APPENDIX C

SUMMARY OF HAZARD MITIGATION STRATEGIES

I. RIVERINE MITIGATION

A. Prevention

Prevention measures are intended to keep the problem from occurring in the first place, and/or keep it from getting worse. Future development should not increase flood damage. Building, zoning, planning, and/or code enforcement offices usually administer preventative measures.

1. Planning and Zoning

Land use plans are put in place to guide future development, recommending where - and where not - development should occur. Sensitive and vulnerable lands can be designated for uses that would not be incompatible with occasional flood events - such as parks or wildlife refugees.

A Capital Improvements Program can recommend the setting aside of funds for public acquisition of these designated lands.

The zoning ordinance can regulate development in these sensitive areas by limiting or preventing some or all development - for example, by designating floodplain overlay, conservation, or agricultural districts.

2. Open Space Preservation

Preserving open space is the best way to prevent flooding and flood damage. Open space preservation should not, however, be limited to the flood plain, since other areas within the watershed may contribute to controlling the runoff that exacerbates flooding.

Land Use and Capital Improvement Plans should identify areas to be preserved by acquisition and other means, such as purchasing easements. Aside from outright purchase, open space can also be protected through maintenance agreements with the landowners, or by requiring developers to dedicate land for flood flow, drainage and storage.

3. Floodplain Development Regulations

Floodplain development regulations typically do not prohibit development in the special flood hazard area, but they do impose construction standards on what is built there. The intent is to protect roads and structures from flood damage and to prevent the development from aggravating the flood potential.

Floodplain development regulations are generally incorporated into subdivision regulations, building codes, and floodplain ordinances, which either stand-alone or are contained within a zoning ordinance.

Subdivision Regulations: These regulations govern how land will be divided into separate lots or sites. They should require that any flood hazard areas be shown on the plat, and that every lot has a buildable area that is above the base flood elevation.

Building Codes: Standards can be incorporated into building codes that address flood proofing for all new and improved or repaired buildings.

Floodplain Ordinances: Communities that participate in the National Flood Insurance Program are required to adopt the minimum floodplain management regulations, as developed by FEMA. The regulations set minimum standards for subdivision regulations and building codes. Communities may adopt more stringent standards than those set forth by FEMA.

4. Stormwater Management

Development outside of a floodplain can contribute significantly to flooding by covering impervious surfaces, which increases storm water runoff. Storm water management is usually addressed in subdivision regulations. Developers are typically required to build retention or detention basins to minimize any increase in runoff caused by new or expanded impervious surfaces, or new drainage systems. Generally, there is a prohibition against storm water leaving the site at a rate higher than it did before the development.

One technique is to use wet basins as part of the landscaping plan of a development. It might even be possible to site these basins based on a watershed analysis. Since detention only controls the runoff rates and not volumes, other measures must be employed for storm water infiltration - for example, swales, infiltration trenches, vegetative filter strips, and permeable paving blocks.

5. Drainage System Maintenance

Ongoing maintenance of channel and detention basins is necessary if these facilities are to function effectively and efficiently over time. A maintenance program should include regulations that prevent dumping in or altering watercourses or storage basins; regrading and filling should also be regulated.

Any maintenance program should include a public education component, so that the public becomes aware of the reasons for the regulations. Many people do not realize the consequences of filling in a ditch or wetland, or regrading their yard without concern for runoff patterns.

B. Property Protection

Property protection measures are used to modify buildings subject to flood damage, rather than to keep floodwaters away. These may be less expensive to implement, as they are often carried out on a cost-sharing basis. In addition, many of these measures do not affect a building's appearance or use, which makes them particularly suitable for historical sites and landmarks.

1. Relocation

Moving structures out of the floodplain is the surest and safest way to protect against damage. Relocation is expensive, however, so this approach will probably not be used except in extreme circumstances. Communities that have areas subject to severe storm surges, ice jams, etc. might want to consider establishing a relocation program, incorporating available assistance.

2. Acquisition

Acquisition by a governmental entity of land in a floodplain serves two main purposes: (1) it ensures that the problem of structures in the floodplain will be addressed; and (2) it has the potential to convert problem areas into community assets, with accompanying environmental benefits.

Acquisition is more cost effective than relocation in those areas that are subject to storm surges, ice jams, or flash flooding. Acquisition, followed by demolition, is the most appropriate strategy for those buildings that are simply too expensive to move, as well as for dilapidated structures that are not worth saving or protecting. Relocation can be expensive, however, there are government grants and loans that can be applied toward such efforts.

3. Building Elevation

Elevating a building above the base flood elevation is the best on-site protection strategy. The building could be raised to allow water to run underneath it, or fill could be brought in to elevate the site on which the building sits.

This approach is cheaper than relocation, and tends to be less disruptive to a neighborhood. Elevation is required by law for new and substantially improved residences in a floodplain, and is commonly practiced in flood hazard areas nationwide.

4. Floodproofing

If a building cannot be relocated or elevated, it may be floodproofed. This approach works well in areas of low flood threat. Flood proofing can be accomplished through barriers to flooding, or by treatment to the structure itself.

Barriers: Levees, floodwalls and berms can keep floodwaters from reaching a building. These are useful, however, only in areas subject to shallow flooding.

Dry Flood proofing: This method seals a building against the water by coating the walls with waterproofing compounds or plastic sheeting. Openings, such doors, windows, etc. are closed either permanently with removable shields or with sandbags.

Wet Flood proofing: This technique is usually considered a last resort measure, since water is intentionally allowed into the building in order to minimize pressure on the structure. Approaches range from moving valuable items to higher floors to rebuilding the floodable area. An advantage over other approaches is that simply by moving household goods out of the range of floodwaters, thousands of dollars can be saved in damages.

5. Sewer Backup Protection

Storm water overloads can cause backup into basements through sanitary sewer lines. Houses that have any kind of connection to a sanitary sewer system - whether it is downspouts, footing drain tile, and/or sump pumps, can be flooded during a heavy rain event. To prevent this, there should be no such connections to the system, and all rain and ground water should be directed onto the ground, away from the building. Other protections include:

- Floor drain plugs and floor drain standpipe, which keep water from flowing out of the lowest opening in the house.
- Overhead sewer - keeps water in the sewer line during a backup.
- Backup valve - allows sewage to flow out while preventing backups from flowing into the house.

6. Insurance

Above and beyond standard homeowner insurance, there is other coverage a homeowner

can purchase to protect against flood hazard. Two of the most common are National Flood Insurance and basement backup insurance.

National Flood Insurance: When a community participates in the National Flood Insurance Program, any local insurance agent is able to sell separate flood insurance policies under rules and rates set by FEMA. Rates do not change after claims are paid because they are set on a national basis.

Basement Backup Insurance: National Flood Insurance offers an additional deductible for seepage and sewer backup, provided there is a general condition of flooding in the area that was the proximate cause of the basement getting wet. Most exclude damage from surface flooding that would be covered by the NFIP.

C. Natural Resource Protection

Preserving or restoring natural areas or the natural functions of floodplain and watershed areas provide the benefits of eliminating or minimizing losses from floods, as well as improve water quality and wildlife habitats. Parks, recreation, or conservation agencies usually implement such activities. Protection can also be provided through various zoning measures that are specifically designed to protect natural resources.

1. Wetlands Protection

Wetlands are capable of storing large amounts of floodwaters, slowing and reducing downstream flows, and filtering the water. Any development that is proposed in a wetland is regulated by either federal and/or state agencies.

Depending on the location, the project might fall under the jurisdiction of the U.S. Army Corps of Engineers, which in turn, calls upon several other agencies to review the proposal. In New Hampshire, the N.H. Wetlands Board must approve any project that impacts a wetland. And, many communities in New Hampshire also have local wetland ordinances.
Generally, the goal is to protect wetlands by preventing development that would adversely affect them. Mitigation techniques are often employed, which might consist of creating a wetland on another site to replace what would be lost through the development. This is not an ideal practice, however, since it takes many years for a new wetland to achieve the same level of quality as an existing one.

2. Erosion and Sedimentation Control

Controlling erosion and sediment runoff during construction and on farmland is important, since eroding soil will typically end up in downstream waterways. And, because sediment tends to settle where the water flow is slower, it will gradually fill in channels and lakes, reducing their ability to carry or store floodwaters.

Practices to reduce erosion and sedimentation have two principal components: (1) minimize erosion with vegetation and; (2) capture sediment before it leaves the site. Slowing the runoff increases infiltration into the soil, thereby controlling the loss of topsoil from erosion and the resulting sedimentation. Runoff can be slowed by vegetation, terraces, contour strip farming, no-till farm practices, and impoundments (such as sediment basins, farm ponds, and wetlands).

3. Best Management Practices

Best Management Practices (BMPs) are measures that reduce nonpoint source pollutants that enter waterways. Nonpoint source pollutants are carried by storm water to

waterways, and include such things as lawn fertilizers, pesticides, farm chemicals, and oils from street surfaces and industrial sites.

BMPs can be incorporated into many aspects of new developments and ongoing land use practices. In New Hampshire, the Department of Environmental Services has developed best management practices for a range of activities, from farming to earth excavations.

D. Emergency Services

Emergency services protect people during and after a flood. Many communities in New Hampshire have emergency management programs in place, administered by an emergency management director (very often the local police or fire chief).

1. Flood Warning

On large rivers, the National Weather Service handles early recognition. Communities on smaller rivers must develop their own warning systems. Warnings may be disseminated in a variety of ways, such as sirens, radio, television, mobile public address systems, or door-to-door contact. It seems that multiple or redundant systems are the most effective, giving people more than one opportunity to be warned.

2. Flood Response

Flood response refers to actions that are designed to prevent or reduce damage or injury, once a flood threat is recognized. Such actions and the appropriate parties include:

- activating the emergency operations center (emergency director)
- sandbagging designated areas (public works department)
- closing streets and bridges (police department)
- shutting off power to threatened areas (public service)
- releasing children from school (school district)
- ordering an evacuation (selectmen/city council/emergency director)
- opening evacuation shelters (churches, schools, Red Cross, municipal facilities)

These actions should be part of a flood response plan, which should be developed in coordination with the persons and agencies that share the responsibilities. Drills and exercises should be conducted so that the key participants know what they are supposed to do.

3. Critical Facilities Protection

Protecting critical facilities is vital, since expending efforts on these facilities can draw workers and resources away from protecting other parts of town. Critical facilities fall into two categories:

Buildings or locations vital to the flood response effort:

- emergency operations centers
- police and fire stations
- hospitals
- highway garages
- selected roads and bridges

- evacuation routes

Buildings or locations that, if flooded, would create secondary disasters

- hazardous materials facilities
- water/wastewater treatment plants
- schools
- nursing homes

All such facilities should have their own flood response plan that is coordinated with the community's plan. Nursing homes, other public health facilities, and schools will typically be required by the state to have emergency response plans in place.

4. Health and Safety Maintenance

The flood response plan should identify appropriate measures to prevent danger to health and safety. Such measures include:

- Patrolling evacuated areas to prevent looting.
- Providing safe drinking water.
- Vaccinating residents for tetanus.
- Clearing streets.
- Cleaning up debris.

The plan should also identify which agencies will be responsible for carrying out the identified measures. A public information program can be helpful to educate residents on the benefits of taking health and safety precautions.

E. Structural Projects

Structural projects are used to prevent floodwaters from reaching properties. These are all man-made structures, and can be grouped into the six types of discussed below. The shortcomings of structural approaches are that:

- They can be very expensive.
- They disturb the land, disrupt natural water flows, and destroy natural habitats.
- They are built to an anticipated flood event, and may be exceeded by a greater-than-expected flood.
- They can create a false sense of security.

1. Reservoirs

Reservoirs control flooding by holding water behind dams or in storage basins. After a flood peaks, water is released or pumped out slowly at a rate the river downstream can handle.

Reservoirs are suitable for protecting existing development, and they may be the only flood control measure that can protect development close to a watercourse. They are most efficient in deeper valleys or on smaller rivers where there is less water to store. Reservoirs might consist of man-made holes dug to hold the approximate amount of

floodwaters, or even abandoned quarries. As with other structural projects, reservoirs:

- are expensive;
- occupy a lot of land;
- require periodic maintenance;
- may fail to prevent damage from floods that exceed their design levels; and
- may eliminate the natural and beneficial functions of the floodplain.

Reservoirs should only be used after a thorough watershed analysis that identifies the most appropriate location, and ensures that they would not cause flooding somewhere else. Because they are so expensive and usually involve more than one community, they are typically implemented with the help of state or federal agencies, such as the Army Corps of Engineers.

2. Levees/Floodwalls

Probably the best know structural flood control measure is either a levee (a barrier of earth) or a floodwall made of steel or concrete erected between the watercourse and the land. If space is a consideration, floodwalls are typically used, since levees need more space. Levees and floodwalls should be set back out of the floodway, so that they will not divert floodwater onto other properties.

3. Diversions

A diversion is simply a new channel that sends floodwater to a different location, thereby reducing flooding along an existing watercourse. Diversions can be surface channels, overflow weirs, or tunnels. During normal flows, the water stays in the old channel. During flood flows, the stream spills over the diversion channel or tunnel, which carries the excess water to the receiving lake or river.

Diversions are limited by topography; they won't work everywhere. Unless the receiving water body is relatively close to the flood prone stream and the land in between is low and vacant, the cost of creating a diversion can be prohibitive. Where topography and land use are not favorable, a more expensive tunnel is needed. In either case, care must be taken to ensure that the diversion does not create a flooding problem somewhere else.

4. Channel Modifications

Channel modifications include making a channel wider, deeper, smoother, or straighter. These techniques will result in more water being carried away, but, as with other techniques mentioned, it is important to ensure that the modifications do not create or increase a flooding problem downstream.

***Dredging*:** Dredging is often cost-prohibitive because the dredged material must be disposed of somewhere else, and the stream will usually fill back in with sediment. Dredging is usually undertaken only on larger rivers, and then only to maintain a navigation channel.

***Drainage modifications*:** These include man-made ditches and storm sewers that help drain areas where the surface drainage system is inadequate or where underground drainage ways may be safer or more attractive. These approaches are usually designed to carry the runoff from smaller, more frequent storms.

5. Storm Sewers

Mitigation techniques for storm sewers include installing new sewers, enlarging small pipes, street improvements, and preventing back flow. Because drainage ditches and storm sewers convey water faster to other locations, improvements are only recommended for small local problems where the receiving body of water can absorb the increased flows without increased flooding.

In many developments, streets are used as part of the drainage system, to carry or hold water from larger, less frequent storms. The streets collect runoff and convey it to a receiving sewer, ditch, or stream. Allowing water to stand in the streets and then draining it slowly can be a more effective and less expensive measure than enlarging sewers and ditches.

F. Public Information

Public information activities are intended to advise property owners, potential property owners, and visitors about the particular hazards associated with a property, ways to protect people and property from these hazards, and the natural and beneficial functions of a floodplain.

1. Map Information

Flood maps developed by FEMA outline the boundaries of the flood hazard areas. These maps can be used by anyone interested in a particular property to determine if it is flood-prone. These maps are available from FEMA, the NH Office of Emergency Management, the NH Office of State Planning, or your regional planning commission.

2. Outreach Projects

Outreach projects are proactive; they give the public information even if they have not asked for it. Outreach projects are designed to encourage people to seek out more information and take steps to protect themselves and their properties. Examples of outreach activities include:

- Mass mailings or newsletters to all residents.
- Notices directed to floodplain residents.
- Displays in public buildings, malls, etc.
- Newspaper articles and special sections.
- Radio and TV news releases and interview shows.
- A local flood proofing video for cable TV programs and to loan to organizations.
- A detailed property owner handbook tailored for local conditions.
- Presentations at meetings of neighborhood groups.

Research has shown that outreach programs work, although awareness is not enough. People need to know what they can do about the hazards, so projects should include information on protection measures. Research also shows that locally designed and run programs are much more effective than national advertising.

3. Real Estate Disclosure

Disclosure of information regarding flood-prone properties is important if potential buyers are to be in a position to mitigate damage. Federally regulated lending institutions are required to advise applicants that a property is in the floodplain.

However, this requirement needs to be met only five days prior to closing, and by that time, the applicant is typically committed to the purchase. State laws and local real estate practice can help by making this information available to prospective buyers early in the process.

4. Library

Your local library can serve as a repository for pertinent information on flooding and flood protection. Some libraries also maintain their own public information campaigns, augmenting the activities of the various governmental agencies involved in flood mitigation.

5. Technical Assistance

Certain types of technical assistance are available from the NFIP Coordinator, FEMA, and the Natural Resources Conservation District. Community officials can also set up a service delivery program to provide one-on-one sessions with property owners.

An example of technical assistance is the *flood audit*, in which a specialist visits a property. Following the visit, the owner is provided with a written report, detailing the past and potential flood depths, and recommending alternative protection measures.

6. Environmental Education

Education can be a great mitigating tool, if people can learn what not to do before damage occurs. And the sooner the education begins, the better. Environmental education programs for children can be taught in the schools, park and recreation departments, conservation associations, or youth organizations. An activity can be as involved as course curriculum development or as simple as an explanatory sign near a river.

Education programs do not have to be limited to children. Adults can benefit from knowledge of flooding and mitigation measures. And decision-makers, armed with this knowledge, can make a difference in their communities.

II. COASTAL FLOODING

A. <u>Prevention</u>

1. Floodplain Regulations

Many of the same requirements for mitigating flood damage in riverine situations apply to coastal zones, especially more stringent building codes, relocation and acquisition programs, elevations of structures, improved open space preservation and land-use planning.

2. Erosion Regulations

Erosion regulations specify setbacks for structures from the water. In Rhode Island, for example, the setbacks are 30 times the annual erosion rate for new or substantially renovated residential structures, and 60 times the annual erosion rate for commercial structures. And, regardless of the erosion rate, setbacks must be at least 50 feet. Setbacks are measured from the top of a bluff, dike or 25 feet inland of a dune crest.

3. Dune and Beach Maintenance

Preventative measures involve either the construction of new or artificial dunes and/or the stabilization of existing dunes. Both of these techniques require an understanding of the biological and physical processes of the coastal zone. Vegetation used for dune construction and for dune stabilization are usually different species.

The most effective methods of creating new dunes involve disrupting the airflow to encourage sand deposition through the use of fences made of porous materials. It is important that the fences alter the airflow but do not halt it. Artificial dunes can also build up the planting of vegetation.

Stabilization is aimed at securing bare sand surfaces against deflation. This can be achieved through grading and rapid construction of new dunes; surface fixing, by the addition of chemicals and planting of vegetation, focuses on grasses, shrubs and trees.

Beach nourishment is the artificial replacement and/or addition of sediment to beaches. The effectiveness of this technique depends on the type of sand imported, the slope of the natural beach, cross-shore currents and the frequency of storms. Nourishment is most effective when combined with dune restoration and beach maintenance.

5. Wetlands Protection

Wetland preservation is very important because wetlands play a role in flood control by their ability to store tremendous amounts of water, releasing the water slowly, thereby reducing downstream flows. Wetlands provide important wildlife habitat, support a wide variety of vegetation, filter of river-borne material before it enters the coastal waters.

B. Property Protection

1. Structural Measures

- Roads: Realigning roads so that they are parallel to the beachfront rather than perpendicular prevents them from channeling floodwaters inland.
- Seawalls: Vertical walls built on seashores, these are designed to protect against direct storm wave action. The biggest problem with seawalls is that they can have an adverse impact on neighboring properties and the movement of sand. The wall, often increasing shoreline erosion, disrupts the natural forces that transport sand and replenish beaches.
- Revetments: These are designed to protect the backshore from high tides and surges. Revetments may be constructed out of a number of materials and configurations. Revetments are more successful on lower-energy coasts.
- Bulkheads: Vertical walls on the shoreline, often constructed of wood or steel, and designed to retain loose fill and sediment behind it. They are usually not good protection from storms or other flooding events.
- Terraces: Terraces are uses in cliff areas and involve the insertion of vertical pilings and planks at different levels.
- Breakwaters: Breakwaters protect the shoreline by breaking down incoming waves in order to diffuse and refract the wave fronts.

- Dredging: Involves the modification of a channel by extracting sediment. Usually only used to maintain navigation in waterways.

- Slope stabilization: Includes a number of methods to prevent landslides, such as slope reduction and adding retention structures.

- Groins: These are wall-like structures, places perpendicular to the beach to capture materials drifting along the shoreline.

- Jetties: These are wall-like structures built perpendicular to the coast to stabilize channels, inlets and outlets. The primary function is to protect navigation channels; they capture sediments by restricting the movement of materials transported by longshore currents.

2. Emergency Measures

- Sand scraping: A temporary way to reinforce a beach structure by, for example, filling in behind protective seawalls using earth-moving equipment.

- Installing storm shutters to protect exposed glass surfaces.

- Install hurricane straps to structures to secure the roof to the walls and foundation.

- Have your home or business inspected by a building professional to ensure that the building components are capable of withstanding wind effects.

C. Natural Resource Protection

See the previous sections under Riverine Mitigation, and Paragraph A of this Section.

D. Emergency Services

In the event of severe weather, coastal communities need to have effective evacuation plans for low-lying and remote coastal areas. A major part of an evacuation plan is an effective hurricane/flood early warning system, such as a weather radio distribution program and an awareness of the National Weather Service programs. These plans also need to include the appropriate resources, such as all-terrain vehicles, powerboats and helicopters to reach stranded residents, as well as temporary shelter, food, water, other basic necessities and backup power sources for emergency facilities.

E. Structural Projects

See the previous section on Property Protection.

F. Public Information

1. COBRA

The Coastal Barriers Resources Act of 1982 (COBRA) removed the Federal government from financial involvement associated with building and development in undeveloped portions of coastal areas. These areas were mapped and designated as Coastal Barrier Resources system units or "otherwise protected areas."

COBRA restricts any Federal program that may have the effect of encouraging

development on coastal barrier beaches or islands. These include "any form of loan, grant, guarantee, insurance, payment, rebate, subsidy or any other form of direct or indirect Federal assistance" with specific and limited exceptions.

COBRA also banned the sale of NFIP flood insurance for structures built or substantially improved on or after a specified date. For the initial COBRA designations, this date is October 1, 1983. For all subsequent designations, this date is the date the COBRA zone was identified. COBRA zones and their identification dates are shown in the legend of the community's Flood Insurance Rate Map.

III. EARTHQUAKES

A. Preventive

1. Planning/zoning to keep critical facilities away from fault lines.
2. Planning, zoning and building codes to avoid areas below steep slopes or soils subject to liquefaction.
3. Building codes to prohibit loose masonry, overhangs, etc.

B. Property Protection

1. Acquire and clear hazard areas.
2. Retrofitting to add braces, remove overhangs.
3. Apply mylar to windows and glass surfaces to protect from shattering glass.
4. Tie down major appliances, provide flexible utility connections.
5. Earthquake insurance riders.

C. Emergency Services

1. Earthquake response plans to account for secondary problems, such as fires and hazardous materials spills.

D. Structural Projects

1. Slope stabilization.

IV. DAM FAILURE

A. Preventive

1. Dam failure inundation maps.
2. Planning/zoning/open space preservation to keep area clear.
3. Building codes with flood elevation based on dam failure.
4. Dam safety inspections.
5. Draining the reservoir when conditions appear unsafe.

B. Property Protection

1. Acquisition of buildings in the path of a dam breach flood.
2. Flood insurance.

C. Emergency Services

1. Dam conditioning monitoring.

2. Warning and evacuation plans based on dam failure.

D. Structural Projects

1. Dam improvements, spillway enlargements.
2. Remove unsafe dams.

V. WILDFIRES

A. Preventive

1. Zoning districts to reflect fire risk zones.
2. Planning and zoning to restrict development in areas near fire protection and water resources.
3. Requiring new subdivisions to space buildings, provide firebreaks, on-site water storage, wide roads multiple accesses.
4. Building code standards for roof materials, spark arrestors.
5. Maintenance programs to clear dead and dry bush, trees.
6. Regulation on open fires.

B. Property Protection

1. Retrofitting of roofs and adding spark arrestors.
2. Landscaping to keep bushes and trees away from structures.
3. Insurance rates based on distance from fire protection.

C. Natural Resource Protection

1. Prohibit development in high-risk areas.

D. Emergency Services

1. Fire Fighting

VI. WINTER STORMS

A. Prevention

Building code standards for light frame construction, especially for wind-resistant roofs.

B. Property Protection

1. Storm shutters and windows
2. Hurricane straps on roofs and overhangs
3. Seal outside and inside of storm windows and check steals in spring and fall.
4. Family and/or company severe weather action plan & drills:

   - include a **NOAA** weather radio
   - designate a shelter area or location
   - keep a disaster supply kit, including stored food and water
   - keep snow removal equipment in good repair; have extra shovels, sand, rock, salt and gas
   - know how to turn off water, gas, and electricity at home or work

C. Natural Resource Protection

Maintenance program for trimming tree and shrubs

D. Emergency Services

1. Early warning systems/NOAA Weather Radio
2. Evacuation Plans