

Part 4 Mitigation Strategy

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Chapter 15 Mitigation Strategy

15.1 Mitigation Strategy

Requirement §201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

The County of Santa Cruz endeavors to be a disaster-resistant and resilient community that can survive and recover from a disaster while preserving the quality of life for residents and the diversity and quality of its natural and built environments. The community strives to offer excellent cultural and community services as well as maintain and improve infrastructure, community safety and emergency preparedness. This Local Hazard Mitigation Plan (LHMP) is a part of this effort.

The County of Santa Cruz has developed a range of policies and programs to act as a “blueprint” for the Hazard Mitigation Strategy. Strategies include “everyday operations” that also contribute to reducing the impact of future hazards as well as specific hazard mitigation projects. While County efforts are focused on evaluation and improvement of County owned structures, particularly those identified as critical facilities, the plan also encourages the establishment of standards to encourage private property owners to upgrade the hazard resistance of their own properties. Finally, the County is actively engaged with other local and regional organizations to collaboratively work towards mitigation actions that meet the County of Santa Cruz’s objective to be a healthy, safe, and more affordable community that is culturally diverse, economically inclusive, and environmentally vibrant.

This plan focuses on mitigation goals and actions, meaning activities that occur prior to a hazard event that reduce or avoid damage when disasters strike. Damage prevention includes structural improvements to existing buildings, land use decisions that will minimize damage and ongoing programs such as firewise vegetation management in wildland/urban interface areas. This plan does not include emergency response activities. The County of Santa Cruz has an Emergency Management Plan (EMP) to help coordinate information and resources for disasters or threat of disasters. As a part of the EMP annual training, critical information updates and drills are conducted to protect people and property. However, the EMP does inform this Hazard Mitigation Plan and can be accessed at: <https://www.co.santa-cruz.ca.us/OR3/Response/PlansReports.aspx> .

15.1.1 Mitigation Goals

Requirement §201.6(c)(3)(i): The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Goals

Goals are general guidelines that explain what is to be achieved. They are broad-based, policy-type statements, which are long-term, and represent global visions. Goals help define the benefits that the

plan is trying to achieve. The success of the LHMP, once implemented, should be measured by the degree to which its goals have been met.

The County of Santa Cruz LHMP team held several meetings to review the identified risks and developed goals, objectives and actions based on the risk assessment. Goals which provided the greatest benefit in hazard reduction were identified as primary goals.

Additional goals, specifically related to each identified potential hazard are presented under each hazard heading.

The LHMP has four primary mitigation goals:

- 1 Avoid or reduce the potential for life loss, injury, and economic damage to Santa Cruz County residents from hazard events.
- 2 Increase the ability of the County government and partner organizations to serve the community during and after hazard events.
- 3 Protect Santa Cruz County's unique character, scenic beauty, and values in the natural and built environment from being compromised by hazard events.
- 4 Identify and encourage mitigation activities to increase the disaster resilience of our community, institutions, private companies, and systems essential to a functioning County of Santa Cruz.

Objectives

The LHMP team selected the objectives listed below to meet multiple goals. The objectives serve as a stand-alone measurement of a mitigation action rather than as a subset of a goal. Achievement of the objectives is a measure of the effectiveness of a mitigation strategy. The objectives are also used to help establish priorities.

Objectives are defined as short-term aims which, when combined, form a course of action to meet a goal. Unlike goals, objectives are specific and measurable.

The County of Santa Cruz Local Hazard Mitigation Team identified this list of objectives:

- 1 Consider the impacts of hazards on future land use decisions in Santa Cruz County by coordinating with other planning mechanisms including the General Plan and land use code developments.
- 2 Protect and sustain reliable local emergency operations and communication facilities during and after a disaster.
- 3 Develop new or enhance existing early warning response systems.
- 4 Seek to enhance emergency response capabilities through improvements to infrastructure and County programs.
- 5 Support Fire Recovery for CZU fire survivors, enhancing their safety to all hazards.
- 6 Seek to enhance our understanding of how hazards and disasters may disproportionately impact certain members of our community and identify ways to build community resilience.
- 7 Seek mitigation projects that provide the highest degree of hazard protection at the least cost.
- 8 Seek to update information on hazards, vulnerabilities, and mitigation measures by coordinating planning efforts and creating partnerships with appropriate local, state, and federal agencies.

- 9 Seek to implement codes, standards, and policies that will protect life, property and quality of life including environmental, historic, and cultural resources from the impacts of hazards within Santa Cruz County.
- 10 Educate the community on preparedness for and mitigation of potential impacts of hazards to Santa Cruz County.
- 11 Encourage retrofit, purchase, or relocation of structures in high hazard areas, including those known to be repetitively damaged.

15.1.2 Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

The Local Hazard Mitigation Goals were enumerated above. In support of those goals, the County of Santa Cruz has identified a number of hazard mitigation actions. This set of actions was developed through an inclusive community process. The LHMP team, with input from the County of Santa Cruz General Plan Update, the Emergency Management Plan, the Capital Improvement Program, the Integrated Regional Water Management Plan as well as other agencies and community members, has selected the following actions as the most beneficial for Santa Cruz County. These actions represent the highest priority mitigation actions identified for each hazard or for a multi-hazard event.

These mitigation actions have proven effective in reducing or eliminating hazard risk. Each of these actions directly meets an objective or goal listed in Santa Cruz County Hazard Mitigation Strategy. These actions are not meant to be exhaustive but rather to inspire thought and provide each department of the County of Santa Cruz with a role in hazard mitigation and a baseline of actions backed by a planning process, consistent with the goals and objectives and within the capabilities of the County. The County departments were not bound to the list of alternatives presented. They were given the opportunity to edit the list. Actions not included in the action plan were eliminated based on the following:

- Action is currently outside the scope of the defined priority rankings
- County’s jurisdiction is not vulnerable to the hazard
- Action has already been implemented
- Estimated cost exceeded estimated benefit

15.1.3 Prioritization of Mitigation Actions

Requirement §201.6(c)(3)(iii): The mitigation strategy shall include an action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

This Plan promotes 67 action items. The list below summarizes all of the actions, identifies the hazard(s) each one addresses, and indicates the assigned priority level of the action. The actions were prioritized in the same way that they were identified. The team leaders proposed an initial prioritization system, dividing the actions into categories of **Very High Priority**, **High Priority**, and **Important**. County staff, committee and community members were given an opportunity to review these categorizations.

Many factors were considered when assigning priorities, as further described below. In general, those actions with strong community support and addressing hazards presenting the highest risk to Santa Cruz County were given Very High or High priority ratings. The updated loss estimates presented in Part 3 of this Plan, and recent experience with the CZU Lightning Complex Fire and the resultant heightened debris flow hazard, are the primary considerations in reordering of risk levels and prioritization of actions. Based on the updated vulnerability assessments in Part 3, wildfires, landslides, earthquakes, and floods have the most potential to cause great economic and human losses, therefore, actions related to these hazards were generally assigned Very High and High Priority. While there is no dollar loss calculation for the hazard of drought, water supply is essential to the survival of the County; therefore, drought and threats to the water system were ranked as Very High Priority. Loss calculations for the hazard of expansive soils shows a high potential loss value; however, potential damage from the hazard of expansive soils is generally not catastrophic but would generally result in minor damage to structures. The level of risk from tsunami, coastal erosion, and dam failure is relatively lower; therefore, these hazards were assigned a relatively lower yet still important priority. The hazard of climate change is a long-term phenomenon and there is no loss calculation for this hazard. However, the effects of climate change exacerbate the hazards of wildfire, landslides, floods, and drought due to changes in seasonal patterns of rainfall and temperature; therefore, actions to address climate change are an important priority. The number of plan objectives potentially addressed by the action, and capability in terms of availability of funding and staffing (identified in the County Budget or Capital Improvement Program or other source) were important additional factors in priority determination.

Section 201.6(c)(3)(iii) of Title 44 of the *Code of Federal Regulations* requires that an action plan describe how actions identified were prioritized. The planning team developed a prioritization methodology for the action plan that meets the needs of the County while at the same time meeting the requirements of CFR 201.6(c)(3)(iii). The mitigation strategies identified were prioritized according to the criteria defined below.

Very High Priority

- A project that meets multiple plan objectives
- Benefits exceed cost
- Has strong community support
- Addresses those hazards presenting the highest risk
- Funds are identified or potentially available
- Project can be completed in one to five years once project is funded

High Priority

- Project meets at least one plan objective
- Benefits exceed costs
- Funding has not been secured
- Project can be completed in one to five years once project is funded

Important

- Project mitigates the risk of a hazard
- Benefits exceed costs
- Funding has not been identified and/or timeline for completion is considered long-term (five to ten years)

A formal cost benefit analysis has not been done. However, in reviewing the mitigation actions proposed, the costs and benefits of each action were considered under the following rating:

Cost Ratings

- High: Existing funding levels are not adequate to cover the costs of the proposed project and would require an increase in revenue through an alternative source (e.g. bonds, grants, and fee increases) to implement.
- Medium: The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
- Low: The project could be funded under the existing budget. The project is part of or can be part of an existing, ongoing program.

Benefit Ratings

- High: Project will have an immediate impact on the reduction of risk exposure to life and property.
- Medium: Project will have a long-term impact on the reduction of risk exposure to life and property or project will provide an immediate reduction in the risk exposure to property.
- Low: Long-term benefits of the project are difficult to quantify in the short-term.

In recent years, and in response to the 1989 Loma Prieta earthquake, the County of Santa Cruz has made significant progress through efforts to reduce risk in public buildings, fire stations, major municipal facilities, and public schools. This plan will continue these types of efforts and expand them throughout the community. These efforts will protect future generations from the devastation of natural hazards experienced by the residents of Santa Cruz County in the past.

The County will pursue the implementation of these actions to meet the goals set out above. The Very High and High priority actions will be conducted actively over the next three to five years as funding becomes available.

As part of the plan update the priorities set forth below are reordered based on the updated risk and vulnerability assessments described in Part 3 and summarized above. The lists of actions are renumbered with the old action number in parenthesis. No actions have been deleted, but several new actions are added as a result of the update process. The new actions are noted as new in parenthesis in the respective sections in Part 3 and in the lists below. The new actions address the hazards of wildfire (A-20 and A-21), landslides (A-22 and A-23), flooding (B-20), drought (C-12), and two additional actions addresses all hazards (A-18 and A-19).

List of Very High Priority Actions (A)

#	Action	Hazard	Responsible Department	Timeline
A-1	Coordinate preparedness efforts with other agencies and cities within the county	All Hazards	OES/OR3	Ongoing
A-2	Continue to enforce floodplain management regulations on all permit applications	Flood	Planning	Ongoing
A-3	Continue to participate in the Community Rating System to improve floodplain management	Flood	Planning	Ongoing
A-4 (B-3) ¹¹	Reduce fire risk in urban/wildland interface (WUI) by advocating use of improved building materials and appropriate code enforcement, including defensible space and fuel reduction programs.	Wildfire	CalFire	Ongoing
A-5 (C-7)	Promote land use planning which will reduce incidence of human caused wildfires especially in very high hazard areas	Wildfire	Planning	Ongoing
A-6 (C-8)	Advocate for creation of secondary road access improvement	Wildfire	CalFire	Ongoing
A-7	Implement water conservation efforts to maximize the use of existing water resources	Drought	Env. Health	Ongoing
A-8	Support the development of additional water supplies	Drought	Env. Health	Ongoing
A-9	Promote more effective use of groundwater storage through increased groundwater recharge and conjunctive use among agencies	Drought	Env. Health	Ongoing

¹¹ As part of the plan update the priorities are reordered based on the updated risk and vulnerability assessments. The lists of actions are renumbered with the old action number from the last plan update in parenthesis. New actions added as part of the current plan update are also identified in parenthesis.

#	Action	Hazard	Responsible Department	Timeline
A-10	Continue to coordinate communication system upgrades with other agencies and cities, including evacuation management and operations, for homes and businesses within specific areas	All hazards	OES/OR3	Ongoing
A-11 (C-6)	Promotion of built-in fire extinguishing systems and fire alarm systems	Wildfire	CalFire	Ongoing
A-12	Continue to maintain cooperative fire protection and prevention agreements with other agencies	Wildfires	CalFire	Ongoing
A-13	Improve road signs and address marking to increase visibility and reduce response times	Wildfires	Public Works	Ongoing
A-14	Enhance support for interoperability communications system with local, state, and federal emergency services	All hazards	OES/OR3	Ongoing
A-15 (C-18)	Continue to require that the County Geologist review development in areas of suspected landsliding and require engineering geology reports when landsliding is identified or suspected	Landslide	Planning	Ongoing
A-16 (C-19)	Continue to require that an engineering geologist and/or geotechnical engineer investigate the site of any proposed construction near landsliding and require mitigation of landslide hazards before issuing any building or grading permit	Landslide	Planning	Ongoing
A-17 (C-20)	Continue to require that an engineering geologist and a geotechnical engineer investigate any landslide damage to homes or roadways before repair of the landslide and reuse of the homes or roadways	Landslide	Planning	Ongoing
A-18 (New)	Continue to refine and improve our evacuation management plans and tools using Zonehaven	All Hazards	CalFire Sheriff OES/OR3	Ongoing
A-19 (new)	Re-establish and support Community Organizations Assisting in Disaster (COAD)	All Hazards	OES/OR3	Ongoing

#	Action	Hazard	Responsible Department	Timeline
A-20 (new)	Reduction of fire risk in the urban/wildland interface (WUI) through hazardous fuel reduction projects including but not limited to indigenous land use practices of controlled burns, hazardous fuel removal, other shaded fuel break burn strategies.	Wildfire	Fire agencies Partners	Ongoing
A-21 (New)	Support CZU Fire Recovery for survivors utilizing best practices for improving overall safety of rebuild	Wildfire	Planning	Ongoing
A-22 (New)	Enhance our early warning, and rainfall monitoring capacity in the high debris flow risk areas of the County following the CZU fires of 2020.	Landslides	OES/OR3 Planning Public Works	Ongoing
A-23 (New)	Identify, monitor, and mitigate where feasible the hazards and risks associated with post fire debris flows.	Landslides	Planning	Ongoing
A-24 (New)	Expand use and functionality of targeted shelters County Wide to serve as “All Hazard Resiliency Centers” which can serve as an all-hazard resource for community members in events including but not limited to: earthquakes, fires, floods, Public Safety Power Shut-off events, extreme weather events, poor air quality days. Building resiliency centers may include but is not limited to back-up power generation capacity, air filtration, air conditioning, kitchen facilities, shelter capacity.	All Hazards/Clim ate Change	OES/OR3	Ongoing

List of High Priority Actions (B)

#	Action	Hazard	Responsible Department	Timeline
B-1	Upgrade roadways, sewer, water, and other infrastructure to withstand seismic shaking	Earthquake	Public Works	Ongoing

#	Action	Hazard	Responsible Department	Timeline
B-2	Review and revise California Environmental quality Act (CEQA) Initial Study checklist to ensure storm water runoff is fully mitigated	Flood	Planning	Completed
B-3 (C-5)	Implement additional fire prevention programs through inspections and education	Wildfire	CalFire	Ongoing
B-4	Maintain adequate Fire Suppression and Prevention staffing levels to meet the needs of the county residents and development trends	Wildfire	CalFire	Ongoing
B-5	Update and revise the Geologic Hazards Ordinance	Flood	Planning	Ongoing
B-6	Pursue elevation of structures to raise them above the 100-year flood level	Flood	Planning	Ongoing
B-7	Continue to enforce requirements for on-site retention of storm water runoff from impervious surfaces where feasible for all new development in the Groundwater Recharge Zone and the Water Supply Watershed Zone and throughout Santa Cruz County	Flood	Public Works	Ongoing
B-8 (A-4)	Evaluate the effectiveness of current policies and ordinances designed to limit storm water runoff and recommend revisions to improve the effectiveness of these policies.	Flood	Public Works	Ongoing
B-9 (A-5)	Evaluate the effectiveness of current drainage plan requirements	Flood	Public Works	Ongoing
B-10 (A-6)	Implement the "Stormwater Facilities Master Plan" for Flood control Districts 5 & 6	Flood	Public Works	Ongoing
B-11 (C-9)	Continue to inspect and maintain drainage system infrastructure	Flood	Public Works	Ongoing
B-12 (C-10)	Develop public education materials on flood protection and mitigation by working collaboratively with community	Flood	Planning	Ongoing

#	Action	Hazard	Responsible Department	Timeline
	groups, non- governmental organizations, and the local media			
B-13 (C-11)	Regulate development in flood zones to optimize preservation of open space through the application of the Geologic Hazards Ordinance and Open Space Preservation policies	Flood	Planning	Ongoing
B-14 (C-12)	Limit development and monitor conditions of development and grading permits near natural channels and wetlands to prevent sedimentation.	Flood	Planning Public Works	Ongoing
B-15 (C-13)	Promote drought planning by the 150 small water systems under county jurisdiction	Drought	Env. Health	Ongoing
B-16 (C-1)	Promote seismic safety upgrade of all emergency use and critical structures	Earthquake	Planning	Ongoing
B-17 (C-2)	Require all new and replacement critical structures be designed to standards of the California building Code and County Geologic Hazard Code	Earthquake	Planning	Ongoing
B-18 (C-3)	Train appropriate plan check staff on seismic requirements for structures	Earthquake	Planning	Ongoing
B-19 (C-4)	Encourage zoning in geologically constrained areas that reflect the nature and extent of the seismic hazard	Earthquake	Planning	Ongoing
B-20 (New)	Implement the Pajaro River Flood Risk Management Project to reduce the probability and consequences of flooding in the City of Watsonville, the Town of Pajaro, and surrounding agricultural lands.	Flood	Public Works (Zone 7)	Ongoing

List of Important Actions (C)

#	Action	Hazard	Responsible Department	Timeline
C-1 (B-8)	Management of early warning system	Tsunami	OES/OR3	Ongoing
C-2 (B-9)	Update tsunami maps	Tsunami	Planning	Unknown
C-3 (B-10)	Protect and preserve the coastline through permit review and continue to review coastal development for conformance with the County's Geologic Hazards ordinance	Coastal Erosion	Planning	Ongoing
C-4 (B-11)	Encourage the replacement of existing seawalls with shoreline protection structures which meet current engineering practice, integrate coastal access elements, and reduce their footprint impact on coastal resources.	Coastal Erosion	Planning	Ongoing
C-5 (B-12)	Develop an event protocol with the State Division of Safety of Dams	Dam Failure	Planning	Not completed
C-6 (B-13)	Continue to require soils reports as part of the building permit process	Expansive Soils	Planning	Ongoing
C-7 (C-14)	Encourage investigation of tsunami threat to the county and update development regulations based upon the best available information	Tsunami	Planning	Ongoing
C-8 (C-15)	Protect and preserve the coastline and infrastructure through restoration efforts	Coastal Erosion	Planning Public Works	Ongoing
C-9 (C-16)	Update dam inundation maps	Dam Failure	Planning	Not completed
C-10 (C-17)	Review dam evaluation files to determine the extent of potential dam failures	Dam Failure	Planning	Not completed
C-11 (C-21)	Continue to enforce design criteria for areas of known expansive soils	Expansive Soils	Planning	Ongoing
C-12 (New)	Adopt General Plan and County Code amendments to implement the Sustainable Santa Cruz County Plan to	Drought	Planning	2022

#	Action	Hazard	Responsible Department	Timeline
	support higher density development along major transit corridors.			
C-13 (C-22)	Plan for climate change	Multi-hazard	Public Health Planning OES/OR3	Ongoing
C-14 (C-23)	Develop a forum for ongoing engagement with coastal private property owners and the California Coastal Commission to discuss frameworks for land use policies that respond to expected future losses	Sea Level Rise	Planning	Ongoing
C-15 (C-24)	Consider relocating coastal development away from areas that will be inundated to eliminate the risk of damage and the need for coastal protection	Sea Level Rise	Planning	Ongoing
C-16 (C-25)	Consider limiting new engineered protection structures to infill in locations where the back beach is currently fixed	Sea Level Rise	Planning	Ongoing
C-17 (C-26)	Consider a program to identify those areas where managed retreat should replace engineered protection structures, based on public benefit	Sea Level Rise	Planning	Ongoing
C-18 (C-27)	Work with the engineering community to define a standard increment of additional height that should be added to the FEMA 100-year wave run up, storm surge, and flood levels when analyzing hazards in specific locations	Sea Level Rise	Planning	Ongoing
C-19 (C-28)	In consultation with the California Coastal Commission, consider revising regulations that address rebuilding structures that are repeatedly damaged by SLR and coastal storms	Sea Level Rise	Planning	Ongoing
C-20 (C-29)	Amend the Public Safety Element of the General Plan and revise implementing regulations to increase the efficacy of the damage prevention and flood protection	Sea Level Rise	Planning	2021-2022

#	Action	Hazard	Responsible Department	Timeline
	aspects of the National Flood Insurance Program			
C-21 (C-30)	Work with the County Office of Response, Recovery, and Resilience to refine FEMA flood hazard mapping to account for climate change, as maps are the basis for evacuation notification in the event of anticipated flooding and/or a tsunami	Sea Level Rise	Planning	Ongoing
C-22 (C-31)	Consider evaluating unprotected developed coastal bluff areas subject to future erosion, and develop plans and timeline for either armor placement, or retreat and relocation of existing public structures and/or infrastructure	Sea Level Rise	Planning	Ongoing
C-23 (C-32)	Consider designing and siting all future County projects and infrastructure to account for sea level rise projections, considering projected life span of project	Sea Level Rise	Public Works	Ongoing
C-24 (C-33)	Consider securing federal grant funding for the following drainage improvements within the Rio Del Mar Esplanade necessary to protect against a 10-year storm	Sea Level Rise	Public Works	Ongoing
C-25 (C-34)	Continue to improve wastewater collection system to reduce infiltration by groundwater or surface water	Sea Level Rise	Public Works	Ongoing
C-26 (C-35)	Consider coordinating with the City of Santa Cruz on programs to minimize vulnerabilities at the Neary Lagoon plant	Sea Level Rise	Public Works	Ongoing

Details of Very High Priority Actions (A)

A-1 Proposed Activity	Emergency Preparedness Coordination Continue to participate in the Emergency Management Council by planning, implementing, and evaluating pre-event activities including ongoing training for county staff
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Hazard	All
Environmental Concerns	None
Lead Dept.	OES/OR3
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-2 Proposed Activity	Floodplain Regulation Continue to enforce flood plain management regulations on all permit applications
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-3 Proposed Activity	Community Rating System Application Continue to participate in the Community Rating System to improve floodplain management
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff Time
Funding Source	Departmental budget
Funding Priority	Very High

A-4 Proposed Activity	Wildfire Hazard Abatement Reduce fire risk in wildland/urban interface (WUI) by advocating use of improved building materials and appropriate code enforcement, including defensible space and fuel break and reduction programs
Hazard	Wildfire
Environmental Concerns	Wildfire
Lead Dept.	CalFire
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-5 Proposed Activity	WUI Land Use Planning Promote land use planning to reduce incidence of human- caused wildfires
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Hazard	Wildfire
Environmental Concerns	Wildfire
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff Time
Funding Source	Departmental budget
Funding Priority	Very High

A-6	Emergency Personnel Road Access
Proposed Activity	Advocate for creation of secondary road access improvement
Hazard	Wildfire
Environmental Concerns	Wildfire
Lead Dept.	CalFire
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-7	Water Conservation
Proposed Activity	Implement water conservation programs to maximize the use of existing water resources
Hazard	Drought
Environmental Concerns	Water supply
Lead Dept.	Environmental Health
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-8	Develop Additional Water Supplies
Proposed Activity	Support the development of additional water supplies
Hazard	Drought
Environmental Concerns	Water supply
Lead Dept.	Environmental Health
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very high

A-9	Drought Protection
Proposed Activity	Promote more effective use of groundwater storage through increased groundwater recharge
Hazard	Drought
Environmental Concerns	None
Lead Dept.	Environmental Health

Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-10	Early Notification\ Warning Systems
Proposed Activity	Continue to coordinate communication system upgrades with other agencies and the cities of Santa Cruz, Watsonville, and Capitola, including evacuation operations, for homes and businesses in specific hazard areas
Hazard	Multi-Hazards
Environmental Concerns	None
Lead Dept.	OES/OR3
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, Federal and state grants
Funding Priority	Very High

A-11	Promote Alarm and Fire-Retardant Systems
Proposed Activity	Promote installation, inspection, and testing of built-in fire alarm and sprinkler systems
Hazard	Wildfire
Environmental Concerns	Wildfire
Lead Dept.	CalFire
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Permit Fees
Funding Priority	Very High

A-12	Fire Protection and Prevention
Proposed Activity	Maintain fire protection and prevention agreements with other agencies
Hazard	Wildfire
Environmental Concerns	Wildfire
Lead Dept.	CalFire
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-13	Reduction of Emergency Response Times
Proposed Activity	Improve road signage visibility and address markings Hazard
Hazard	Multi-Hazard
Environmental Concerns	None
Lead Dept.	Public Works

Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-14	Communications Interoperability
Proposed Activity	Enhance support for interoperability of communications system with local, state, and federal emergency services
Hazard	All Hazards
Environmental Concerns	None
Lead Dept.	OES/OR3
Timeline	Ongoing
Resources Required	Staff time, new equipment
Funding Source	Departmental budget, State and Federal grants
Funding Priority	Very High

A-15	Minimize Landslide Risk
Proposed Activity	Continue to require that the County Geologist review development in areas of suspected landsliding and require engineering geology reports when landsliding is identified or suspected
Hazard	Landslide
Environmental Concerns	Landslide
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, permit fees
Funding Priority	Very High

A-16	Landslide Regulations
Proposed Activity	Continue to require that an engineering geologist and/or geotechnical engineer investigate the site of any proposed construction near landsliding and require mitigation of landslide hazards before issuing any building or grading permits
Hazard	Landslide
Environmental Concerns	Landslide
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, permit fees
Funding Priority	Very High

A-17	Landslide Inspections
Proposed Activity	Continue to require that an engineering geologist

	and/or a geotechnical engineer investigate any landslide damage to homes or roadways before repair of the landslide and reuse of the homes or roadways
Hazard	Landslide
Environmental Concerns	Landslide
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, Permit fees
Funding Priority	Very High

A-17	Minimize Damage from Expansive Soils
Proposed Activity	Continue to enforce design criteria for areas of known expansive soils
Hazard	Expansive soils
Environmental Concerns	Geology
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-18	Evacuation Plans
Proposed Activity	Continue to refine and improve our evacuation management plans and tools using Zonehaven
Hazard	All hazards
Environmental Concerns	None
Lead Dept.	Fire agencies, Sheriff, OES/OR3
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-19	Community Organizations Assisting in Disaster (COAD)
Proposed Activity	Re-establish and support Community Organizations Assisting in Disaster (COAD)
Hazard	All hazards
Environmental Concerns	None
Lead Dept.	OES/OR3
Timeline	2021-2026
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-20	Hazardous Fuel Reduction
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Proposed Activity	Reduction of fire risk in the urban/wildland interface (WUI) through hazardous fuel reduction projects including but not limited to indigenous land use practices of controlled burns, hazardous fuel removal, other shaded fuel break burn strategies.
Hazard	Wildfire
Environmental Concerns	Wildfire
Lead Dept.	Fire agencies, partners
Timeline	Ongoing
Resources Required	Staff time, partner agencies
Funding Source	Departmental budget, grant funding
Funding Priority	Very High

A-21 Proposed Activity	CZU Fire Recovery Support CZU Fire Recovery for survivors utilizing best practices for improving overall safety of rebuild
Hazard	Wildfire
Environmental Concerns	Site dependent
Lead Dept.	Planning, OES/OR3
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Very High

A-22 Proposed Activity	Early Warning Systems Enhance our early warning, and rainfall monitoring capacity in the high debris flow risk areas of the County following the CZU fires of 2020.
Hazard	Debris Flow
Environmental Concerns	Landslide
Lead Dept.	OES/OR3, Planning, Public Works
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, State and Federal grants
Funding Priority	Very High

A-23 Proposed Activity	Debris Flow Hazard Mitigation Identify, monitor, and mitigate where feasible the hazards and risks associated with post fire debris flows.
Hazard	Landslide
Environmental Concerns	Landslide
Lead Dept.	Planning
Timeline	2021-2026

Resources Required	Staff time, partner agencies
Funding Source	Departmental budget, grant funding
Funding Priority	Very High

A-24	Emergency Shelters
Proposed Activity	Expand use and functionality of targeted shelters County Wide to serve as “All Hazard Resiliency Centers” which can serve as an all-hazard resource for community members in events including but not limited to: earthquakes, fires, floods, Public Safety Power Shut-off events, extreme weather events, poor air quality days. Building resiliency centers may include but is not limited to back-up power generation capacity, air filtration, air conditioning, kitchen facilities, shelter capacity.
Hazard	All Hazards/Climate Change
Environmental Concerns	N/A
Lead Dept.	OES/OR3
Timeline	2021-2026
Resources Required	Staff time, partner agencies
Funding Source	Departmental budget, grant funding
Funding Priority	Very High

Details of High Priority Actions (B)

B-1	Infrastructure Upgrades
Proposed Activity	Upgrade roadways, sewer, water, and other infrastructure to withstand seismic shaking
Hazard	Earthquake
Environmental Concerns	Geology
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff time, external funding
Funding Source	Departmental budget, Federal and State grants
Funding Priority	High

B-2	Review Stormwater Runoff Regulations
Proposed Activity	Review and revise California Environmental Quality Act (CEQA) Initial Study checklist to ensure that storm water runoff is fully considered and mitigated to the extent possible
Hazard	Flood
Environmental Concerns	Flood
Lead Dept.	Planning
Timeline	Completed

Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	High

B-3 Proposed Activity	Fire Safety and Prevention Programs Implement additional fire prevention programs in schools, institutions, and commercial buildings through inspections and education
Hazard	Wildfire
Environmental Concerns	Wildfire
Lead Dept.	CalFire
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, grants
Funding Priority	High

B-4 Proposed Activity	Adequate Staffing Maintain adequate Fire Suppression and Prevention staffing levels to meet the needs of the county
Hazard	Wildfire
Environmental Concerns	Wildfire
Lead Dept.	CalFire
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	High

B-5 Proposed Activity	Geologic Hazards Ordinance Update Update and revise the Geologic Hazards Ordinance
Hazard	Multi- Hazard
Environmental Concerns	Geology
Lead Dept.	Planning
Timeline	In process
Resources Required	Staff time
Funding Source	Departmental budget, Federal and State Grants
Funding Priority	High

B-6 Proposed Activity	Elevation of Structures in Floodplain Continue to pursue elevation of structures above level of 100-year flood Hazard
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time, consultants, technical studies

Funding Source	Departmental budget, Federal/State grants, permit fees
Funding Priority	High

B-7	Stormwater Management
Proposed Activity	Continue to enforce requirements for on-site retention of storm water
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, Permit fees
Funding Priority	High

B-8	Stormwater Policy and Ordinance Evaluation
Proposed Activity	The County shall evaluate the effectiveness of current policies and ordinances designed to limit storm water runoff and flooding and, if needed, recommend revisions to improve effectiveness of these policies and codes
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	High

B-9	Drainage Plan Evaluation
Proposed Activity	The county shall evaluate the effectiveness of the current drainage plan requirements to ensure that storm water runoff from impervious surfaces does not contribute to flooding and, if needed, revise permit conditions of approval
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff Time
Funding Source	Departmental budget
Funding Priority	High

B-10	Stormwater Control
Proposed Activity	Implement the "Stormwater Facilities Master Plan" for Flood control Districts 5 & 6
Hazard	Flood

Environmental Concerns	None
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff Time
Funding Source	Departmental budget
Funding Priority	High

B-11	Drainage system Infrastructure Integrity
Proposed Activity	Continue to inspect and maintain drainage system infrastructure
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff time, consultant, repair funds
Funding Source	Departmental budget, Federal and State grants
Funding Priority	High

B-12	Flood Mitigation Education
Proposed Activity	Continue to develop public education materials by working collaboratively with community groups, non-governmental organizations, and the local media
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	High

B-13	Open Space in Flood Zones
Proposed Activity	Regulate development in flood zones to optimize preservation of open space
Hazard	Flood
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	High

B-14	Flood Zone Development Regulation
Proposed Activity	Limit development and monitor conditions of development and grading permits near natural channels and wetlands to prevent sedimentation
Hazard	Flood

Environmental Concerns	Flooding
Lead Dept.	Planning, Public Works
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	High

B-15	Promote Drought Planning
Proposed Activity	Promote drought planning by the 130 small water systems under county jurisdiction
Hazard	Drought
Environmental Concerns	Water Supply
Lead Dept.	Environmental Health
Timeline	Ongoing
Resources Required	Staff time, consultant
Funding Source	Departmental budget, federal and state grants
Funding Priority	High

B-16	Protection of Critical Structures
Proposed Activity	Promote seismic safety upgrade of all emergency use and critical structures
Hazard	Earthquake
Environmental Concerns	Earthquake
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	High

B-17	Critical Structural Safety
Proposed Activity	Require all new and replacement critical structures be designed to standards of the California building code and the county's Geologic Hazards Code
Hazard	Earthquake
Environmental Concerns	Earthquake
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	High

B-18	Training for Planning Staff
Proposed Activity	Train appropriate plan check staff on seismic requirements for structures
Hazard	Earthquake
Environmental Concerns	Earthquake

Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time, training consultant
Funding Source	Departmental budget, federal and state grants
Funding Priority	High

B-19	Seismic Zoning
Proposed Activity	Encourage zoning in geologically constrained areas that reflect the nature and extent of the seismic hazard
Hazard	Earthquake
Environmental Concerns	Earthquake
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	High

B-20	Pajaro River Flood Risk Management Project
Proposed Activity	Implement the Pajaro River Flood Risk Management Project to reduce the probability and consequences of flooding in the City of Watsonville, the Town of Pajaro, and surrounding agricultural lands.
Hazard	Flooding
Environmental Concerns	Flooding
Lead Dept.	Department of Public Works Zone 7
Timeline	Ongoing
Resources Required	Departmental budget, federal and state assistance
Funding Source	Departmental budget, federal grants, County matching funds
Funding Priority	High

Details of Important Actions (C)

C-1	Management of Early Warning System
Proposed Activity	Maintain a reverse 911 system that notifies all homes and businesses within tsunami inundation areas and maintain a media protocol for evacuation notices
Hazard	Tsunami
Environmental Concerns	Flooding
Lead Dept.	OES/OR3
Timeline	Ongoing
Resources Required	Staff time

Funding Source	Departmental budget, FEMA Grant funds
Funding Priority	Important

C-2	Minimize Risk from Tsunami
Proposed Activity	Update tsunami inundation maps
Hazard	Tsunami
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Unknown
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Important

C-3	Protect and Preserve Coastline
Proposed Activity	Protect and preserve coastline through permit review process
Hazard	Coastal Erosion
Environmental Concerns	Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Important

C-4	Protect Coastline and Infrastructure
Proposed Activity	Encourage replacement of existing seawalls with shoreline protection structures which meet current engineering standards
Hazard	Coastal Erosion
Environmental Concerns	Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time, consultants
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-5	Minimize Risk from Dam Failure
Proposed Activity	Develop an event protocol with the State Division of Safety of Dams
Hazard	Dam Failure
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Unknown
Resources Required	Staff Time
Funding Source	Departmental budget
Funding Priority	Important

C-6	Minimize Risks from Expansive soils
Proposed Activity	Continue to require soils reports as part of the building permit process
Hazard	Expansive soils
Environmental Concerns	Geology
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Important

C-7	New Regulations in Tsunami Inundation Areas
Proposed Activity	Encourage investigation of the tsunami threat to the county and update development regulations based upon this investigation
Hazard	Tsunami
Environmental Concerns	None
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Federal and state grants
Funding Priority	Important

C-8	Restoration of Coastline
Proposed Activity	Protect and preserve the coastline and infrastructure through restoration efforts
Hazard	Coastal Erosion
Environmental Concerns	Erosion
Lead Dept.	Planning, Public Works
Timeline	Ongoing
Resources Required	Staff time, consultants
Funding Source	Departmental budget, Federal and State grants
Funding Priority	Important

C-9	Update Inundation Maps
Proposed Activity	Update dam inundation maps
Hazard	Dam Failure
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Unknown
Resources Required	Staff time
Funding Source	Departmental budget, State grants
Funding Priority	Important

C-10	Review Dam Hazards
Proposed Activity	Review dam evaluation files to determine the extent of potential dam failures

Hazard	Dam Failure
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	Unknown
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Important

C-11	Minimize Damage from Expansive Soils
Proposed Activity	Continue to enforce design criteria for areas of known expansive soils
Hazard	Expansive soils
Environmental Concerns	Geology
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget
Funding Priority	Important

C-12	Reduce Per-Capita Water Consumption
Proposed Activity	Adopt General Plan and County Code amendments to implement the Sustainable Santa Cruz County Plan to support higher density development along major transit corridors.
Hazard	Drought
Environmental Concerns	Water Supply
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time, consultants
Funding Source	Departmental budget, grant funding
Funding Priority	Important

C-13	Climate Change
Proposed Activity	Address climate change in Public Health Preparedness Plan Update, General Plan Update, and other pertinent plans in order to implement policies and programs to reduce impact of climate change
Hazard	Multi-Hazards
Environmental Concerns	Multiple
Lead Dept.	Public Health, Planning, OES
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-14	Climate Change
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Proposed Activity	Develop a forum for ongoing engagement with coastal private property owners and the California Coastal Commission to discuss frameworks for land use policies that respond to expected future losses.
Hazard	Sea Level Rise
Environmental Concerns	Flooding, Coastal Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time, consultants
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-15 Proposed Activity	Climate Change Consider relocating coastal development away from areas that will be inundated to eliminate the risk of damage and the need for coastal protection.
Hazard	Sea level rise
Environmental Concerns	Coastal Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-16 Proposed Activity	Climate Change Consider limiting new engineered protection structures to infill in locations where the back beach is currently fixed.
Hazard	Sea Level Rise
Environmental Concerns	Coastal Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-17 Proposed Activity	Climate Change Consider a program to identify those areas where managed retreat should replace engineered protection structures, based on public benefit.
Hazard	Sea Level Rise
Environmental Concerns	Flooding, Coastal Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time

Funding Source	Departmental budget, Federal and State grants
Funding Priority	Important

C-18	Climate Change
Proposed Activity	Work with the engineering community to define a standard increment of additional height that should be added to the FEMA 100-year wave run up, storm surge, and flood levels when analyzing hazards in specific locations.
Hazard	Sea Level Rise
Environmental Concerns	Flooding, Coastal Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, Federal and State grants
Funding Priority	Important

C-19	Climate Change
Proposed Activity	In consultation with the California Coastal Commission, consider revising regulations that address rebuilding structures that are repeatedly damaged by SLR and coastal storms.
Hazard	Sea Level Rise
Environmental Concerns	Flooding, Coastal Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, Federal and State grants
Funding Priority	Important

C-20	Climate Change
Proposed Activity	Amend the Safety Element of the General Plan and revise implementing regulations to increase the efficacy of the damage prevention and flood protection aspects of the National Flood Insurance Program.
Hazard	Sea Level Rise
Environmental Concerns	Flooding
Lead Dept.	Planning
Timeline	2021-2022
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-21	Climate Change
Proposed Activity	Work with the County Office of Response, Recovery, and Resilience to refine FEMA flood

Hazard	hazard mapping to account for climate change, as maps are the basis for evacuation notification in the event of anticipated flooding and/or a tsunami.
Environmental Concerns	Sea Level Rise
Lead Dept.	Flooding
Timeline	Planning
Resources Required	Ongoing
Funding Source	Staff time
Funding Priority	Departmental budget, Federal and State grants
	Important

C-22	Climate Change
Proposed Activity	Consider evaluating unprotected developed coastal bluff areas subject to future erosion, and develop plans and timeline for either armor placement, or retreat and relocation of existing public structures and/or infrastructure.
Hazard	Sea Level Rise
Environmental Concerns	Coastal Erosion
Lead Dept.	Planning
Timeline	Ongoing
Resources Required	Staff time, consultants
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-23	Climate Change
Proposed Activity	Consider designing and siting all future County projects and infrastructure to account for sea level rise projections, considering projected life span of project.
Hazard	Sea Level Rise
Environmental Concerns	Coastal Erosion, Flooding
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, Federal and State grants
Funding Priority	Important

C-24	Climate Change
Proposed Activity	Consider securing federal grant funding for the following drainage improvements within the Rio Del Mar Esplanade necessary to protect against a 10-year storm
Hazard	Sea Level Rise
Environmental Concerns	Flooding
Lead Dept.	Public Works

Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-25	Climate Change
Proposed Activity	Continue to improve wastewater collection system to reduce infiltration by groundwater or surface water
Hazard	Sea Level Rise
Environmental Concerns	Flooding
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important

C-26	Climate Change
Proposed Activity	Consider coordinating with the City of Santa Cruz on programs to minimize vulnerabilities at the Neary Lagoon plant.
Hazard	Sea Level Rise
Environmental Concerns	Flooding
Lead Dept.	Public Works
Timeline	Ongoing
Resources Required	Staff time
Funding Source	Departmental budget, federal and state grants
Funding Priority	Important