

CITY OF LAKE OSWEGO

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MEMORANDUM

TO: Comprehensive Plan Citizen Advisory Committee (CAC)

FROM: Beth St. Amand, Senior Planner

DATE: February 15, 2013

SUBJECT: Agenda Item #5: Natural Hazards and Disasters Goal and Policy Packet

ACTIONS

1. Complete final review of the “Natural Hazards and Disasters” goals and policies and consider recommending them to the Planning Commission. Track Changes and Clean version of the policies can be found as Attachments 5a and 5b in this packet.

CAC GOAL AND POLICY REVIEW

CAC Review 11-29-12; PC Review 12-10-12

Purpose of Proposed Updates:

- Integrate the City’s 2010-2012 Natural Hazards Mitigation Plan, including goals, policies and hazard planning programs.
- Remove policies that are outdated or have been incorporated into the Development Code.
- Revise policies to reflect the City’s approach to hazards (Did we actually apply the old policy?) or propose new approaches (How does the City want to protect life and property from hazards?)
- Reduce redundancies by including general policies that apply to all hazards.

CAC Changes

The CAC reviewed these policies on November 29, 2012. Due to this chapter’s technical nature, most of the discussion focused on question clarifying the policies and the floodplain graphic. The attached policies reflect the discussed changes, which include rewording the landslide policies where it referred inaccurately to open space.

Planning Commission Changes

The Planning Commission reviewed these policies at its December 10, 2012, meeting. Changes included language, more clearly defining the different facilities referenced, and concurring with the CAC that a more understandable floodplain graphic was needed. Policy 5 under Floods was rewritten to more accurately capture the relationship of natural vegetation to flood control. Staff also added Policy 6 to be consistent with the Surface Water Management goals and policies.

Former Policy 5 under Floods received a great deal of discussion; this policy had been flagged for additional work. Staff has proposed a three-fold response to capture the Commission's comments:

1. Add a general policy to "Allow innovative site and building design and density transfer to minimize development in hazard areas," which replaced the hazard-specific Comprehensive Plan policies. The Community Development Code currently allows for this development flexibility when hazards such as floodplains and steep slopes are present on the development site.
2. Provide policy language under Floods to minimize flood issues through promoting low-impact development outside the floodplain.
3. Include a new action plan item to examine density transfers for possible expanded application.

The CAC should review the goals and policies and make a recommendation to the Planning Commission.

NEXT STEP

If the CAC recommends these goals and policies to the Planning Commission, the goals and policies will be part of the Community Health and Public Safety hearing this summer (part of Package 2).

ATTACHMENTS

5A: Natural Hazards and Disasters Goals and Policies, TRACK CHANGES

5B: Natural Hazards and Disasters Goals and Policies, CLEAN COPY

Community Health and Public Safety, Part 1: Healthy, Safe People
Natural Disasters and Hazards (Goal 7) TRACK CHANGES
Feb., 21, 2013

~~Goal 7 Areas Subject To Natural Disasters And Hazards~~
~~Section 1, Flood Hazards~~

BACKGROUND

Statewide Planning Goal 7: Areas Subject To Natural Disasters And Hazards

"To protect life and property from natural disasters and hazards."

GOALS & POLICIES

GOAL

Minimize future impacts and risk to life and property from natural hazards* and disasters.

A. General Hazard Policies

1. Coordinate the City's hazard planning between departments, programs, agencies, and jurisdictions to promote consistency and implementation.

2. Work with DOGAMI*, DLCD*, Clackamas County and other agencies to maintain updated hazard inventories that inform potential development.

3. Allow innovative site design, building design and density transfer to minimize development in hazard areas.

4. Locate new City infrastructure, essential public facilities* public functions*, major structures, and hazardous facilities in non-hazard areas where possible.

Comment [BSA1]: Substitute public functions*

5. Improve the City's resilience of the City's infrastructure by reducing the vulnerability of critical facilities and infrastructure*.

6. Use the City's Natural Hazards Mitigation Plan Addendum (NHMP) to prioritize hazard mitigation projects.

~~The City shall protect life and property from flood hazards.~~

B. FLOOD POLICIES

~~1. Continue to participate in the National Flood Insurance Program* and comply with all Federal Emergency Management Agency (FEMA)* standards.~~

Comment [BSA2]: This policy got moved down.

1. Apply flood management standards to areas defined and mapped as being within the City's Flood Management Area which includes:

Comment [BSA3]: This is existing Policy 7-1.11

a. Land within the 100-year flood boundary as depicted on the most recent Flood Insurance Rate Maps (FIRM) and Flood Boundary and Floodway Maps created for the National Flood Insurance Program by the Federal Emergency Management Agency (FEMA).

b. The area of inundation by the February 1996 flood along the Willamette River, along the Tualatin River, and along the Oswego Canal south of Bryant Road.

2. Continue to participate in the National Flood Insurance Program* and comply with Federal Emergency Management Agency (FEMA)* standards.

3. Limit new development in the FEMA-regulated floodway*, including filling and removal of earth, to the following uses provided ~~there that~~ is no increase in base-year flood levels.* occurs.

Comment [BSA4]: See figure 1. This policy is implemented in the CDC. A flood way is reserved and regulated by individual communities in cooperation with FEMA and the National Flood Insurance Program (NFIP) so water levels should never rise above a specific, safe designation during floods. The floodway should not be obstructed, be built on or have any encroachment without danger of flooding. An encroachment is any activity, construction, improvement or development which has not been approved to occur within the flood way. Encroachments are banned in flood ways unless it can be proved, via hydro-logic analysis, that the encroachment will not result in a rise in flood levels.

a. Public and private open space and recreational uses;

b. Water-dependent structures* such as docks, piers, bridges, and floating marinas; and,

c. Public facilities, such as utilities, bridges or other improvement structures. ~~including unpaved roads and private access ways.~~

Comment [BSA5]: The Planning Commission had questions about this original policy c. Further review determined that the original wording did not accurately reflect the intent.

~~43.~~ Implement regulations and standards to ensure public facilities and development meet City, FEMA and Metro Title 3 and other regulatory agency requirements, and the following: ~~Review development proposals, including public facilities, filling and grading, within areas subject to flooding to ensure:~~

~~a. Conformance with City, FEMA and other regulatory agencies;~~

~~ba. Reasonable protection of public facilities;~~

~~eb. The flow, velocity and elevation of flood waters are not changed so as to endanger other property;~~

~~d. Natural systems such as fish and wildlife habitat, vegetation, wetlands and stream corridors are protected; and,~~

~~ec. Other problems associated with flooding such as ponding, poor drainage, high water tables and unstable soils are addressed.~~

~~45.~~ Improve flood control through ~~p~~ Protecting and r, ~~restoring~~ and maintain the natural systems of floodplains including riparian vegetation, wooded areas and, wetlands and fish and wildlife habitat.

6. Ensure public and private stormwater systems are planned, developed, and maintained to prevent flooding, protect water quality, and preserve natural surface water systems to protect aquatic habitat (from Public Facilities and Services).

7. Reduce flooding by promoting Low Impact Development (LID) practices that reduce impervious surfaces and promote infiltration of surface water.

Comment [BSA6]: Policies 6 and 7 reflect Planning Commission discussion and the recent City surface water management efforts and CompPlan policies.

~~5. Allow development density within the flood fringe/floodway fringe to be transferred to higher portions of the development site.~~

Comment [BSA7]: This policy has been moved to create one umbrella policy under General Hazards.

~~6. Designate undeveloped floodplains as potential Protection Open Space*. (This original policy was implemented in the CDC; however, the 2003 CDC amendments removed this policy. It no longer exists. Recommend deletion.)~~

~~7. Prohibit the storage of hazardous substances* within the floodplain. (redundant with 3a)~~

~~8. Ensure that filling in the flood fringe/floodway fringe is conducted in accordance with City and applicable state and federal regulations, and is the minimum necessary for development to conform with FEMA standards. (redundant with 3a.)~~

~~9. Protect, restore and maintain watercourses* within the floodplain.~~

Comment [bsa8]: Policy 4 addresses this already; the specific term "watercourse" is more appropriate for Goal 5, as it refers to drainageways and contribute to the overall natural systems including hydrology, vegetation and wildlife habitat.

~~10. Require new or replacement water and sanitary sewer systems within the floodplain, constructed to prevent infiltration of floodwaters and discharge of untreated waste water during flooding.~~

Comment [BSA9]: This is exact wording from the code 50.05.011-13 and is already covered.

~~11. Flood management standards shall be applied to those areas defined and mapped as being within the~~

Comment [BSA10]: This policy moved up.

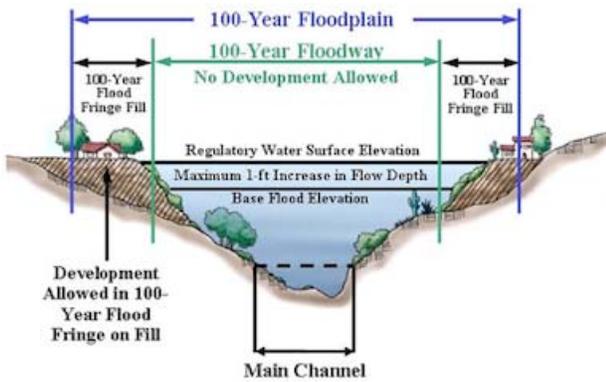
~~_____ Flood Management Area of the City of Lake Oswego. These areas shall include:
a. Land within the 100-year flood boundary as depicted on the most recent *Flood Insurance Rate Maps (FIRM)* and *Flood Boundary and Floodway Maps* created for the National Flood Insurance Program by the Federal Emergency Management Agency (FEMA).~~

~~b. The area of inundation by the February 1996 flood along the Willamette River, along the Tualatin River, and along the Oswego Canal south of Bryant Road.~~

Figure 1

Floodplain Cross Section

Comment [BSA11]: Updates Figure 6 with a new figure.



Section 2, Earthquake Hazards

BACKGROUND

Statewide Planning Goal 7: Areas Subject To Natural Disasters And Hazards

"To protect life and property from natural disasters and hazards."

GOALS & POLICIES

GOAL

The city shall protect life and property from earthquake hazards.

C. EARTHQUAKE POLICIES

~~1. Cooperate with the DOGAMI in the delineation of areas of relatively greater hazard due to potential damage from earthquakes. Now addressed in the general policies.~~

~~21.~~ When siting essential public facilities*, evaluate hazard risk and location based on the most recent geologic and seismic studies. Enact regulations governing the location of structures and land uses, as new seismic information becomes available.

~~3.~~ Coordinate adequate earthquake emergency response with the Federal Emergency Management Agency, Clackamas County Emergency Operations and other appropriate government agencies. Now addressed in the general policies

~~4.~~ 2. Require compliance with the current edition of the Oregon Structural Specialty Code regarding building design for earthquake resistance.

Comment [BSA12]: This is mandatory.

~~53.~~ Provide education and public awareness of earthquake risks and public safety.

~~Section 3, Landslides, Erosion and Unstable Soils~~

~~BACKGROUND~~

~~Statewide Planning Goal 7: Areas Subject To Natural Disasters And Hazards
"To protect life and property from natural disasters and hazards."~~

~~GOALS & POLICIES~~

~~GOAL~~

~~The City shall protect life and property, from hazards associated with landslides, soil erosion and unstable soils.~~

~~D. LANDSLIDES, EROSION AND UNSTABLE SOIL POLICIES~~

~~1.~~ 1. Identify areas Continue updating Community Development Code maps within the Lake Oswego Urban Services Boundary with the best and most current information to minimize hazards associated with... within the Lake Oswego Urban Services Boundary with a potential for soil erosion hazard, landslides hazard and unstable soils, including the degree of potential hazard.

~~2.~~ Regulate density and intensity of land use in areas with the potential for unstable soils, known or potential landslide hazards and soil erosion hazard areas, in accord with the degree of hazard.

Comment [bsa13]: Moved down to Policy 6.
Action item: need to be rewritten based on weak foundation soils atlas from 1960; need new information that is expected.

~~3.~~ 2. Implement regulations, standards and incentives to protect life and property from hazards associated with landslides, soil erosion and unstable soils to ensure:

~~Enact and maintain regulations and standards which require:~~

- a. Appropriate engineering and site development measures to prevent damage from hazards associated with erosion, landslides and unstable soils;

- b. Protection and restoration of natural and topographic features such as ridge lines and vegetation to preserve slope and soil stability;
- c. ~~Open space~~ preservation of undisturbed slopes which cannot be developed because of ~~severe landslide and erosion hazard;~~
- d. Protection of natural resources associated with steep slopes such as stream corridors, trees and other vegetation and wildlife habitat; and,
- e. Erosion control measures.
- f. Property owners to include erosion and drainage control measures in site planning, during and after development, to prevent increases in surface water runoff, erosion and siltation.

Comment [bsa14]: Change in language here. The CAC raised questions regarding "open space." This refers to a private open space tract or conservation easement, not publicly available open space. This refers to the code's limitation on "undisturbed slopes greater than 50 percent" which "cannot develop more than 30% of the site." This applies to subdivisions, PDs, and the open space means no impervious pavement or structures.

Comment [bsa15]: This is current Policy 5 below. Will ensure consistency with stormwater updates.

Comment [BSA16]: Addressed under 2 above.

- 4. ~~Control erosion at its source through minimizing the disturbance of existing vegetation.~~
- 5. ~~Require property owners to include erosion and drainage control measures in site planning, during and after development, to prevent increases in surface water runoff, erosion and siltation. (addressed under 2 above)~~

- 6. ~~Control erosion through the following measures:~~
 - a. ~~Minimize the disturbance of existing vegetation to control erosion.~~
 - b. ~~Require that Preserve LLand identified with a potential for high erosion hazard will be maintained in open space as undisturbed slope, unless appropriate evidence demonstrates that engineering can effectively overcome soil and slope limitations.~~
 - c. ~~Promote Low Impact Development (LID) practices to reduce surface water volume and velocity.~~

Comment [BSA17]: Open space here refers to open space tracts or conservation easements. **Action item: Clarify the CDC definition of "high erosion hazard."**

Comment [BSA18]: This addition reflects Planning Commission discussion and the recent City surface water management efforts and CompPlan policies.

- 7. ~~Allow development density proposed on steep slopes and on lands with unstable soils to be transferred to stable portions of the site when these areas are preserved as open space.~~
- 8. ~~Allow innovative site and building design, including the clustering of buildings, to avoid development in hazard areas and encourage steep slopes to be maintained as open space be used for open space uses.~~

Comment [bsa19]: This moves up to a General Policy; the second half is addressed through 2c above.

- 9. ~~Ensure that public facilities and services are planned to be located in non-hazard areas, where possible.~~ Ensure that public facilities* and services are designed to withstand movement of soil and rock if locating in hazard areas is unavoidable.

- 10. ~~Require the review of any development proposal by the appropriate local, state and federal agencies.~~

Definitions

Base Flood: The flood having a one percent chance of being equaled or exceeded in any given year. The base flood is also known as the 100 year flood.

Critical Facilities and Infrastructure: As defined by the Natural Hazards Mitigation Plan Addendum. Critical facilities are City Hall; Dispatch, Law Enforcement; Fire Stations; the Adult Community Center; and the City Maintenance Facility. Critical infrastructure includes infrastructure that provides services for the City of Lake Oswego, including treatment plants, major public facility lines, gas pipelines, transportation networks, substations, fiber optic lines and communications towers.

DLCD: Department of Land Conservation and Development. This state agency administers the statewide land use planning program.

DOGAMI: The Oregon Department of Geology and Mineral Industries' (DOGAMI) primary function is to map the state's varied geology and natural hazards to help Oregonians understand and prepare for the vast array of natural hazards that accompany the state's spectacular geology.

Essential Public Facilities: As defined by ORS 455.447 (a) "Essential facility" means: (A) Hospitals and other medical facilities having surgery and emergency treatment areas; (B) Fire and police stations; (C) Tanks or other structures containing, housing or supporting water or fire-suppression materials or equipment required for the protection of essential or hazardous facilities or special occupancy structures; (D) Emergency vehicle shelters and garages; (E) Structures and equipment in emergency-preparedness centers; (F) Standby power generating equipment for essential facilities; and (G) Structures and equipment in government communication centers and other facilities required for emergency response.

Floodplain: The area bordering a watercourse subject to flooding. The floodplain includes both the floodway fringe and the floodway. The floodplain is further defined as being flooded by the 100-year flood, also referred to as the base flood (Figure 1).

Floodway : The area within the floodplain which includes the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot (Figure 1).

Floodway Fringe: The area within the floodplain lying outside the floodway. This is the area, in addition to the floodway, which is inundated by the 100 year or base flood (Figure 1).

Natural hazards: Floods, earthquake, landslides, wildfire, severe storms and volcanic eruption, as defined in statewide planning Goal 7 and the City of Lake Oswego's Natural Hazards Mitigation Plan Addendum (2010).

Public facilities: any and all on-site and off-site improvements to be accepted for ownership, maintenance and operation by the City, including sewer, water and transportation systems.

Public Functions: As defined by the public function zone, it includes uses such as government services, education and similar activities, as well as major and minor public facilities. Many of these uses are conditional.

Potential Action Plan Items:

- Consider park or natural area opportunities for undeveloped areas subject to high hazard ratings, consistent with the Parks Plan 2025 recommendations and City policy. Analyze how much land would be affected; define the scope and applicability.
- Update inventory maps
- Update code provisions relating to hillside protection standards and weak foundation soils when new data & LIDAR maps become available, including clarifying the definition of high erosion hazard.
- To implement the above policies, determine if density transfers should be expanded beyond the current application.

Statewide Planning Goal 7: Areas Subject To Natural Disasters And Hazards

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GOALS & POLICIES

GOAL

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A. GENERAL HAZARD POLICIES

1. Coordinate the City's hazard planning between departments, programs, agencies, and jurisdictions to promote consistency and implementation.
2. Work with DOGAMI*, DLCD*, Clackamas County and other agencies to maintain updated hazard inventories that inform potential development.
3. Allow innovative site design, building design and density transfer to minimize development in hazard areas.
4. Locate new City infrastructure, essential public facilities* public functions*, major structures, and hazardous facilities in non-hazard areas where possible.
5. Improve the City's resilience of the City's infrastructure by reducing the vulnerability of critical facilities and infrastructure*.
6. Use the City's Natural Hazards Mitigation Plan Addendum (NHMP) to prioritize hazard mitigation projects.

Comment [BSA1]: Substitute public functions*

B. FLOOD POLICIES

1. Apply flood management standards to areas defined and mapped as being within the City's Flood Management Area which includes:
 - a. Land within the 100-year flood boundary as depicted on the most recent Flood Insurance Rate Maps (FIRM) and Flood Boundary and Floodway Maps created for the National Flood Insurance Program by the Federal Emergency Management Agency (FEMA).
 - b. The area of inundation by the February 1996 flood along the Willamette River, along the Tualatin River, and along the Oswego Canal south of Bryant Road.

Comment [BSA2]: This policy got moved down.

Comment [BSA3]: This is existing Policy 7-1.11

2. Continue to participate in the National Flood Insurance Program* and comply with Federal Emergency Management Agency (FEMA)* standards.
3. Limit new development in the FEMA-regulated floodway*, including filling and removal of earth, to the following uses provided that no increase in base-year flood levels* occurs.
 - a. Public and private open space and recreational uses;
 - b. Water-dependent structures* such as docks, piers, bridges, and floating marinas; and,
 - c. Public facilities, such as utilities, bridges or other improvement structures.
4. Implement regulations and standards to ensure public facilities and development meet City, FEMA and Metro Title 3 and other regulatory agency requirements, and the following:
 - a. Reasonable protection of public facilities;
 - b. The flow, velocity and elevation of flood waters are not changed so as to endanger other property;
 - c. Other problems associated with flooding such as ponding, poor drainage, high water tables and unstable soils are addressed.
5. Improve flood control through protecting and restoring riparian vegetation, wooded areas and wetlands.
6. Ensure public and private stormwater systems are planned, developed, and maintained to prevent flooding, protect water quality, and preserve natural surface water systems to protect aquatic habitat (from Public Facilities and Services).
7. Reduce flooding by promoting Low Impact Development (LID) practices that reduce impervious surfaces and promote infiltration of surface water.

Comment [BSA4]: See figure 1. This policy is implemented in the CDC. A flood way is reserved and regulated by individual communities in cooperation with FEMA and the National Flood Insurance Program (NFIP) so water levels should never rise above a specific, safe designation during floods. The floodway should not be obstructed, be built on or have any encroachment without danger of flooding. An encroachment is any activity, construction, improvement or development which has not been approved to occur within the flood way. Encroachments are banned in flood ways unless it can be proved, via hydro-logic analysis, that the encroachment will not result in a rise in flood levels.

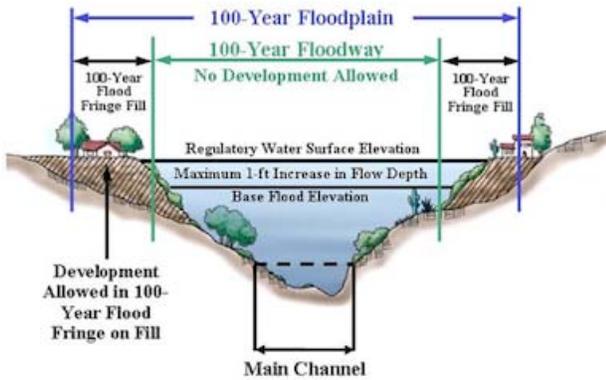
Comment [BSA5]: The Planning Commission had questions about this original policy c. Further review determined that the original wording did not accurately reflect the intent.

Comment [BSA6]: Policies 6 and 7 reflect Planning Commission discussion and the recent City surface water management efforts and CompPlan policies.

Figure 1

Floodplain Cross Section

Comment [BSA7]: Updates Figure 6 with a new figure.



C. EARTHQUAKE POLICIES

1. When siting essential public facilities*, evaluate hazard risk and location based on the most recent geologic and seismic studies.
2. Require compliance with the current edition of the Oregon Structural Specialty Code regarding building design for earthquake resistance.
3. Provide education and public awareness of earthquake risks and public safety.

Comment [BSA8]: This is mandatory.

D. LANDSLIDES, EROSION AND UNSTABLE SOIL POLICIES

1. Continue updating Community Development Code maps with the best and most current information to minimize hazards associated with soil erosion, landslides and unstable soils.
2. Implement regulations, standards and incentives to protect life and property from hazards associated with landslides, soil erosion and unstable soils to ensure:
 - a. Appropriate engineering and site development measures to prevent damage from hazards associated with erosion, landslides and unstable soils;
 - b. Protection and restoration of natural and topographic features such as ridge lines and vegetation to preserve slope and soil stability;
 - c. Preservation of undisturbed slopes which cannot be developed because of severe landslide and erosion hazard;

Comment [bsa9]: Change in language here. The CAC raised questions regarding "open space." This refers to a private open space tract or conservation easement, not publicly available open space. This refers to the code's limitation on "undisturbed slopes greater than 50 percent" which "cannot develop more than 30% of the site." This applies to subdivisions, PDs, and the open space means no impervious pavement or structures.

- d. Protection of natural resources associated with steep slopes such as stream corridors, trees and other vegetation and wildlife habitat; and,
- e. Erosion control measures.
- f. Property owners include erosion and drainage control measures in site planning, during and after development, to prevent increases in surface water runoff, erosion and siltation.

Comment [bsa10]: This is current Policy 5 below. Will ensure consistency with stormwater updates.

3. Control erosion through the following measures:

- a. Minimize the disturbance of existing vegetation to control erosion.
- b. Preserve land identified with a potential for high erosion hazard as undisturbed slope, unless appropriate evidence demonstrates that engineering can effectively overcome soil and slope limitations.
- c. Promote Low Impact Development (LID) practices to reduce surface water volume and velocity.

Comment [BSA11]: Open space here refers to open space tracts or conservation easements.
Action item: Clarify the CDC definition of "high erosion hazard."

Comment [BSA12]: This addition reflects Planning Commission discussion and the recent City surface water management efforts and CompPlan policies.

4. Ensure that public facilities* and services are designed to withstand movement of soil and rock if locating in hazard areas is unavoidable.

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Structures and equipment in emergency-preparedness centers; (F) Standby power generating equipment for essential facilities; and(G) Structures and equipment in government communication centers and other facilities required for emergency response.

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- Update inventory maps
- Update code provisions relating to hillside protection standards and weak foundation soils when new data & LIDAR maps become available, including clarifying the definition of high erosion hazard.
- To implement the above policies, determine if density transfers should be expanded beyond the current application.