APPENDIX A

Relevant Programs and Regulations

1.0 RELEVANT PROGRAMS AND REGULATIONS

Existing laws, ordinances and plans at the federal, state, and local level can support or impact flood hazard mitigation actions identified in this plan. Flood hazard mitigation planning typically includes review and incorporation as appropriate of existing plans, studies, and technical information. This section provides a review of laws and ordinances that can affect flood hazard mitigation in the planning area. Some laws and programs have emergency protocols that go into effect during emergency situations to waive or expedite requirements or procedures. These modifications are limited in scope and duration, and all mitigation and recovery projects should be planned for and implemented in ways that they meet all federal, state, and local laws. All of the following federal, state and local programs have been identified as being related to the goals and objectives to this plan.

1.1 Federal

1.1.1 Disaster Mitigation Act of 2000

The federal Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for state, local and Indian tribal governments as a condition of mitigation grant assistance. The DMA amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by replacing previous mitigation planning provisions with new requirements that emphasize the need for planning entities to coordinate mitigation planning and implementation efforts. The law added incentives for increased coordination and integration of mitigation activities at the state level by establishing two levels of state plans. The DMA also established a new requirement for local mitigation plans and authorized up to 7 percent of Hazard Mitigation Grant Program funds to be available for development of state, local, and Indian tribal mitigation plans.

1.1.2 National Flood Insurance Program

The NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities that enact flood hazard management regulations. For most participating communities, FEMA has prepared a detailed Flood Insurance Study. The study presents water surface elevations for floods of various magnitudes, including the one-percent annual chance flood (100-year flood) and the 0.2-percent annual chance flood (the 500-year flood). Base flood elevations and the boundaries of the 100- and 500-year floodplains are shown on Flood Insurance Rate Maps (FIRMs), which are the principal tools for identifying the extent and location of the flood hazard. FIRMs are the most detailed and consistent data source available, and for many communities they represent the minimum area of oversight under their flood hazard management program.

NFIP participants must, at a minimum, regulate development in floodplains in accordance with NFIP criteria. Before issuing a permit to build in a mapped flood area, participants must ensure that three criteria are met:

- New buildings and those undergoing substantial improvements must, at a minimum, be elevated to protect against damage by the 100-year flood.
- New floodplain development must not aggravate existing flood problems or increase damage to other properties.

- New floodplain development must exercise a reasonable and prudent effort to reduce its adverse impacts on threatened salmonid species.

Lewis County participates in the NFIP, as do the cities of Chehalis and Centralia. All have adopted regulations that meet the NFIP requirements. Table 4-1 summarizes participation dates for these communities.

Table 1-1. NFIP Participation by Lewis County and Municipalities.

ID	Community Name	Initial Flood Hazard Boundary Map	Initial Flood Insurance Rate Map	Current Effective Map Date	Program Entry Date
530103	City of Centralia	03/15/74	06/01/82	06/01/82	06/01/82
530104	City of Chehalis	06/07/74	05/01/80	07/17/06	05/01/80
530254	City of Napavine	12/14/75	07/17/06	07/17/06	05/19/17
530296	Town of Pe Ell	07/18/75	03/04/80	03/04/80	03/04/80
530102	Lewis County	11/29/77	12/15/81	07/17/06	12/15/81

Source: FEMA

Structures permitted or constructed in participating communities before the first FIRM was adopted are called “pre-FIRM” structures, and structures built afterwards are called “post-FIRM.” The insurance rate is different for the two types of structures. The effective date for the current FIRM is September 30, 2004. At the time of this planning process, FEMA was in the process of updating Lewis County’s maps, but no progress has been made for several years. Lewis County is currently in good standing with the provisions of the NFIP.

1.1.3 The Community Rating System

The CRS is a voluntary program within the NFIP that encourages flood hazard management activities that exceed the minimum NFIP requirements. Flood insurance premiums are discounted in participating communities to reflect the reduced flood risk resulting from community actions to meet the CRS goals of reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of the NFIP and foster comprehensive floodplain management.

For participating communities, flood insurance premium rates are discounted in increments of five percent. For example, a Class 1 community would receive a 45 percent premium discount, and a Class 9 community would receive a five percent discount. (Class 10 communities are those that do not participate in the CRS; they receive no discount.) The CRS classes for local communities are based on 19 creditable activities in the following categories:

- Public information
- Mapping and regulations
- Flood damage reduction
- Flood preparedness

CRS activities can help to save lives and reduce property damage. Communities participating in the CRS represent a significant portion of the nation’s flood risk; over 67 percent of the NFIP’s policy base is located in these communities. Communities receiving premium discounts through the CRS range from

small to large and represent a broad mixture of flood risks, including riverine, shallow and flash flood risks.

Figure 1-1. CRS Ratings as of June 1, 2021.

Community Name	CRS Entry Date	CRS Class	SFHA Discount	Non-SFHA Discount
City of Centralia	10/1/1994	6	20%	10%
City of Chehalis	10/1/1994	7	15%	5%
City of Napavine	-	-	-	-
Town of Pe Ell	-	-	-	-
Lewis County	10/1/1994	5	25%	10%

Source: FEMA

1.1.4 Endangered Species Act

The federal Endangered Species Act (ESA) was enacted in 1973 to conserve species facing depletion or extinction and the ecosystems that support them. The act sets forth a process for determining which species are threatened and endangered and requires the conservation of the critical habitat in which those species live. The ESA provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. The ESA outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species and contains exceptions and exemptions. It is the enabling legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Criminal and civil penalties are provided for violations of the ESA and the Convention.

Federal agencies must seek to conserve endangered and threatened species and use their authorities in furtherance of the ESA's purposes. The ESA defines three fundamental terms:

- Endangered means that a species of fish, animal or plant is "in danger of extinction throughout all or a significant portion of its range." (For salmon and other vertebrate species, this may include subspecies and distinct population segments.)
- Threatened means that a species "is likely to become endangered within the foreseeable future." Regulations may be less restrictive for threatened species than for endangered species.
- Critical habitat means "specific geographical areas that are…essential for the conservation and management of a listed species, whether occupied by the species or not."
- Five sections of the ESA are of critical importance to understanding it:
    - Section 4: Listing of a Species – The National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) is responsible for listing marine species; the US Fish and Wildlife Service is responsible for listing terrestrial and freshwater aquatic species. The agencies may initiate reviews for listings, or citizens may petition for them. A listing must be made "solely on the basis of the best scientific and commercial data available." After a listing has been proposed, agencies receive comment and conduct further scientific reviews for 12 to 18 months, after which they must decide if the listing is warranted. Economic impacts cannot be considered in this decision, but it may include an evaluation of the adequacy of local and state protections. Critical habitat for the species may be designated at the time of listing.

- Section 7: Consultation – Federal agencies must ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed or proposed species or adversely modify its critical habitat. This includes private and public actions that require a federal permit. Once a final listing is made, non-federal actions are subject to the same review, termed a "consultation." If the listing agency finds that an action will "take" a species, it must propose mitigations or "reasonable and prudent" alternatives to the action; if the proponent rejects these, the action cannot proceed.
- Section 9: Prohibition of Take – It is unlawful to "take" an endangered species, including killing or injuring it or modifying its habitat in a way that interferes with essential behavioral patterns, including breeding, feeding or sheltering.
- Section 10: Permitted Take – Through voluntary agreements with the federal government that provide protections to an endangered species, a non-federal applicant may commit a take that would otherwise be prohibited as long as it is incidental to an otherwise lawful activity (such as developing land or building a road). These agreements often take the form of a "Habitat Conservation Plan."
- Section 11: Citizen Lawsuits – Civil actions initiated by any citizen can require the listing agency to enforce the ESA's prohibition of taking or to meet the requirements of the consultation process.

- With the listing of salmon and trout species as threatened or endangered, the ESA has impacted most of the Pacific Coast states. Although some of these areas have been more impacted by the ESA than others due to the known presence of listed species, the entire region has been impacted by mandates, programs and policies based on the presumption of the presence of listed species. Most West Coast jurisdictions must now take into account the impact of their programs on habitat.

1.1.5 The Clean Water Act

The federal Clean Water Act (CWA) employs regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's surface waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

Evolution of CWA programs over the last decade has included a shift from a program-by-program, source-by- source, pollutant-by-pollutant approach to more holistic watershed-based strategies. Under the watershed approach, equal emphasis is placed on protecting healthy waters and restoring impaired ones. A full array of issues are addressed, not just those subject to CWA regulatory authority. Involvement of stakeholder groups in the development and implementation of strategies for achieving and maintaining water quality and other environmental goals is a hallmark of this approach.

1.1.6 National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires federal agencies to consider the environmental impacts of proposed actions and reasonable alternatives to those actions, alongside technical and economic considerations. NEPA established the Council on Environmental Quality, whose regulations (40 CFR Parts 1500-1508) set the standard for NEPA compliance. Consideration of environmental impacts and decision-making process is documented in an environmental impact statement or

environmental assessment. Environmental impact assessment requires the evaluation of reasonable alternatives to a proposed action, solicitation of input from organizations and individuals that could be affected, and the unbiased presentation of direct, indirect, and cumulative environmental impacts.

1.1.7 National Incident Management System

The National Incident Management System (NIMS) is a systematic approach for government, nongovernmental organizations, and the private sector to work together to manage incidents involving floods and other hazards. The NIMS provides a flexible but standardized set of incident management practices. Incidents typically begin and end locally, and they are managed at the lowest possible geographical, organizational, and jurisdictional level. In some cases, success depends on the involvement of multiple jurisdictions, levels of government, functional agencies, and emergency-responder disciplines. These cases necessitate coordination across this spectrum of organizations. Communities using NIMS follow a comprehensive national approach that improves the effectiveness of emergency management and response personnel across the full spectrum of potential hazards (including natural hazards, terrorist activities, and other human-caused disasters) regardless of size or complexity.

1.1.8 Americans with Disabilities Act

The Americans with Disabilities Act (ADA) seeks to prevent discrimination against people with disabilities in employment, transportation, public accommodation, communications, and government activities. Title II of the ADA deals with compliance with the Act in emergency management and disaster-related programs, services, and activities. It applies to state and local governments as well as third parties, including religious entities and private nonprofit organizations.

The ADA has implications for sheltering requirements and public notifications. During an emergency, officials must use a combination of warning methods to ensure that all residents have any necessary information. Those with hearing impairments may not hear radio, television, sirens, or other audible alerts, while those with visual impairments may not see flashing lights or visual alerts. Two technical documents issued for shelter operators address physical accessibility needs of people with disabilities as well as medical needs and service animals.

The ADA intersects with disaster preparedness programs in regards to transportation, social services, temporary housing, and rebuilding. Persons with disabilities may require additional assistance in evacuation and transit (e.g., vehicles with wheelchair lifts or paratransit buses). Evacuation and other response plans should address the unique needs of residents. Local governments may be interested in implementing a special-needs registry to identify the home addresses, contact information, and needs for residents who may require more assistance.

1.1.9 Civil Rights Act of 1964

The Civil Rights Act of 1964 prohibits discrimination based on race, color, religion, sex or national origin and requires equal access to public places and employment. The Act is relevant to emergency management and hazard mitigation in that it prohibits local governments from favoring the needs of one population group over another.

Local government and emergency response must ensure the continued safety and well-being of all residents equally, to the extent possible.

1.1.10 Rural Development Program

The mission of the US Department of Agriculture (USDA) Rural Development Program is to help improve the economy and quality of life in rural America. The program provides project financing and technical assistance to help rural communities provide the infrastructure needed by rural businesses, community facilities, and households. The program addresses rural America's need for basic services, such as clean running water, sewage and waste disposal, electricity, and modern telecommunications and broadband. Loans and competitive grants are offered for various community and economic development projects and programs, such as the development of essential community facilities including fire stations.

1.1.11 Community Development Block Grant Disaster Resilience Program

In response to disasters, Congress may appropriate additional funding for the US Department of Housing and Urban Development Community Development Block Grant programs to be distributed as Disaster Recovery grants (CDBG-DR). These grants can be used to rebuild affected areas and provide seed money to start the recovery process. CDBG-DR assistance may fund a broad range of recovery activities, helping communities and neighborhoods that otherwise might not recover due to limited resources. CDBG-DR grants often supplement disaster programs of the Federal Emergency Management Agency, the Small Business Administration, and the US Army Corps of Engineers. Housing and Urban Development generally awards noncompetitive, nonrecurring CDBG-DR grants by a formula that considers disaster recovery needs unmet by other federal disaster assistance programs. To be eligible for CDBG-DR funds, projects must meet the following criteria:

- Address a disaster-related impact (direct or indirect) in a federally declared county
- Be a CDBG-eligible activity (according to regulations and waivers)
- Meet a national objective

Incorporating preparedness and mitigation into these actions is encouraged, as the goal is to rebuild in ways that are safer and stronger.

1.1.12 Emergency Watershed Program

The USDA Natural Resources Conservation Service (NRCS) administers the Emergency Watershed Protection (EWP) Program, which responds to emergencies created by natural disasters. Eligibility for assistance is not dependent on a national emergency declaration. The program is designed to help people and conserve natural resources by relieving imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. EWP is an emergency recovery program. Financial and technical assistance are available for the following activities:

- Remove debris from stream channels, road culverts, and bridges
- Reshape and protect eroded banks
- Correct damaged drainage facilities
- Establish cover on critically eroding lands
- Repair levees and structures
- Repair conservation practices (National Resources Conservation Service, 2016)

1.1.13 Presidential Executive Orders 11988 and 13690

Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. It requires federal agencies to provide leadership and take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values of floodplains. The requirements apply to the following activities (FEMA, 2015d):

- Acquiring, managing, and disposing of federal lands and facilities
- Providing federally undertaken, financed, or assisted construction and improvements
- Conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing.

Executive Order 13690 expands Executive Order 11988 and acknowledges that the impacts of flooding are anticipated to increase over time due to the effects of climate change and other threats. It mandates a federal flood risk management standard to increase resilience against flooding and help preserve the natural values of floodplains. This standard expands management of flood issues from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain when federal dollars are involved in a project. The goal is to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended (Office of the Press Secretary, 2015).

1.1.14 Presidential Executive Order 11990

Executive Order 11990 requires federal agencies to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. The requirements apply to the following activities (National Archives, 2016):

- Acquiring, managing, and disposing of federal lands and facilities
- Providing federally undertaken, financed, or assisted construction and improvements
- Conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing.

1.1.15 Emergency Relief for Federally Owned Roads Program

The US Forest Service's Emergency Relief for Federally Owned Roads Program was established to assist federal agencies with repair or reconstruction of tribal transportation facilities, federal lands transportation facilities, and other federally owned roads that are open to public travel and have suffered serious damage by a natural disaster over a wide area or by a catastrophic failure. The program funds both emergency and permanent repairs (Office of Federal Lands Highway, 2016).

1.1.16 US Army Corps of Engineers Programs

The US Army Corps of Engineers has several civil works authorities and programs related to flood risk and flood hazard management:

- Floodplain Management Services are 100-percent federally funded technical services such as development and interpretation of site-specific data related to the extent, duration, and frequency of flooding. Special studies may be conducted to help a community understand and respond to flood risk. These may include flood hazard evaluation, flood warning and preparedness, or flood modeling.

- For more extensive studies, the Corps of Engineers offers a cost-shared program called Planning Assistance to States and Tribes. Studies under this program generally range from $25,000 to $100,000 with the local jurisdiction providing 50 percent of the cost.
- The Corps of Engineers has several cost-shared programs (typically 65 percent federal and 35 percent non-federal) aimed at developing, evaluating, and implementing structural and non-structural capital projects to address flood risks at specific locations or within a specific watershed:
    - The Continuing Authorities Program for smaller-scale projects includes Section 205 for Flood Control, with a $7 million federal limit and Section 14 for Emergency Streambank Protection with a
    - $1.5 million federal limit. These can be implemented without specific authorization from Congress.
    - Larger scale studies, referred to as General Investigations, and projects for flood risk management, for ecosystem restoration or to address other water resource issues, can be pursued through a specific authorization from Congress and are cost-shared, typically at 65 percent federal and 35 percent non- federal.
    - Watershed Management planning studies can be specifically authorized and are cost-shared at 50 percent federal and 50 percent non-federal.
- The Corps of Engineers provides emergency response assistance during and following natural disasters. Public Law 84-99 enables the Corps to assist state and local authorities in flood fight activities and cost share in the repair of flood protective structures. Assistance afforded under PL 84-99 is broken down into the following three categories:
    - Preparedness – The Flood Control and Coastal Emergency Act establishes an emergency fund for preparedness for emergency response to natural disasters; for flood fighting and rescue operations; for rehabilitation of flood control and hurricane protection structures. Funding for Corps of Engineers emergency response under this authority is provided by Congress through the annual Energy and Water Development Appropriation Act. Disaster preparedness activities include coordination, planning, training and conduct of response exercises with local, state, and federal agencies.
    - Response Activities – PL 84-99 allows the Corps of Engineers to supplement State and local entities in flood fighting urban and other non-agricultural areas under certain conditions (Engineering Regulation 500-1-1 provides specific details). All flood fight efforts require a Project Cooperation Agreement signed by the public sponsor and a requirement for the sponsor to remove all flood fight material after the flood has receded. PL 84-99 also authorizes emergency water support and drought assistance in certain situations and allows for “advance measures” assistance to prevent or reduce flood damage conditions of imminent threat of unusual flooding.
    - Rehabilitation – Under PL 84-99, an eligible flood protection system can be rehabilitated if damaged by a flood event. The flood system would be restored to its pre-disaster status at no cost to the Federal system owner, and at 20% cost to the eligible non-Federal system owner. All systems considered eligible for PL 84-99 rehabilitation assistance have to be in the Rehabilitation and Inspection Program (RIP) prior to the flood event. Acceptable operation and maintenance by the public levee sponsor are verified by levee inspections conducted by the Corps on a regular basis. The Corps has the responsibility to coordinate levee repair issues with interested Federal, State, and local agencies following natural disaster events where flood control works are damaged.

1.2 State

1.2.1 Washington State Floodplain Management Law

Washington's floodplain management law (Revised Code of Washington (RCW) 86.16, implemented through Washington Administrative Code (WAC) 173-158) states that prevention of flood damage is a matter of statewide public concern and places regulatory control with the Department of Ecology. RCW 86.16 is cited in floodplain management literature, including FEMA's national assessment, as one of the first and strongest in the nation. A 1978 major challenge to the law – Maple Leaf Investors Inc. v. Department of Ecology—is cited in legal references to flood hazard management issues. The court upheld the law, declaring that denial of a permit to build residential structures in the floodway is a valid exercise of police power and did not constitute a taking. RCW Chapter 86.12 (Flood Control by Counties) authorizes county governments to levy taxes, condemn properties and undertake flood control activities directed toward a public purpose.

1.2.2 Department of Ecology Grants

Washington's first flood control maintenance program, passed in 1951, was called the Flood Control Maintenance Program. In 1984, the state Legislature established the Flood Control Assistance Account Program (FCAAP) to assist local jurisdictions in comprehensive planning and flood control maintenance (RCW 86.26; WAC 173-145). This is one of the few state programs in the country that provides grant funding to local governments for flood hazard management planning and implementation. The account is funded at $4 million per state biennium, unless modified by the Legislature. Projects include comprehensive flood hazard management planning, maintenance projects, feasibility studies, purchase of flood-prone properties, matches for federal projects, and emergency projects. Funding is available in the FCAAP for the first time in several years for the 2021-2023 biennium and is anticipated to be funded into the future.

In 2013, the Legislature authorized $44 million in new funding for integrated projects consistent with Floodplains by Design, an emerging partnership of local, state, federal and private organizations focused on coordinating investment in and strengthening the integrated management of floodplain areas. The most recent funding for the 2019-2021 biennium totaled $50.4 million. The Department of Ecology's Floods and Floodplain Management Division administers the Floodplains by Design grant program. Ecology awards grants on a competitive basis to eligible entities for collaborative and innovative projects in Washington that support the integration of flood hazard reduction with ecological preservation and restoration. Proposed projects may also address other community needs, such as preservation of agriculture, improvements in water quality, or increased recreational opportunities, provided they are part of a larger strategy to restore ecological functions and reduce flood hazards.

1.2.3 Shoreline Management Act

The 1971 Shoreline Management Act (RCW 90.58) was enacted to manage and protect the shorelines of the state by regulating development in the shoreline area. A major goal of the act is to prevent the "inherent harm in an uncoordinated and piecemeal development of the state's shorelines." Its jurisdiction includes all water areas of the state, including reservoirs, and their associated shorelands, together with the lands underlying them, except: shorelines of statewide significance; streams upstream of where the mean annual flow is 20 cubic feet per second or less; and lakes smaller than 20 acres.

1.2.4 Growth Management Act

The 1990 Washington State Growth Management Act (RCW Chapter 36.70A) mandates that local jurisdictions adopt land use ordinances to protect the following critical areas:

- Wetlands
- Critical aquifer recharge areas
- Fish and wildlife habitat conservation areas
- Frequently flooded areas
- Geologically hazardous areas

The Growth Management Act regulates development in these areas, and therefore has the potential to affect hazard vulnerability and exposure at the local level.

1.2.5 Washington State Building Code

The Washington State Building Code Council adopted the 2018 editions of national model codes, with some amendments (RCW 19.27.074). The Council also adopted changes to the Washington State Energy Code.

Washington's state-developed codes are mandatory statewide for residential and commercial buildings. The residential code exceeds the 2006 International Energy Conservation Code standards (as amended) for most homes, and the commercial code meets or exceeds standards of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE 90.1-2004). For residential construction covered by ASHRAE 90.1- 2007 (buildings with four or more stories), the state code is more stringent. The 2018 International Building Code went into effect as the Washington model code on February 1, 2021.

1.2.6 Comprehensive Emergency Management Planning

Washington's Comprehensive Emergency Management Planning law (RCW 38.52) establishes parameters to ensure that preparations of the state will be adequate to deal with disasters, to ensure the administration of state and federal programs providing disaster relief to individuals, to ensure adequate support for search and rescue operations, to protect the public peace, health and safety, and to preserve the lives and property of the people of the state. It achieves the following:

- Provides for emergency management by the state and authorizes the creation of local organizations for emergency management in political subdivisions of the state.
- Confers emergency powers upon the governor and upon the executive heads of political subdivisions of the state.
- Provides for the rendering of mutual aid among political subdivisions of the state and with other states and for cooperation with the federal government with respect to the carrying out of emergency management functions.
- Provides a means of compensating emergency management workers who may suffer any injury or death, who suffer economic harm including personal property damage or loss, or who incur expenses for transportation, telephone or other methods of communication, and the use of personal supplies as a result of participation in emergency management activities.

- Provides programs, with intergovernmental cooperation, to educate and train the public to be prepared for emergencies.

It is policy under this law that emergency management functions of the state and its political subdivisions be coordinated to the maximum extent with comparable functions of the federal government and agencies of other states and localities, and of private agencies of every type, to the end that the most effective preparation and use may be made of manpower, resources, and facilities for dealing with disasters.

WAC 118-30-060(1) requires each political subdivision to base its comprehensive emergency management plan on a hazard analysis, and makes the following definitions related to hazards:

- Hazards are conditions that can threaten human life as the result of three main factors:
  - Natural conditions, such as weather and seismic activity.
  - Human interference with natural processes, such as a levee that displaces the natural flow of floodwaters.
  - Human activity and its products, such as homes in a flood hazard area.
- The definitions for hazard, hazard event, hazard identification, and flood hazard include related concepts:
  - A hazard may be connected to human activity.
  - Hazards are extreme events.

Hazards generally pose a risk of damage, loss, or harm to people and/or their property.

1.2.7 Watershed Management Act

Washington's Watershed Management Act of 1998 encourages local communities to develop plans for protecting local water resources and habitat. Lawmakers wanted local governments and citizens to develop plans since they know their own regions best. WRIA is an acronym for "Water Resource Inventory Area." WRIAs are watershed planning areas established by the Department of Ecology. Washington State is divided into 62 WRIAs, each loosely drawn around a natural watershed or group of watersheds. A watershed is an area of land that drains into a common river, lake, or the ocean.

1.2.8 Washington State Enhanced Mitigation Plan

The 2018 Washington State Enhanced Hazard Mitigation Plan provides guidance for hazard mitigation throughout Washington (Washington Emergency Management Division, 2018). The plan identifies hazard mitigation goals, objectives. and actions for state government to reduce injury and damage from natural hazards. By meeting federal requirements for an enhanced state plan (44 CFR Parts 201.4 and 201.5), the plan allows the state to seek significantly higher funding from the Hazard Mitigation Grant Program following presidential declared disasters (20 percent of federal disaster expenditures vs. 15 percent with a standard plan).

1.2.9 Washington Silver Jackets

The Washington Silver Jackets team was formed in 2010 and is a mix of federal and state agencies that work together to address flood risk priorities in the state. Federal agencies include the Corps of

Engineers, which facilitates coordination within the group, FEMA, the National Oceanic and Atmospheric Administration (NOAA), and the US Geological Survey (USGS). Participating state agencies include the Department of Ecology, the Emergency Management Division, and the Department of Transportation. The team's projects are intended to address state needs and improve flood risk management throughout the full flood life cycle (Silver Jackets, 2016).

1.2.10 Land and Water Conservation Fund

Congress established the Land and Water Conservation Fund in 1965 and authorized the Secretary of the Interior to provide financial assistance to the states for the acquisition and development of public outdoor recreation areas. The Washington State Recreation and Conservation Office administers the program in Washington. Funding comes from a portion of federal revenue from selling and leasing offshore oil and gas resources. Eligible projects include land acquisition and development or renovation projects, such as natural areas and open space. The Washington State Recreation and Conservation Office administers the program (Washington State Recreation and Conservation Office, 2016a).

1.2.11 Salmon Recovery Fund

In 1999, the Washington State Legislature created the Salmon Recovery Funding Board. The board provides grants to protect or restore salmon habitat. Funded projects may include activities that protect existing, high quality habitat for salmon or that restore degraded habitat to increase overall habitat health and biological productivity. Funding also is available for feasibility assessments to determine future projects and for other salmon related activities. Projects may include the actual habitat used by salmon and the land and water that support ecosystem functions and processes important to salmon (Washington State Recreation and Conservation Office, 2016b).

1.2.12 State Environmental Policy Act

The State Environmental Policy Act (SEPA) provides a way to identify possible environmental impacts of governmental decisions. These decisions may be related to issuing permits for private projects, constructing public facilities, or adopting regulations, policies, or plans. Information provided during the SEPA review process helps agency decision-makers, applicants, and the public understand how a proposal will affect the environment. This information can be used to change a proposal to reduce likely impacts, or to condition or deny a proposal when adverse environmental impacts are identified. Actions identified in hazard mitigation plans are frequently subject to SEPA review requirements before implementation.

Non-project actions are governmental actions involving decisions on policies, plans, or programs that contain standards controlling use or modification of the environment, or that will govern a series of connected actions. This includes, but is not limited to, the adoption or amendment of comprehensive plans (WAC 197-11-704(2)(b)).

Adoption of the Comprehensive Flood Hazard Management Plan will have no probable significant adverse impact on the environment; therefore, an environmental impact statement will not be required under RCW 43.21C.030(2)(c).

1.2.13 State Hydraulic Code

Washington's Hydraulic Code states that any person or government agency intending to undertake a hydraulic project shall, before commencing work, secure a Hydraulic Project Approval from the Washington Department of Fish and Wildlife verifying the adequacy of the proposed means for protecting fish (RCW 77.55.021 (1)). The code defines a hydraulic project as work that will use, divert, obstruct, or change the natural flow or bed of any salt or freshwaters of the state. Approval is required for projects at or waterward of the ordinary high water line and for projects landward of the ordinary high water line that are immediately adjacent to waters of the state.

1.2.14 Office of the Chehalis Basin

In 2016, the Washington Legislature created the Office of the Chehalis Basin to administer legislative funding to implement the Chehalis Basin Strategy. The Office of the Chehalis Basin is located within the Department of Ecology.

1.2.15 Chehalis River Basin Flood Authority

The Chehalis River Basin Flood Authority was created in 2008 after the major flood of 2007. The Flood Authority is made up of officials from the principal jurisdictions in the basin, including Grays Harbor, Lewis, and Thurston Counties, and Aberdeen, Bucoda, Centralia, Chehalis, Cosmopolis, Hoquiam, Montesano, Napavine, Oakville, and Pe Ell. This planning project was funded by the Flood Authority.

1.3 Local

1.3.1 Flood Control Zone District

The Chehalis River Basin Flood Control Zone District (FCZD) was initiated by the Board of Lewis County Commissioners on February 14, 2011. RCW 86.15 enables the creation of such districts for the purpose of undertaking, operating, or maintaining flood control projects. Activities of the FCZD may include the following:

- Flood warning and emergency response
- Flood-proofing and elevation of structures
- Property acquisition
- Implementation of consistent development regulations that recognize the impacts of flooding
- Basin-wide flood planning
- Flood facility maintenance
- Public education and outreach
- Mapping and technical studies
- Mechanisms for citizen inquiry and public assistance
- Identification, engineering, and construction of capital projects to mitigate flood problems

The purpose of the Chehalis River Basin FCZD is to address the continuing flooding problem associated with the Chehalis River. The objectives of the District include, but are not limited to: reducing the risk

associated with flooding; preserving life, preventing damage to property; and protecting, preserving and conserving natural resources within the District.

The Flood Control Zone District is sponsoring a major flood mitigation project identified as the Governor's Work Group Recommendation in the Chehalis River Basin Strategy. The recommendation would achieve flood damage reduction through implementation of a Flood Retention Facility and raising the Airport Levee.

The Chehalis River Basin FCZD is not currently funded, but is authorized to assess up to $0.50 per $1,000. Examples of 2016 levy rates in other FCZDs include $0.12980 per $1,000 in King County, $0.1344 per $1,000 in Whatcom County, $0.070054 per $1,000 in Kittitas County, $0.10 per $1,000 in Pierce County, $0.07 per $1,000 in Chelan County, and $0.08975 per $1,000 in Yakima County.

The adopted Flood Plan will direct future operations of the Chehalis River Basin FCZD.

1.3.2 Comprehensive Plan

Lewis County's Comprehensive Plan, updated in 2018, provides guidance about what residents hope to see in their community. Washington's 1990 Growth Management Act established specific goals and requirements for local comprehensive plans and development regulations. The County's Comprehensive Plan will be updated every eight years as required by the GMA. The next update will provide an opportunity to integrate the findings and recommendation of this Flood Plan into the updated Comprehensive Plan.

1.3.3 Emergency Management Plan

The 2011 Comprehensive Emergency Management Plan is Lewis County's framework for response to a disaster or emergency. Several emergency support function documents provided as functional annexes to the basic plan outline general guidelines by which County organizations will carry out the responsibilities assigned in the plan. These emergency support function documents are consistent with FEMA's 2008 National Response Framework.

The Comprehensive Emergency Management Plan details the authorities, functions, and responsibilities of local, state, and federal agencies in the event of emergency. It describes the processes of crisis and consequence management and how the integrated actions of local, state, and federal agencies establish a mutually cooperative environment for preparedness, prevention, response, and recovery activities.

1.3.4 Critical Areas Ordinance

Washington's GMA requires cities and counties to adopt policies and development regulations based on the best available science to protect critical areas. Lewis County updated its Critical Areas Ordinance to comply with the GMA in 2018. Chapter 17.38 of Lewis County Code describes and defines setback requirements for the following critical areas:

- Fish and wildlife habitat conservation areas
- Wetland areas
- Aquifer recharge areas

- Frequently flooded areas
- Geologically hazardous areas

1.3.5 Shoreline Master Program

Lewis County's current Shoreline Master Program was adopted by the Lewis County and the Washington Department of Ecology in 2017. Primary responsibility for administering this regulatory program is assigned to the County's Community Development Department, which has jurisdiction for permitting development on the state's shoreline within the County.

1.3.6 Voluntary Stewardship Program

The Voluntary Stewardship Program is an optional, incentive-based approach to protecting critical areas while promoting agriculture. The program is allowed under the Growth Management Act as an alternative to traditional approaches to critical areas protection, such as "no touch" buffers. Lewis County is one of 27 counties that has opted in to the Voluntary Stewardship Program.

APPENDIX B

Description of CRS and FCAAP Planning Guidelines

COMMUNITY RATING SYSTEM GUIDELINES

The Community Rating System provides credit for a community-wide floodplain management plan that was prepared by following a standard planning process. The plan must follow the ten steps listed below to receive full credit. **Required items are shown in bold**.

Step 1. Organize to prepare the plan (Maximum credit: 15 points)

The credit Step 1 is the total of the following points, which are based on how the community organizes to prepare its floodplain management plan:

(a) if the office responsible for the community's land use and comprehensive planning is actively involved in the floodplain management planning process;

(b) if the planning process is conducted through a committee composed of staff from those community departments that have expertise or will be implementing the majority of the plan's recommendations;

(c) if the planning process and/or the committee are formally created or recognized by action of the community's governing board.

The plan document must discuss how it was prepared, who was involved in the planning process, and how the public was involved during the planning process. When a multi-jurisdictional plan is prepared, at least two representatives from each community seeking CRS credit must be involved on the planning committee that is credited under item (b), and at least one representative must attend every planning committee meeting.

Step 2. Involve the public (Maximum credit: 120 points)

The planning process must include an opportunity for the public to comment on the plan during the drafting stage and before plan approval. The term "public" includes residents, businesses, property owners, and tenants in the floodplain and other known hazard areas as well as other stakeholders in the community, such as such as developers and contractors, civic groups, environmental organizations, academia, non-profit organizations, major employers, and staff from other governmental agencies, such as a levee district, housing authority, Natural Resources Conservation Service, or the National Weather Service. The credit for this step is the total of the following points based on how the community involves the public during the planning process.

(a) if the planning process is conducted through a planning committee that includes members of the public. If this is the same planning committee credited under Step 1, items (b) and (c), at least one half of the members must be representatives of the public, including residents, businesses, or property owners from the flood-prone areas. The committee must hold a sufficient number of meetings that involve the members in planning steps 4 through 8 (e.g., at least one meeting on each step).

(b) if one or more public information meetings are held in the affected area(s) within the first two months of the planning process to obtain public input on the natural hazards, problems, and possible solutions. At least one meeting must be held separate from the planning committee meetings in item (a).

(c) for holding at least one public meeting to obtain input on the draft plan. The meeting must be at the end of the planning process, at least two weeks before submittal of the recommended plan to the community's governing body.

(d) if other public information activities are implemented to explain the planning process and encourage input to the planner or planning committee.

Step 3. Coordinate (Maximum credit: 35 points)

Other agencies and organizations must be contacted to see if they have any studies, plans, or information pertinent to the plan, to determine if they are doing anything that may affect the community's program, and to see if they could support the community's efforts.

Examples of "other agencies and organizations" include neighboring communities; local, regional, state, and federal agencies; and businesses, academia, and other private and non-profit organizations affected by the hazards or involved in hazard mitigation or floodplain management. The credit for this step is the total of the following points. To receive credit for this step, the coordination must include items (a).

(a) **if the planning includes a review of existing studies, reports, and technical information and of the community's needs, goals, and plans for the area.**

(b) for coordinating with agencies and organizations outside the community's governmental structures. Coordinate means to contact the agency and keep a record, ask for data or information, ask if they're doing anything that might affect flooding, and offer opportunity to be involved in the planning effort.

Step 4. Assess the hazard (Maximum credit: 35 points)

Under this step, the community gathers data about natural hazards that affect the community. The credit for this step is the total of the following points based on what the community includes in its assessment of the hazard. To receive CRS credit for this step, the assessment must include item (a). If the community wants the plan to also qualify as a FEMA multi- hazard mitigation plan, item (b) must also be completed.

(a) for including an assessment of the flood hazard in the plan. **If the community is a Category B or C repetitive loss community, this step must cover all of its repetitive loss areas.** The assessment must include at least one of the following items:

(1) a map of the known flood hazards.

(2) a description of the known flood hazards, including source of water, depth of flooding, velocities, and warning time.

(3) a discussion of past floods.

(b) for including an assessment of less-frequent floods hazards. The assessment must:

(1) identify the hazard such as preparing an inventory of levees or preparing and inventory of dams that would result in a flood of developed areas if they fail.

(2) include a map of the area.

(3) summarize the hazards in lay terms.

(c) for including an assessment of flood problems that are likely to get worse in the future.

(d) for including a description of the magnitude or severity, history, and probability of future events for other natural hazards, such as earthquakes, wildfires, or tornados. The plan should include all natural hazards that affect the community. At a minimum, it should include hazards identified by the state's hazard mitigation plan.

Step 5. Assess the problem (Maximum credit: 52 points)

In this step, the community collects data and summarizes what is at risk. The credit for this step is the total of the following points, based on what is included in the assessment of the vulnerability of the

community to the hazards identified in the previous hazard assessment step. To receive credit for this step, the assessment must include item (a) and (c).

(a) **if the plan includes an overall summary of the jurisdiction's vulnerability to each hazard identified in the hazard assessment (Step 4) and the impact on the community.**

(b) if the plan includes a description of the impact that the hazards identified in the hazard assessment (Step 4) have on: life, safety, and public health; critical facilities and infrastructure; the community's economy and major employers; the number and types of affected buildings.

(c) if the plan includes a review of historical damage to buildings, including all repetitive loss properties and all properties have received flood insurance claim payments. **Category B and C repetitive loss communities must include their repetitive loss areas in their problem assessment.**

(d) if the plan describes areas that provide natural and beneficial functions, such as wetlands, riparian areas, sensitive areas, and habitat for rare or endangered species.

(e) if the plan includes a description of development, redevelopment, and population trends and a discussion of what the future brings for development and redevelopment in the community, the watershed, and natural resource areas.

(f) if the plan includes an description of the impact of the future flooding conditions described in item (c).

Step 6. Set goals (Maximum credit: 2 points)

The two credit points for this step are provided if the plan includes a statement of the goals of the community's floodplain management or hazard mitigation program. The goals must address all flood-related problems identified in Step 5.

Step 7. Review possible activities (Maximum credit: 35 points)

The plan must describe those activities that were considered and note why they were or were not recommended (e.g., they were not cost-effective or they did not support the community's goals).
If an activity is currently being implemented, the plan must note whether it should be modified. The discussion of each activity needs to be detailed enough to be useful to the lay reader. The credit for this step is the total of the following points based on which floodplain management or hazard mitigation activities are reviewed in the plan.

(a) **if the plan reviews preventive activities, such as zoning, stormwater management regulations, building codes, and preservation of open space and the effectiveness of current regulatory and preventive standards and programs;**

(b) if the plan reviews whether the community's floodplain management regulatory standards are sufficient for current and future conditions, as discussed under Steps 4(c) and 5(f)

(c) if the plan reviews property protection activities, such as acquisition, retrofitting, and flood insurance;

(d) if the plan reviews activities to protect the natural and beneficial functions of the floodplain, such as wetlands protection;

(e) if the plan reviews emergency services activities, such as warning and sandbagging;

(f) if the plan reviews structural projects, such as reservoirs and channel modifications; and

(g) if the plan reviews public information activities, such as outreach projects and environmental education programs.

Step 8. Draft an action plan (Maximum credit: 60 points)

The action plan specifies those activities appropriate to the community's resources, hazards, and vulnerable properties.

For each recommendation, the action plan must identify who does what, when it will be done, and how it will be financed. The actions must be prioritized and include a review of the benefits of the proposed projects and their associated costs. A multi-jurisdictional plan must have actions from at least two of the following categories. The credit for this step is based on what is included in the action plan.

Credit is provided for a recommendation on floodplain regulations, provided it recommends a regulatory standard that exceeds the minimum requirements of the NFIP.

(a) how many categories credited in Step 7 have action items.

(b) additional points are provided if the action plan establishes post-disaster mitigation policies and procedures.

(c) additional points are provided if the plan includes action items (other than public information activities) to mitigate the effects of the other natural hazards identified in the hazard assessment (Step 4, item (b)).

Step 9. Adopt the plan (Maximum credit: 2 points)

The 2 credit points for this step are provided if the plan and later amendments are officially adopted by the community's governing body. When a multi-jurisdictional plan is prepared, it must be adopted by the governing board of each community seeking CRS or multi-hazard mitigation plan credit.

Step 10. Implement, evaluate, and revise (Maximum credit: 26 points)

The credit for this step is the total of the following points based on how the community monitors and evaluates its plan.

(a) **if the community has procedures for monitoring implementation, reviewing progress, and recommending revisions to the plan in an annual evaluation report. The report must be submitted to the governing body, released to the media and made available to the public.**

(b) if the evaluation report is prepared by the same planning committee that prepared the plan that is credited in step 2(a) or by a successor committee with a similar membership that was created to replace the planning committee and charged with monitoring and evaluating implementation of the plan.

To maintain this credit, the community must submit a copy of its annual evaluation report with its recertification each year and update the plan at least every five years.

FLOOD CONTROL ASSISTANCE ACCOUNT PROGRAM GUIDELINES

Pursuant to WAC 173-145-040, a Comprehensive Flood Hazard Management Plan must include the following elements:

1) Determination of the need for flood control work.
   (a) Description of the watershed;
   (b) Identification of types of watershed flood problems;
   (c) Location and identification of specific problem areas;
   (d) Description of flood damage history;
   (e) Description of potential flood damage;
   (f) Short-term and long-term goals and objectives for the planning area;
   (g) Description of rules that apply within the watershed including, but not limited to, local shoreline management master programs, and zoning, subdivision, and flood hazard

ordinances;

(h) Determination that the in-stream flood control work is consistent with applicable policies and rules.

2) Alternative flood control work.
   (a) Description of potential measures of in-stream flood control work;
   (b) Description of alternatives to in-stream flood control work.

3) Identification and consideration of potential impacts of in-stream flood control work on the following in- stream uses and resources.
   (a) Fish resources;
   (b) Wildlife resources;
   (c) Scenic, aesthetic, and historic resources;
   (d) Navigation;
   (e) Water quality;
   (f) Hydrology;
   (g) Existing recreation;
   (h) Other impacts.

4) Area of coverage for the comprehensive plan shall include, as a minimum, the area of the one-hundred-year frequency flood plain within a reach of the watershed of sufficient length to ensure that a comprehensive evaluation can be made of the flood problems for a specific reach of the watershed. The plan may or may not include an entire watershed. Comprehensive plans shall also include flood hazard areas not subject to riverine flooding such as areas subject to coastal flooding, flash flooding, or flooding from inadequate drainage. Either the meander belt or floodway must be identified on aerial photographs or maps that will be included with the plan.

5) Conclusion and proposed solution(s). The Comprehensive Flood Control Management Plan must be finalized by the following action from the appropriate local authority:
   (a) Evaluation of problems and needs;
   (b) Evaluation of alternative solutions;
   (c) Recommended corrective action with proposed impact resolution measures for resource losses; and
   (d) Corrective action priority.

The April 2021 Draft Comprehensive Planning for Flood Hazard Management: A Guidebook outlines the following steps:

Step 1: Identify Related Regulatory Programs and Planning Priorities
Step 2: Establish Process for Public and Agency Participation
Step 3: Draft Short- and Long-term Goals and Objectives for Flood Hazard Management
Step 4: Inventory and Analysis of Physical Conditions and Other Technical Issues
Step 5: Set Short- and Long-term Goals and Objectives for Flood Hazard Management
Step 6: Determine Need for Flood Hazard Management Strategies and Measures
Step 7: Identify Alternative Strategies and Measures for Flood Hazard Management

Step 8: Evaluate Alternative Strategies and Measures
Step 9: Hold Public Alternative Evaluation Workshop(s)
Step 10: Develop Strategy and Implementation Approaches for Flood Hazard Management
Step 11: Complete Draft CFHMP and SEPA Documentation
Step 12: Submit Final CFHMP to Department of Ecology
Step 13: Hold Public Hearing and Adopt the CFHMP

APPENDIX C

Public Outreach Survey Results and Summaries

1.0 PUBLIC OUTREACH SUMMARY

To be completed after public outreach concludes.

2.0 SURVEY RESULTS

Chehalis River Basin Flood Control Zone District

Chehalis River Basin

The Draft Chehalis River Basin Comprehensive Flood Hazard Management Plan (CFHMP) is ready for public review!

Click here for the draft plan!

For the past year, Stakeholders within Lewis County have been meeting to update the CFHMP. Check out the "Planning Process" and "Project Background" tab to learn more about the process and the planning area within Lewis County.

Attend our Open House!

- **When:** Wednesday, September 1st
- **Time**: 5:30 - 6:30 pm

- **Where**: Commissioners Hearing Room.

The meeting will be both in-person and online using Zoom. Find the link to the Zoom meeting on the FCZD website.

Keep scrolling to learn more about the plan, and be sure to leave us comments using the comment form or by emailing the County Project Manager, Betsy Dillin.

For more information about the project, contact Betsy Dillin at 360-740-1138 or at Betsy.Dillin@lewiscountywa.gov.

What is in the CFHMP?

The CFHMP is assembled in three parts:

1. Planning Process and Project Background
2. Risk Assessment
3. Mitigation Strategy

Each part is summarized below.

Photo: Main Street interchange in Chehalis. February 1996.

Part 1 - Planning Process and Background

Part 1 of the plan provides:

- Specific details about the planning process, such as meeting agenda items, names of stakeholders, and public outreach.

- Information about Lewis County, such as history, climate, geography, demographics, and economics.

Photo: Chambers Way. January 1990.

Part 2 - Risk Assessment

Part 2 of the plan outlines the flood hazards present in the Chehalis River Basin within Lewis County, and evaluates the **risk, exposure, and vulnerability** of the County and the Cities of Chehalis, Centralia, and Napavine and the Town of Pe Ell.

The risk assessment is based off the results of a Hazus analysis. Hazus is a program developed by FEMA that estimates damage from flooding based on flooding depth, assessor data, Census data, and building replacement values.

For this plan, we developed Hazus analyses for four flood scenarios:

- Effective 100-year floodplain (FEMA Flood Insurance Rate Maps, also knows as the "regulatory floodplain")
- 100-year flood based on a new flood model (similar to flood limits of the 2007 flood)
- 100-year flood based on a climate change scenario in 50 years (mid-range scenario)
- 10-year flood based on a new flood model.

> *"The term "100-year flood" means a flood that has a 1% chance of occurring every single year."*

> *"A "10-year flood" has a 10% chance of occurring each year."*

The interactive map shows the limits of the 100-yr Effective Floodplain in blue, the 2007 actual floodplain boundary in red, and areas they overlap are in purple. If you're on a cell phone, click on the map to interact.

This data is also available on the Lewis County GIS Web Map.

Risk (Chapter 6)

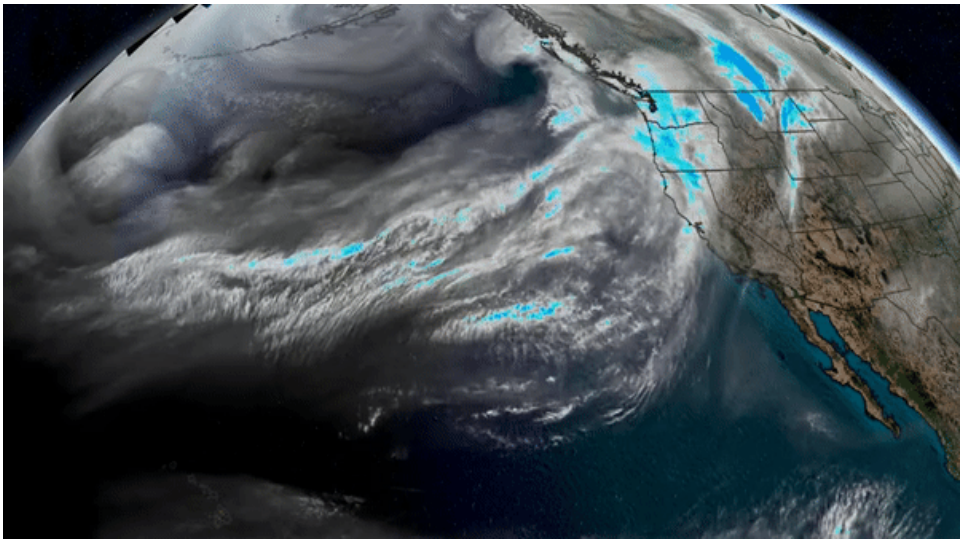
The Chehalis River Basin within Lewis County has a long history of flooding. For a comprehensive list of floods, view

this story on the Chronicle's website written by Julie McDonald and Edna Fund.

From Native American Legends to 2007: A History of Flooding in the Chehalis River Basin

The tab labeled "Interactive Timeline" also has a comprehensive list of floods.

Most flooding in Lewis County is associated with heavy rainfall. These rainfall events are often due to **atmospheric rivers** which bring several inches of rainfall in a short time. The **Pineapple Express** is an atmospheric river that bring warm moist air from the tropics.



This image shows the atmospheric river that brought storms in January 2021.

Photo: Chehalis. December 1933.

Exposure (Chapter 7)

Using the results of the Hazus analysis, we evaluated the number of structures within each of the floodplain scenarios to determine how many structures are exposed to flooding. We also estimated the value of the structures and contents within the floodplains.

We found that in the Chehalis River Basin 100-year effective floodplain (FEMA), there are 2,260 structures within 30,210 acres of floodplain. This is **$1.9 billion of exposed structures and content**, or 15% of the total value of all structures and content within study area (2019).

sing the modeled 100-year floodplain (similar to the 2007 flood), we found there to be **$2.2 billion in exposed structures and contents**, or 18% of the total value (2019).

And using the climate change model, we found there to be **$3.19 Billion in exposed structures and contents**, or 26% of the total value (2019).

Photo: Chambers Way. December 2007.

Vulnerability (Chapter 8)

Vulnerability assesses the people and structures that are at most risk.

For example, a house that has been elevated may be exposed to flood risks, but it will have very little damage, so it has low vulnerability.

People with disabilities are more vulnerable to flooding, because they may be unable to evacuate themselves and may require assistance.

Landowners who do not have flood insurance are also more vulnerable to flooding, because homeowners insurance does not cover flood damage. They may be entirely responsible for the cost of repairs to their damaged structure. Our analysis found that property owners have bought enough flood insurance to cover only $432 million of the estimated $1.95 billion of structures and contents within the floodplain.

For more information on flood insurance, visit Floodsmart.gov

Part 3 - Mitigation Strategy

Mitigation is the process of reducing exposure and vulnerability to flooding.

Flood mitigation is either structural or non-structural.

Structural flood mitigation often includes levees, floodgates, or other structures that control where floodwaters go.

Non-structural flood mitigation often includes elevating structures, building farm pads for livestock, creating open space, or changing building codes.

Click on the tab labeled "Mitigation Actions" to review the mitigation actions identified by the Stakeholder Committee.

Photo: Farm pad for livestock.

Proposed Mitigation Actions

Chehalis River Basin Comprehensive Flood Hazard Management Plan

During the planning process, the stakeholder committee identified several actions to include in the plan that will mitigate the flooding risk. These actions are focused at the county and city level, to reduce the impacts of local flooding. Some actions are existing programs that will remain on-going, other actions are long-term plans if and when funding becomes available.

There are six categories of mitigation actions:

- **Preventative** actions keep flood problems from getting worse.
- **Structural project** actions keep flood waters out of certain areas.
- **Emergency services** actions are taken during an emergency to minimize its impact.

- **Property protection** actions are implemented by property owners.
- **Public information** actions advise property owners, residents, and visitors about the hazard.
- **Natural resource protection** actions preserve or restore natural areas or the natural functions of floodplains.

Keep scrolling or click on the shortcuts on the top of this webpage to learn about some of the mitigation actions proposed in this plan. To review all mitigation actions, review Chapter 12 of the draft CFHMP.

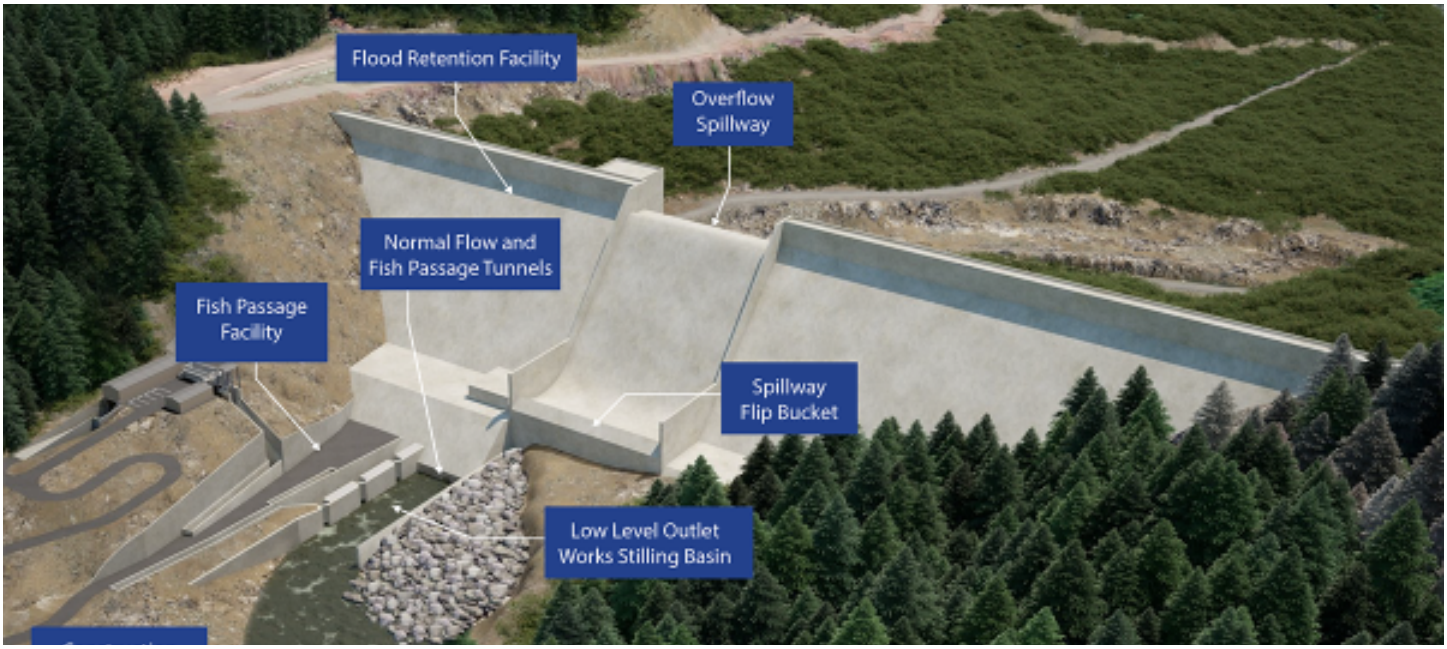
Prevention Actions

- **Action #8** – All participating agencies will continue to maximize federal, state, and local funding opportunities through grant application submittals in support of capital improvement projects, technical studies, and other flood hazard management activities.
- **Action #10** – All participating agencies will continue to maintain a database of flood control needs within the planning area as needs become identified for

incorporation into future updates and progress reporting to this plan.

- **Action #11** – All participating agencies will continue to collect high water marks, recorded damages, photos, observed flood conditions, etc.
- **Action #14** —Lewis County and the Cities of Centralia and Chehalis will continue participating in the Community Rating System (CRS) process.
- **Action #17** – The FCZD will continue to participate and coordinate with the Office of the Chehalis Basin, the Chehalis River Basin Flood Authority, and other pertinent Chehalis Basin organizations to ensure projects and programs are consistent with larger basin-wide objectives.
- **Action #18** – All agencies will participate in updates to the County's Flood Insurance Rate Maps to ensure the maps accurately reflect local conditions.
- **Action #36** – The Cities and County will continue to maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on flood hazard requirements and impacts.
- **Action #40** – The FCZD will continue to utilize the best available data, science, and technology in their projects, programs, and outreach.

Photo: SR 6 looking east towards Chehalis. December 2007.



Structural Project Actions

- **Action #1** - The FCZD will continue participation and implementation of the flood damage reduction projects that are part of the Chehalis Basin Strategy sponsored by the Office of the Chehalis Basin.
- Currently the FCZD is working on the Flood Retention Facility and the Chehalis-Centralia Airport Levee projects. For more information on these projects, visit the **Chehalis Basin Strategy** website.
- **Action #3** – The FCZD and other agencies such as the City of Chehalis, Port of Chehalis, and Lewis County, will develop a Newaukum Unit Drainage Basin Plan for Dillenbaugh, Dilly, and Berwick Creeks. The plan will identify cost effective and feasible structural and non-structural actions that will minimize future peak flow increases. The study should include the area between Armstrong Road and Jackson Highway adjacent to Logan Hill Road.
- **Action # 4** – The FCZD will identify sources of local funding to fund FCZD administration and leverage alternative funding sources.
- **Action #9** – The Cities and County will mitigate flood related risk to publicly owned County and City bridges.

- **Action #24** – The FCZD and Public Works will continue to support projects that evaluate the feasibility of regional stormwater detention facilities to address increased stormwater runoff for development in the basins that occurred prior to implementation of site-specific stormwater management measures.
- **Action #26** – All jurisdiction that participated in the CFHMP planning process will continue to participate in developing flood control projects with other entities such as the Chehalis River Basin Flood Authority, Office of the Chehalis Basin, USACE, and the Washington State Department of Transportation (WSDOT).

Image: Proposed Flood Control Facility.

Emergency Services Actions

- **Action #22** – The FCZD will continue to maintain their website to provide Chehalis River Basin information and links to the flood warning system and all other related websites and information.

- **Action #28** – All participating jurisdictions will continue to support projects that would mitigate or relocate utilities and critical facilities which are subject to flooding.
- **Action #29** – Lewis County Emergency Management will continue to encourage NIMS/ICS training for staff that may work within or interact with the Emergency Operations Center (EOC).
- **Action #30** – Lewis County Emergency Management and other county agencies will work together to develop flood response plans to include response and recovery roles, responsibilities, and priorities, flood early warning system procedures, pre-identified detour routes, criteria to assist emergency response personnel in determining what actions are appropriate when providing assistance to private property during the response and recovery phases, and a list of not-for-profit essential service providers that provide community support during and after a flood event.
- **Action #37** – Lewis County Emergency Management will work with the Cities and County to develop a communication protocol plan and provide training to all County and city responders on new protocol and system upgrades as funding becomes available.
- **Action #38** – Lewis County Emergency Management and the Public Works Department will map detour routes and share routes with WSDOT to assist in efficient detour planning.

Public Education and Awareness Actions

- **Action #15** – The Cities, County, and Emergency Management will continue to deploy public information and outreach program targeting at-risk properties within the planning area.
- **Action #19** – The County will continue to maintain on online web map with information layers such as CMZs, dam and levee breach inundation areas, and critical areas.
- **Action #21** – The County and Cities will continue to provide outreach and educational materials for the public on flood hazards, risks of development in floodplains, NFIP regulations, and flood mitigation programs, including annual mailings to flood prone properties and placing flood information at local libraries.
- **Action #39** – All participating agencies will support updates to the flood warning system to ensure it utilizes the best available data, science, and technology.

Photo: SR 6 landslide near Pe Ell. December 2007.

Property Protection Actions

- **Action #2** – The FCZD will develop a technical assistance program to support landowners with bank stabilization and/or post-disaster debris removal.
- **Action #7** – When requested, FCZD may act as the applicant agent for mitigation grant opportunities for private property requesting to participate in the grant program.

Natural Resource Protection Actions

Many of the proposed actions include a natural resource protection component. One action with a great focus on natural resource protection is:

- **Action #1** - The FCZD will continue participation and implementation of the flood damage reduction projects that are part of the Chehalis Basin Strategy sponsored by the Office of the Chehalis Basin.

The Chehalis Basin Strategy includes a plan for aquatic species restoration throughout the entire Chehalis River Basin. The plan is described in more detail in the draft Aquatic Species Restoration Plan, which can be viewed on the **Chehalis Basin Strategy website.**

Planning Process

The planning team is following a 10-step planning process. Each step is described below.

Step 1: Organize

A stakeholder committee was formed to guide the planning process. The committee includes representatives

from Lewis County, the cities of Centralia and Chehalis, Department of Ecology, and interested citizens. The committee generally meets on the 4th Tuesday of each month. For exact meeting dates and locations, agendas, and meeting summaries, visit the FCZD website. All stakeholder meetings are open to the public.

Step 2: Involve the public

Public participation is vital for the success of this project. There will be at least two public meetings during the process, the draft CFHMP will go through a public review and comment period, and the final plan will be adopted after holding a public hearing.

Step 3: Coordinate

The Chehalis basin has been studied for years by local, state, and federal agencies. Significant information already exists to help us understand risk, goals, and future plans for the basin. The planning team will review the existing information and coordinate with other agencies to ensure consistency at the local level. Much of the information we are reviewing is on the Chehalis Basin Strategy website.

Step 4 and 5: Assess the hazard and the problem

The planning team will identify the location and extent of flooding, using the best available and most current information, and assess how vulnerable the community is within the flood hazard area. This will include documenting past flooding and damages and assessing future flooding impacts which may result from development or climate change. The team will review the locations of critical facilities, such as fire stations, hospitals, and schools, and assess the economic value of infrastructure within the floodplain.

Some of the information the planning team is using is

already online. The Chehalis River Flood website shows where floodwater may reach during different flood stages.

Step 6: Set goals

The stakeholder committee will update the goals from the 2009 plan to identify priority actions and where mitigation should be focused.

Step 7 and 8: Review possible activities and draft an action plan

Once risk is fully understood and goals and policies are decided, the stakeholder committee will identify mitigation actions. These actions may be in support of larger, regional projects, or identify smaller projects that address local flooding or drainage issues. All possible activities will be evaluated for cost and feasibility. Activities that are determined to be cost-effective and feasible will be included in the action plan. An implementation plan will also be developed, which includes possible funding sources, which agency will lead the project, and which agencies can coordinate or support the project.

Step 9: Adopt the plan

Lewis County and the participating cities will adopt the plan after a public review and comment period.

Step 10: Implement, Evaluate, and Revise

The stakeholder committee will review the plan each year and discuss progress that has been made. The plan will go through an update process every five years.

Project Background

Chehalis River Basin Comprehensive Flood Hazard Management Plan

What is a CFHMP?

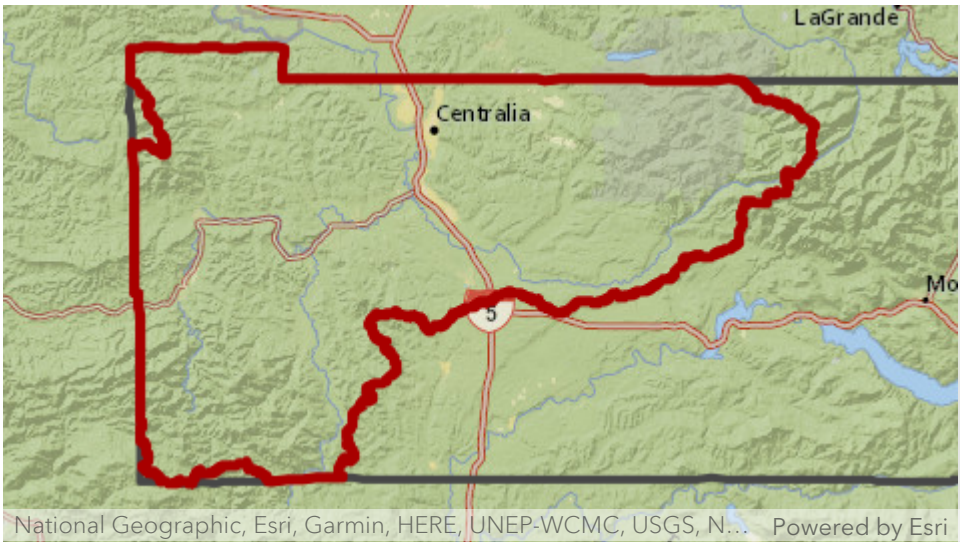
A Comprehensive Flood Hazard Management Plan is a plan written by a local government to document goals and policies for the management of floodplains. The CFHMP will also identify actions that can be taken to reduce the impacts of flooding from the Chehalis River and its tributaries. The CFHMP will guide the Chehalis River Basin Flood Control Zone District (FCZD) administrators, Board of Supervisors, and Advisory Committee in FCZD operations. For more information about the FCZD, visit the FCZD website.

Is this project related to the proposed flood retention facility or airport levee?

Not directly. The flood retention facility is part of the Chehalis Basin Strategy. This CFHMP planning process is also part of the Chehalis Basin Strategy, but is focused on actions that can be taken by local government to address local flooding issues. More information about the flood retention facility can be found on the Chehalis Basin Strategy website.

What is the study area?

The CFHMP study area includes the entire Chehalis River Basin within Lewis County, including the cities of Centralia, Chehalis, and Napavine, and Town of Pe Ell. See map below.



Study area highlighted in red.

Why is the plan being updated?

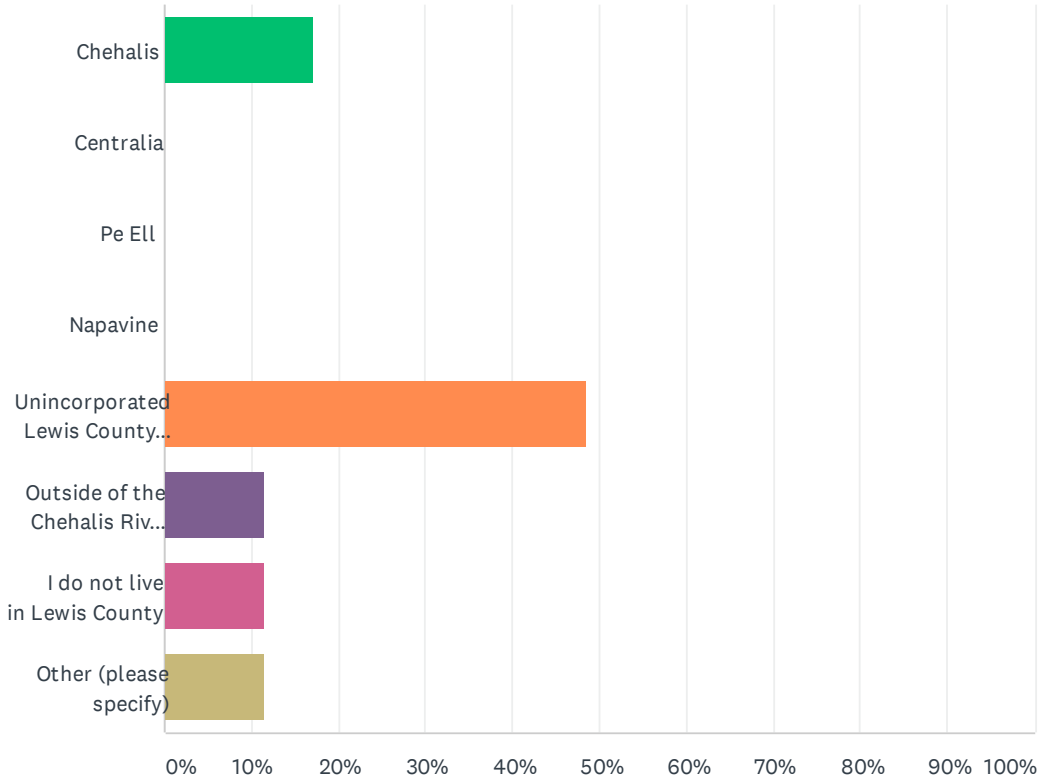
The County's first CFHMP was written in 1994 and the most recent update was in 2009. The FCZD recently received a grant from the Office of the Chehalis Basin to update the plan. The plan is being updated to include new information, review and revise goals and objectives, and identify new mitigation projects and other actions. The current plan can be downloaded here.

Who is updating the plan?

The FCZD has hired a consultant to lead the planning process and write the plan. A stakeholder committee is guiding the planning process. The stakeholder committee includes representatives from the county, cities, state, and members of the public.

Q1 Where in Lewis County do you live?

Answered: 35 Skipped: 0

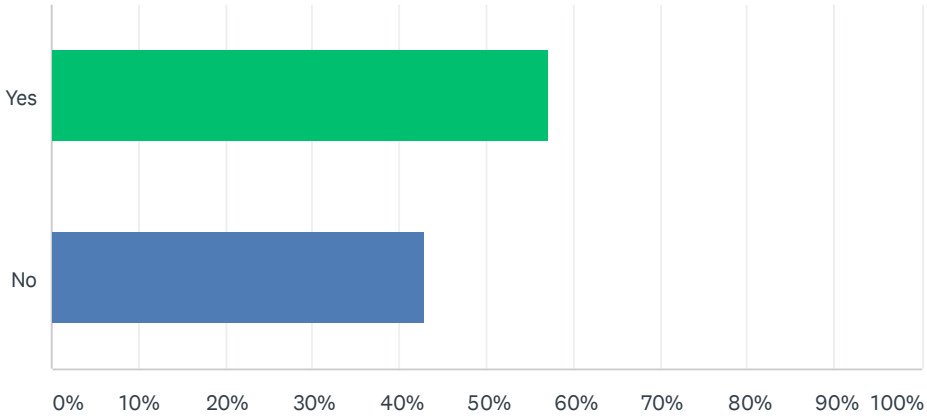


ANSWER CHOICES	RESPONSES	
Chehalis	17.14%	6
Centralia	0.00%	0
Pe Ell	0.00%	0
Napavine	0.00%	0
Unincorporated Lewis County within Chehalis River Basin	48.57%	17
Outside of the Chehalis River Basin, including: Cowlitz River Basin (Winlock, Toledo, Vader, Packwood, Morton, Mossyrock, etc), Deschutes River Basin, or Nisqually River Basin	11.43%	4
I do not live in Lewis County	11.43%	4
Other (please specify)	11.43%	4
TOTAL		35

#	OTHER (PLEASE SPECIFY)	DATE
1	I live in southern Thurston, up against the Chehalis river	5/14/2020 1:08 PM
2	Adna	5/5/2020 11:52 PM
3	Onalaska	5/4/2020 7:28 PM
4	Vader	4/13/2020 9:53 AM

Q2 Do you work in Lewis County?

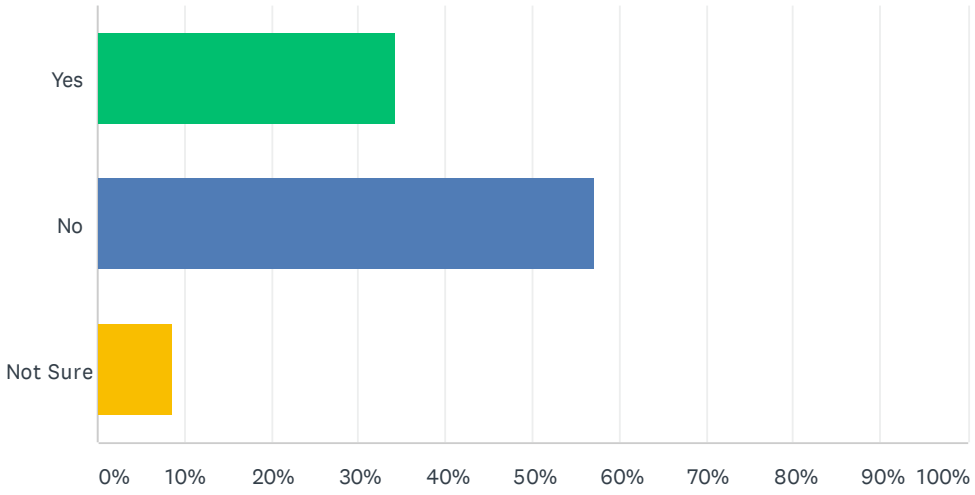
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	57.14%	20
No	42.86%	15
TOTAL		35

Q3 Do you live in a known floodplain or area that has been subject to flooding?

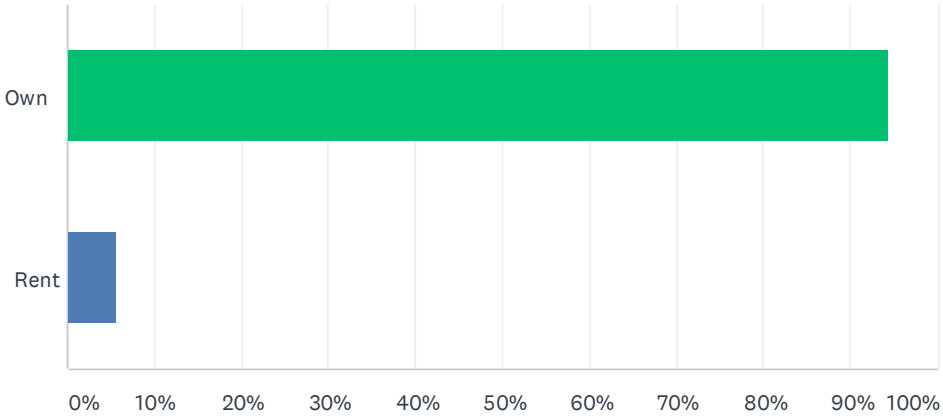
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	34.29%	12
No	57.14%	20
Not Sure	8.57%	3
TOTAL		35

Q4 Do you own or rent your place of residence?

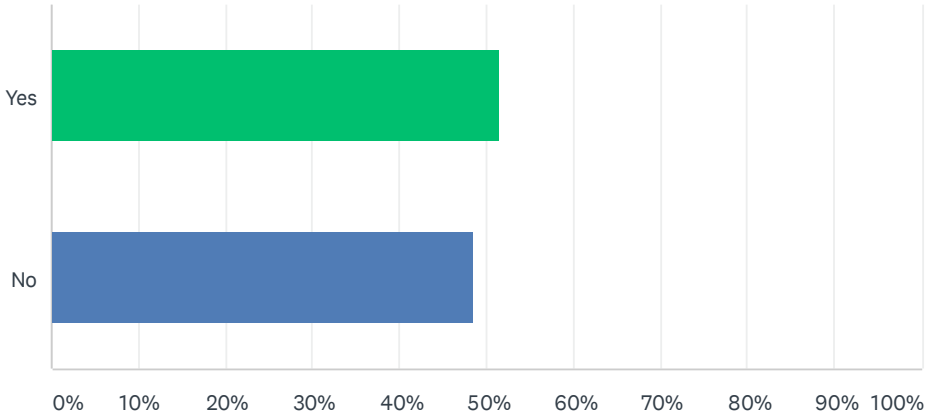
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Own	94.29%	33
Rent	5.71%	2
TOTAL		35

Q5 Do you have a mortgage?

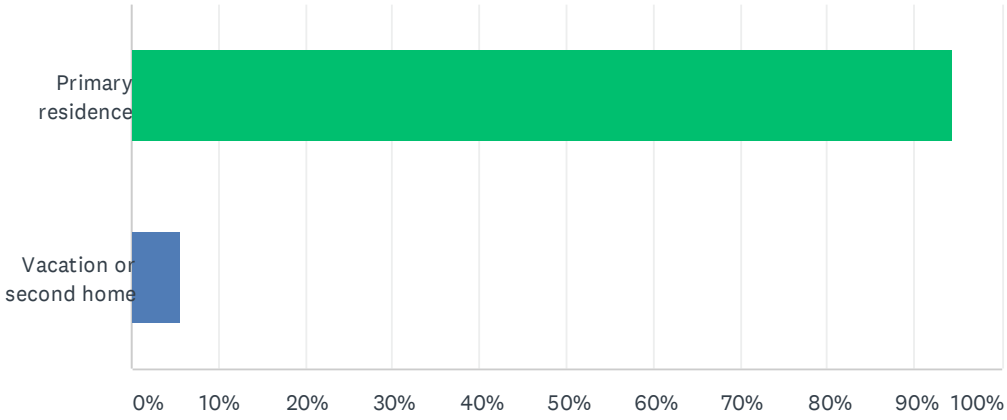
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	51.43%	18
No	48.57%	17
TOTAL		35

Q6 Is this your primary residence or is it your vacation/second home?

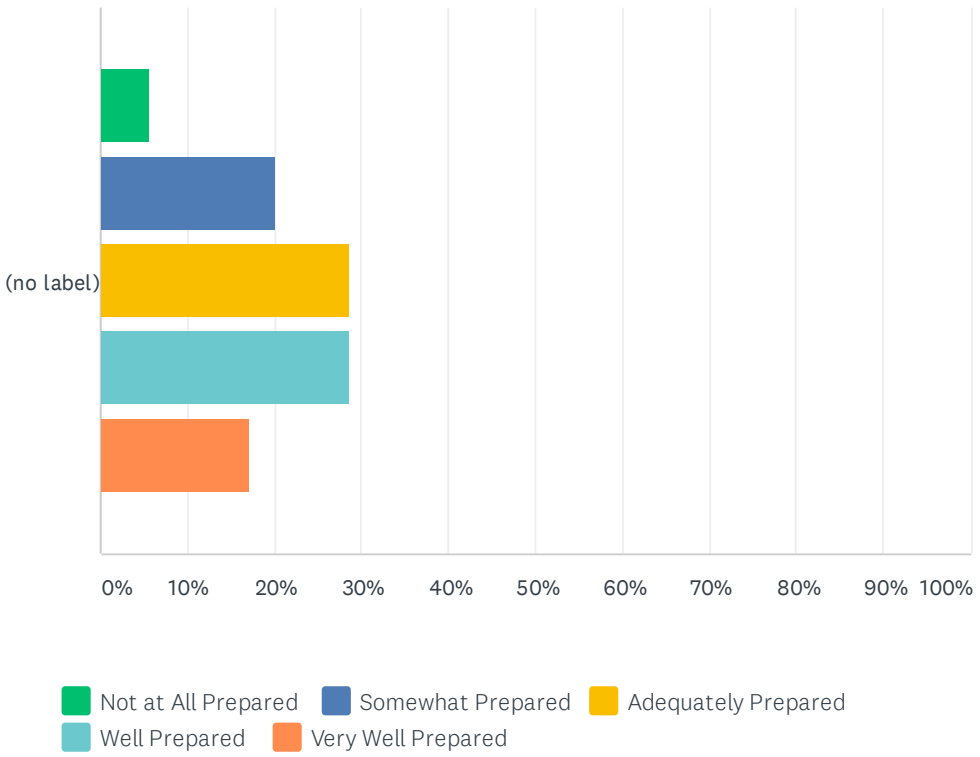
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Primary residence	94.29%	33
Vacation or second home	5.71%	2
TOTAL		35

Q7 How prepared is your household to deal with a flood event?

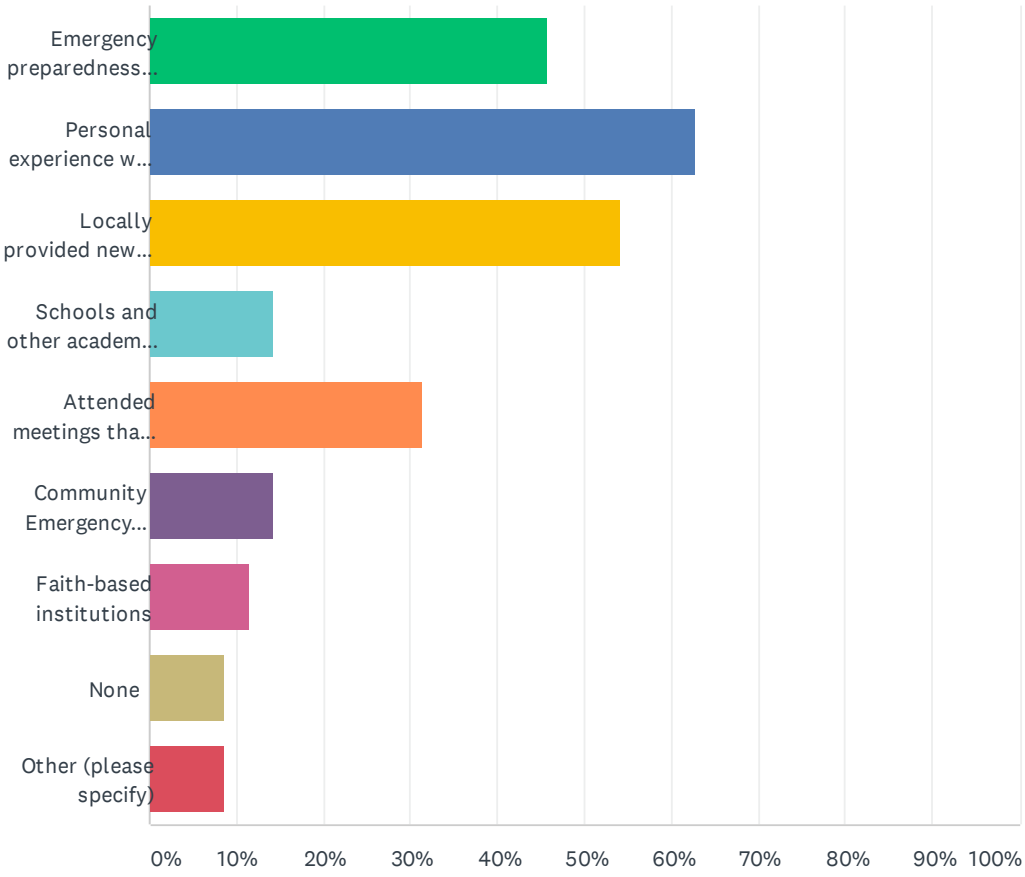
Answered: 35 Skipped: 0



	NOT AT ALL PREPARED	SOMEWHAT PREPARED	ADEQUATELY PREPARED	WELL PREPARED	VERY WELL PREPARED	TOTAL	WEIGHTED AVERAGE
(no label)	5.71% 2	20.00% 7	28.57% 10	28.57% 10	17.14% 6	35	3.31

Q8 Which of the following have provided you with useful information to help you be prepared for a flood event?

Answered: 35 Skipped: 0



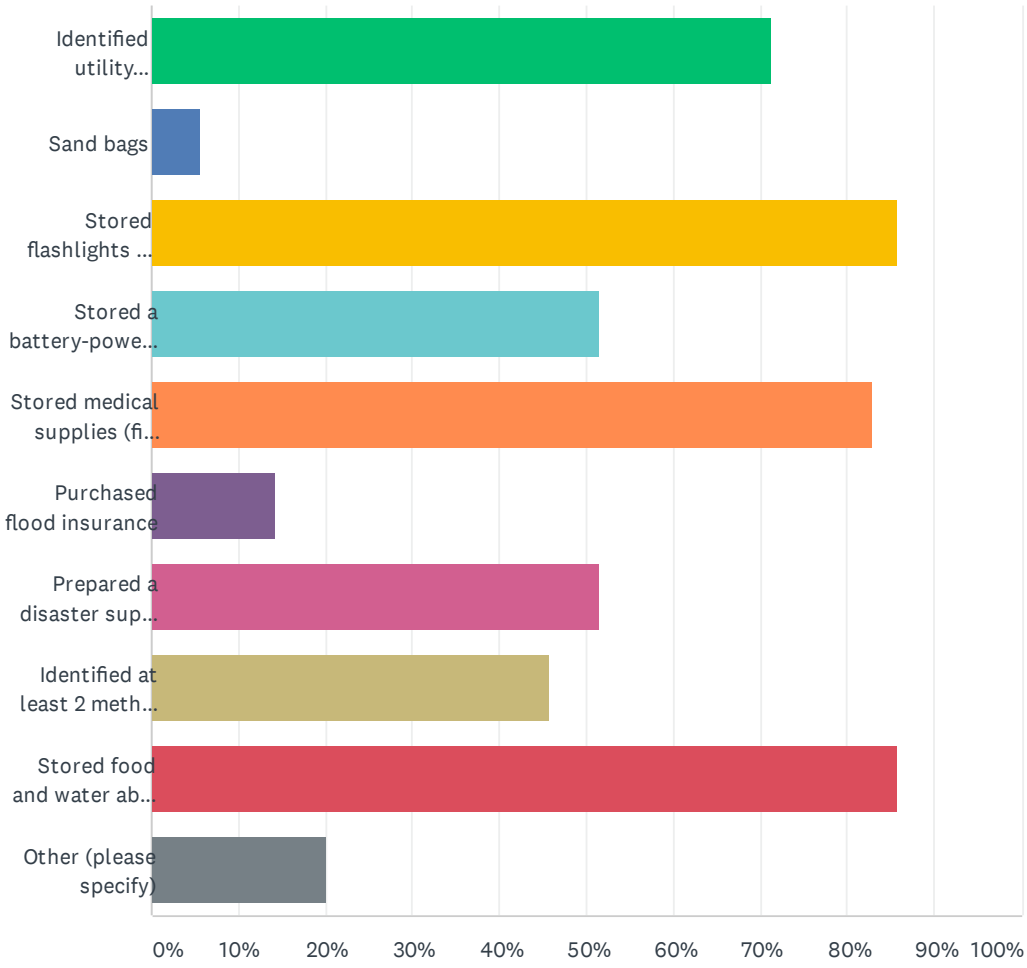
ANSWER CHOICES	RESPONSES	
Emergency preparedness information from a government source (e.g., federal, state, or local emergency management)	45.71%	16
Personal experience with flood events	62.86%	22
Locally provided news or other media information	54.29%	19
Schools and other academic institutions	14.29%	5
Attended meetings that have dealt with flood preparedness	31.43%	11
Community Emergency Response Training (CERT)	14.29%	5
Faith-based institutions	11.43%	4
None	8.57%	3
Other (please specify)	8.57%	3
Total Respondents: 35		

#	OTHER (PLEASE SPECIFY)	DATE

1	NGO Disaster Preparedness	5/11/2020 9:38 AM
2	My job as a Firefighter.	5/5/2020 11:52 PM
3	Was involved in flood recovery after 2007 flood.	5/4/2020 12:53 PM

Q9 Which of the following steps has your household taken to prepare for a flood event? (Check all that apply)

Answered: 35 Skipped: 0

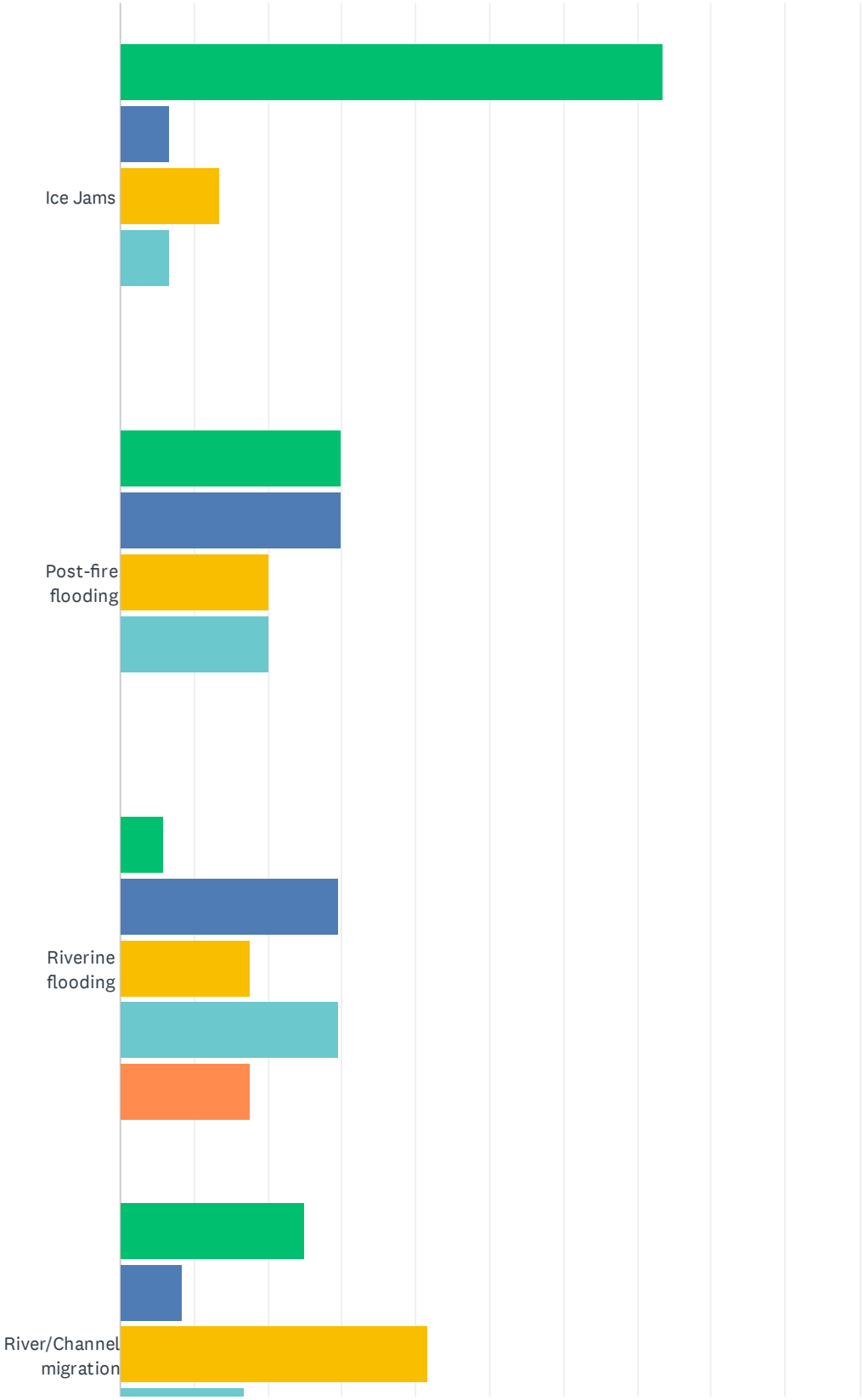


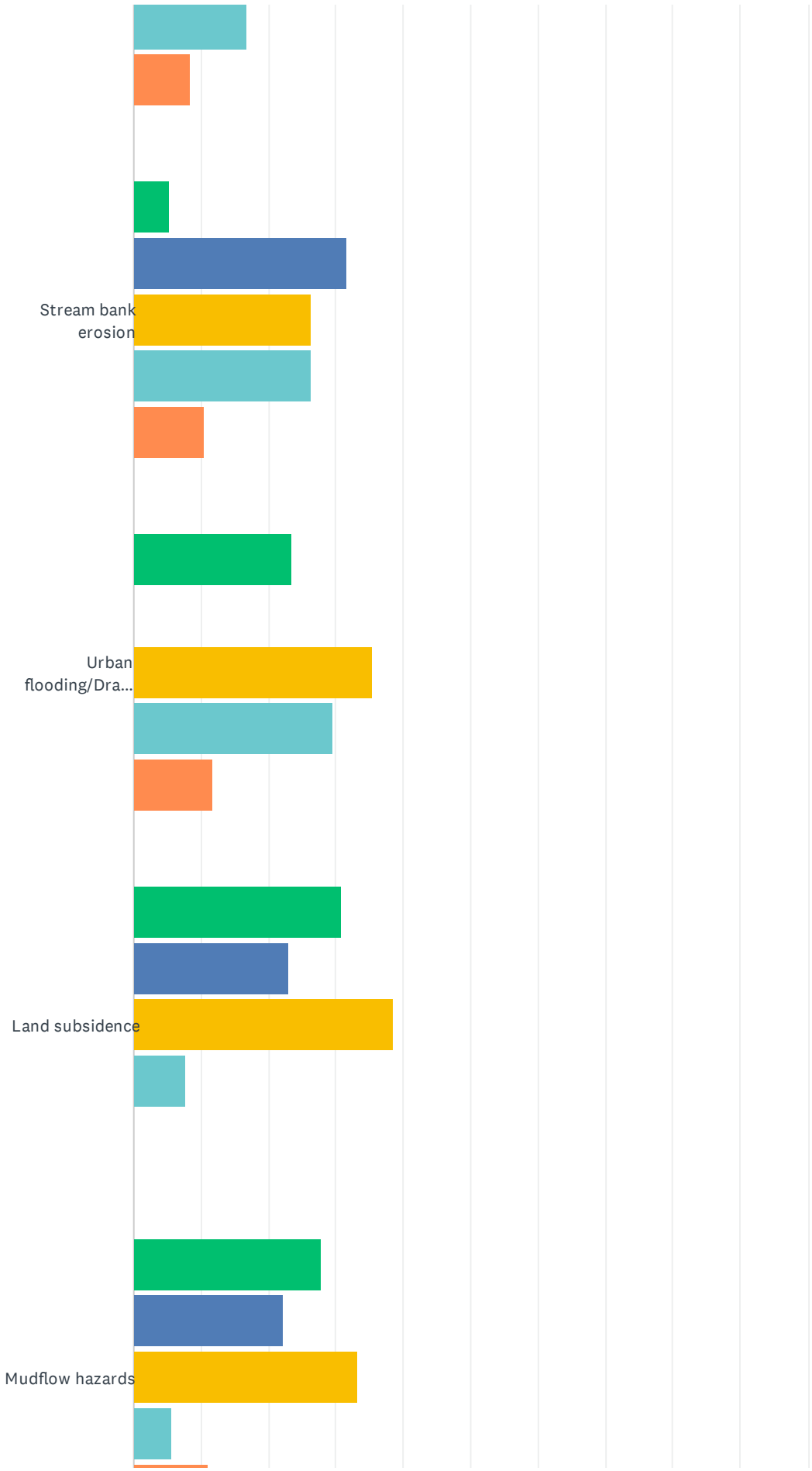
ANSWER CHOICES	RESPONSES	
Identified utility shutoffs	71.43%	25
Sand bags	5.71%	2
Stored flashlights and batteries	85.71%	30
Stored a battery-powered radio	51.43%	18
Stored medical supplies (first aid kit, medications)	82.86%	29
Purchased flood insurance	14.29%	5
Prepared a disaster supply kit	51.43%	18
Identified at least 2 methods for receiving emergency notifications and information during emergencies	45.71%	16
Stored food and water above potential flood levels	85.71%	30
Other (please specify)	20.00%	7
Total Respondents: 35		

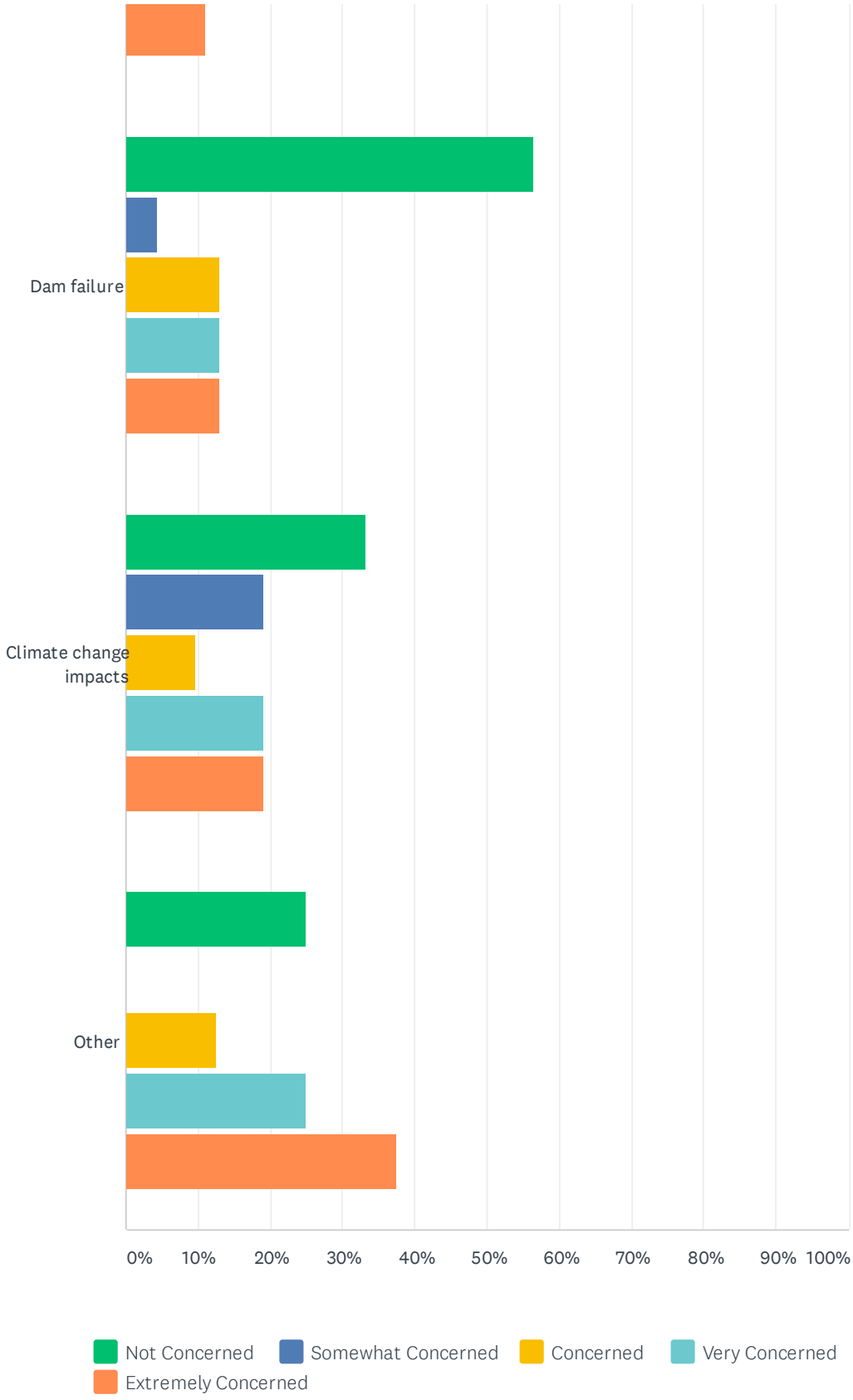
#	OTHER (PLEASE SPECIFY)	DATE
1	None	5/18/2020 11:02 AM
2	Amateur Radio Operator with generator back up power	5/15/2020 1:22 PM
3	Watch hydrographs	5/15/2020 10:12 AM
4	Live outside the floodplain on high ground.	5/15/2020 10:08 AM
5	1000 Gallon cistern for water. Multi fuel generator	5/14/2020 1:08 PM
6	Aquarium	5/12/2020 9:01 AM
7	Developed a ham radio network in community and an emergency response network among community members.	5/4/2020 12:53 PM

Q10 How concerned are you about the following flood related hazards in Lewis County? (Check one response for each hazard)

Answered: 34 Skipped: 1




Stream bank erosion
Urban flooding/Dra...
Land subsidence
Mudflow hazards

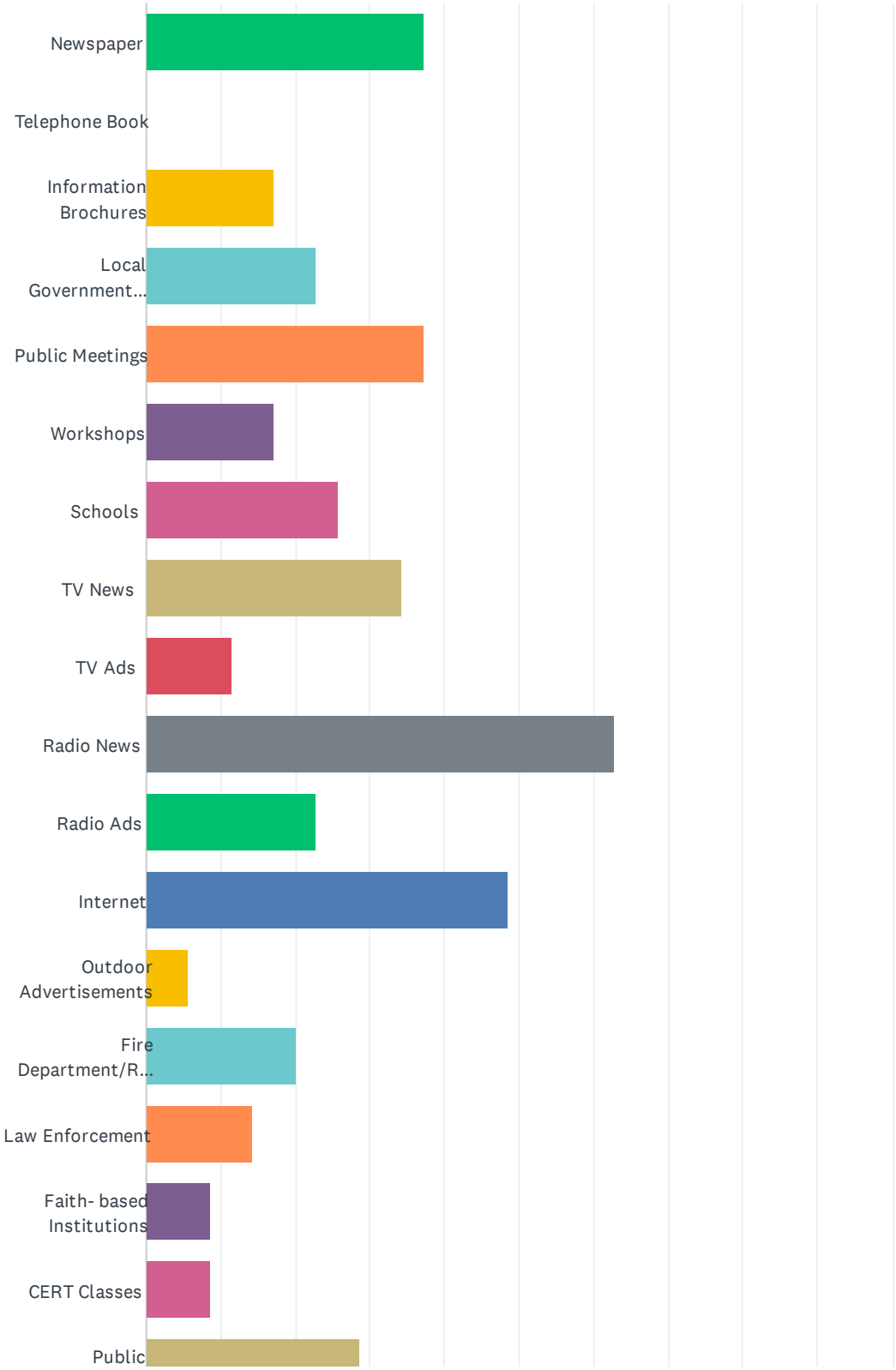

Dam failure
Climate change impacts
Other
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Not Concerned
Somewhat Concerned
Concerned
Very Concerned
Extremely Concerned

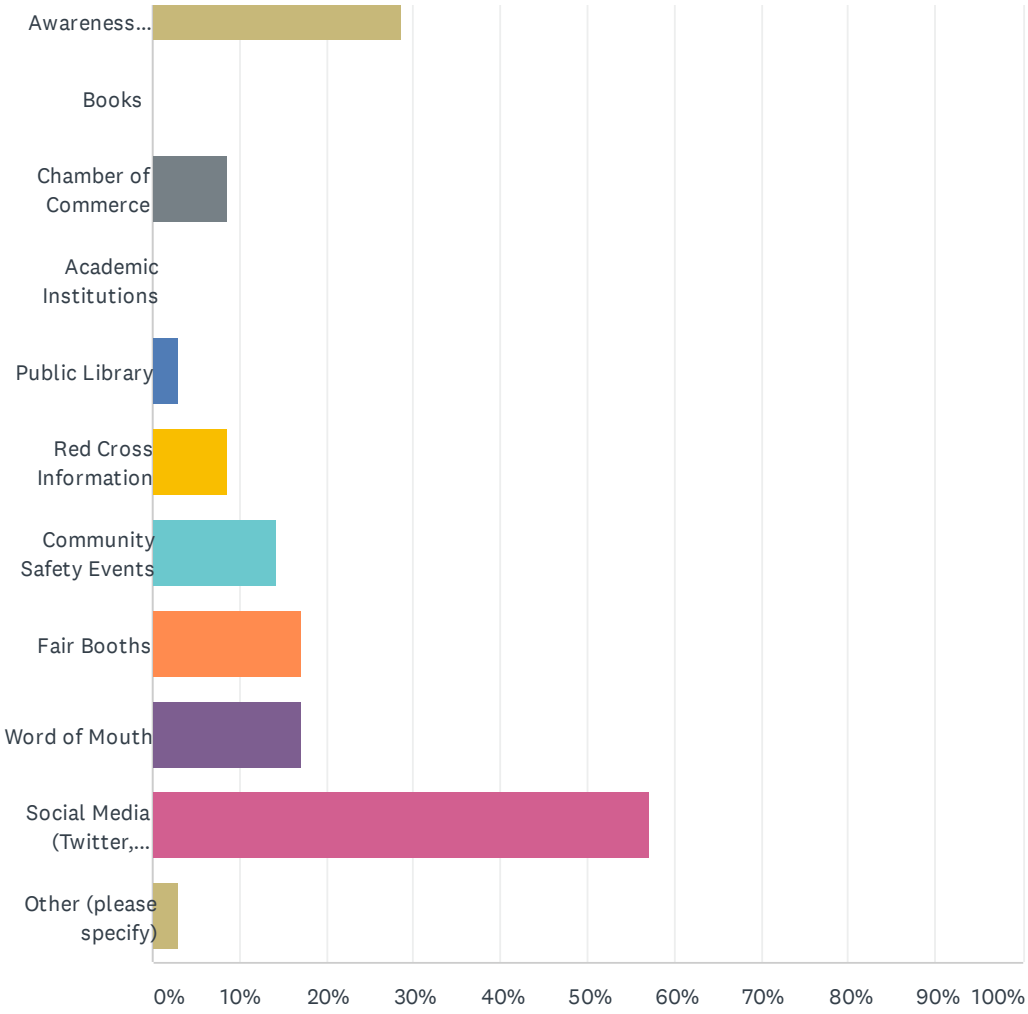
	NOT CONCERNED	SOMEWHAT CONCERNED	CONCERNED	VERY CONCERNED	EXTREMELY CONCERNED	TOTAL
Ice Jams	73.33% 11	6.67% 1	13.33% 2	6.67% 1	0.00% 0	15
Post-fire flooding	30.00% 3	30.00% 3	20.00% 2	20.00% 2	0.00% 0	10
Riverine flooding	5.88% 1	29.41% 5	17.65% 3	29.41% 5	17.65% 3	17
River/Channel migration	25.00% 3	8.33% 1	41.67% 5	16.67% 2	8.33% 1	12
Stream bank erosion	5.26% 1	31.58% 6	26.32% 5	26.32% 5	10.53% 2	19
Urban flooding/Drainage issues	23.53% 4	0.00% 0	35.29% 6	29.41% 5	11.76% 2	17
Land subsidence	30.77% 4	23.08% 3	38.46% 5	7.69% 1	0.00% 0	13
Mudflow hazards	27.78% 5	22.22% 4	33.33% 6	5.56% 1	11.11% 2	18
Dam failure	56.52% 13	4.35% 1	13.04% 3	13.04% 3	13.04% 3	23
Climate change impacts	33.33% 7	19.05% 4	9.52% 2	19.05% 4	19.05% 4	21
Other	25.00% 2	0.00% 0	12.50% 1	25.00% 2	37.50% 3	8

#	OTHER (PLEASE SPECIFY OTHER FLOOD-RELATED HAZARD AND LEVEL OF CONCERN)	DATE
1	Fish loss and environmental damage due to large floods	5/18/2020 5:06 PM
2	Your hazard options in 10 are faulty	5/15/2020 10:46 AM
3	Suppressed land use opportunity and resource loss	5/12/2020 12:26 PM
4	any concerns pertaining to our immediate neighborhood	5/11/2020 9:56 PM
5	Post Logging flooding (Chart doesn't work properly)	5/11/2020 9:38 AM
6	error in survey.... why can't I be concerned about more than one hazard?	5/9/2020 3:09 PM
7	This survey is only allowing one response per level of concern	5/5/2020 12:14 AM
8	habitat disruption from built structures on and near rivers	5/4/2020 7:28 PM
9	Concerned for Loss of James Frankland Bridge Escape Route	5/4/2020 1:11 PM
10	Your boxes don't work properly - Only one concern allowed per level of concern	5/4/2020 12:53 PM
11	Libs trying to milk as much money as they can from taxpayers delaying the project even longer.	4/10/2020 10:17 AM

Q11 Choose five (5) of the following methods you think are most effective for providing flood hazard and disaster information? (Choose up to 5 answers)

Answered: 35 Skipped: 0



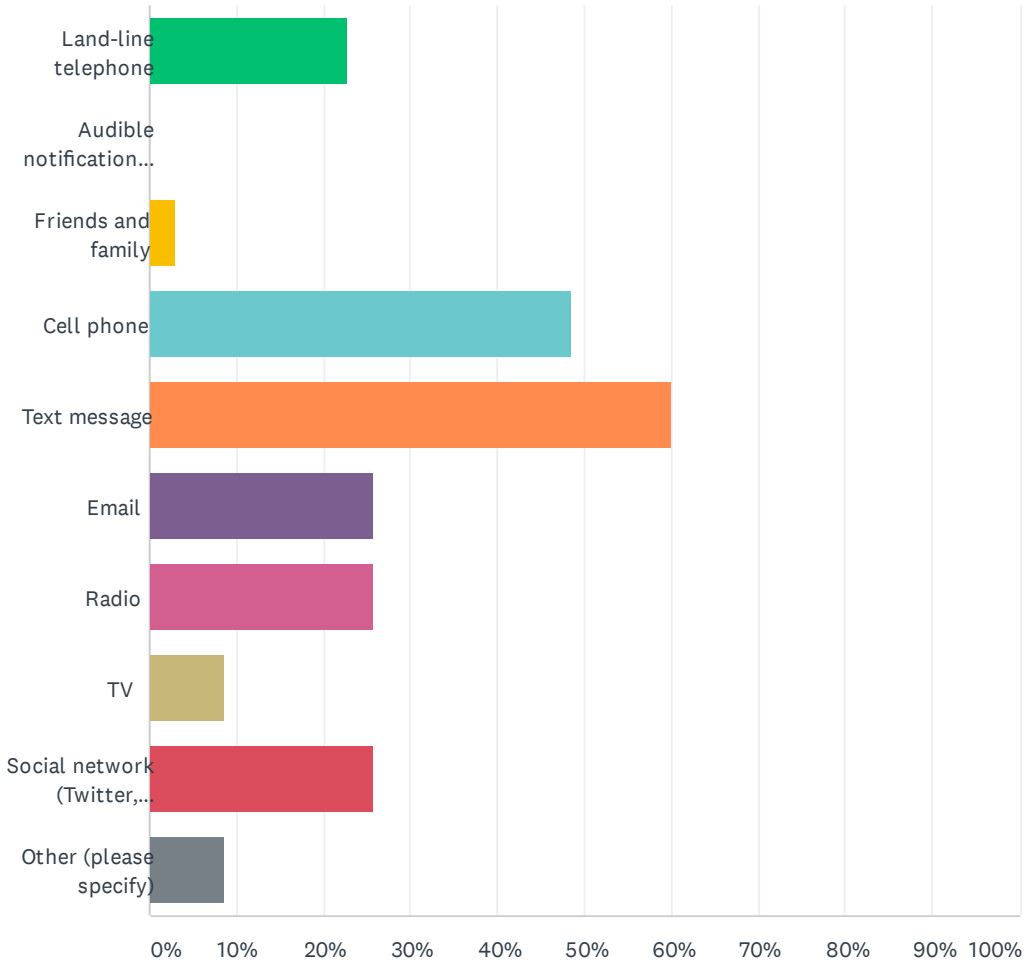

Awareness...
Books
Chamber of Commerce
Academic Institutions
Public Library
Red Cross Information
Community Safety Events
Fair Booths
Word of Mouth
Social Media (Twitter,...
Other (please specify)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

ANSWER CHOICES	RESPONSES	
Newspaper	37.14%	13
Telephone Book	0.00%	0
Information Brochures	17.14%	6
Local Government Newsletters	22.86%	8
Public Meetings	37.14%	13
Workshops	17.14%	6
Schools	25.71%	9
TV News	34.29%	12
TV Ads	11.43%	4
Radio News	62.86%	22
Radio Ads	22.86%	8
Internet	48.57%	17
Outdoor Advertisements	5.71%	2
Fire Department/Rescue	20.00%	7
Law Enforcement	14.29%	5
Faith- based Institutions	8.57%	3
CERT Classes	8.57%	3
Public Awareness Campaign (e.g., Flood Awareness Week, Winter Storm Preparedness Month)	28.57%	10
Books	0.00%	0
Chamber of Commerce	8.57%	3
Academic Institutions	0.00%	0
Public Library	2.86%	1
Red Cross Information	8.57%	3
Community Safety Events	14.29%	5
Fair Booths	17.14%	6
Word of Mouth	17.14%	6
Social Media (Twitter, Facebook, Instagram, etc.)	57.14%	20
Other (please specify)	2.86%	1
Total Respondents: 35		

#	OTHER (PLEASE SPECIFY)	DATE
1	FEMA River Gauges & Lewis County Alert	5/4/2020 1:11 PM

Q12 What method is best for you and your family to get time sensitive warning information or instructions for action?

Answered: 35 Skipped: 0

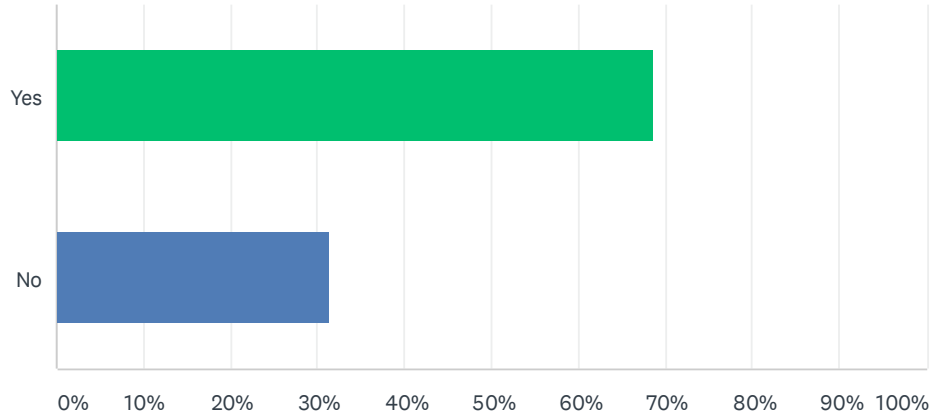


ANSWER CHOICES	RESPONSES	
Land-line telephone	22.86%	8
Audible notification (siren)	0.00%	0
Friends and family	2.86%	1
Cell phone	48.57%	17
Text message	60.00%	21
Email	25.71%	9
Radio	25.71%	9
TV	8.57%	3
Social network (Twitter, Facebook, Instagram, etc.)	25.71%	9
Other (please specify)	8.57%	3
Total Respondents: 35		

#	OTHER (PLEASE SPECIFY)	DATE
1	Monitoring online reported river levels on government websites	5/18/2020 5:06 PM
2	Existing Emergency Alert Radio system (NOAA)	5/11/2020 9:38 AM
3	We are part of ES network. We get plenty of notice. Thanks!	5/4/2020 12:53 PM

Q13 Are you signed up to recive notifications from Lewis County Alert?

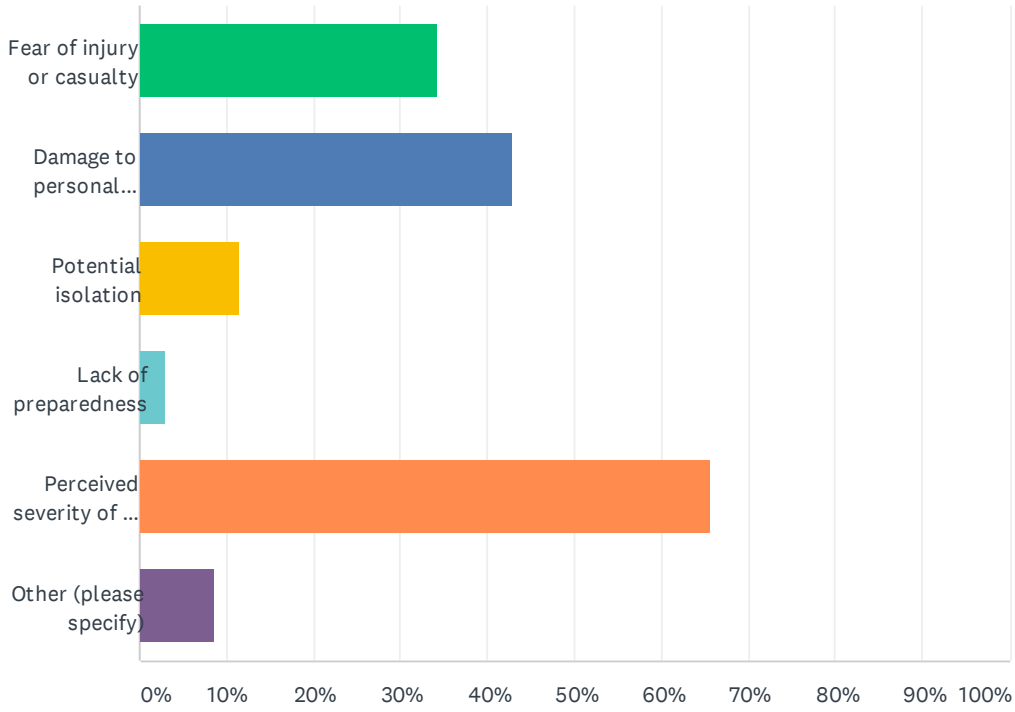
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	68.57%	24
No	31.43%	11
TOTAL		35

Q14 What would drive you to action in response to an emergency notification?

Answered: 35 Skipped: 0

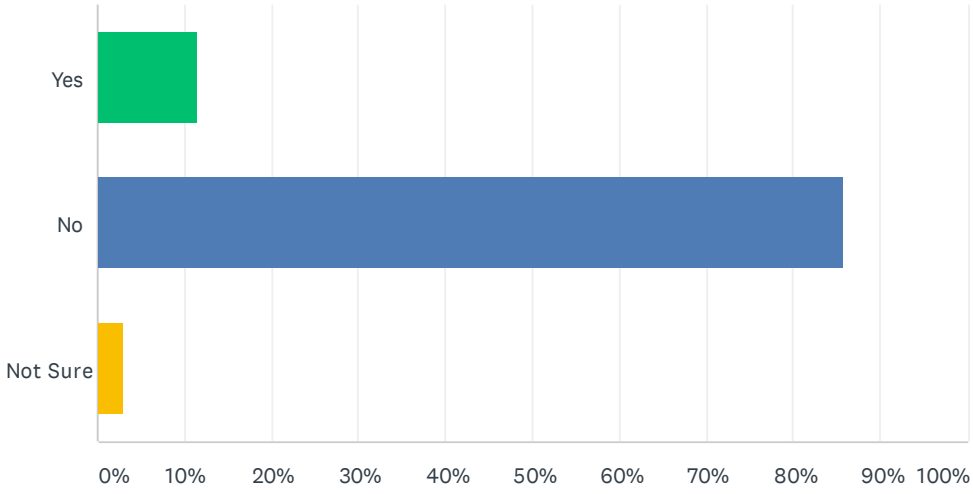


ANSWER CHOICES	RESPONSES	
Fear of injury or casualty	34.29%	12
Damage to personal property	42.86%	15
Potential isolation	11.43%	4
Lack of preparedness	2.86%	1
Perceived severity of the incident	65.71%	23
Other (please specify)	8.57%	3
Total Respondents: 35		

#	OTHER (PLEASE SPECIFY)	DATE
1	Past experience of what needed to be done in response to the probable events	5/18/2020 5:06 PM
2	Acutal severity of the incident	5/11/2020 9:38 AM
3	We always respond to emergency notification because community needs people to step up.	5/4/2020 12:53 PM

Q15 Do you have flood insurance?

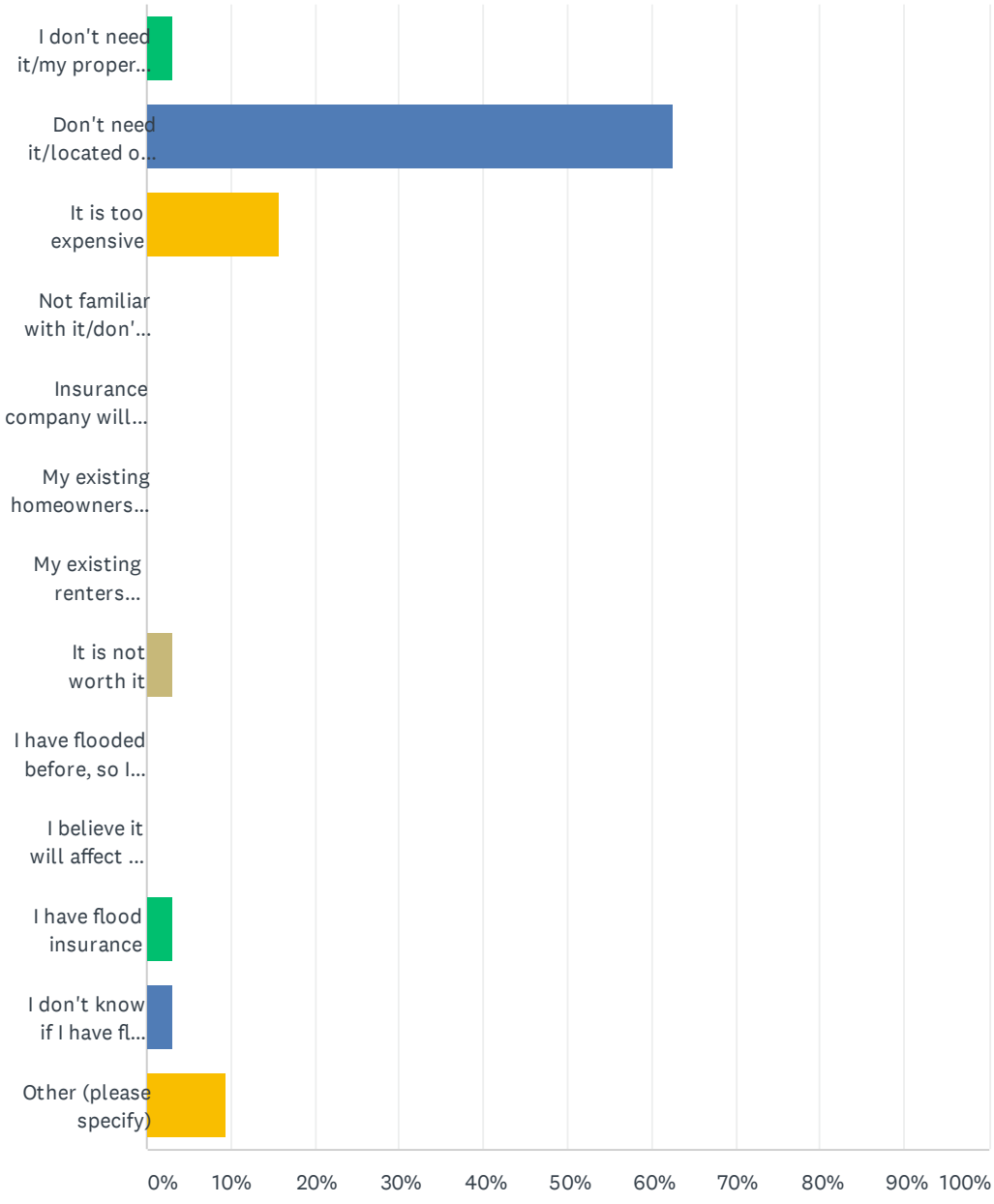
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	11.43%	4
No	85.71%	30
Not Sure	2.86%	1
TOTAL		35

Q16 If you do NOT have flood insurance, what is the primary reason?

Answered: 32 Skipped: 3

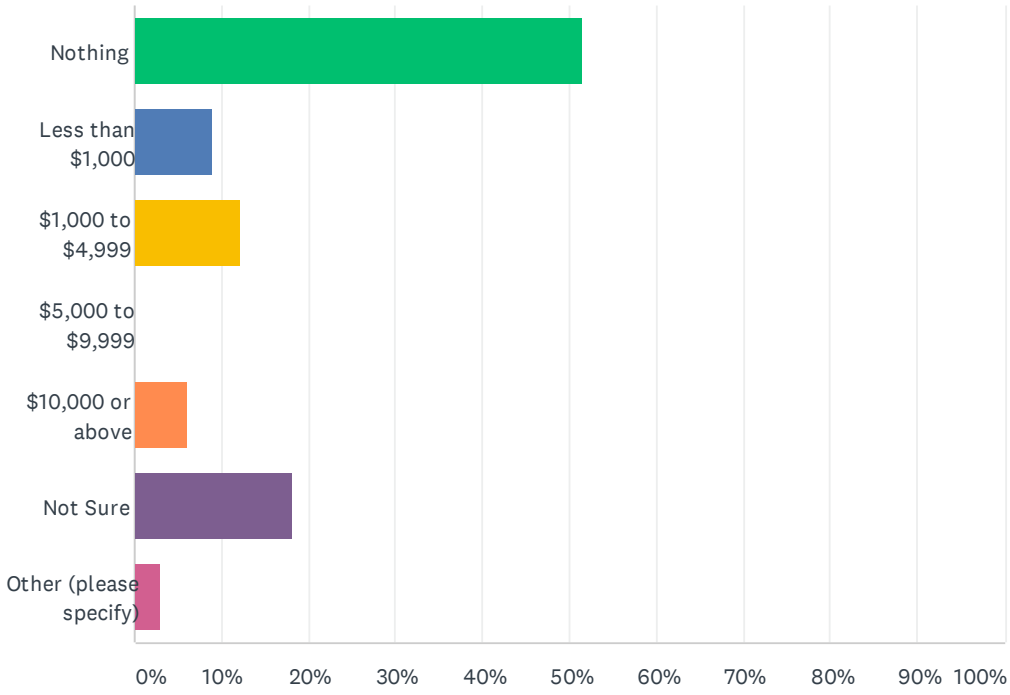


ANSWER CHOICES	RESPONSES	
I don't need it/my property has never flooded	3.13%	1
Don't need it/located on high ground	62.50%	20
It is too expensive	15.63%	5
Not familiar with it/don't know about it	0.00%	0
Insurance company will not provide coverage	0.00%	0
My existing homeowners insurance provides coverage	0.00%	0
My existing renters insurance provides coverage	0.00%	0
It is not worth it	3.13%	1
I have flooded before, so I did not think I qualified for coverage	0.00%	0
I believe it will affect the value of my property	0.00%	0
I have flood insurance	3.13%	1
I don't know if I have flood insurance	3.13%	1
Other (please specify)	9.38%	3
TOTAL		32

#	OTHER (PLEASE SPECIFY)	DATE
1	I practice flood hazard management	5/15/2020 10:12 AM
2	flood ins will not cover our loss	5/11/2020 9:56 PM
3	Risk vs Cost assessment	5/4/2020 1:11 PM

Q17 How much money would you be willing to spend to retrofit your home to reduce risks associated with flood disasters? (e.g., elevating a home above flood level, flood-proofing, building berms or floodwalls)

Answered: 33 Skipped: 2

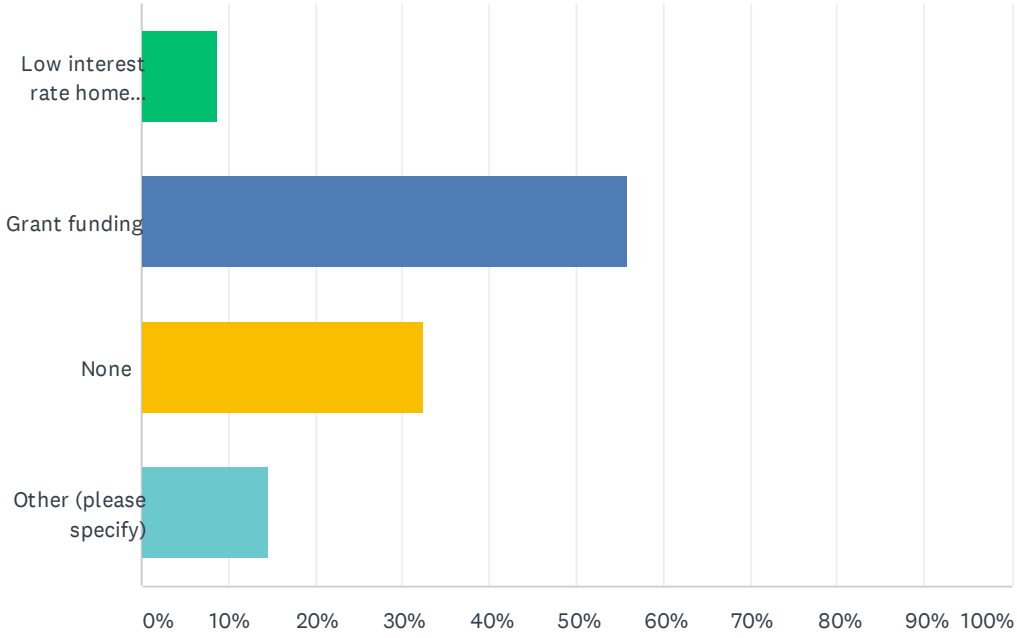


ANSWER CHOICES	RESPONSES	
Nothing	51.52%	17
Less than $1,000	9.09%	3
$1,000 to $4,999	12.12%	4
$5,000 to $9,999	0.00%	0
$10,000 or above	6.06%	2
Not Sure	18.18%	6
Other (please specify)	3.03%	1
TOTAL		33

#	OTHER (PLEASE SPECIFY)	DATE
1	Not Applicable, over 200-foot elevation, not in floodplain or floodway.	9/5/2020 2:47 PM

Q18 Which of the following incentives would encourage you to spend money to retrofit your home to protect against flood disasters (Check all that apply)

Answered: 34 Skipped: 1

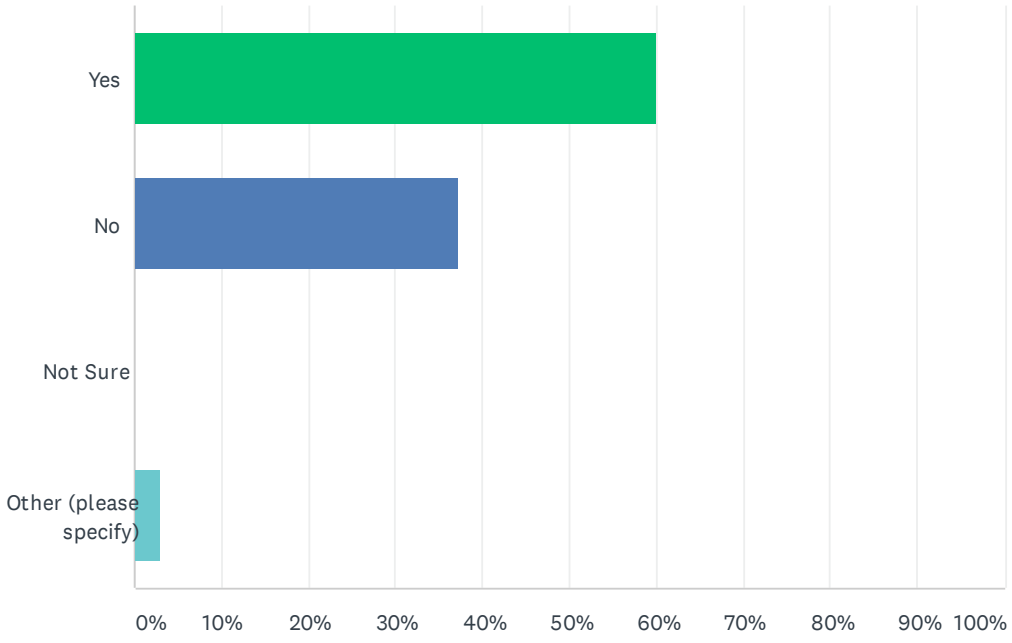


ANSWER CHOICES	RESPONSES	
Low interest rate home improvement plan	8.82%	3
Grant funding	55.88%	19
None	32.35%	11
Other (please specify)	14.71%	5
Total Respondents: 34		

#	OTHER (PLEASE SPECIFY)	DATE
1	i believe we can't rebuild if flood or fire due to our location on the fema map	5/11/2020 9:56 PM
2	County Road Services Provides Rock and Soil for Berm	5/4/2020 1:11 PM
3	None of these apply - we live on the hill above - we just see the flood	5/4/2020 12:53 PM
4	Retrofit is not needed, located on high ground	4/11/2020 8:48 AM
5	Doesn't apply	4/10/2020 10:17 AM

Q19 When you moved into your home, did you consider the impact of a potential flood could have on your home?

Answered: 35 Skipped: 0

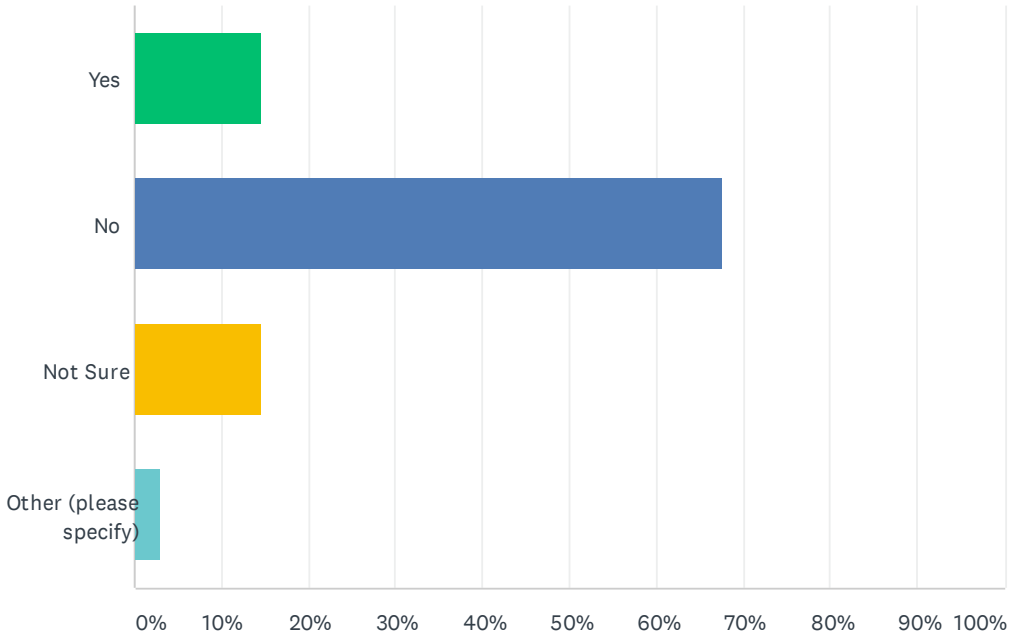


ANSWER CHOICES	RESPONSES	
Yes	60.00%	21
No	37.14%	13
Not Sure	0.00%	0
Other (please specify)	2.86%	1
TOTAL		35

#	OTHER (PLEASE SPECIFY)	DATE
1	n/a	5/18/2020 11:02 AM

Q20 Was the presence of a flood hazard disclosed to you by a real estate agent, seller, or landlord before you purchased or moved into your home?

Answered: 34 Skipped: 1

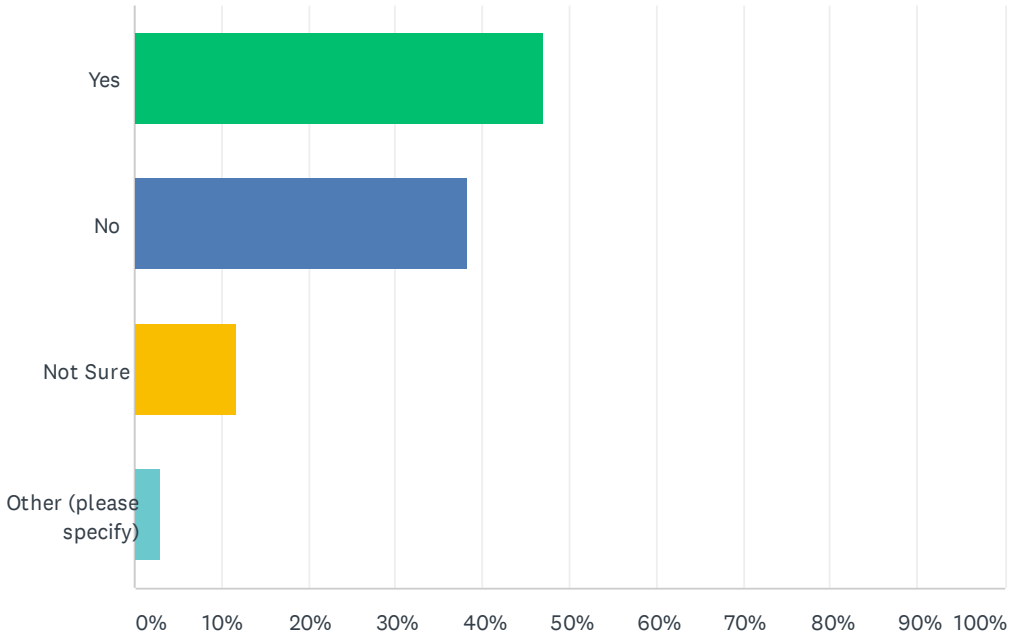


ANSWER CHOICES	RESPONSES	
Yes	14.71%	5
No	67.65%	23
Not Sure	14.71%	5
Other (please specify)	2.94%	1
TOTAL		34

#	OTHER (PLEASE SPECIFY)	DATE
1	n/a	5/18/2020 11:02 AM

Q21 Would the disclosure of the flood hazard have influenced your decision to buy or rent a home?

Answered: 34 Skipped: 1

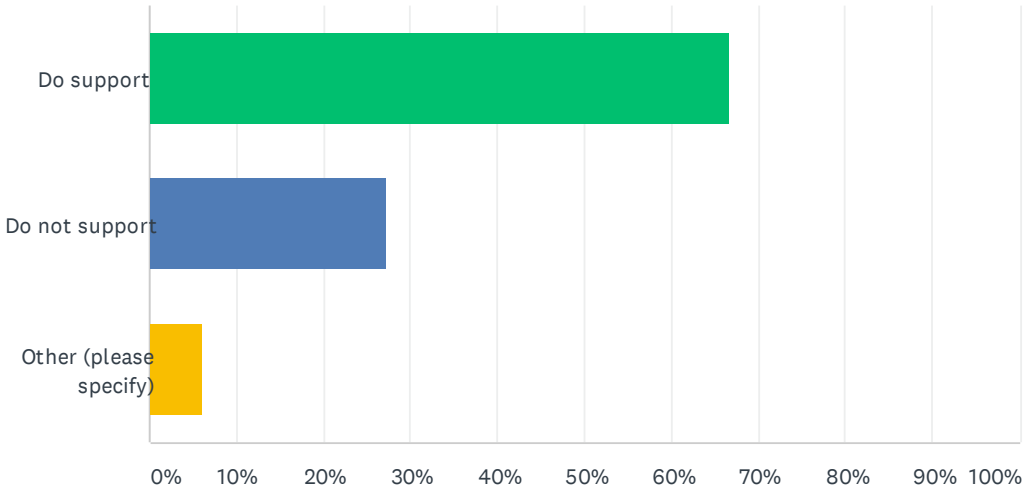


ANSWER CHOICES	RESPONSES	
Yes	47.06%	16
No	38.24%	13
Not Sure	11.76%	4
Other (please specify)	2.94%	1
TOTAL		34

#	OTHER (PLEASE SPECIFY)	DATE
1	Not Applicable	9/5/2020 2:47 PM

Q22 Do you support the preservation of natural land that contains a flood hazard?

Answered: 33 Skipped: 2

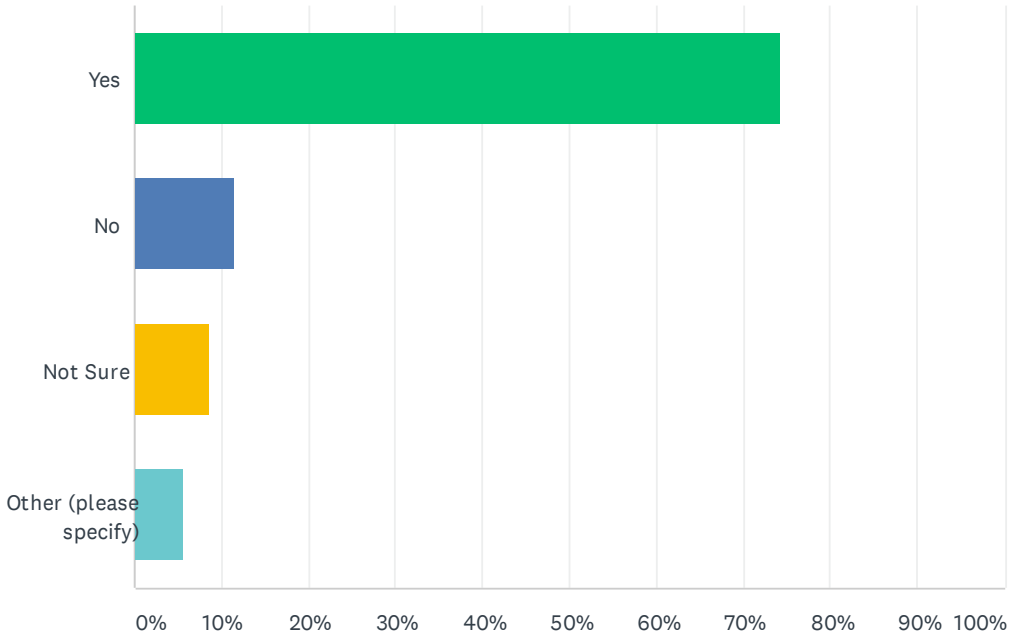


ANSWER CHOICES	RESPONSES	
Do support	66.67%	22
Do not support	27.27%	9
Other (please specify)	6.06%	2
TOTAL		33

#	OTHER (PLEASE SPECIFY)	DATE
1	I do not support restoration of the floodplain to its original state where building has already occurred	9/5/2020 2:47 PM
2	This is a vague question.. It depends entirely on the starting conditions and the method of preservation intended.	5/18/2020 5:06 PM

Q23 Do you support the regulation (restriction) of land uses within known, high risk, flood hazard areas?

Answered: 35 Skipped: 0

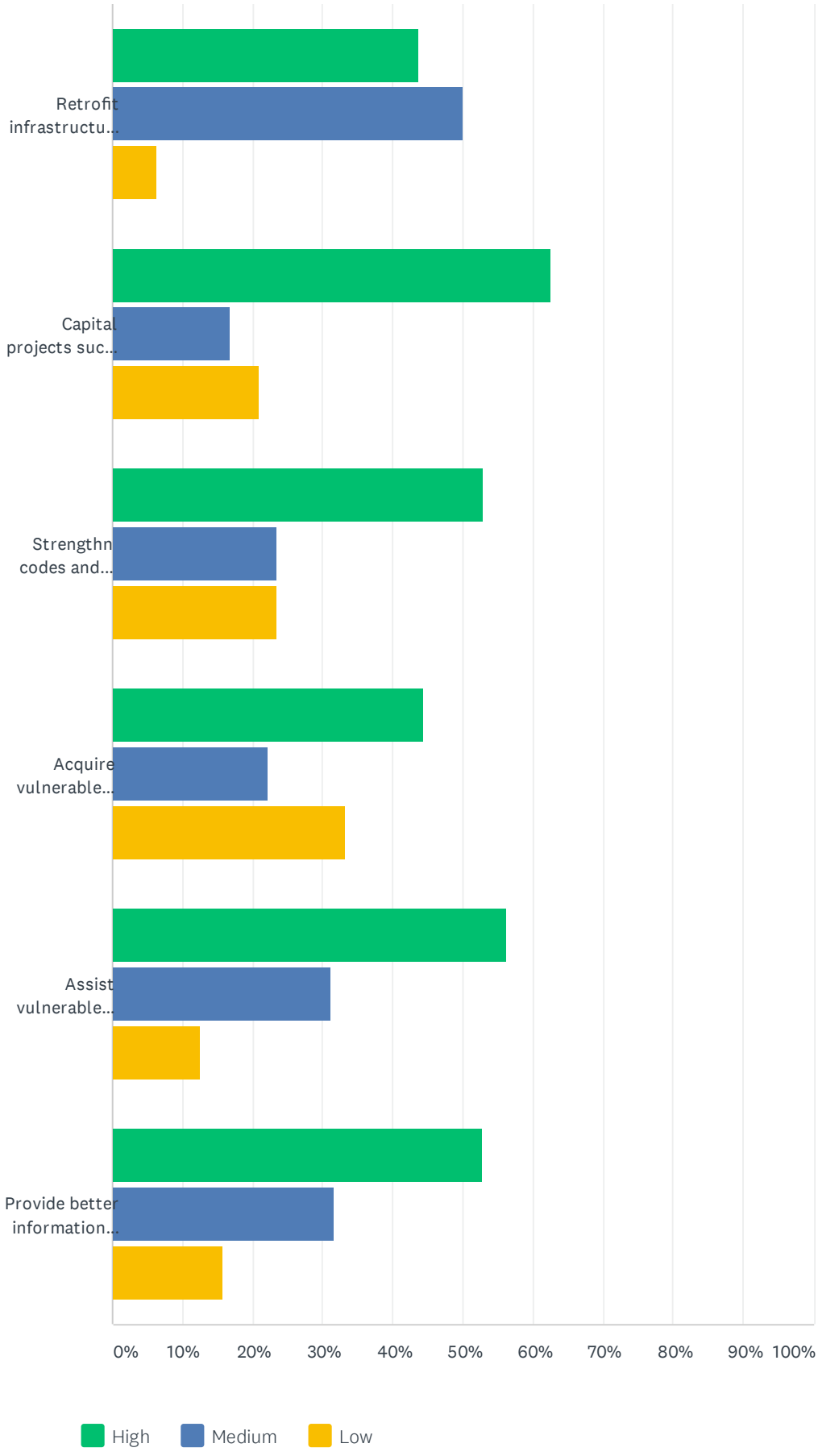


ANSWER CHOICES	RESPONSES	
Yes	74.29%	26
No	11.43%	4
Not Sure	8.57%	3
Other (please specify)	5.71%	2
TOTAL		35

#	OTHER (PLEASE SPECIFY)	DATE
1	Yes, if it has not already been developed.	9/5/2020 2:47 PM
2	Not if the land is already in use.	5/18/2020 5:06 PM

Q24 What types of projects do you believe the Local, State or Federal governemnt agencies should consider to reduce damage and disruption from flooding?

Answered: 35 Skipped: 0

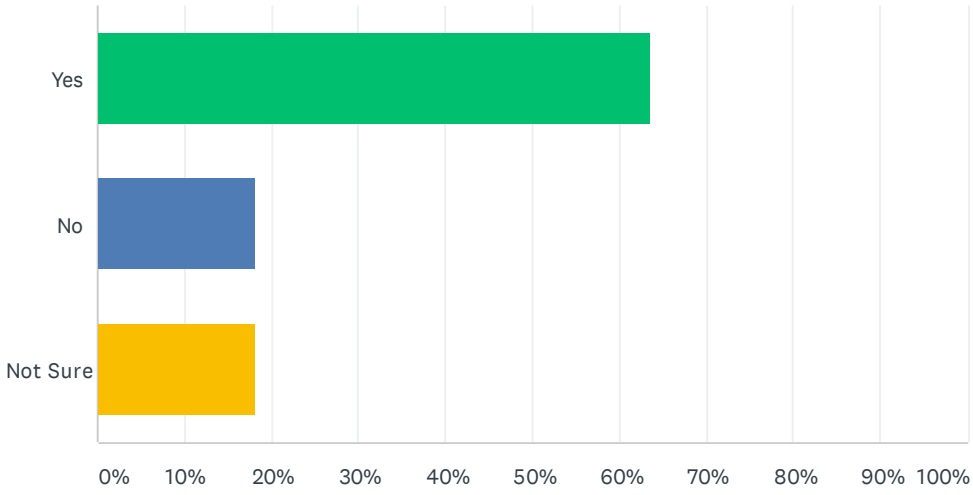

Retrofit infrastructu...
Capital projects suc...
Strengthn codes and...
Acquire vulnerable...
Assist vulnerable...
Provide better information...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
High
Medium
Low

	HIGH	MEDIUM	LOW	TOTAL	WEIGHTED AVERAGE
Retrofit infrastructure, such as improving cultures, bridges, and local drainage.	43.75% 7	50.00% 8	6.25% 1	16	2.38
Capital projects such as dams, levees, flood walls and drainage improvements.	62.50% 15	16.67% 4	20.83% 5	24	2.42
Strengthn codes and regulations to include higher regulatory standards in flood hazard areas.	52.94% 9	23.53% 4	23.53% 4	17	2.29
Acquire vulnerable properties and maintain as open space.	44.44% 8	22.22% 4	33.33% 6	18	2.11
Assist vulnerable properties owners with securing funding for mitigation.	56.25% 9	31.25% 5	12.50% 2	16	2.44
Provide better information about flood risk to the public.	52.63% 10	31.58% 6	15.79% 3	19	2.37

#	OTHER (PLEASE SPECIFY)	DATE
1	Your boxes above do not allow me to check the ones I want	5/15/2020 10:46 AM
2	#22 Discovery Trail is in a high flood area. Our neighborhood does not support that TRAIL. It does nothing but bring us heavy traffic, rude walkers, free roaming dogs, trash	5/11/2020 9:56 PM
3	Chart doesnt work, can only pick one per column	5/11/2020 9:38 AM
4	again error in program	5/9/2020 3:09 PM
5	would only allow one choice per level failure on the empty	5/5/2020 12:14 AM
6	This answer box doesn't work either	5/4/2020 12:53 PM

Q25 If your property were located in a designated "high flood hazard" area or had recieved repetitive damages from flood events, would you consider a "buyout" offered by a public agency?

Answered: 33 Skipped: 2

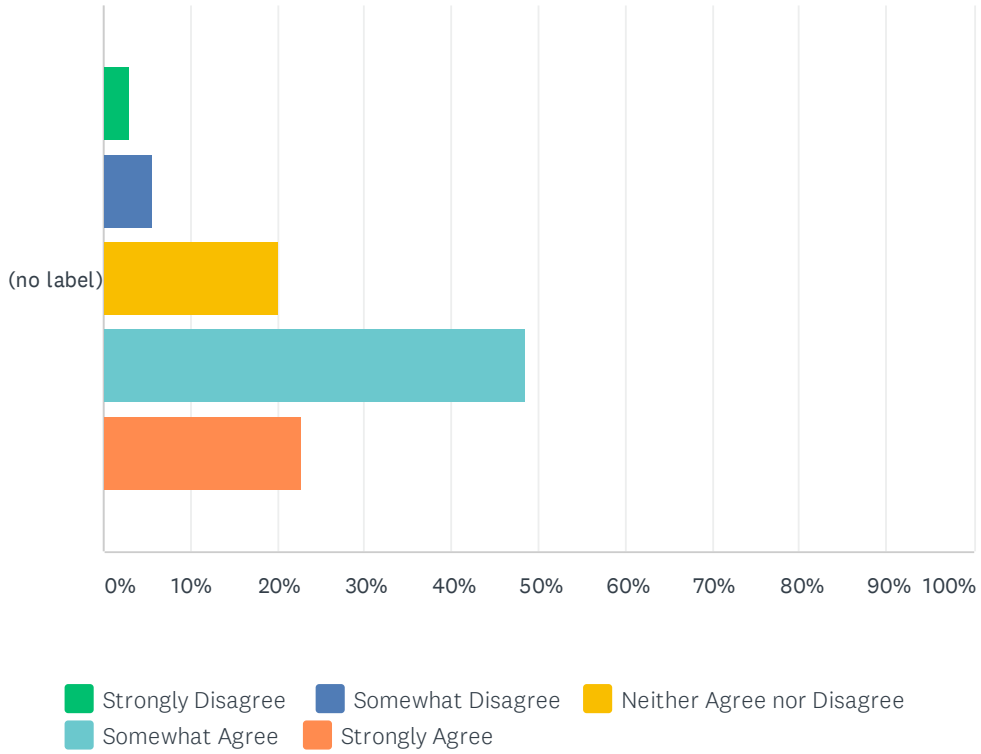


ANSWER CHOICES	RESPONSES	
Yes	63.64%	21
No	18.18%	6
Not Sure	18.18%	6
TOTAL		33

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q26 Please indicate how you feel about the following statement : It is the responsibility of government (local, state and federal) to provide education and programs that promote citizen actions that will reduce exposure to the risks associated with flood hazards.

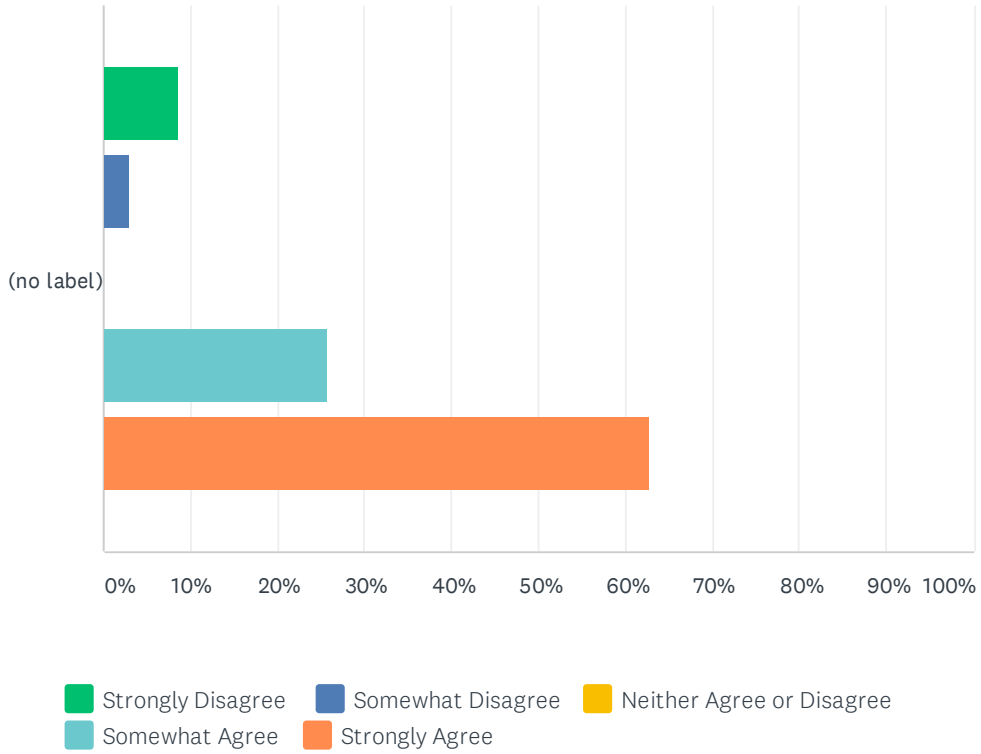
Answered: 35 Skipped: 0



	STRONGLY DISAGREE	SOMEWHAT DISAGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	2.86% 1	5.71% 2	20.00% 7	48.57% 17	22.86% 8	35	3.83

Q27 Please indicate how you feel about the following statement : It is my responsibility to educate myself and take actions that will reduce my exposure to the risks associated with flood hazards.

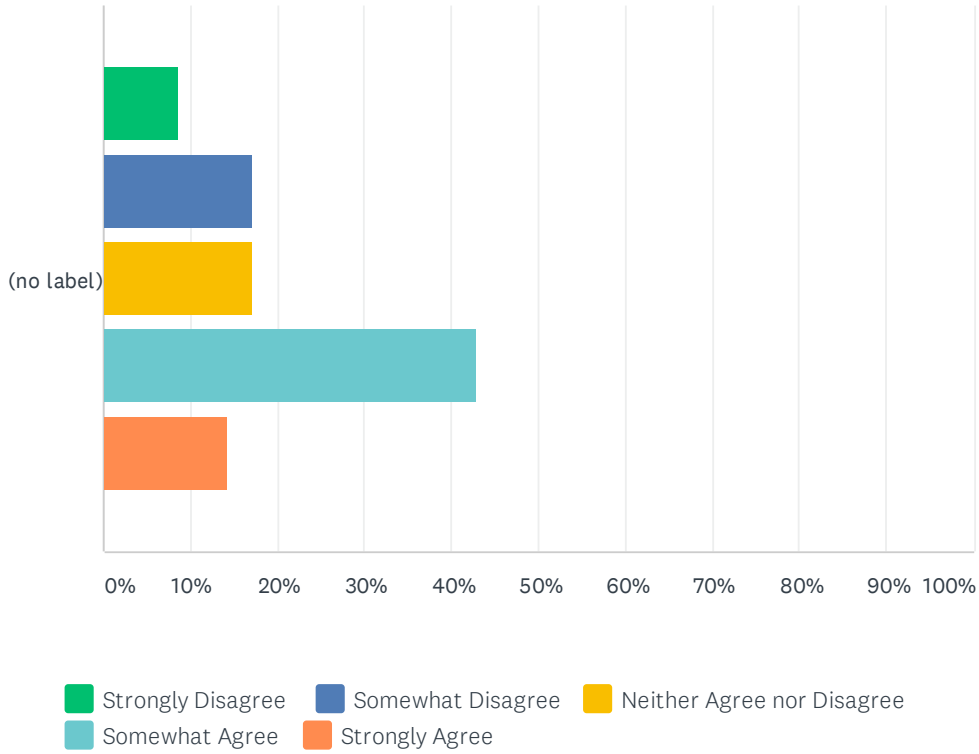
Answered: 35 Skipped: 0



	STRONGLY DISAGREE	SOMEWHAT DISAGREE	NEITHER AGREE OR DISAGREE	SOMEWHAT AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	8.57% 3	2.86% 1	0.00% 0	25.71% 9	62.86% 22	35	4.31

Q28 Please indicate how you feel about the following statement: Information about the risks associated with flood hazards is readily available and easy to locate.

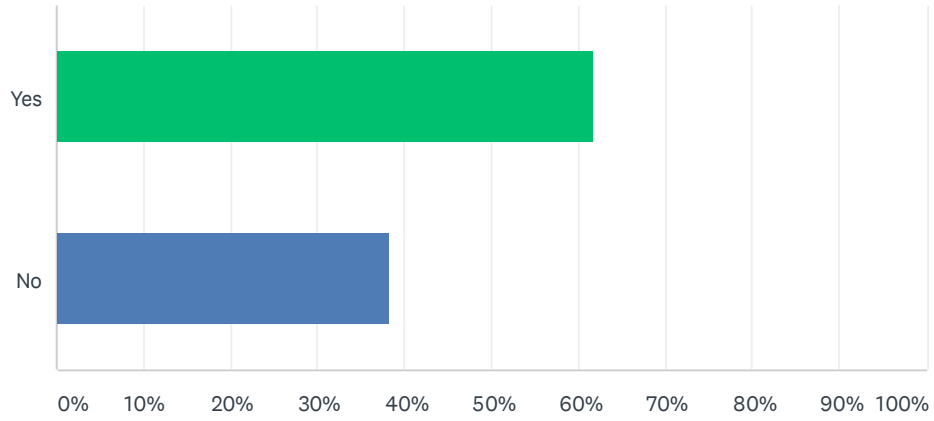
Answered: 35 Skipped: 0



	STRONGLY DISAGREE	SOMEWHAT DISAGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
(no label)	8.57% 3	17.14% 6	17.14% 6	42.86% 15	14.29% 5	35	3.37

Q29 Are you aware of any local programs and policies designed to reduce risk from flood hazards?

Answered: 34 Skipped: 1

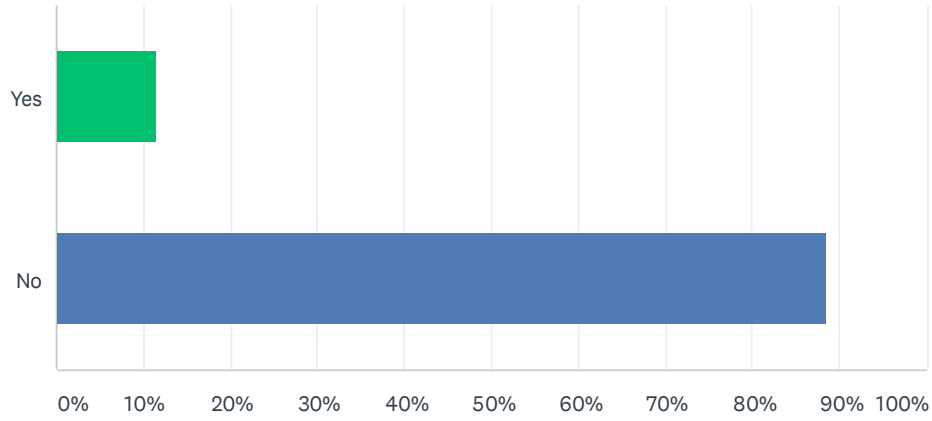


ANSWER CHOICES	RESPONSES	
Yes	61.76%	21
No	38.24%	13
TOTAL		34

#	PLEASE DESCRIBE PROGRAMS AND POLICIES OF WHICH YOU ARE AWARE	DATE
1	Lewis County Emergency Management	9/5/2020 2:47 PM
2	The current project to build a temporary flood retention facility on the Upper Chehalis. The past addition of better weather prediction equipment in the area. Improved river level prediction reporting.	5/18/2020 5:06 PM
3	City offers free site visits and advice on retrofits and guidance before, during and after purchase/construction.	5/18/2020 1:21 PM
4	I am aware of the onoing efforts with leadership from Lewis COunty BoCC and attorney VanderSteop	5/16/2020 1:59 PM
5	Lewis County web site.	5/16/2020 8:40 AM
6	Early awareness, no construction in floodways and some flood plains	5/15/2020 10:12 AM
7	The highly expensive, and environmentally damaging dam project near PeEll	5/11/2020 9:38 AM
8	chehalis flood authority	5/5/2020 12:14 AM
9	Chehalis Basin Project	5/4/2020 7:28 PM
10	I know the Chehalis River Basin Authority wants to build a dam, and I strongly oppose that initiative.	5/4/2020 3:13 PM
11	Chehalis Basin Dam Project. Packwood flood plain study	5/4/2020 1:11 PM
12	Conservation Districts, flood plains by design, FEMA grants	5/4/2020 12:53 PM
13	Programs to develop flood containment areas to slow the flooding	4/17/2020 8:51 AM
14	building the dam	3/27/2020 2:19 PM

Q30 Do you have any special access or functional needs within your household that would require early warning or specialized response during disasters?

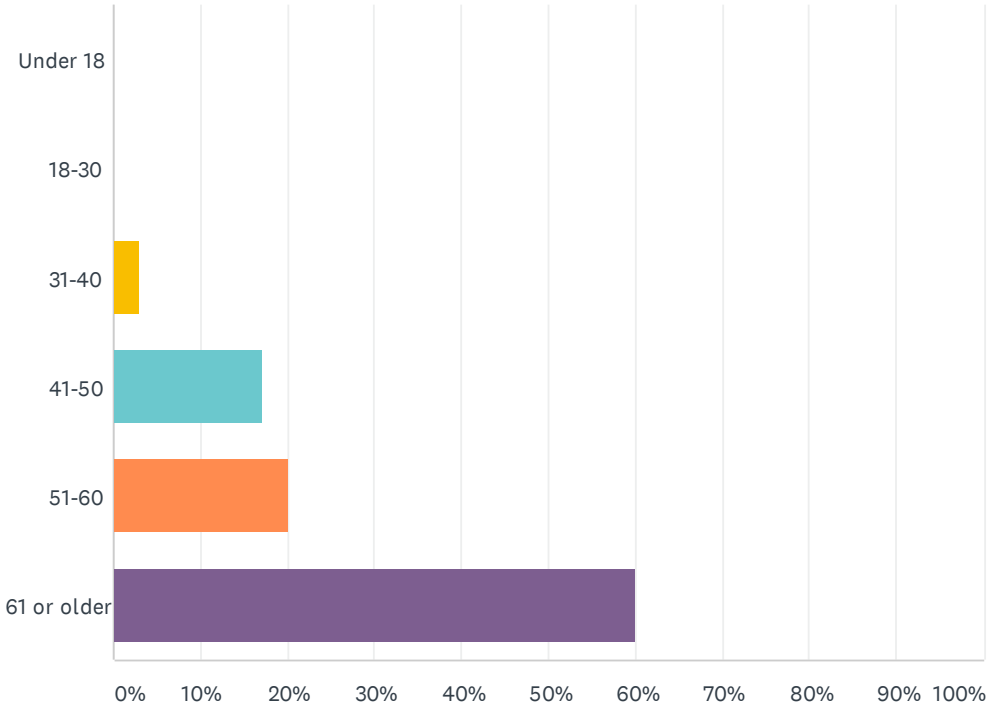
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	11.43%	4
No	88.57%	31
TOTAL		35

Q31 Please indicate your age range:

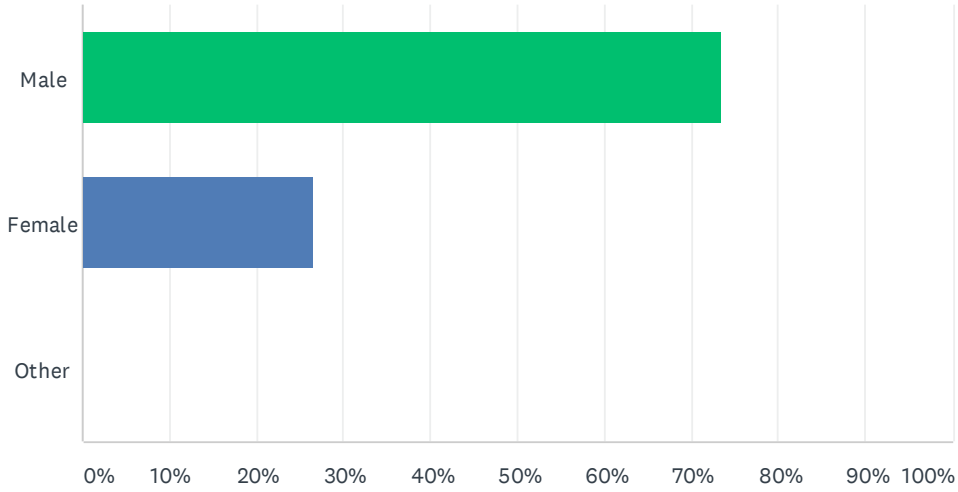
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Under 18	0.00%	0
18-30	0.00%	0
31-40	2.86%	1
41-50	17.14%	6
51-60	20.00%	7
61 or older	60.00%	21
TOTAL		35

Q32 Please indicate your gender:

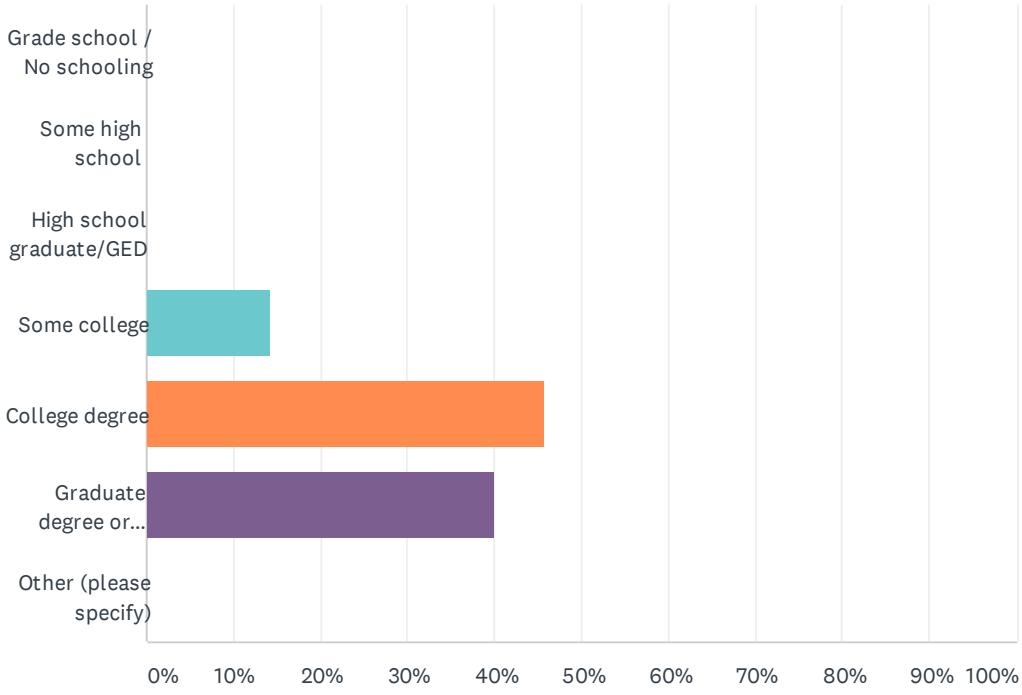
Answered: 34 Skipped: 1



ANSWER CHOICES	RESPONSES	
Male	73.53%	25
Female	26.47%	9
Other	0.00%	0
TOTAL		34

Q33 Please indicate your highest level of education

Answered: 35 Skipped: 0

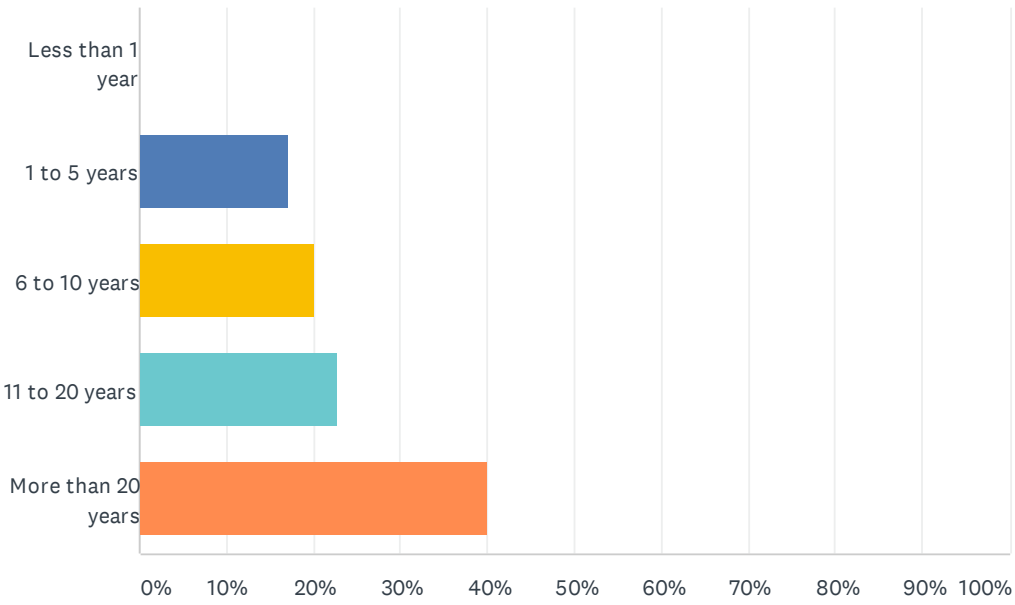


ANSWER CHOICES	RESPONSES	
Grade school / No schooling	0.00%	0
Some high school	0.00%	0
High school graduate/GED	0.00%	0
Some college	14.29%	5
College degree	45.71%	16
Graduate degree or higher	40.00%	14
Other (please specify)	0.00%	0
TOTAL		35

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q34 How long have you lived at your current residence?

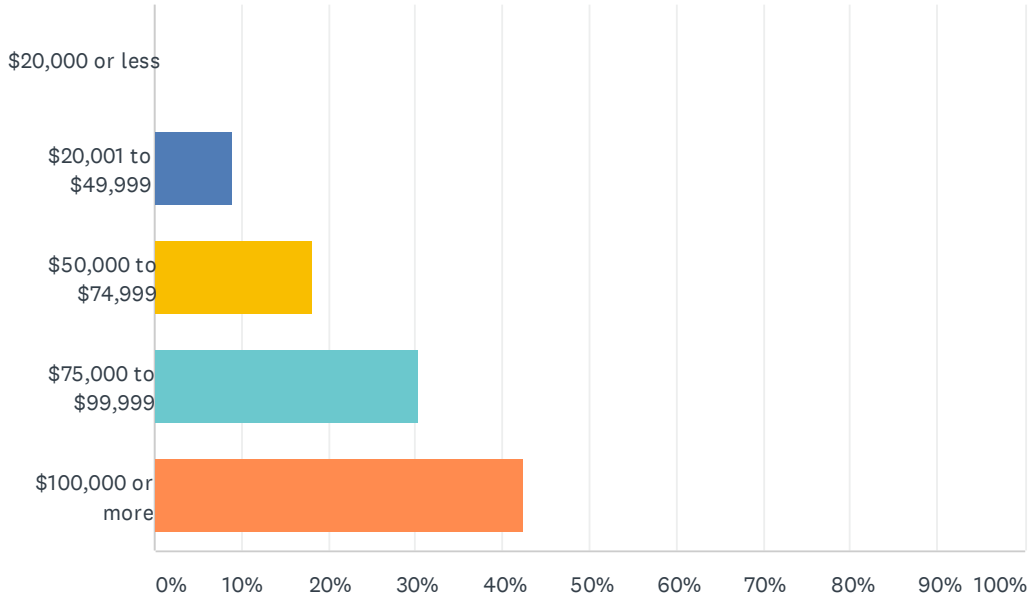
Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Less than 1 year	0.00%	0
1 to 5 years	17.14%	6
6 to 10 years	20.00%	7
11 to 20 years	22.86%	8
More than 20 years	40.00%	14
TOTAL		35

Q35 How much is your gross household income?

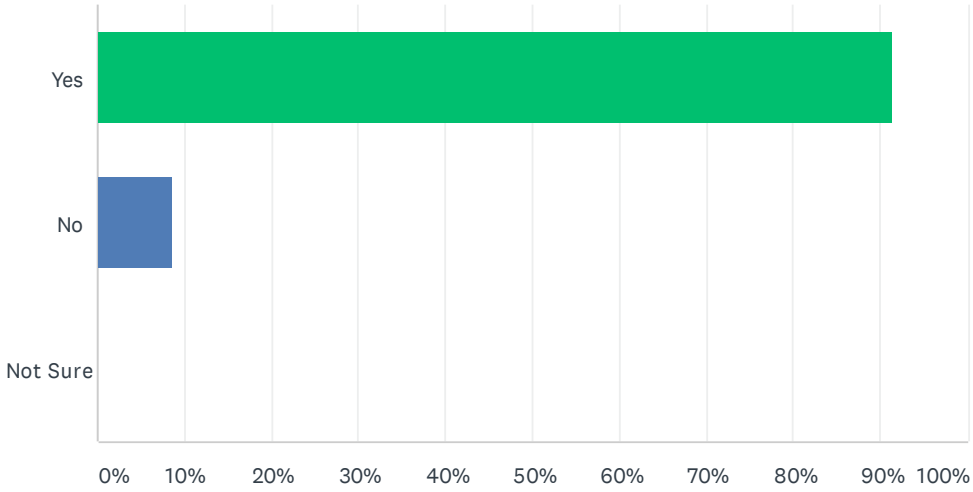
Answered: 33 Skipped: 2



ANSWER CHOICES	RESPONSES	
$20,000 or less	0.00%	0
$20,001 to $49,999	9.09%	3
$50,000 to $74,999	18.18%	6
$75,000 to $99,999	30.30%	10
$100,000 or more	42.42%	14
TOTAL		33

Q36 Do you have regular access to the internet?

Answered: 35 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	91.43%	32
No	8.57%	3
Not Sure	0.00%	0
TOTAL		35

Q37 If you have additional information you would like to share about your knowledge and experience regarding local flood related hazards, we invite you to provide your information in the comment box below.

Answered: 12 Skipped: 23

#	RESPONSES	DATE
1	The current pet idea of buying out landowners instead of controlling major flooding is a non-starter. The current uses in farming, pasture and other important businesses in the basin cannot be relocated.	5/18/2020 5:06 PM
2	Homes and businesses in the Chehalis River flood plain should be removed. The river basin flood plains should be for only agriculture and open space lands.	5/16/2020 8:40 AM
3	I have years of observation of floods and have seen what works and what does not.. O also worked on flood mitigation projects.	5/13/2020 1:16 PM
4	Questions 10 and 24 should allow more than one answer.	5/9/2020 3:09 PM
5	Having lived in Lewis County most of my life and working the floods as a firefighter rescuing people the last thing we need is a Dam. The flood of 2007 was caused by water stuck behind a log jam above PeEll that was held up by Weyco's bridge. A dam is just the same thing, if it failed or they had to release a lot of water the flood would be worse then 2007.	5/5/2020 11:52 PM
6	Clearcuts are not helping	5/5/2020 12:14 AM
7	Climate change will continue to increase risks of flooding, not just on the Chehalis, but on the Cowlitz as well. The county could be doing more to mitigate climate change through energy efficiency & renewable energy incentive programs, through building codes, through robust transportation infrastructure, and by advocating for a carbon fee and dividend or similar pricing structure with our representatives in Congress. It is completely immoral to consider altering the flow of one of our last unfettered sea-going rivers (the Chehalis), especially in light of inaction on climate. Salmon are a sacred and endangered species. We can figure out how to move the I-5 business infrastructure and let the river have its course.	5/4/2020 3:13 PM
8	Believe the Packwood Flood Plain Study is a waste of money as the village of Packwood is in the flood plain and will most likely flood within the next 5 years. If the study is honest their product will change little from the existing FEMA map.	5/4/2020 1:11 PM
9	Disappointed with some questions. Like #22 but there were others. It doesn't have to be yes or no. There could be an answer of "in some cases" or "none of the above."	5/4/2020 12:53 PM
10	Please move as fast as possible to build the water retention project. The basin needs this now badly.	4/10/2020 10:17 AM
11	Lewis County residents are independent folk who resent Seattle/Olympia urbanites telling them how they should run their county. Lets plan for Lewis County residents, not Olympia	3/27/2020 2:19 PM
12	The two questions with multiply choose removes previous answer, when one selects that level again. It does not say select 3 or5 responses.	3/24/2020 3:24 PM

APPENDIX D

Mitigation Action Catalog

1.0 MITIGATION ACTION CATALOG

The stakeholder committee evaluated the action catalog while developing the CFHMP action plan. Not all actions were included in the CFHMP.

1.1 Public Sector Actions Catalog

The following actions by the public sector have the potential to mitigate the flood hazard:

- Manipulate the flooding hazard:
  - Refrain from obstructing stormwater drains, culverts, and other related infrastructure
  - Increase water conservation efforts
  - Install localized stormwater systems
- Reduce exposure to the flooding hazard:
  - Locate outside of hazard area
  - Elevate utilities above base flood elevation
  - Institute low impact development techniques on property
  - Assess projects to determine if they may inadvertently increase flood risk
- Reduce vulnerability to the flooding hazard:
  - Retrofit house (elevate house above base flood elevation)
  - Elevate items within house above base flood elevation
  - Build new house above base flood elevation
  - Floodproof non-residential structures
  - Retrofit, protect, or replace scour-critical bridges
  - Replace undersized culverts
- Increase the ability to respond to or be prepared for the flooding hazard:
  - Comply with National Flood Insurance Program
  - Buy flood insurance
  - Develop household mitigation plan, such as retrofit savings, communication capability with outside, 72-hour self-sufficiency during and after an event
  - Be aware of evacuation routes
  - Educate yourself on flood risk from related hazards, such as wildfire
  - Participate in Community Emergency Response Team training if and when available.

1.2 Private Sector Actions

The following actions by the private sector have the potential to mitigate the flood hazard:

- Manipulate the flooding hazard:
  - Refrain from obstructing stormwater drains, culverts, and other related infrastructure
  - Increase water conservation efforts
  - Install localized stormwater systems

- Reduce exposure to the flooding hazard:
  - Locate business critical facilities or functions outside hazard area
  - Institute low impact development techniques on property
  - Assess projects to determine if they may inadvertently increase flood risk
- Reduce vulnerability to the flooding hazard:
  - Build redundancy for critical functions; retrofit critical buildings
  - Provide flood-proofing measures when new critical infrastructure must be located in flood hazard areas
- Increase the ability to respond to or be prepared for the flooding hazard:
  - Increase capability by having cash reserves for reconstruction
  - Support and implement hazard disclosure for the sale of property in identified risk zones
  - Solicit cost-sharing through partnerships with other private or public sector stakeholders on projects with multiple benefits

1.3 Government Sector Actions

The following actions by governments have the potential to mitigate the flood hazard:

- Manipulate the flooding hazard:
  - Design and encourage stormwater systems
  - Maintain stormwater drains, culverts, and other related infrastructure
  - Perform dredging and levee construction/maintenance, providing retention areas
  - Provide/maintain structural flood control: levees, dams, channelization, revetments
  - Construct regional stormwater facilities, flood debris basins
  - Stabilize areas with significant erosion concerns
  - Promote/retain natural vegetation in areas with significant erosion concerns
  - Identify and implement sediment management strategies
  - Increase water conservation efforts
  - Continue to pursue holistic flood hazard management and opportunities for promoting or preserving natural floodplain function
- Reduce exposure to the flooding hazard:
  - Locate or re-locate critical facilities outside of hazard areas
  - Acquire or relocate structures from identified governmental repetitive loss properties
  - Promote open space uses in identified high hazard areas via techniques such as planned unit developments, easements, setbacks, greenways, or sensitive area tracks
  - Adopt land development criteria such as planned unit developments, density transfers and clustering
  - Institute low impact development techniques on property
  - Acquire vacant land or promote open space uses in developing watersheds to control increases in runoff
  - Perform a buildable lands analysis to determine areas where exposure may increase
  - Comply and work with provisions protecting endangered species within the County

- Reduce vulnerability to the flooding hazard:
  - Strengthen existing infrastructure
  - Provide redundancy for critical functions and infrastructure
  - Adopt appropriate regulatory standards, such as cumulative substantial improvement/damage, freeboard, lower substantial damage threshold and compensatory storage
  - Adopt/enhance stormwater management regulations and master planning
  - Adopt no-adverse-impact flood hazard management policies that strive to avoid increasing the flood risk on downstream communities
  - Encourage mitigation of private property
  - Perform regular inspections and assessments of locally owned or maintained flood control infrastructure
  - Replace undersized culverts
  - Provide permanent protection for pump stations at risk of flooding
  - Identify and mitigate drainage issues resulting in ponding
  - Enhance road drainage programs
  - Ensure that the permitting process is consistent with the adopted flood hazard development ordinance
  - Elevate or relocate roads subject to frequent flooding
  - Retrofit, protect, or replace scour critical bridges
  - Develop guidelines for floodplain fringe protections
  - Increase freeboard regulations
  - Account for changing climate conditions in relevant codes
  - Develop and assist in maintenance of emergency warning systems
- Increase the ability to respond to or be prepared for the flooding hazard:
  - Produce more accurate flood hazard maps or identify areas for further study
  - Provide technical information and guidance
  - Enact tools to help manage development in hazard areas (stronger controls, tax incentives, information, enforcement of the NFIP)
  - Include retrofit or replacement of critical systems in capital improvement programs
  - Develop strategy to take advantage of post-disaster opportunities
  - Warehouse critical infrastructure components
  - Develop and adopt a continuity of operations plan
  - Improve and build on Community Rating System program classification
  - Maintain existing data and gather new data needed to define risks and vulnerability
  - Provide training for staff and decision-makers in flood hazard management
  - Create a building and elevation inventory of structures in flood hazard areas
  - Develop and implement a public information strategy
  - Charge a hazard mitigation fee on all new permits to create a hazard mitigation funding source for actions or grant cost-share requirements

- Develop a flood task force/advisory committee
- Integrate flood hazard management policies into other local planning mechanisms
- Develop and maintain a system for perishable data collection after a flood event
- Develop a framework and continue efforts for cooperation between agencies and districts in flood mitigation activities (e.g. sand and sandbag deployment)
- Retain good standing in National Flood Insurance Program
- Integrate flood mitigation opportunities into capital improvement programs
- Create a fund or earmark funds for in-kind contributions as grant opportunities become available
- Produce after-action reports on flood events
- Develop and update evacuation routes
- Participate in information sharing with other agencies (e.g. Corps of Engineers, NWS)
- Develop and update memorandums of understanding with other local jurisdictions and continue to coordinate emergency response and preparedness activities
- Identify sources of nuisance flooding
- Review and, if needed, update flood hazard development ordinances
- Require or encourage rapid damage assessment training
- Map locations of storm drains, catch basins, dry wells and other stormwater infrastructure so they may be maintained and cleared when needed
- Identify debris collection sites
- Continue to develop post-fire outreach strategies for impacted residents
- Develop public outreach materials
- Educate residents on types of projects that may inadvertently increase flood risk
- Educate residents on the nexus between water conservation, drought and flood
- Continue to identify opportunities for partnerships
- Promote the Flood Control Zone District as a taxing authority to generate funding or identify sustainable funding solutions
- Support and implement hazard disclosure for the sale of property in identified risk zones and increase enforcement of disclosure provisions
- Map and create an inventory of open spaces with potential for beneficial functions
- Incorporate invasive species management into flood hazard management activities
- Continue improving upon emergency services capabilities and public awareness of preparedness
- Sponsor/encourage/promote local Community Emergency Response Team activities (if and when available)
- Identify and monitor drainage problem areas

APPENDIX E

Annual Progress Report Template

Lewis County, Washington
Chehalis River Basin
Comprehensive Flood Hazard Management Plan
Annual Progress Report

Reporting Period: *(Insert reporting period)*

Background: Lewis County developed a Chehalis River Basin Comprehensive Flood Hazard Management Plan to reduce risk from flooding through identified resources, information, and strategies. To prepare the plan, Lewis County organized resources, assessed risks from flooding, developed planning goals and objectives, reviewed mitigation alternatives, and developed an action plan to address probable impacts from floods. The plan can be viewed on-line: [WEBISTE LINK].

Purpose: The purpose of this report is to provide an annual update on the implementation of the action plan identified in the *Chehalis River Basin Comprehensive Flood Hazard Management Plan.* The objective is to ensure that there is a continuing and responsive planning process that will keep the floodplain management plan dynamic and responsive to the needs and capabilities of Lewis County and its stakeholders. This report discusses the following:

- Flood events that have occurred within the last year
- Changes in risk exposure within the planning area
- Mitigation success stories
- Changes in capabilities that could impact plan implementation
- Floodplain management plan implementation status
- Review of the action plan
- Recommendations for changes/enhancement

Flood Events within the Planning Area: During the reporting period, there were __#__ flood events in the planning area that had a measurable impact on people or property. A summary of these events is as follows: *(Include a narrative of each flood event. What type of flood event? When it occurred? Where it occurred? How long did it last? What types of damages did it do?)*

Changes in Risk Exposure in the Planning Area: *(Insert an overview of any flood event in the planning area that changed the probability of occurrence of flooding as presented in the floodplain management plan)*

Mitigation Success Stories: *(Insert an overview of mitigation accomplishments during the reporting period, including notably successful public outreach efforts)*

Changes That May Impact Implementation of the Flood Plan: *(Insert an overview of any significant changes in the planning area that would have a profound impact on the implementation of the plan or on public outreach efforts. Specify any changes in technical, regulatory and financial capabilities identified during the plan's development)*

Floodplain Management Plan Progress

Summary Overview of the Flood Plan's Progress: The performance period for the floodplain management plan became effective on _____, 2021 with the adoption of the Flood Plan by the Lewis County Board of Commissioners. The initial performance period for this plan will be five years, with an anticipated update to the plan to occur before _____, 2026. As of this reporting period, the performance period for this plan is considered to be ___% complete. The floodplain management plan has targeted ___#___ flood hazard mitigation actions to be pursued during the five-year performance period. As of the reporting period, the following overall progress can be reported:

____ out of ___actions (___%) reported ongoing action toward completion.
____ out of ___actions (___%) were reported as being complete.
____ out of ___actions (___%) reported no action taken.

The Floodplain Management Plan Stakeholder Committee: The floodplain management plan Stakeholder Committee, made up of stakeholders within the planning area, reviewed and approved this progress report at its annual meeting held on _____, 2022. It was determined through the plan's development process that the Stakeholder Committee would remain in service to oversee maintenance of the plan. At a minimum, the Stakeholder Committee will provide technical review and oversight on the development of the annual progress report. It is anticipated that there will be turnover in the membership annually, which will be documented in the progress reports. For this reporting period, the Stakeholder Committee membership is as indicated in Table 1.

Table 1. Stakeholder Committee Members.

Name	Title	Jurisdiction/Agency

Review of the Action Plan: Table 2 reviews the action plan, reporting the status of each initiative. Reviewers of this report should refer to the floodplain management plan for more detailed descriptions of each initiative and the prioritization process.

Address the following in the "status" column of the following table:

Was any element of the initiative carried out during the reporting period?
If no action was completed, why?
Is the timeline for implementation for the initiative still appropriate?
If the initiative was completed, does it need to be changed or removed from the action plan?

Table 2. Action Plan Matrix.

Action Taken? (Yes or No)	Timeline	Priority	Status	Status (X, O, ⍰)
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		
Initiative # —		**[description]**		

Initiative # —	**[description]**
Initiative # —	**[description]**
Initiative # —	**[description]**
Initiative # —	**[description]**
Initiative # —	**[description]**
Initiative # —	**[description]**
Initiative #__—_____	**[description]**
Initiative # —	**[description]**

Completion status legend:
 = Project Completed
O = Action ongoing toward completion
X = No progress at this time

Recommendations for Changes or Enhancements: Based on the review of this report by the floodplain management plan Stakeholder Committee, the following recommendations will be noted for future updates or revisions to the plan:

_____
_____
_____
_____
_____

PUBLIC REVIEW NOTICE

The contents of this report are considered to be public knowledge and have been prepared for total public disclosure. Copies of the report have been provided to the Lewis County Board of County Commissioners and to local media outlets and the report is posted on the floodplain management plan website. Any questions or comments regarding the contents of this report should be directed to:

Chehalis River Basin Flood Control Zone District
351 NW North Street
Chehalis, WA 98532
(360) 740-2697
[EMAIL]