

ORDINANCE NO. -N.S.

AMENDING MUNICIPAL CODE (BMC) CHAPTER 17.08, PRESERVATION AND RESTORATION OF NATURAL WATERCOURSES

BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That Berkeley Municipal Code Chapter 17.08 is amended to read as follows:

**Section 17.08.010 Purpose.**

The purpose of this chapter is to regulate: (1) building over or near culverted creeks; (2) building near open creeks; (3) the rehabilitation and restoration of natural waterways; and (4) the management of watersheds. (Ord. 5961-NS § 2, 1989)

**Section 17.08.020 Findings.**

The City Council does find and declare that:

A. Public health and safety requires creek and watershed management and planning in order to control flood and erosion damages.

B. A dependence on structural solutions for reduction of property damage such as creek channelization, culverting and channel riprapping, often has been found to result in the loss of property from unanticipated problems associated with their design. Channelization can result in changes in stream meander, bank erosion, channel filling and channel degradation, causing damages by the undercutting of bridges, homes and other structures or by the over-the-bank flows caused by channel filling. Culverts can result in upstream and downstream bank erosion problems and, because debris removal from them is difficult, they can back up flows and cause floods. Undersized culverts and culverts installed at the wrong slope can also cause flooding and bank erosion.

C. The use of riprap or other debris to stabilize banks can result in the erosion of streambanks up and downstream of the riprap. Riprap and other debris may decrease channel capacity contributing to potential flooding.

D. Streams managed as close to a natural system as possible without interference from structures, maintain a geomorphic equilibrium or watercourse best suited for carrying stream flows, and carrying and depositing suspended bed loads.

E. Natural streams and their associated riparian habitat have great ecological value, and should be protected and restored because they provide environmental amenities to the community and riparian owners.

F. The desired condition of creeks within the City of Berkeley includes natural stream banks and a corridor of riparian vegetation.

G. Culverting or channelization of existing open creeks should not occur unless there is strong evidence that there is no other means to prevent the erosion of supports, foundations or other structures.

H. It is in the interest of the community to encourage the removal of culverts and channels, prevent unnecessary channel riprapping, and to restore natural watercourses whenever safely possible.

I. It is in the interest of the City of Berkeley to develop incentive programs and stream management resources designed to assist property owners in protecting creek corridors.

J. Construction over a culverted creek is discouraged but if performed must protect building safety, access to the culvert and the environmental quality of the water flowing through the culvert.

K. These regulations should protect and restore natural creeks functions in an urban environment while respecting the interests of property owners.

L. In recognition of private property, daylighting of culverted creeks is entirely voluntarily.

M. The California Environmental Quality Act applies to actions taken under this chapter.

### **Section 17.08.030 Definitions.**

The following definitions shall be applicable in the construction and application of this chapter.

A. "Creek" means a watercourse (1) that carries water from either a permanent or natural source, either intermittently or continuously, in a defined channel, continuous swale or depression, or in a culvert that was placed in the general historic location thereof; and (2) the water either merges with a larger watercourse or body of water, or is diverted into an engineered structure that does not follow the general historic course of a creek.. A "creek" does not include any part of an engineered structure developed for collection of storm or flood waters (e.g. a storm drainpipe) that does not follow the general historic course of a creek. 1. A "permanent or natural source" includes a spring, artesian well, lake, estuary, or a rainfall drainage area that covers at least one-third acre (14,520 square feet).

2. The word "creek" is used synonymously with the phrase "natural watercourse" in this chapter.

3. The portion of a creek that is visible above the ground is referred to throughout this chapter as an "open creek."

4. The portion of a creek below ground and contained in an engineered structure or culvert is referred to throughout this chapter as a "culverted creek."

5. A "swale" is a shallow trough-like depression that carries waters mainly during rainfalls and snowmelts.

6. The City of Berkeley may maintain maps and other reliable records, reflecting such creeks for the guidance of the public.

B. "Culverting" means the placement or construction of a pipe or box shaped conduit in a creek bed allowing water to be conducted.

C. "Rehabilitation" means the improvement of a natural watercourse by the use of erosion control technology, revegetation, vegetation management and/or selective channel clearing with the objective to conserve and manage a natural waterway and riparian system.

D. "Daylighting" means the unearthing of a culverted creek or natural watercourse and the design of a new open channel to re-create the original stream channel and environment.

E. "Riprap" means cobbles, rock, concrete pieces or other non-vegetative debris used to protect streambanks against erosion. "Riprapping" means the placement of riprap on streambanks.

F. "Cribwalls" means a rectangular framework of logs which is filled with soil and/or rocks and planted with cuttings.

G. "Brush matting" means the use of dead or live cuttings from riparian vegetation stacked and secured against streambanks to check erosion and revegetate banks.

H. "Fascines" (sometimes called, "wattles") means bundles of cuttings from riparian plants used to revegetate banks.

I. "Plant cuttings" means sticks cut from riparian shrub and tree branches in their dormant state such as willows and alder, which are buried about halfway in the ground and take root.

J. "Brush layering" means the use of live branches or cuttings which are inserted into the streambanks perpendicular to the slope so that the rooting occurs back into the slope.

K. "Retention basins" means open spaces which hold overbank stream flows and can be used as parks and other open space uses in drier seasons.

L. "Gabions" means wire baskets filled with rocks and soil and planted with seeds, cuttings and rooted plants. They can be used to rebuild streambanks.

M. "Administrative Use Permit" means a permit issued in accordance with the procedures, including appeals, described in Chapter 23B.28 after making the findings required by this Chapter.

N. "Use Permit" means a permit issued in accordance with the procedures, including appeals, described in Chapter 23B.32 after making the findings required by this Chapter.

O. "Variance" means a permit issued in accordance with the procedures, including appeals, described in, and after making the findings required by, Chapter 23B.44.

P. "Creek Permit" means a permit issued by the City Engineer in accordance with the procedures described in this Chapter.

Q. "Culverted Creek Permit" means a permit issued by the City Engineer in accordance with the procedures described in this Chapter.

The City Manager may issue administrative guidelines and procedures to implement this chapter, which may further explain these definitions.

#### **Section 17.08.040 Obstructing or interfering with watercourses prohibited.**

It is unlawful for any person, organization, institution, corporation or the City of Berkeley to fill, or cause to be filled, to obliterate or cause to be obliterated, to obstruct or cause to be obstructed, to construct a building bridging a creek or cause such building to be constructed, or in any manner to interfere with or cause to be interfered with, any natural watercourse in Berkeley which carries off at any time of the year any storm water, or any surface waters, which have been precipitated by rains. This chapter does not apply to structures or conditions existing in creeks on or before January 4, 1990.

#### **Section 17.08.045 Construction near Creek Culverts.**

A. Except as provided in subsection B, any construction within 25 feet of the centerline of a culverted creek, as the location of such creek is depicted on the City of Berkeley map, that either expands the mass or footprint of an existing building, or builds a new structure whether or not subject to the securing of a building permit, shall comply with the requirements of this section. This section authorizes administrative review and regulation of development of structures near creek culverts for the purpose of determining appropriate setbacks that promote safety and allow access for maintenance and repair. Appropriate setbacks generally include those in which the structure foundations are set back from the edge of the culvert a distance equal to the depth of the culvert.

B. The following structures shall be exempt from the requirements of this section:

1. Any fence, arbor, trellis, pergola, gazebo, play structure or other similar unenclosed accessory structure.

2. Retaining walls less than three feet in height.
3. Flag and light poles.
4. Solar energy equipment.
5. Mechanical lifts.
6. Prefabricated or other moveable one-story detached accessory buildings that are not permanently attached to a foundation.

C. Prior to undertaking construction subject to this section, in addition to the information otherwise required to be submitted in connection with any other applicable permit, the property owner shall submit the written results of an investigation, including a map with topographic features and two foot contours and the depth and size of the culvert, that demonstrates to the satisfaction of the City Engineer the location of the culverted creek. Where such investigation establishes to the satisfaction of the City that the centerline of the culverted creek is located more than fifteen feet from the proposed construction, such construction shall not be subject to any further regulation under this section and the City shall so advise the property owner in writing unless the City Engineer finds that the depth and size of the culvert requires further review under paragraph D.

D. If the investigation submitted pursuant to subsection C demonstrates that the proposed construction will occur within fifteen feet of the centerline of the location of the culverted creek, or the City Engineer finds under subsection C that further review is required under this subsection D, then the applicant shall be required to obtain a Culverted Creek Permit. The City Engineer shall only issue a Culverted Creek Permit if the applicant submits a report from a structural engineer, contemporaneously, with the application for a building permit, which establishes to the satisfaction of the City Engineer, each of the following:

1. The structural integrity of the culvert under existing conditions is acceptable to the City Engineer and will not be compromised by the proposed construction;
2. The proposed construction will not impede access for the responsible party to repair and maintain the culvert;
3. The flow of the creek will not be impeded nor its water quality impaired.

The report from the structural engineer shall include (1) a map depicting the distance between the structure and the culvert with topographic features and two foot contours and the depth and size of the culvert; (2) a description of any physical defects in the culvert based upon a visual inspection by closed circuit television or other technology approved by the City Engineer; (3) an analysis of the stability of the culvert based upon a structural analysis; (4) the proposed design of the foundation and the bearing strength of the soil; and (5) any other information deemed necessary by the City Engineer.

E. If the proposed construction is located within fifteen feet of the transition to an open creek, then the construction must comply with each of the provisions of this chapter that apply to construction adjacent to or within an open creek including the provisions of section 17.08.050.

#### **Section 17.08.050 Setbacks for new construction required adjacent to open creeks.**

A. Construction of, or addition to, any structure having a roof supported by columns or walls, including dwellings, garages, other accessory buildings and commercial buildings, within thirty feet of the centerline of an open creek shall comply with ~~to~~ this section.

B. A vertical expansion within its existing footprint of a structure that is located within thirty feet of the centerline of an open creek may be constructed with the approval of a creek permit by the City Engineer in accordance with this section. An applicant for a creek permit shall submit a

report completed by a licensed engineer or licensed geologist with expertise in hydrology or slope stability concurrently with the application for a building permit demonstrating to the satisfaction of the City Engineer each of the following:

1. The project will not create, exacerbate, or prevent the abatement of erosion and bank de-stabilization problems;
2. The project will not increase stormwater runoff into the creek;
3. The project's construction activities will not degrade water quality from increased sedimentation and particulates from disturbed soils; pollution from motor oil; or from the generally high level of toxics and trash around construction sites;
4. The project will not eliminate or degrade significant in-stream or riparian corridor habitat; and
5. The project will not prevent establishing stable banks and/or headwall at a culvert intake or outflow or otherwise impede or complicate access to a culvert for maintenance or repair.

The City Engineer may adopt administrative regulations that guide analysis of each of these issues and may establish a list of qualified consultants. If the expansion is otherwise subject to an Administrative Use Permit or Use Permit under the Zoning Ordinance, then the requirements of this sub-section shall be satisfied as part of the consideration of the Administrative Use Permit or Use Permit.

C. Any expansion of an existing structure into or within the area twenty-five to thirty feet from the centerline of an open creek may be constructed outside its existing footprint with the approval of an Administrative Use Permit. Each of the following findings must be made by the Zoning Officer or, on appeal, the Board:

1. Alternatives to expansion within the setback area, such as reducing setbacks to move the structure further away from the centerline of the creek, are either physically or economically infeasible. Physical feasibility includes site constraints and the relationship of the structure to adjacent structures. Economic feasibility includes consideration of the relative cost of constructing the structure in its original location and moving the structure to a new location.
2. The additional encroachment into the area within 25-30 feet from the centerline of the creek is not substantial in relation to the width and depth of the property and the existing structure on the property.
3. The expansion will not create, exacerbate, or prevent the abatement of, erosion and bank de-stabilization problems.
4. The expansion will not increase storm water runoff into the creek.
5. The expansion's construction activities will not degrade water quality from increased sedimentation and particulates from disturbed soils; pollution from motor oil; or from the generally high level of toxics and trash around construction sites.
6. The expansion will not eliminate or degrade significant in-stream or riparian corridor habitat.

Any expansion of an existing structure within thirty feet of the centerline of a creek impacts the riparian corridor in that it reduces the size of the corridor, and may impact habitat, flooding, runoff, and water quality. The Zoning Officer/Board shall require on-site mitigation commensurate with the impact of an expansion on the riparian corridor subject to this section.

D. Except as otherwise provided in subsections B and C, it is unlawful for any person, organization, institution, corporation or the City of Berkeley to construct any structure having a roof supported by columns or walls, including dwellings, garages, other accessory buildings and commercial buildings, within 30 feet of the center line of any open creek.

Approval for such construction may be granted only by appeal to the Zoning Adjustments Board for a variance. The decision of the Zoning Adjustments Board may be appealed to the City Council pursuant to Chapter 23B.44 of the Berkeley Zoning Ordinance.

**Section 17.08.052 Regulation of construction, expansion, rebuilding, or replacement of decks adjacent to open creeks.**

A. Deck between ten and thirty feet of the centerline. It is unlawful for any person, organization, institution, corporation, or the City of Berkeley to construct, add to, rebuild, or replace a deck located in an area between ten feet and thirty feet of the centerline of a creek without the approval of a Creek Permit from the City Engineer accordance with this section. An applicant for a creek permit shall submit a report completed by a licensed engineer or licensed geologist with expertise in hydrology or slope stability demonstrating to the satisfaction of the City Engineer each of the standards in paragraph D.

The City Manager or designee may adopt administrative guidelines for analysis of each of the standards described in paragraph D and may establish a list of qualified consultants. If the deck construction is otherwise subject to an Administrative Use Permit or Use Permit, then the requirements of this sub-section shall be satisfied as part of the consideration of the Administrative Use Permit or Use Permit.

B. Replacement or Rebuilding of Deck within ten feet of the centerline. Except as otherwise provided in Section 17.08.055, it is unlawful for any person, organization, institution, corporation, or the City of Berkeley to rebuild or replace a damaged or destroyed deck within ten feet of the centerline of a creek without the approval of an Administrative Use Permit after making the findings in paragraph D.

C. New Deck within ten feet of the centerline –Except as otherwise provided in paragraph A, it is unlawful for any person, organization, institution, corporation or the City of Berkeley to construct a new deck or add to an existing deck located in an area within ten feet of the centerline of a creek without the approval of a Variance.

D. Permit Standards - Neither a Creek Permit nor an Administrative Use Permit may be issued pursuant to paragraphs A or B, respectively, without determining each of the following:

1. The deck will not create, exacerbate, or prevent the abatement of, erosion and bank destabilization problems.
2. The deck will not increase stormwater runoff into the creek.
3. The deck's construction activities will not degrade water quality from increased sedimentation and particulates from disturbed soils; pollution from motor oil; or from the generally high level of toxics and trash around construction sites.
4. The deck will not eliminate or degrade significant in-stream or riparian corridor.

The Zoning Officer/Board may impose conditions when necessary to make the findings set forth herein for approval of the administrative use permit.

**Section 17.08.053 Paving adjacent to open creeks.**

A. Impervious Paving – Prohibited. It is unlawful for any person, organization, institution, corporation or the City of Berkeley to install, or replace after loss, impervious paving on the area within thirty feet of the centerline of an open creek without the approval of a variance.

B. Pervious Paving – 10 to 30 feet from centerline of open creek. Pervious paving is permitted in an area between ten and thirty feet of the centerline of an open creek.

C. Pervious Paving – 0 to 10 feet from the centerline of open -creek. Pervious paving is permitted in an area between zero and ten feet from the centerline of a creek for footpaths only.

**Section 17.08.054 New or replacement of bridges.**

In addition to any other requirements imposed by the City or other agencies, a bridge over an open creek may only be ~~is~~ built or replaced, if the bridge provides a clear span necessary to pass the water level raised by a one in 100 year storm event unless a variance is approved. The bridge shall only be as wide as is necessary to accommodate the proposed use of such bridge.

**Section 17.08.055 Replacement of a structure or any portion thereof where destroyed due to disaster or similar occurrence.**

Notwithstanding any other provisions of this chapter, a structure, or any portion thereof, may be replaced or reconstructed as long as all the following conditions exist:

A. The structure, or any portion thereof, has been destroyed by any involuntary causes including fire, earthquake or flood.

B. The proposed structure to replace or reconstruct the destroyed structure or portion thereof, is substantially the same with respect to its use, dimensions, floor area, square footage, lot coverage and footprint as the destroyed structure or portion thereof and complies with all currently applicable building codes.

C. If a culvert exists on the parcel and the proposed replacement will be within 15 feet of the centerline of such culvert, the applicant has submitted a report by a licensed structural engineer demonstrating to the satisfaction of the City that the proposed replacement structure will not negatively affect the culvert and that the replacement structure is designed with a foundation, such as pile supported, which does not exert any bearing load on the culvert. In making this determination, the report included information related to the proposed foundation design, the bearing strength of the soil, and the depth and size of the culvert. Alternatively, the applicant has submitted a report by a licensed structural engineer which has demonstrated to the City's satisfaction either that there is no feasible alternative to avoid imposing additional loading on the culvert, and the analysis provided has determined that the culvert has sufficient strength to resist such loading or the applicant proposes to reinforce the culvert as part of the project at the applicant's expense in a manner satisfactory to the City. (Ord. 6825-NS § 1, 2004)

**Section 17.08.058 Replacement of structure or any portion thereof where destroyed for reasons other than involuntary causes.**

If a lawful non-conforming roofed structure located within 30 feet of a centerline of an open creek is to be replaced to the extent that more than 50% of its appraised value is to be removed, and such replacement is not as a result of an involuntary cause such as fire, earthquake, or flood, the Board may approve a Use Permit for the structure to be repaired, or rebuilt within its

previous footprint. In addition to the findings required to approve a Use Permit, each of the following findings must be made:

1. Alternatives to rebuilding of structures within the 30-foot setback area have been considered, including possible encroachments into yard setbacks to move the structure farther away from the creek centerline, and have been determined by the Board either not to be physically or economically feasible. In determining physical feasibility, the Board may consider site constraints; and the relationship of the structure to adjacent structures. In determining economic feasibility, the Board may consider the relative cost of constructing the structure in its original location and moving the structure to a new location.
2. Rebuilding the structure would not create, exacerbate, or prevent the abatement of, erosion and bank de-stabilization problems;
3. Rebuilding the structure would not increase stormwater runoff into the creek;
4. Rebuilding the structure will not degrade water quality from increased sedimentation and particulates from disturbed soils; pollution from motor oil; or from the generally high level of toxics and trash around construction sites;
5. Rebuilding the structure would not eliminate or degrade significant in-stream or riparian corridor.

**Section 17.08.060 Construction of walls, drains, bulkheads, etc.--Permit conditions required.**

The intent of this section is to prohibit culverting and riprapping, unless there is strong evidence that there is no other reasonable means to prevent the erosion of adjacent supports, foundations or other structures.

It is unlawful for any person, organization, institution, corporation or the City of Berkeley to construct or cause to be constructed, any wall, culvert, drain, bulkhead, or other structure in any natural watercourse or creek in the City of Berkeley, or to place riprap or any debris in the channel or on the banks, without first obtaining a permit therefor from the City Engineer. If a permit for construction is granted, the City Engineer shall require the applicant to submit plans and specifications for such a wall, bulkhead, culvert, drain, structure or bank protection work which shall specify the exact location and extent of the project. Any work that has been granted a permit, shall be carried out under the supervision of the City Engineer, or his/her designated representative.

Such a permit will not be granted if any one or more of the following alternatives, or any other is available to solve the problem.

- A. Excavating to restore a natural meander, stream geometry and channel roughness.
- B. Clearing debris cleanup.
- C. Flood proofing: e.g. minor redesign of buildings, relocation of porches or other minor structures, sheds, garages; raising of such structures; raising the grade of adjacent land.
- D. Removal of structures where feasible.
- E. Bank stabilization using vegetation or combination revegetation construction (soil bioengineering) that does not degrade the existing natural environment. This may include the use of vegetated and dirt filled gabions, vegetated wood cribwalls, live and dead brush matting, fascines, brush layering and cuttings, and other similar strategies based on employing plants as the long-term stabilizing materials.

F. Vegetation management that can include selective clearing that retains a riparian canopy and root structure to preserve riparian habitat, control unwanted undergrowth, and stabilize banks.

G. Set-back levee construction: flood wall construction on the flood plain.

H. Changes in site design.

The request for any permit to culvert or perform any construction in a natural watercourse must conform to the requirements of the California Environmental Quality Act (C.E.Q.A.) and its current amendments and guidelines.

If the City Engineer recommends the granting of a permit for culverting or any other construction in any natural watercourse, the matter shall be referred to the Public Works Commission for review. If the City Engineer denies a permit, the applicant may appeal to the Public Works Commission for review and recommendation. In all cases the decision of the Public Works Commission will be final, unless the matter is appealed within 15 days to the City Council by the applicant, City staff or an interested party. (Ord. 5961-NS § 2, 1989)

**Section 17.08.070 Obstructions or structures declared nuisance when--Notice to remove--City to perform work when--Costs.**

Any structure, wall, bulkhead, culvert, drain, riprap or dam hereafter constructed, erected or maintained in violation of any of the provisions of Sections 17.08.040 and 17.08.050 hereof, any structure, wall, bulkhead, culvert, drain, riprap or dam heretofore erected or constructed in such manner or of such materials that the same does now or will hereafter obstruct the flow of any natural watercourse in the City, shall be and the same is declared to constitute a public nuisance, and the City Attorney of said City shall, upon order of the City Council, immediately commence action or proceedings for the abatement and removal and enjoinder thereof in the manner provided by law, and shall take such other steps and shall apply to such courts as may have jurisdiction to grant such relief as will abate and remove such building, obstruction, or structure, and restrain and enjoin any person, firm, or corporation from setting up, erecting, building, maintaining, or using any such building, obstruction or structure or using any property contrary to the provisions of this chapter. The remedies provided for herein shall be cumulative and not exclusive.

Any violation of this chapter shall be deemed an infraction punishable as set forth in Chapter 1.20 of the Berkeley Municipal Code. (Ord. 5961-NS § 2, 1989)

**Section 17.08.080 Failure to enforce chapter.**

Failure to enforce any part of this chapter, will not give rise to any civil or criminal liabilities. (Ord. 5961-NS § 2, 1989)

**Section 17.08.090 Fees.**

The City Council may establish by resolution the fees for administration of this chapter. (Ord. 6716-NS § 2, 2002)

**Section 17.08.100 Violation--Penalty.**

Any violation of this Chapter may be charged, in the discretion of the enforcing officer or City Attorney, as a misdemeanor or an infraction.

Section 2. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of Old City Hall, 2134 Martin Luther King Jr. Way. Within 15 days of adoption, copies of this Ordinance shall be filed at each branch of the Berkeley Public Library and the title shall be published in a newspaper of general circulation.