# CITY OF ANACORTES

## Introduction

The purpose of this section of the plan is to assess the vulnerability of the City of Anacortes in regards to the various natural hazards previously identified in SECTION II of this plan. In addition, mitigation strategies that are currently in place relating to these natural hazards as well as newly proposed mitigation strategies have been included in this section of the plan.

To complete the vulnerability assessment process, various city staff utilized a series of locally developed forms as well as forms available in the 20/20 Mitigation Software that was provided to Skagit County by the Washington State Military Department, Emergency Management Division. The information collected with these forms is included in this portion of the plan.

As part of the vulnerability assessment process, City of Anacortes government completed an inventory of all critical facilities and has considered these critical facilities in our planning and mitigation strategy development process. However, due to post 9/11 concerns, those facilities are not listed separately in this document. A list of these facilities will be made available to FEMA personnel in the event this information is required to obtain future hazard mitigation grant funding.

## National Flood Insurance Program

The City of Anacortes has participated in the National Flood Insurance Program (NFIP) since 2003. The identifying, analyzing, and prioritizing of mitigation measures is based (and will continue to be based) upon continued participation and compliance with the National Flood Insurance Program. No repetitive loss properties have been identified within the City of Anacortes.

## Mitigation Planning Committee

The City has appointed a three person committee consisting of the Building Official, Assistant City Engineer, and Assistant Fire Chief to act as the Mitigation Planning Committee for the City of Anacortes. This committee will work closely with other jurisdictions, agencies, Indian tribes, and the Skagit Natural Hazards Planning Committee to develop a comprehensive, coordinated mitigation plan intended to reduce the vulnerability to natural hazards within the City.

Former Building Official Ed Frank (retired in July, 2008) led the initial update process for the City. Michelle Deaton, Permit Technician II, provided additional information and Don Measamer, current Building Official, reviewed and approved the final documents.

The plan was reviewed to consider the vulnerabilities, risks, and impacts posed by the natural hazards that affect Anacortes (including Tsunami) as well as changes to city infrastructure, population, development trends, and recent changes to codes and ordinances. The disaster events and codes and comprehensive plan portions were updated; mitigation strategies were evaluated, determined to still be valid, and re-affirmed for the 2008 – 2013 plan cycle.

## Incorporating Mitigation Into Other Planning Mechanisms

The City of Anacortes is governed by the Mayor and City Council members that set policy and oversee the various city departments. The process by which the City will incorporate the mitigation

strategy and other information contained in the Skagit County Natural Hazards Mitigation Plan into other planning mechanisms is:

1. Adoption of the plan by the Mayor and City Council.
2. Inclusion into City of Anacortes Comprehensive Plan, when appropriate.
3. Inclusion into other planning mechanisms subordinate to the City of Anacortes Comprehensive Plan, when appropriate.

It should also be noted that additions and changes made to the City of Anacortes Comprehensive Plan utilize an established process that is consistent with, and in compliance with, Washington State Growth Management requirements.

Since the original adoption of the Skagit County Natural Hazards Mitigation Plan in 2003, Anacortes government has begun the process of incorporating the mitigation strategy and other information contained in the plan pertaining to the local vulnerability and risk associated with natural hazards into the plans and programs listed below:

- Water Treatment Facilities Plan (Draft 2008)
- Anacortes Critical Areas Ordinance
- Anacortes Water System Plan (Draft 2008)
- Storm Water Facilities Plan

Continued participation by the City of Anacortes government in the following programs is consistent with, and in support of, the mitigation strategy as well as the local vulnerability and risk associated with the natural hazards that affect the City of Anacortes:

- Skagit River Flow Management Committee
- Flood Control Zone Technical Committee
- Washington Association of Building Officials Code Committee

**The Process**

The information contained in this document presents the results of this effort to identify the specific natural hazards threatening the City of Anacortes, to characterize the vulnerability of the City of Anacortes regarding these hazards, and to identify current as well as proposed mitigation strategies, projects and/or programs to address those vulnerabilities.

The analyses conducted by City of Anacortes staff were based on the best currently available information and data regarding the characteristics of the neighborhoods identified, the natural hazards that threaten the people, property, and environment of these neighborhoods as well as the impacts these neighborhoods have suffered in past disasters. This information includes, when available, United States Census data, local tax records, local and national geographic information system data, Flood Insurance Rate Maps, hazard specific analyses, and other environmental and demographic facts. However, very often authoritative or current information simply was not available for the planning effort. In these cases, the experience, knowledge and judgment of local officials representing City of Anacortes government were used in the planning, including assumptions and approximations that were believed to be reasonable. In addition, straight-forward, simplified technical analyses were used for tasks such as estimating
Property values, determining the size of populations affected, and so forth. The reliance on the judgment of knowledgeable officials and simplified analyses is considered acceptable at this stage to allow the participating organizations to complete the tasks needed to develop this multi-jurisdictional natural hazards mitigation plan. As the planning continues in future years, or at the time when a proposed mitigation initiative is intended to be funded and/or implemented, the participating organizations/jurisdictions recognize that additional information and analyses may be required.

City of Anacortes government is committed to the implementation of the mitigation related projects/programs described in this section of the plan as resources become available. Since 2003 the City of Anacortes has installed isolation valves at water reservoirs. Additional items have not been updated due to lack of funding and staff. The City of Anacortes government is committed to continuing the mitigation planning process that has resulted in the development of this document, and to the ongoing cooperation with other agencies, organizations, Indian tribes, and jurisdictions to make the City of Anacortes more resistant to the damages and hardships that could otherwise be the result of future natural disasters.

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## City Profile

Population of Jurisdiction: 16,400 and growing slightly

Principal Economic Base: Industrial/Manufacturing

Economic Characteristic: Average for the State

| | 2003 | 2008 |
|---|---|---|
| Land area within the existing city limits (acres): | 9,728 | 9,728 |
| Land area within urban growth area (acres): | 3,000 | 3,000 |
| Land area of park, forest, and/or open space (acres): | 3,456 | 3,456 |
| Land area set aside as resource lands (acres): | 1,500 | 1,500 |
| Current population: | 14,910 | 16,500 |
| Expected population in 2025: (2030) | 18,300 | 18,300 |
| Annual Budget: | $32,128,671 | $43,575,982 |

Current and Anticipated Development and Population Trends: Steady growth of 2% a year until build-out in 2012 and in-fill/redevelopment thereafter.

City Infrastructure Summary:

| | 2003 | 2008 | | |
|---|---|---|---|---|
| Miles of Streets/Road: | 118 | 123.6 | approximate value: | $ 866,924 |
| Miles of Sanitary Sewer: | 100 | 105.8 | approximate value: | $23,304,632 |
| Miles of Storm Sewer: | 55 | 83.5 | approximate value: | $ 2,984,374 |
| Miles of Water Line: | 187 | 219.8 | approximate value: | $40,408,582 |

**Critical Facilities** (Emergency Operations Center, Fire Station, Police Station, Sewer Treatment):

1. Police/EOC approximate value: $ 4,485,800
2. Fire Station #1 approximate value: $ 536,110
3. Fire Station #2 approximate value: $ 1,521,080
4. Water Treatment approximate value: $32,187,890
5. Wastewater Treatment approximate value: $25,803,686
6. Other municipal facilities approximate value: $26,131,470

**Total value of all Municipal Infrastructure: $ 158,230,548**

## Flood-Specific Information

Percentage of existing city limits within the 100-year floodplain: **0.8%**

Assessor's valuation of private properties within the 100-year floodplain: **$51,578,000**

Critical facilities located within the 100-year floodplain:

1. Water Treatment Plant

Total value of municipal infrastructure located within the 100-year floodplain: **$4,914,979**

## Existing Applicable Natural Hazard Mitigation Policies, Ordinances, Codes, & Plans

15.04 - Building and Fire Codes
17.51.050 - Storm Drainage Ordinance
17.54.070 - Regulated Slopes
17.65 - Non/Tidal Wetlands
18.12 - Land Clearing and Grading
Adopted Land Use/Zoning Code
Adopted International Fire Code
Adopted Building Code (2006 International Building Code)
Municipal Code
Zoning Code
Subdivision Code
Flood Damage Prevention Code
Comprehensive Land Use Plan
Local Water Quality Plan
Water Comprehensive Plan
Water Treatment Plant Flood Plan
Storm Water Management Plan
Participation in NFIP Program

## Existing Prioritized Natural Hazard Mitigation Strategies or Projects

1. Power line removal from in front of Fire Stations
2. Installation of propane tanks for electric generators
3. Seismic analysis of existing buildings, infrastructure and upgrade
4. New water reservoir
5. Inter-tie with PUD Water system
6. Map Utility systems
7. Improve water treatment plant flood resistance
8. Water Treatment Plant Emergency Generator

## City of Anacortes
## 2008 Natural Hazard Identification and Risk Estimation

**Based on Mitigation 20/20 Risk Assessment Formula (Area Impacted+Health and Safety Consequences+Property Damage+Environmental Damage+Economic Disruption multiplied by Probability of Occurence)*

***The greater the Risk Score, the greater the risk.*

| | Area Impacted | Health & Safety | Property | Environment | Economic | Probability | Risk Score |
|---|---|---|---|---|---|---|---|
| **Drought** | 1 | 0 | 1 | 2 | 0 | 4 | **16** |
| **Earthquake** | 3 | 2 | 2 | 2 | 3 | 3 | **36** |
| **Flooding** | 1 | 1 | 1 | 1 | 2 | 2 | **12** |
| **High Winds** | 2 | 1 | 1 | 1 | 2 | 5 | **35** |
| **Infestation/Disease** | 1 | 1 | 0 | 2 | 2 | 3 | **18** |
| **Landslide/Erosion** | 1 | 1 | 1 | 1 | 2 | 4 | **24** |
| **Lightning** | 0 | 1 | 1 | 0 | 0 | 1 | **2** |
| **Storm Surge/Tsunami** | 1 | 1 | 1 | 1 | 2 | 4 | **24** |
| **Subsidence,expansive Soils** | 0 | 0 | 0 | 0 | 0 | 1 | **0** |
| **Urban Fire** | 2 | 2 | 1 | 2 | 2 | 2 | **18** |
| **Wildfire** | 1 | 1 | 1 | 2 | 2 | 3 | **21** |
| **Winter Storm** | 3 | 1 | 1 | 1 | 1 | 5 | **35** |
| **Volcanic Activity** | 0 | 0 | 0 | 1 | 1 | 1 | **2** |

| **Total Jurisdictional Risk Estimation Score:** | **243** |
|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Area Impacted: | 0=No impact | 1=<25% | 2=<50% | 3=<75% | 4=>75% |
| Health & Safety: | 0=No impact | 1=Few injuries | 2=Few fatalities, many injuries | 3=Numerous fatalities | |
| Property: | 0=No impact | 1=Few destroyed or damaged | 2=Few destroyed, many damaged or Few damaged, many destroyed | 3=Many properties destroyed or damaged | |
| Environment: | 0=Little or No impact | 1=Short term | 2=Long term | 3=No recovery | |
| Economic: | 0=No impact | 1=Low costs | 2=High direct cost and Low indirect or Low direct and High indirect | 3=High Direct and Indirect Cost | |
| Probability: | 1=Unknown but rare | 2=Unknown but anticipated | 3= <100 year | 4=<25 year | 5=Once a year or more |

# RECENT ANACORTES DISASTER EVENTS

| DATE | DISASTER NO. | DESCRIPTION |
|---|---|---|
| Nov. 1990 | 883 | Heavy rains caused flooding of the Skagit River forcing sandbagging of the Anacortes Water Treatment Plant near the City of Mount Vernon; damage to city storm water structures and street flooding. |
| Dec. 1990 | 896 | High winds downed trees that damaged homes and power lines. Marina damage was extensive. |
| Nov. 1995 | 1079 | Heavy rains caused flooding of the Skagit River forcing sandbagging of the Anacortes Water Treatment Plant near the City of Mount Vernon. |
| Feb. 1996 | 1100 | Heavy rains caused flooding of the Skagit River forcing sandbagging of the Anacortes Water Treatment Plant near the City of Mount Vernon. |
| Dec. 1996 & Jan. 1997 | 1159 | Snow accumulations of 2 to 3 feet followed by heavy rains and wind caused roofs to collapse; covered boat moorage structures suffered extensive damage. |
| Dec. 2000 | not declared | A series of windstorms with gusts between 60 and 90 miles per hour caused numerous downed trees and power lines within the city. |
| Feb.2001 | 1361 | The 6.8 Magnitude Nisqually Earthquake was felt throughout the community. Several building suffered minor damage that required repair. The unreinforced smoke stack of an abandoned paper mill was severely damaged and subsequently razed. |
| Oct. 2003 | 1499 | Heavy rains caused flooding of the Skagit River forcing sandbagging of the Anacortes Water Treatment Plant near the City of Mount Vernon. |
| Feb. 2006 | 1682 | A severe low pressure weather event accompanied by high winds and coinciding with high tide created a 100-year tidal surge event causing damage to homes and other structures adjacent to shorelines on Fidalgo Island. |
| Nov. 2006 | 1672 | Heavy rains caused flooding of the Skagit River forcing sandbagging of the Anacortes Water Treatment Plant near the City of Mount Vernon. |
| Nov. 2006 | not declared | A sustained windstorm with high peak gusts caused significant blow-down of large trees and power lines on Fidalgo Island blocking roads for 2-3 days and forced some temporary relocation of residents to emergency shelters. |
| Dec. 2007 | 1734 | A series of windstorms in the western portion of Skagit County caused damage to various structures. |

**The City of Anacortes is most vulnerable to severe storms, flooding, and earthquakes.**

Due to the city's proximity to the marine waters of Skagit County and the surrounding topography, Anacortes is especially vulnerable to severe arctic winds from the north as they exit the Frazier River Valley in British Colombia, Canada.

The city is also vulnerable to flooding of the Skagit River ... not because the city is located within the floodplain of the Skagit, but because the city's source of potable water is the Skagit River and the water treatment plant is located adjacent to the Skagit River near the City of Mount Vernon. The City of Anacortes must take action to prevent damage to this vital infrastructure and to insure a source of potable water for residents, business, and industry.

The city's vulnerability to earthquake extends beyond damage to buildings, roads and infrastructure within the city limits. Water transmission lines from Mount Vernon to Anacortes cross the floodplain of the Skagit River in soils that are susceptible to liquefaction; recent studies indicate the shoreline areas of the city are vulnerable to tsunami resulting from a large-magnitude subduction-zone earthquake occurring off the coast of Washington.

# Codes and Comprehensive Plan
# Natural Hazard Reduction

(updated April 8, 2008)

| Purpose | Document | Review Schedule |
|---|---|---|
| Reduce city exposure to landslides, and to minimize reliance on federal and state programs for disaster mitigation, protect public and private property, save lives, and use community resources wisely.<br>(a) Integrate regulatory standards such as buffers and setbacks with hazard avoidance measures.<br>(b) Coordinate hazard vulnerability assessments with programs for purchase or preservation of open space.<br>(c) Update hazard mitigation and disaster plans every three years.<br>(d) Coordinate related activities of city departments with the County, State, and Federal agencies.<br>a. Mapping designations – Continue to revise and compile mapping of vulnerable areas by using City, County, State and Federal database.<br>Development Regulations – Revise the Zoning, Subdivision, Critical Areas Ordinance and the regulations portion of the Shoreline Master Program to incorporate hazard avoidance provisions and assure consistency of definitions and mapping. | Comprehensive Land Use Plan | Annual |
| Objectives: (a) Prevent property damage from flooding. (b) Perform the necessary analysis and recommend solutions for existing flooding problems. (c) Employ management strategies in flood-prone areas to ensure that new development is not exposed to significant flood risk. (d) Preserve wetlands and implement a wetlands management strategy. (e) Review the City's critical areas ordinances to ensure consistency with the surface water management program goals. (f) Ensure adequate funding for program implementation. (g) Coordinate the City program with the Skagit County program. | Storm Water Quality Management Plan | 6 Year |
| Identifies drainage basins, general soil conditions, recommends drainage ordinances and drainage system development. | Comprehensive Storm Water Plan | |
| It is the purpose of this ordinance to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed: (1) To protect human life and health; (2) To minimize expenditure of public money and costly flood control projects; (3) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the | Flood Damage Prevention Ordinance | 2003 |

| | | |
|---|---|---|
| general public; (4) To minimize prolonged business interruptions; (5) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard; (6) To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; (7) To ensure that potential buyers are notified that property is in an area of special flood hazard; and, (8) to ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. | | |
| The purpose of this code is to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures within this jurisdiction. | Building Code 2006 IBC | July 2007 |
| This code prescribes regulations consistent with nationally recognized good practice for the safeguarding to a reasonable degree of life and property from the hazards of fire, explosion, and dangerous conditions arising from the storage, handling and use of hazardous materials and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises and provisions to assist emergency response personnel. | Fire Code 2006 IFC | July 2007 |
| The City Council finds that this chapter is necessary to promote sound development policies and construction procedures that respect and preserve the city's watercourses; to minimize water quality degradation and control of sedimentation of creeks, streams, ponds, lakes, and other water bodies; to protect the life, health and property of the general public; to preserve and enhance the suitability of waters for contact recreation and fish habitat; to preserve and enhance the aesthetic quality of the waters; to maintain and protect valuable groundwater quantities, locations and flow patterns; to ensure the safety of city roads and rights-of-ways; and to decrease drainage-related damages to public and private property. | Surface Water Management Code | 1997 |
| In part this provides such activities must not threaten public safety or cause nuisances by: (A) Blocking flood flows or destroying flood storage areas, thereby raising flood heights or velocities on other land and increasing flood damages; (B) Causing water pollution through any means, including location of wastewater disposal systems in wet soils; unauthorized or detrimental application of pesticides, herbicides and algaecides; disposal of solid wastes or storm water runoff at inappropriate sites; or the creation of un-stabilized fills… (C) Increasing erosion; or (D) Increasing runoff of sediment and storm water. This section also refers to other land altering codes. | Non-tidal Wetland Protection | Annually |

| | | |
|---|---|---|
| In Part: The ordinance is designed to assist in orderly community development, conserve the value of property and safeguard the public welfare by: Implementing the City of Anacortes comprehensive plan policies through land-use regulations; protecting the general public health, safety and welfare; | Zoning Code | Annually |
| To minimize surface water and ground water runoff and diversion, to reduce siltation of lakes and streams and to deter erosion due to removal of trees and ground cover and the risk of slides. | Land Clearing Code | 2002 |
| A description of how the proposed development and its associated grading plan will or will not impact each of the following on the subject property and adjoining properties. (1) Slope stability, erosion, and landslide hazard. (2) Drainage, surface and subsurface hydrology, and water quality. (3) Existing vegetation as it relates to wetlands, regulated slopes and soil stability. | Regulated Slopes Geologically Hazardous Areas | Annually |
| There shall be allowed as an accessory use to a permitted use on site hazardous waste treatment and storage facilities provided such facilities comply with the State Hazardous Waste Siting Standards and Anacortes and State Environmental Policy Act Requirements in the following districts…. | Hazardous Waste Treatment and Storage | Annually |
| Land to be subdivided shall be of a character that can be used safely for building purposes without danger to health or peril from fire, flood, or other menace. | Subdivision Code | Annually |
| Coordinate with Skagit County through arrangements such as interlocal agreements, joint programs, consistent standards, or regional boards or committees. | Multi-Jurisdictional All Natural Hazards Mitigation Planning project | Annual maintenance with five year update required |
| Provides long range (5 year) planning for maintenance and replacement of municipal infrastructure, buildings and equipment incorporating strategies for mitigation of natural hazards. | Capital Facilities Plan | Annually |

| DOCUMENT LOCATION MATRIX | | | | | | | |
|---|---|---|---|---|---|---|---|
| NO | REQUEST | AVAILABLE YES/NO/? | LOCATION OF INFORMATION | MAINTAINED BY | LAST UPDATE | UPDATE TO PRINTING | NOTES |
| 1 | Critical Areas Map | Yes | Engineering | GIS | 7/2005 | 7/2005 | |
| 2 | Parks Plan Map | Yes | Parks Dept. | GIS | 1/2008 | 1/2008 | |
| 3 | Sewer Plan Map | Yes | Engineering | GIS | 3/2008 | 3/2008 | |
| 4 | Storm Water Plan Map | Yes | Engineering | GIS | 3/2008 | 3/2008 | |
| 5 | Street Map | Yes | Engineering | GIS | 3/2008 | 3/2008 | |
| 6 | Zoning Map | Yes | Planning/Bldg. | GIS | 1/2008 | 1/2008 | |
| 7 | Critical Facilities Map | Yes | Engineering | GIS | 6/2007 | 6/2007 | |
| 8 | WSRB – Fire | Yes | Fire Department | Fire Department | Nov 2002 | 1/15/2003 | |
| 9 | BCEG Rating – Building | Yes | Building Dept. | Building Official | 9/28/98 | 1/15/03 | Update Late 2008 |
| 10 | Repetitive Loss Properties and Address | Yes | Building Dept. | Building Official | 1/2008 | 1/21/2008 | |
| 11 | List of Recent Events | Yes | Building Dept. | Building Official | 2008 | 3/1/2008 | |
| 12 | Comprehensive Land Use Plan | Yes | Planning Dept. | Planning | 1/2007 | 1/2007 | |
| 13 | Comprehensive Storm Water Plan | Yes | Public Works | Public Works | 11/2007 | 11/2007 | Update Late 2008 |
| 14 | Basin Reconnaissance Report | Yes | Building Dept. | Public Works | 2007 | 2007 | Contains sensitive area mapping. |
| 15 | Comp. Transportation Plan | Yes | | Public Works | 3/2008 | 3/2008 | Update Late 2008 |
| 16 | Comp Wastewater Plan | Yes | Public Works | Public Works | 1993 | 1/93 | Update Late 2008 |
| 17 | Comp. Water System Plan | Yes | Public Works | Public Works | 2000 | 9/00 | Update Late 2008 |
| 18 | Floods Hazard Reduction Plan | | Building Dept. | Building Official | 2003 | | In Process with FEMA |
| 19 | Disaster Preparedness | Yes | Various | Public Safety Public Works | 2001 | | |
| 20 | Capital Improvement Plan | Yes | Planning | Planning | 11/2007 | 11/2007 | |
| 21 | Building Code | Yes | Building Dept. | Building Official | 2006 | 7/1/2008 | 2006 IBC |
| 22 | Fire Code | Yes | Fire Dept. | Fire Marshal | 2006 | 7/1/2008 | 2006 IFC |
| 23 | Surface Water Management Code | Yes | | | 9/2007 | 9/2007 | |
| 24 | Critical Areas Code | Yes | Planning Dept. | Planning Dir. | 7/2005 | 7/2005 | |

| NO | REQUEST | AVAILABLE YES/NO/? | LOCATION OF INFORMATION | MAINTAINED BY | LAST UPDATE | UPDATE TO PRINTING | NOTES |
|---|---|---|---|---|---|---|---|
| 25 | Zoning Code | Yes | Planning Dept. | Planning Dir. | 2008 | 2/2008 | Summer 2008 Complete |
| 26 | Subdivision Code | Yes | Planning Dept. Engineering Dept. | Planning Dir. City Engineer | 5/2005 | 5/2005 | |
| 27 | Sewer Code | | Public Works | Public Works | 2008 | 2008 | |
| 28 | Traffic and Street Code | | | | | | Uniform Traffic Code Adopted by Reference |
| 29 | Total Acreage of City and UGA | Yes | Engineering | GIS | 3/2008 | 3/2008 | |
| 30 | Zoning Acreage Breakdown | Yes | Engineering | GIS | 3/2008 | 3/2008 | |
| 31 | Vacant Land Available for Development | Yes | Engineering | GIS | 3/2008 | 3/2008 | |
| 32 | Water Shortage Response Plan | Yes | Public Works | Public Works | 2002 | | Update Late 2008 |

## PRIORITIZATION OF ACTION ITEMS

The City of Anacortes operates under the requirements of the Growth Management Act of the State of Washington. The city government format is a strong mayor with council. City staff evaluates actions based on community needs as expressed in the growth management act and the various comprehensive plans and ordinances adopted by City Council. Staff prepares recommendations for specific actions to the council for consideration. Council weighs the input from staff and citizens before making any decision.

Before an action may proceed there must be a demonstrated need and funding must be secured. When funding is available and council approval is given, the project is included in the annual budget. Need for an action to proceed may be determined in a variety of ways including but not limited to: action items identified in adopted plans, cost benefit analysis, necessary service, emergency, directive from state or federal agency, safety or other benefit to the community. For planning purposes projects are evaluated and included in the annual update of the 6 year capital facilities plan. Many projects in the capital facilities plan are dependent on outside funding. Possible sources of funding are the general fund, capital improvement funds, utility reserves, local improvement district, utility district, grant funding from a variety of sources including but not limited to private agencies, economic development organizations, state agencies, federal agencies and philanthropic sources. Others sources of funding may, from time to time, become available for specified actions that may or may not be included in the community planning process.

## MITIGATION STRATIGIES

The following tables identify initiatives that the City of Anacortes identified in 2003. Progress made during the 2003 – 2008 plan cycle has been noted and modifications have been made for the 2008 – 2013 plan cycle to further mitigate natural hazard impacts to existing and future infrastructure, critical facilities and the community investment in housing and commerce.

| FACILITY | HAZARD | MITIGATION |
|---|---|---|
| Water Treatment Facility | Flood | **2003:** Move the facility out of the floodplain but maintain capability to collect water from the river. The Anacortes water treatment and distribution system serves 3 communities western Skagit County, Oak Harbor, NAS Whidbey, and 2 major oil refineries.<br>**2003-2008 Accomplishments:**<br>1. Levee height protecting the facility was raised three (3) feet in 2005 to provide added protection from flooding.<br>2. Phase I of a Plant Reliability Design was completed in early 2008.<br>**The costs to move the facility out of the floodplain prohibit such action being taken. Flood mitigation action for the Water Treatment Facility has been modified (as follows) for the 2008-2013 plan cycle:** Implement significant structural modifications to better resist predicted flood events. |
| | Winter Storm, Wind Storm | **2003:** Purchase and install an emergency generator with capacity to supply enough electricity to operate the plant.<br>**2003-2008 Accomplishments:**<br>1. An emergency generator was purchased and installed in 2005.<br>**This mitigation action has been completed and is not continued for the 2008-2013 plan cycle.** |
| Water Distribution | Flood, Storm, Equipment Failure | **2003:** Construct an inter-tie with Skagit County PUD. The inter-tie with Skagit County PUD will provide both utilities with capacity should either plant be out of service for a short period of time.<br>**2003-2008 Accomplishments:**<br>1. The inter-tie project with Skagit County PUD is currently in the design phase.<br>**This mitigation action is continued for the 2008-2013 plan cycle.** |
| Water Distribution (continued) | Earthquake | **2003:** Install isolation valves at water reservoirs; relocate portions of distribution system to protected areas.<br>**2003-2008 Accomplishments:**<br>1. Isolation valves were installed at water reservoirs in 2007.<br>2. 21-inch diameter waterline was relocated to a more protected area in 2007-2008.<br>**These mitigation actions have been completed and are not continued for the 2008-2013 plan cycle.** |

| | | |
|---|---|---|
| Fire Station 1 | Earthquake, winter storm, wind storm | **2003:** Install alternate fuel source for emergency generator.<br>**2003:** Relocate overhead power lines underground at apparatus access and egress.<br>**Due to lack of local funding, these mitigation actions have not been completed and are re-affirmed for the 2008-2013 plan cycle.** |
| Fire Station 2 | Earthquake, winter storm, wind storm | **2003:** Install alternate fuel source for emergency generator.<br>**2003:** Relocate overhead power lines underground at apparatus access and egress.<br>**Due to lack of local funding, these mitigation actions have not been completed and are re-affirmed for the 2008-2013 plan cycle.** |
| Fire Station 3 | Earthquake, winter storm, wind storm | **2008:** Install emergency generator.<br>**2008:** Install alternate fuel source for emergency generator.<br>**Fire Station 3 was activated in 2007; these mitigation actions are new to the plan for the 2008-2013 plan cycle.** |
| Municipal Building | Earthquake, winter storm, wind storm | The Municipal building is 90 year's old and houses several critical functions. Installation of an emergency generator and upgrade of the building structural and fire systems is necessary to ensure continued function during and after any natural hazard event.<br>**2003-2008 Accomplishments:**<br>1. Emergency generator was installed in 2005.<br>**This mitigation action has been completed and is not continued for the 2008-2013 plan cycle.**<br>2. Seismic evaluation was completed in 2006; implementation is dependent upon future grant funding.<br>**This mitigation action is on-going and has been re-affirmed for the 2008-2013 plan cycle.**<br>3. An upgrade of the Fire Alarm System was completed in 2006 and emergency lighting was also installed in 2006; further upgrades are still needed.<br>**This mitigation action is on-going and has been re-affirmed for the 2008-2013 plan cycle.** |

Other Mitigation Strategies:

- Adopt and enforce building codes as adopted by the State of Washington.
- Participation in the National Flood Insurance Program.
- Compliance with the State of Washington Growth Management Act.
- A disaster response plan has been implemented and is updated by staff when necessary.
- Develop and implement a natural hazard awareness program.

# CITY OF ANACORTES
# ACTION PLAN FOR NATURAL HAZARD REDUCTION
# SELECTION OF APPROPRIATE ACTIVITIES

No new activities have been identified for the 2008 plan. Progress is noted within the specific activity listed below.

1. Preventive activities, such as zoning, storm water management regulations, building codes, and preservation of open space and the effectiveness of current regulatory and preventive standards and programs.

| ACTIVITY | STAFF ASSIGNMENT & SCHEDULE | FINANCING PLAN |
|---|---|---|
| ***Earthquake, Severe Storm, fire, Land Movement*** | | |
| Utilize the latest adopted state building code to insure adequate protection in construction against Earthquakes in Seismic Zone 3, Severe storms with Wind exposure C, Fire with fire Resistive construction Standards, and Land Movement with Grading Standards | State Legislature has adopted International Codes for implementation in 2007<br>**City Council** adopts updated codes on a 3 year cycle in compliance with RCW 19.27, State Building Code. | No financial impact |
| Utilize the latest adopted state fire code to insure adequate protection against fire in construction with standards for fire flow and through the annual Inspection of Commercial Structures | State Legislature has adopted International Codes for implementation in 2007<br>**City Council** adopts updated codes on a 3 year cycle in compliance with RCW 19.27, State Building Code. | No financial impact |
| ***Flood*** | | |
| The 100 year Flood zones shall be regulated to protect human life, property and the public health and safety of the citizens of Anacortes; minimize the expenditure of public money; and maintain the city's flood insurance eligibility while avoiding regulations which are unnecessarily restrictive or difficult to administer | Planning and Building Department – On-going<br>Administration of model National Flood Insurance Program Ordinance | No financial impact |
| Manage storm water runoff to improve drainage, control storm water quantity, prevent localized flooding of streets and private property during storm events, and protect and enhance water quality. Increase focus on storm water quality. | **Public Works & Street Department**-Administer Surface Water Management Code; **Update comprehensive Storm Water Plan –** 6 year cycle | Funded by Surface Water Utility fees, both new construction and monthly rates |

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|---|---|---|
| Make investigations and corrective actions of problem storm drains, including sampling. Developed a program for operation and maintenance of storm drains, detention systems, ditches, and culverts. | **Public Works & Street Departments – Ongoing** Administer Surface Water management code | Funded by Surface Water Utility fees, both new construction and monthly rates |
| ***Flood, Landslide, Earthquake*** | | |
| Utilizing Best Available science to develop the Critical Areas title to protect, to the greatest extent practical, life, property and the environment from loss, injury and damage by pollution, erosion, flooding, landslides, strong ground motion, soil liquefaction, accelerated soil creep, settlement and subsidence, and other potential hazards, whether from natural causes or from human activity and related goals. | **Planning, Building and Public Works Departments – Ongoing** program and regulations are in place. | Funding integrated into each department's budget, with dependence on grant funding. |
| Coordinate with Skagit county through arrangements such as interlocal agreements, joint programs, consistent standards, or regional boards or committees. | **Multi-jurisdictional All Natural Hazards Mitigation Planning project – 2003 first plan, 2008 first update; Annual maintenance with five year update required** | Funded by State/Federal Grant with local participation. |
| Public Works implementation of drainage utility including improved maintenance and operations, a rate structure and public education element. Drainage Utility rate structure adopted in early 1999; annual inspection and maintenance requirements for all private facilities implemented; previous annual inspections limited to public facilities. | **Public Works Department – Ongoing** | Funded by Surface Water Utility fees, both new construction and monthly rates |

2. The plan reviews property protection actions, such as acquisition, retrofitting, and insurance.

| ACTIVITY | STAFF ASSIGNMENT & SCHEDULE | FINANCING PLAN |
|---|---|---|
| ***Landslide*** | | |
| Provide protection of steep slopes according to standards in the Critical Areas Ordinance. | **Planning, building & Public Works Departments – Ongoing** | Local funds, fees and possible grant support. |
| ***Flooding*** | | |
| Regulations and policies reflect the existing shoreline. Nonstructural solutions to flood hazards shall be encouraged including restricting development in flood-prone areas and storm water runoff management | **Planning, building & Public Works Departments – Ongoing** | Local funds, fees and possible grant support. |
| The Building Official has developed a recording system for elevation certificates. Each elevation certificate is maintained by address and copies will be sent to FEMA on disk as requested. | **Building Department – Ongoing** | Local funds and fees. |

| | | |
|---|---|---|
| *Action:* Require, review, enter data in computer, and file certificates for all new development in flood zones. | | |
| The Planning director and the Building Official will continue to provide technical advice to property owners, contractors and design professionals. | **Building and Planning Departments** | Local funds and fees. |
| ***Earthquake, Severe Storm, Flooding*** | | |
| Increase flood protection for the Water Treatment Plant; Provide Emergency Generator with capacity to operate plant. | **Public Works-- Long term project—2 to 5 years in duration** | Dependent on grant funding. Funding has been secured with construction planned for 2009/2010. |
| Seismic upgrade of Municipal Building | **Parks Department – Long term – 3 year project** | Funding to be determined. Grant application approved but not funded in 2008. |
| Fire protection of Municipal Building | **Parks Department – Long term – 3 year project** | Funding to be determined. Grant application approved but not funded in 2008. |

3. The plan reviews activities to protect the natural and beneficial functions of the flood zones, such as wetlands protection;

| ACTIVITY | STAFF ASSIGNMENT & SCHEDULE | FINANCING PLAN |
|---|---|---|
| ***Flooding*** | | |
| Protect and restore critical areas, plan for flood hazard mitigation, surface water management and pollution control, establishment and maintenance of green belts and conservation areas. | **Planning, Public Works, Building Departments – Ongoing** | Combination of funding including department budgets, grant funds, surface water utility. |
| Provide habitat for wildlife species, food fish, and saltwater fish in close proximity to an urban area, including Fidalgo Bay. | **Planning and Public Works Departments -- Ongoing** | Combination of funding including department budgets, grant funds, surface water utility together with citizen actions on private property. |
| Plan the Stormwater management system to be consistent with policies regarding flooding, wetlands, land use, and water quality. | **Public Works Department – Ongoing** | Surface Water Utility funds, department budgets, and grant support. |
| Apply best management practices to reduce pollutant loading and minimize the effects of contaminated sediments on Fidalgo Bay, Guemes Channel and Burrows Bay. | **Planning, & Public Works Departments – Ongoing** | Funding integrated into department budgets, grant funding |
| ***Flooding, Earthquake, Landslide, Fire, Severe Storms*** | | |
| Encourage the retention of open space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural | **Planning, Parks Departments – Ongoing** | Parks Fund, general budgets together with citizen actions on private property |

| ACTIVITY | STAFF ASSIGNMENT & SCHEDULE | FINANCING PLAN |
|---|---|---|
| ***Flooding*** | | |
| Protect and restore critical areas, plan for flood hazard mitigation, surface water management and pollution control, establishment and maintenance of green belts and conservation areas. | **Planning, Public Works, Building Departments – Ongoing** | Combination of funding including department budgets, grant funds, surface water utility. |
| Provide habitat for wildlife species, food fish, and saltwater fish in close proximity to an urban area, including Fidalgo Bay. | **Planning and Public Works Departments -- Ongoing** | Combination of funding including department budgets, grant funds, surface water utility together with citizen actions on private property. |
| Plan the Stormwater management system to be consistent with policies regarding flooding, wetlands, land use, and water quality. | **Public Works Department – Ongoing** | Surface Water Utility funds, department budgets, and grant support. |
| Apply best management practices to reduce pollutant loading and minimize the effects of contaminated sediments on Fidalgo Bay, Guemes Channel and Burrows Bay. | **Planning, & Public Works Departments – Ongoing** | Funding integrated into department budgets, grant funding |
| ***Flooding, Earthquake, Landslide, Fire, Severe Storms*** | | |
| resource lands and water, and develop parks. Integrate the concepts with natural functions such as drainage and topographic features. | | |
| Forest Lands fire protection plan | **Fire Department – Ongoing** | General Budget, Department Budget. |

## 4. The plan reviews emergency services activities

| ACTIVITY | STAFF ASSIGNMENT & SCHEDULE | FINANCING PLAN |
|---|---|---|
| ***Flooding, Tsunami, Earthquake*** | | |
| Developed a specific flood and tsunami warning and evacuation program for affected areas in the City of Anacortes | **City Emergency Response Plan Committee – Time frame to be determined** | General Fund, other support to be determined |
| The transportation plan is designed to ensure the continued ability of the transportation system to function at a reasonable level of service throughout the urban service area and coordinate the links to the regional transportation system. Critical for evacuation. | **Planning and Public Works Departments -- Ongoing** | Funding integrated into department budgets with occasional grant funding support. |
| Maintain Police, Fire, and Wastewater Treatment Critical Facilities up to date with most current technology and standards to ensure operation during hazard events. | **City of Anacortes --- Ongoing** | Funding integrated into department budgets with occasional grant funding support. |

| ACTIVITY | STAFF ASSIGNMENT & SCHEDULE | FINANCING PLAN |
|---|---|---|
| Annual maintenance of the Emergency Response Plan to insure that all Critical Facilities including Nursing Homes, chemical storage facilities, schools, electric and communication substations have working emergency plan in place and that contacts are up to date. | **City Emergency Response Plan Committee – Annual Review and update every 3 years** | Funding integrated into department budgets. |

**5. The plan reviews structural projects.**

| ACTIVITY | STAFF ASSIGNMENT & SCHEDULE | FINANCING PLAN |
|---|---|---|
| ***Flooding*** | | |
| Structural Measures – Rebuild the water treatment plant to better withstand up to 100 year estimated flood events. Construction is estimated for 2009/2010. | **Public Works Department** | Variety of funding sources including grant fund, federal, state and local funds. |
| ***Earthquake*** | | |
| Rebuild the water treatment plant to better withstand seismic events, relocate portions of distribution system to protected areas. Construction for the treatment plant is estimated for 2009/2010, the distribution system between Anacortes and the plant has been completed. | **Public Works Department – Short term projects** | Variety of funding sources including grant fund, federal, state and local funds. |
| Seismic upgrade of municipal building, including analysis, design, and completion of work. A FEMA grant has been approved but not funded in 2008. | **Parks Department – Short term project** | Variety of funding sources including grant fund, federal, state and local funds. |
| ***All Hazards*** | | |
| Purchase and install emergency generator with capacity to operate water treatment plant. Construction is estimated for 2009/2010. | **Public Works Department – Short term projects** | Variety of funding sources including grant fund, federal, state and local funds. |
| Construct water system inter-tie with Skagit County PUD. The inter-tie with Skagit County PUD will provide both utilities with capacity should either plant is out of service for a short period of time. Dependant on compatible treatment processes. | **Public Works Department – Skagit County PUD -- Short term projects** | Variety of funding sources including grant fund, federal, state and local funds. |
| Install alternate fuel source for emergency generators at Fire Stations 1, 2, and 3. | **Fire Department – Short Term Project** | General fund and grant funding. Grant funding applied for in 2008. |
| Install emergency power generator at Fire Station 3. | **Fire Department – Short Term Project** | General fund and grant funding. Grant funding applied for in 2008. |
| Relocate overhead electrical wires underground at Fire Station 1apparatus access and egress ramp. | **Fire Department – Short Term Project** | General fund and grant funding. |

| ACTIVITY | STAFF ASSIGNMENT & SCHEDULE | FINANCING PLAN |
|---|---|---|
| City Hall—Install emergency generator capable of operating entire building | **Parks Department- Short Term Project** | General Fund and grant funding. |
| City Hall—Upgrade fire protection systems. City hall is a 90 year old building that houses several municipal functions. Upgrade of the building structural and fire protection systems to ensure continued function during and after any natural hazard event | **Parks Department- Short Term Project** | General Fund and grant funding. A FEMA grant has been approved but not funded in 2008. |

The City of Anacortes has been pro-active upgrading facilities to modern codes. Since 1985 the following new facilities have been constructed:

- Three fire stations
- Sewer treatment Plant
- Police/Court Bldg with EOC
- Library
- Water distribution system upgrades
- All schools modernized with seismic upgrades
- Hospital upgrades for seismic, fire safety and emergency care needs