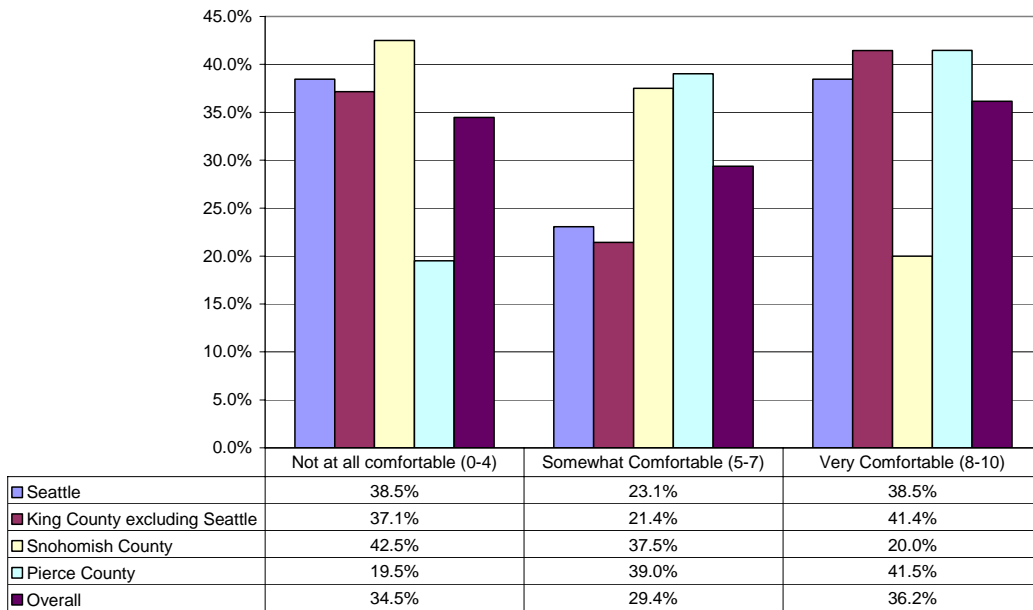
**Relationship Between Perception of Preparedness and Actual Workplace Preparedness**



### Q19. Comfort Level with Child Remaining at School during an Emergency

Respondents with children (28.3%) were asked to rate their comfort level with leaving children at school between 24 and 72 hours in the event of an emergency. On a scale of 0 to 10 where 0 is *Not at all comfortable* and 10 meant *Extremely comfortable*, the distribution showed little variance between the scale’s ends. The mean rating was 5.60 and the median was 6.0, indicating that responses are skewed slightly to the high end of the scale.

Comfort with children remaining at school for 24-72 hours hours due to emergency or disaster



### Q20. Emergency Preparedness at Child’s School

Parents were asked what types of emergency preparedness they were aware had taken place in their child’s school. They frequently cited *Fire drills* (59.1%) and *Evacuation procedures* (49.3%).

Workplace Preparedness	
Evacuation procedures	49.3%
Fire drills	59.1%
Drop, cover and hold earthquake drills	47.8%
Other	42.7%
Don't know	24.5%

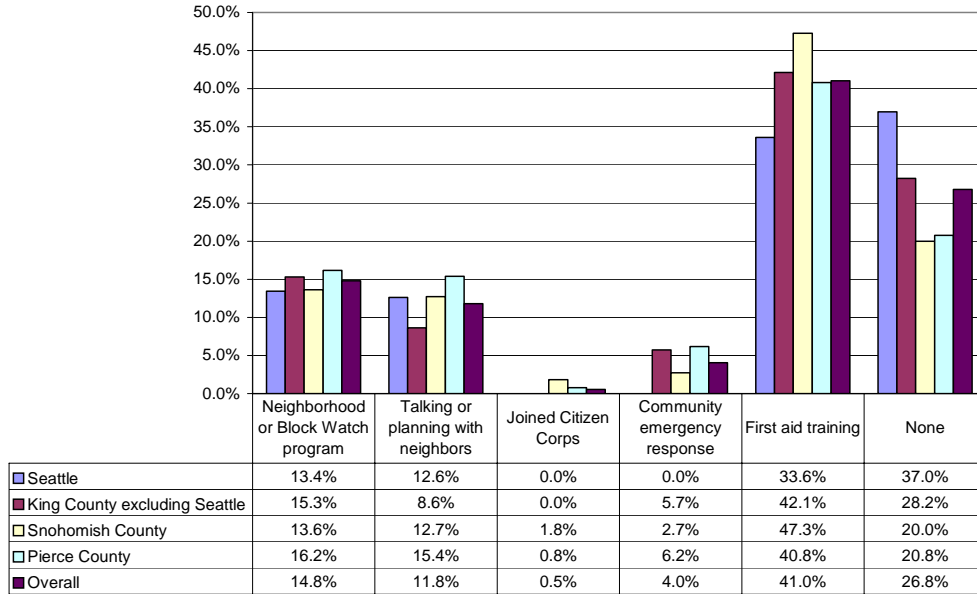
**Note:** Percentages do not sum to 100% because many respondents provided more than one response



## Q12a. Community Disaster Preparedness Participation

Among those that have engaged in preparedness activities, many cited *First aid training* as the activity they engaged in. This is an action often driven at least in part by concerns other than preparedness.

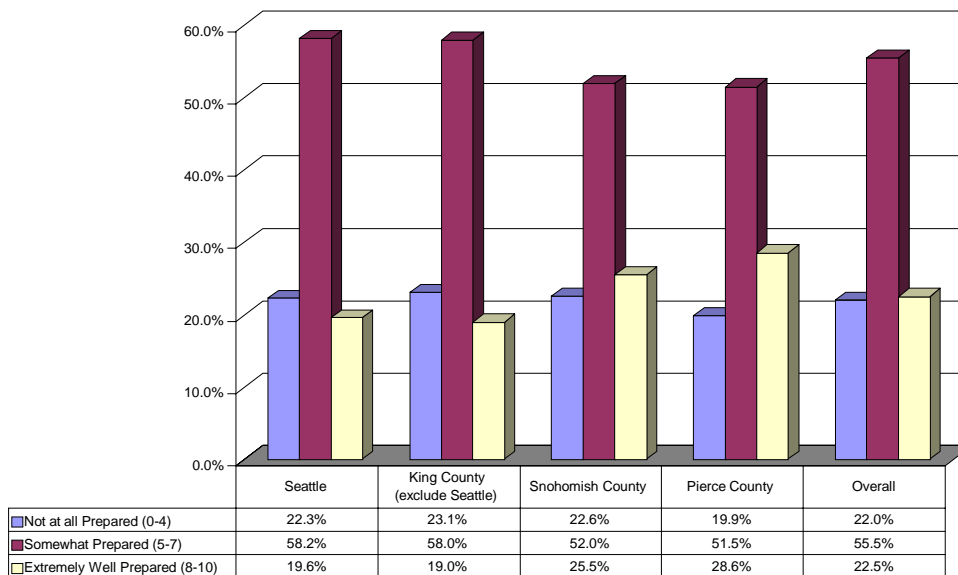
Actions Taken by Residents to Prepare for Disaster



## Q21. Perceived County Preparedness Beyond Police and Fire Services

Most respondents (58%) agreed their county was *Somewhat prepared* to deal with disasters and emergencies beyond basic police and fire services (57.0%).

Perception of home county preparedness beyond basic services such as fire and police



## Q22. Type of Information that Would Make Respondent Feel Prepared

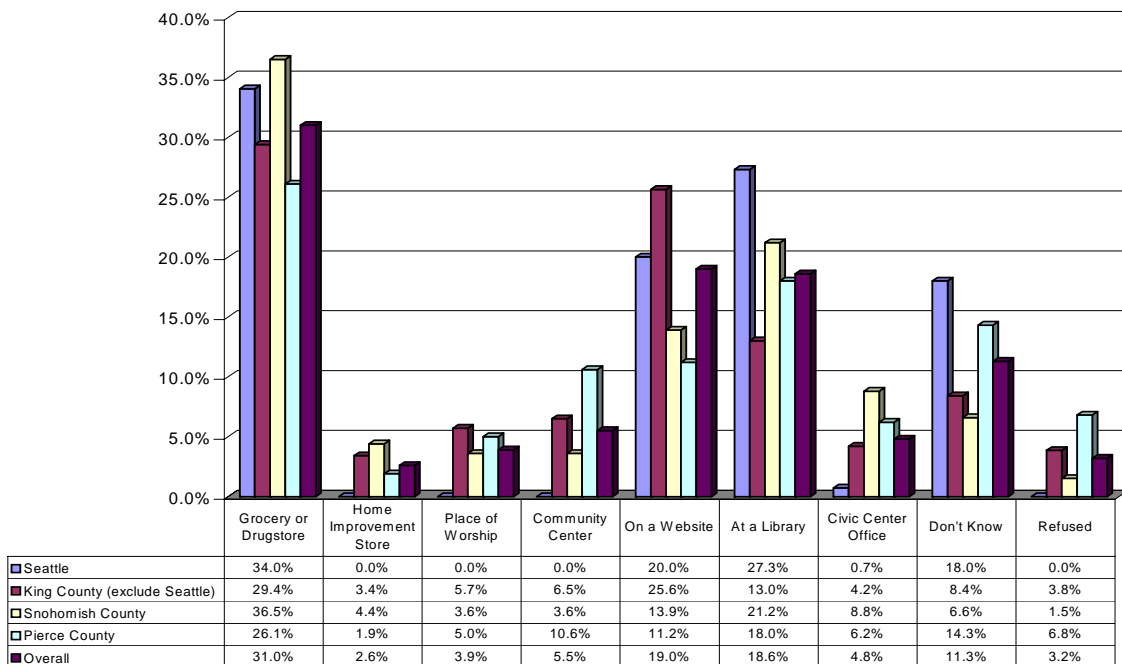
Survey participants were queried about the form of preparedness information that would help them ready their households for dealing with a major event. Among the choices listed, a *Checklist* of inventory items and a *Communication plan form* represented specific types of assistance.

Type of Assistance	Seattle	King County excluding Seattle	Snohomish County	Pierce County	Overall
Checklist for home supplies	10.0%	23.0%	20.2%	22.7%	19.6%
A form to enter names and numbers for a communication plan	1.7%	0.5%	2.8%	3.4%	1.8%
Television messages giving you information	13.3%	16.2%	16.5%	17.6%	15.9%
Radio messages giving you information	5.0%	4.9%	5.5%	6.7%	5.4%
Information in a newspaper	3.3%	5.4%	3.7%	3.4%	4.2%
Information with monthly utility bill	5.8%	6.9%	5.5%	7.6%	6.5%
Information in a neighborhood or community club newsletter	5.8%	2.9%	7.3%	3.4%	4.5%
Other	20.0%	20.6%	13.8%	15.1%	17.9%
Don't know	20.0%	11.8%	16.5%	12.6%	14.7%
None	15.0%	7.8%	8.3%	7.6%	9.4%

## Q22a. - Availability of Preparedness Materials and Information

Respondents were asked what distribution channels would be most useful to them. *Drug or grocery stores* (31.0%), *libraries* (18.6%) and *websites* (19.0%) were cited with the most frequency.

Usefulness of Specific Communication Channels



## *Phase III KCOEM Survey Questionnaire*

Hello, my name is \_\_\_\_\_, and I am calling from Hebert Research, a research firm in Bellevue. We are conducting a study about emergency preparedness. This call is for research purposes only and does not involve sales of any kind. May I speak with the head of the household please? **[IF NOT CONVENIENT ARRANGE TO CALL BACK]**

In this study we will be asking for your views on issues related to preparing for emergencies such as natural disasters or man-made emergencies.

Before we begin, here is some terminology that we'll use in the survey. When we talk about disasters or emergencies in this survey, we will mean something that is a large-scale event that could affect not only your home and family, but could also affect your place of employment, neighborhood, town, city, or even larger area. For example, an earthquake would be considered a disaster or emergency, but something like a car accident, while serious for the people involved, would not be considered because it is relatively smaller in scale. **[MAKE SURE RESPONDENT UNDERSTANDS DEFINITION]**

1. First, let's talk about your overall feelings about emergencies or disasters in general. On a scale of 0 to 10, where 0 means "Extremely anxious or fearful" and 10 means "Extremely comfortable or secure", how would you rate your feelings regarding the possibility of a disaster or emergency?
2. Why did you answer the way you did? **[VERBATIMS]**
3. There are two basic categories of disaster or emergency situations — natural disasters like an earthquake, flood, or a tsunami; and man-made like a chemical spill, or a terrorist act. Of these two basic categories – natural or man-made, which causes you the most concern?
  1. Natural
  2. Man-made
  3. Both concern me equally
  4. Neither one concerns me
  5. Don't know
  6. Refused
4. Think for a minute about emergencies in general and the possible difficulties in dealing with them both at home and at work. Overall, considering where you live and work, what would you consider to be the worst possible type of emergency that you could encounter? **[DO NOT READ. PRECODES]**
  1. Earthquake
  2. Terrorist attack

3. Chemical spill or other type of industrial accident
  4. Winter storm
  5. Flooding
  6. Disease outbreak or epidemic
  7. Tsunami
  8. Meth Lab in neighborhood
  9. Volcanic eruption
  10. Other **[SPECIFY]**
  11. Don't know
  12. Refused
5. In general, which type of disaster or emergency do you personally feel best prepared to deal with, natural or man-made, and why? **[VERBATIMS]**
6. "Remaining in place" is the term used for the idea of staying where you are and taking care of yourself and possibly your family when any sort of disaster emergency occurs. Which of the following have been done in your household to prepare for remaining in place in a disaster or emergency situation? **[ROTATE 1 – 9]**  
**[PRECODES]**
1. Taken a class for training on first aid, CPR or disaster preparation
  2. Developed a household escape plan
  3. Discussed disaster or emergency preparedness with household members
  4. Have out of area contact for all household members to contact when separated
  5. Have secured household objects from falling
  6. Know how to turn off utilities
  7. Have an All Hazard Tone Alert radio
  8. Have designated a particular room in the dwelling to stay in during a disaster or emergency
  9. Have an accessible household "remaining in place" supply kit containing water, food, radio and personal need items
  10. Don't Know
  11. Refused
7. On a scale of 0 to 10 where 0 is "Not at all prepared" and 10 means "Extremely well prepared", how would you rate the level of preparation of your household if you had to remain in place during a disaster or emergency?
8. How many days do you feel your household could remain in place with an emergency situation before you would need assistance with water, food, and other basic needs?  
**[RECORD IN FULL DAYS, NOT FRACTIONAL]**
9. Some types of emergencies require people to evacuate to safe locations. Let's talk now about how prepared your household is to evacuate within 15 minutes to another location if an emergency occurs. Which of the following has your household done to prepare for an evacuation in the event of such a command? **[ROTATE 1-8]**
1. Prepared a checklist of items to take

2. Have grab 'n go kit with pair of eyeglasses, necessary medications, toiletries
  3. Made photocopy of identification and credit cards
  4. Have set aside small amount of cash
  5. Have grab n' go kit with entertainment items for household members
  6. Have set aside supplies for special needs of infants or elderly
  7. Water and snack food set aside
  8. Pet necessities taken into account
  9. Don't know
  10. Refused
10. Using the same 0 to 10 scale as before, where 0 is "Not at all prepared" and 10 means "Extremely well prepared", how would you rate the level of preparation of your household to evacuate to another location within 15 minutes if necessary?
11. Thinking about the level of preparedness of your household right now, which situation would present the greatest difficulty for you in an emergency situation, remaining in place, or evacuating to another location?
1. Remaining in place
  2. Evacuating to another location
  3. Both the same difficulty
  4. Don't know
  5. Refused
12. Which of the following have you implemented or dedicated to disaster preparedness?  
**[ROTATE 1-5] [ACCEPT 5]**
1. Gathered home supplies such as water, food, and blankets
  2. Have secured household items from falling
  3. A household communications plan
  4. A home emergency escape route
  5. A workplace escape route
  6. None of the above
  7. Don't know
  8. Refused

**[ASK Q13 ONLY IF THEY DON'T HAVE ANY ANSWERS (1-5) IN Q12 IMPLEMENTED]**

13. What has kept you from accomplishing any of these plans? **[VERBATIM]**
14. Do you have any pets?
1. Yes
  2. No **[SKIP TO Q18]**
  3. Refused **[SKIP TO Q18]**
15. Do you have a plan in place to take care of your pets during a disaster or emergency?
1. Yes
  2. No

3. Refused
16. Do you have a plan in place to evacuate your pets from your home during a disaster or emergency?
  1. Yes
  2. No
  3. Refused
17. Do you have a plan in place to evacuate your pets from your neighborhood or city during a disaster or emergency?
  1. Yes
  2. No
  3. Refused
18. Which of the following have you participated in related to disaster preparedness?  
[ACCEPT 5]
  1. Neighborhood or Block Watch program
  2. Talking or planning w/ neighbors
  3. Joined Citizen Corps
  4. Received Community Emergency Response Team training
  5. First aid training
  6. Don't know
  7. Refused
  8. None

**Now let's talk specifically about the preparations for disasters and emergencies at your place of work.**

19. What is your employment status?
  1. Employed
  2. Unemployed [SKIP TO Q24]
  3. Retired [SKIP TO Q24]
  4. Refused [SKIP TO Q24]
20. Which of the following most accurately describes the type of facility in which you work? [READ] [ACCEPT 1]
  1. Free standing building
  2. A building containing multiple businesses, such as a mall, strip mall, or office building
  3. A manufacturing plant
  4. A high-rise office building
  5. A temporary or portable structure
  6. Mostly work outside, not in a building
  7. Work at home
  8. Not employed
  9. Don't know

10. Refused
21. **[ASK ONLY IF Q20 = 4]** On what floor is your main place of work? **[RECORD NUMBER]**
22. At the place where you work, which of the following steps for emergency preparation have been taken? **[READ] [ROTATE ANSWERS] [ACCEPT 7]**
1. Discussed what to do in the event of a fire or earthquake
  2. Employees and co-workers have been assigned responsibilities
  3. Practiced drills on specific procedures for emergencies such as drop, cover, and hold during an earthquake
  4. Dedicated provisions such as water, food, and blankets
  5. Dedicated emergency flashlights, batteries, and radio
  6. Heavy objects have been secured
  7. Instructed on exit routes from work area to outside building
  8. My place of work does not have a specific plan for dealing with emergencies
  9. Don't know
  10. Refused
23. Using the same 0 to 10 scale as before, where 0 is "Not at all prepared" and 10 means "Extremely well prepared", how would you rate the level of preparation of your place of work for a man-made emergency, such as a major chemical spill or terrorist act?
24. Do you have dependent children less than 18 years old living in your household, who attend school in King, Pierce, or Snohomish Counties?
1. Yes
  2. No **[SKIP TO Q29]**
  3. Refused
25. Using a 0-10 scale, where 0 is "Not at all comfortable" and 10 means "Extremely comfortable", how comfortable would you be if your child(ren) had to remain at school for 24-72 hours due to a disaster or emergency?
26. To your knowledge, what types of emergency preparedness procedures are in place in your children's schools? **[DO NOT READ] [ACCEPT 5]**
1. Evacuation procedures
  2. Fire drills
  3. "Drop, cover, and hold" earthquake drills
  4. Parent/child reunion procedures
  5. Other **[SPECIFY]**
  6. Don't know
  7. Refused
27. Do you know if the school has emergency policies and procedures for reuniting parents with their children?
1. Yes

2. No
3. Refused

28. If you can't get to your child's school after a regional disaster, do you have a plan for someone else to pick up your child?

1. Yes
2. No
3. Refused
4. Don't know

Now think about the community you live in, regardless of whether that is a town, city, or unincorporated area.

29. Thinking about the county you live in. Using a scale of 0 to 10 where 0 means "Not at all prepared" and 10 means "Extremely well prepared", how prepared do you think your county is beyond police and fire services to deal with either a natural or man-made disaster or emergency?

30. What kind of assistance would make you feel satisfied that your household is prepared for dealing with disasters or emergencies? **[ACCEPT 8]**

1. Checklist for home supplies
2. A form to enter names and numbers for a communication plan
3. Television messages giving you information and directing you to other resources
4. Radio messages giving you information and directing you to other resources
5. Information in a newspaper
6. Information with monthly utility bill
7. Information in a neighborhood or community club newsletter
8. Other **[SPECIFY]**
9. Don't know
10. Refused

31. Thinking of informational resource locations, where would the availability of checklists and guides for preparedness be the most useful to you? **[ACCEPT 8]**

1. At the grocery or drugstore
2. At hardware or home improvement store
3. Place of worship
4. Neighborhood or community center
5. When buying a home (from the realtor)
6. On a website
7. At a library
8. Civic center of satellite office

32. **[ASK ONLY IF Q31 = 6]** What type of website? **[ACCEPT 3]**

1. Weather website
2. Newspaper site
3. TV website



4. Radio website
  5. City website
  6. Specific website [**SPECIFY**]
  7. Other [**SPECIFY**]
  8. Don't know
  9. Refused
33. How interested would you be in receiving an emergency preparedness kit as a welcoming gift, from the realtor or from the city, when you buy a new home? Please use a scale from 0 to 10 where 0 means "not at all interested" and 10 means "extremely interested."
34. Do you recall having seen or heard any messages on TV, radio, or publications about where to look for information about preparedness, or about things you should do to prepare your household? [**VERBATIMS. PROBE FOR SOURCE OF INFO. TRY TO GET INFORMATION ABOUT THE TYPE OF MESSAGE AND WHERE IT WAS SEEN/HEARD/READ, AND DID HE/SHE DO ANY PREPAREDNESS ACTIVITIES AS A RESULT**]
35. Are you aware of any actions your community, neighborhood, or church has taken to be prepared in case of a natural or man made disaster? [**VERBATIMS. PROBE FOR SOURCE OF INFO. TRY TO GET INFORMATION ABOUT THE TYPE OF MESSAGE AND FROM WHICH ORGANIZATION IT WAS SEEN/HEARD/READ, AND DID RESPONDENT DO ANY PREPAREDNESS ACTIVITIES AS A RESULT**]
36. In your opinion, what could be the key drivers or motivators that would enable people to take action to prepare for different types of emergencies? [**VERBATIMS**] [**POSTCODES**]
37. Who in your household would most likely take charge of preparing for emergencies? [**VERBATIMS**]
38. Have you heard of or seen advertising for 3 Days, 3 Ways? If you have, where have you seen or heard it? [**ACCEPT 6**]
1. Bus
  2. Radio
  3. Telephone
  4. Internet
  5. Went to the website ([www.3days3ways.org](http://www.3days3ways.org))
  6. Other [**SPECIFY**]
  7. Have not seen or heard of it
  8. Don't Know
  9. Refused

[**READ**]

**3 Days, 3 Ways is a public service announcement developed through a joint effort between emergency management agencies throughout the Puget Region to raise awareness of citizens to get prepared for a major event in our area. The campaign is designed to be easy to learn the steps to preparedness. The three key ingredients are: make a plan, get a kit, and get involved. Any step a citizen takes today will put them in a stronger position to be more resilient in a major event such as earthquake, winter storms or terrorist attack**

39. How likely are you to develop a plan or finding information about emergency preparedness using this website? Please use a scale from 0 to 10 where 0 means “not at all likely” and 10 means “extremely likely.”

I just have a few more questions for classification purposes.

40. Into which of the following age ranges do you fall?

1. 18 to 24
2. 25 to 34
3. 35 to 44
4. 45 to 54
5. 55 to 64
6. 65 or older
7. Don't Know
8. Refused

41. What is your marital status?

1. Single (include divorced/widowed)
2. Married (include committed relationship)
3. Don't Know
4. Refused

42. With what ethnic group do you identify yourself?

1. White/Caucasian
2. Hispanic or Latino
3. Asian American/Pacific Islander
4. Native American
5. African American
6. Other [SPECIFY]
7. Don't know
8. Refused

43. What is the zip code of the city or community where you work?

**[VERBATIM] [POSTCODES]**

44. What is the zip code of the city or community where you live?

**[VERBATIM] [POSTCODES]**

45. What city do you live in?  
**[VERBATIM] [POSTCODES]**

46. What city do you work in?  
**[VERBATIM] [POSTCODES]**

47. Which of the following most accurately describes your place of residence?

1. Single Family detached home **[SKIP TO 49]**
2. Apartment, Condo, or town-house
3. Mobile/manufactured Home **[SKIP TO 49]**
4. Other **[SPECIFY]**

48. Do you live in a high-rise building of 10 or more stories?

1. Yes
2. No

49. Gender **[POSTCODE FROM VOICE]**

That concludes our survey. Thank you very much for your time.

August 5, 2006

King County OEM  
Executive Summary - Addendum

The Puget Sound Region comprising King, Snohomish, and Pierce counties represents 3.4 million people. While geology, and weather are forces which contribute to vulnerability from natural disasters, our proximity to international air and shipping routes contribute to the increased probabilities of manmade emergencies. The potential for these episodic events are random with respects to time, place, why they occur, whom and how many will be impacted remains a puzzle... Some progress has been made on better predictive models of weather and volcanic eruptions. Methods of prevention of infectious diseases have become more hopeful. Preparedness especially the individual members of the community remains the most viable solution.

The challenge, however, is to effectively educate a large population to prepare for the breath of possible disasters and emergencies for themselves, their families and friends. The problem is further compounded because of powerful behavioral variables. Populations adapt to the threat of natural and manmade threats by coping, operating within comfort zones. This was clearly found in the research where only 14.1% self reported they were anxious about the possibilities of natural and manmade disasters.

An important gestalt was discovered in the orthogonal relationship between the levels of preparedness to shelter in place. The purpose of the research was to determine a public education program could be developed and implemented that would cause a change within a large regional populations.

An integral calculus model involving conditional probabilities was developed. Basically this involves the relationship of a dependent variable (y) defined as change in the increase in emergency preparedness through a set of independent variables (x...). Specifically these variables involved increasing the awareness of natural and manmade disasters, providing information, motivating the regional population,

There were several important research findings:

1. Awareness of disasters from earthquakes significantly increased from 40.5% in 2005 to 50.5% in 2006 in the region. In Seattle the awareness of terrorist attacks increased significantly from 16.7% to 25.0% in the same period.
2. Taking a class for first aid training, CPR, or disaster preparation as well as discussion within the family on emergency prepared significantly increased.
3. A strong measure of statistical association was found (Cramer's V = .311) was found between the level of preparedness and ability to evacuate in 15 minutes.
4. Radio, television, and in grocery and drug store information was reported as the most useful. Websites for more information and check list were reported as the most helpful.

5. Within a ninety day test period there was an awareness developed of a specific program called 3 days 3 ways by 12% of the regional population representing 340,000 adult members of the population. Furthermore, 67.2% were likely to use the 3 days 3 ways program to create and develop a plan for preparedness.
6. It is especially important to high level the high degree of promise the emergency preparedness program achieved in such a short period and the degree interest and actual response in a large population base.

James D. Hebert