SECTION 02820
FLOOD PROTECTION

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes:

1. Definition of Floodplains
2. Regulations related to Floodplains
3. Requirements for Development within the Floodplain

B. Related Sections:

1. Colorado Department of Natural Resources Water Conservation Board Floodplain Damage Prevention Ordinance

1.2 INTENT:

A. The purpose of this section is to regulate certain areas of the University subject to flooding in order to protect the public health, safety and welfare by;

1. Restricting or prohibiting certain uses that are hazardous to life or property in time of flood.
2. Restricting the location of structures intended for human occupancy and regulating the manner in which such structures may be built in order to minimize danger to human life within and around such structures;
3. Requiring that those structures allowed in the floodplain be expanded or enlarged, and equipment and fixtures be installed or replaced, in a manner designed to prevent their being washed away and to assure their protection from severe damage.
4. Regulating the method of construction and replacement of water supply and sanitation systems in order to prevent disease, contamination, and unsanitary conditions;
5. Protecting and preserving the water-carrying and water-retention characteristics and capacities of watercourses used for conveying and retaining floodwaters.

B. Flooding May Occur: The degree of flood protection provided by the terms of this section has been determined to be reasonable for regulatory purposes. Floods of greater magnitude will occur, and flood heights may be increased as a result of natural or human made causes. The provisions of this section do not imply that areas outside of the floodplain or land uses permitted within the floodplain are free from flooding, flood hazard or flood damages.

C. Scope and Application

1. The requirements of this section supplement those imposed of the same lands by any
underlying zoning provisions of this code or other ordinance of the University. If there is a conflict between such requirements, the more restrictive controls.

2. If a lot or parcel of land lies closely within the high hazard zone or the conveyance zone or the flood fringe area, all the standards and requirements of this section shall apply to the entire structure.

D. Flood Regulatory Areas:

1. The provisions of this section apply to the area shown as floodplain on the most recent maps adopted by the Federal Emergency Management Agency. The regulatory floodplain encompasses the one hundred-year floodplain, the flood fringe, the conveyance zone and the high hazard zone. The following regulations governing each portion of the floodplain are cumulative and not exclusive.

1.3 REGULATIONS

A. Floodplain

1. Floodplain Development Permit: Except as specified in paragraph (a)(1)(A)(1.3), no development in the floodplain may occur prior to the issuance of a floodplain development permit.

a. Activities exempt from a floodplain development permit: The following activities are allowed within the flood regulatory area and do not require a floodplain development permit:

   i. Maintenance that does not constitute a substantial improvement and does not affect the efficiency or capacity of the conveyance zone or high hazard zone.

   ii. Sidewalks, concrete, asphalt or stone flatwork that does not result in the establishment or expansion of parking area and does not modify existing grade by more than 6 inches.

   iii. Underground utilities that do not modify existing grade.

   iv. Poles, lines, cables, sign posts, landscaping and artwork that do not affect the efficiency or capacity of the conveyance zone or high hazard zone.

   v. Temporary facilities that are not permanently attached to the ground such as tents, traffic control devices and lawn furniture provided that they will not affect the efficiency or capacity of the conveyance zone or high hazard zone, or they will remain in place for no more than thirty days.

2. Anchoring:

   a. All new construction and substantial improvements or substantial modifications shall be anchored to prevent flotation, collapse or lateral movement of the structure and be capable of resisting the hydrostatic and hydrodynamic loads.
b. All manufactured structures must be elevated and anchored to resist flotation, collapse or lateral movement and capable of resisting the hydrostatic or hydrodynamic loads.

3. Construction Materials and Methods:
   a. All new substantial improvements and substantial modifications shall be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and located (by elevating or floodproofing the components) so as to prevent water from entering or accumulating within the components during flooding conditions.

4. Utilities
   a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems
   b. All new and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into the groundwater.

5. Floodproofing: Whenever this section requires and building or section to be floodproofed, the following standards shall be met:
   a. Such building or structure shall be floodproofed to the flood protection elevation in such a manner that the building or structure is watertight with walls substantially impermeable to the passage of water and in a manner requiring no human intervention;
   b. Such building or structure shall have structural components capable of resisting projected hydrostatic and hydrodynamic loads and the effects of buoyancy; and
   c. Such floodproofing shall be certified by a Colorado registered professional engineer or registered architect to comply with this paragraph.

6. Hazardous Materials: No person shall store a hazardous substance at or below the flood protection elevation for the area of the floodplain in which it is located.

7. Flood Warning System: No owner of a hotel, a motel, a dormitory, a rooming house, a hostel, a school, a bed and breakfast, a daycare center, a group home or a residential or congregate care facility located in the Boulder Creek floodplain shall fail to provide a flood warning system approved by the University Engineer that is connected to a point of central communication in the building with twenty-four-hour monitoring. No such person shall fail to maintain such a flood warning system.

8. Existing Structures: Any structure in existence before the enactment of this section or any amendment thereto that does not conform to the requirements of this section may remain or may undergo rehabilitation subject to the requirements of this section. Further, any such structure may be otherwise improved as follows:
   a. Any person making an expansion or an enlargement to an existing residential structure shall elevate the lowest floor, including the basement, of the expanded or enlarged portion to or above the flood protection elevation.
b. Any person making an expansion or an enlargement to an existing residential structure shall elevate the lowest floor, including the basement, of the expanded or enlarged portion to 2 feet above the 100 year flood protection elevation.

c. Any person making a substantial modification or a substantial improvement to any existing structure shall floodproof or elevate the lowest floor, including the basement, of the substantially modified or improved portion to or above the flood protection elevation and shall floodproof the remainder of the existing structure.

9. New Structures: Construction of new structures shall meet the following requirements:

a. Any person constructing a new structure shall floodproof in a manner requiring no human intervention or elevate the lowest floor, including the basement, to 2 feet above the 100 year flood elevation.

B. Conveyance Zone

1. No person shall establish or change any use that results in any rise in the elevation of the one hundred-year flood.

2. No person shall carry out any other development that results in any rise in the elevation of the one hundred-year flood.

3. Localized rises within flood channels or on a specific parcel that is being developed are permissible, if there is no adverse impact on nearby properties and there is no increase in the average water surface elevations along the cross sections of the floodplain.

PART 2 – MATERIALS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 02820