



CREEK PROTECTION INSTRUCTIONS

Last Updated November 20, 2019

Background

Adopted in 1989, the City of Berkeley *Preservation and Restoration of Natural Watercourses Ordinance* ([Berkeley Municipal Code \(BMC\) Chapter 17.08](#))¹, also known as the **Creeks Ordinance**, regulates construction activity over or near both open and culverted creeks. The purposes of the Ordinance are to rehabilitate and restore natural waterways, and to manage Berkeley's watersheds for flood control and erosion damage. This document can help you determine whether the Creeks Ordinance applies to your property, the ways in which proposed development is regulated by the Ordinance, and which actions are required by applicants in order to comply with the Ordinance.

What is a Creek?

Per the definitions of the **Creeks Ordinance**, a creek is a watercourse 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 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 to collect storm or flood waters (e.g., a storm drainpipe) that does not follow the general historic course of a creek.²

A "permanent or natural source" includes a spring, artesian well, lake, estuary, or a rainfall drainage area that covers at least one-third acre (or 14,520 square feet).

An open creek is defined as the portion of the creek that is visible above the ground, while a culverted creek is defined as the portion of the creek this is below ground and contained in an engineered structure or culvert.

A continuous swale is defined as a shallow trough-like depression that carries waters mainly during rainfalls and snowmelts.

Does the Creeks Ordinance apply to my property?

Determining which type of creek may be located near your property is key to understanding which regulations apply and how certain development projects would be affected. The City has developed a Creek Map that depicts 1) open creeks surrounded

¹ Ordinance 5961 Section 2, 1989; Ordinance 6740 Section 1, 2003; Ordinance 6956 Section 1, 2006.

² Berkeley Municipal Code, Section 17.08.030 Definitions <https://www.codepublishing.com/CA/Berkeley/>

by a 40-foot buffer on either side of the centerline and 2) culverted creeks surrounded by a 25-foot buffer on each side of the section.

Access the Creek Map on the City of Berkeley Geographic Information Systems (GIS) Web portal (<http://www.cityofberkeley.info/ppop>), following these steps:

1. Enter the street address or APN (Tax Assessor's Parcel Number) in the search bar at the right of the webpage;
2. Select the following layers from the Layer List drop-down menu at the left of the webpage:
 - a. Environment heading, click the 'plus' symbol to expand the drop-down list.
 - b. Three BMC 17.08 Creek layers: Creeks, Culverted Creek Setback, and Open Creek Setback.
3. Select the Legend symbol at the bottom of the webpage to determine which type of creek is on or near your property.
4. Select the Print symbol at the bottom of the webpage to save a screenshot of the map.

If the information is unclear, consult with Planning Department Staff at the Zoning Counter, located in the Permit Service Center at 1947 Center Street, 3rd Floor (M, W, Th 8:30-4:00pm, T 8:30-2:00pm), or call 510-981-7410.

Open Creeks

If your property is near an open creek, then the Creeks Ordinance applies to construction of new buildings and expansion of existing buildings, decks, pavement and bridges located within 30 feet of the open creek centerline (measured horizontally).

Which regulations apply to construction activities near an open creek?

The Creeks Ordinance prohibits the construction of new structures with a roof, as well as new impervious (e.g., paved) surfaces located within 30 feet of an open creek. Some types of expansions of existing buildings are allowed and may require a permit. See the attached matrix for a detailed description of the types of construction and structures that are regulated by the Ordinance within 30 feet of an open creek.

If the type of development project you are proposing is regulated by the Creeks Ordinance, then you must obtain the necessary permits before a building permit can be issued. For example, you may need to submit a report prepared by a licensed hydrologist or engineer, obtain a Creek Permit (issued by the Public Works Department), then obtain either an Administrative Use Permit, Use Permit, or Variance (issued by the Planning & Development Department, Land Use Division).

How do I apply for a permit to develop near an open creek?

As described above, certain types of development are prohibited within 30 feet of the creek centerline; other types of development within the 40 foot creek buffer must be reviewed for compliance with the Ordinance, as mapped by the City of Berkeley. A 40-

foot buffer is used because the GIS mapping software is an approximate measurement of the location of the creek.

1. If the project type is not regulated, no further information is needed.
2. If there is an open creek on the property that is subject to the Creeks Ordinance, and the project is located forty feet or less from the creek centerline, you must submit the following materials:
 - Site photos and a site map showing the location of the existing and proposed structures, as well as the centerline and top of bank of the creek; and
 - A topographic survey³ of the property and any adjoining properties may be required.

If either the map or survey shows that the project is more than 30 feet from the creek centerline, then this documentation should be provided as an attachment to any land use or building permit application, as applicable.

3. If the project requires a **Creek Permit** (see the attached matrix), you must submit the following materials:
 - a. Topographic survey
 - b. Report completed by either a licensed engineer or a licensed geologist with expertise in hydrology or slope stability, which demonstrates, to the satisfaction of the City Civil Engineer, the following requirements:
 - i. The project will not create, exacerbate, or prevent the abatement of erosion and bank de-stabilization problems;
 - ii. The project will not increase stormwater runoff into the creek;
 - iii. 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;
 - iv. The project will not eliminate or degrade significant in-stream or riparian corridor habitat; and
 - v. 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.
 - c. All required fees, per the [City Fee Schedule](https://www.cityofberkeley.info/bpfees/) (<https://www.cityofberkeley.info/bpfees/>)
4. If the project includes work located within either the banks or channel of an open creek, you must submit the following materials:
 - a. San Francisco Bay Area Joint Aquatic Resource Permit Application (JARPA) application (<https://bcdc.ca.gov/forms/JARPA-Instructions.pdf>); and

³ A topographic survey must adequately identify drainage patterns to locate the centerline(s) of any channels, swales, or depressions located within thirty feet of the subject property. This survey must show relevant parcel boundaries, relevant portions of the existing structure(s) footprint(s), and any features from which a proposed development are referenced. Elevations must be measured from mean sea level. Finally, the survey must be certified by either a registered civil engineer or a licensed land surveyor.

- b. Completed CEQA checklist or [Environmental Review](#) Documents associated with the project.
([https://www.cityofberkeley.info/Planning_and_Development/Land_Use_Division/Environmental_Review_\(CEQA\).aspx](https://www.cityofberkeley.info/Planning_and_Development/Land_Use_Division/Environmental_Review_(CEQA).aspx))
5. If the project requires an **Administrative Use Permit (AUP)** and/or other land use permits (see Creek/Creek Culvert Permit Application form), you must submit the following materials:
 - a. A topographic survey;
 - b. A complete AUP, UP or Variance application (Zoning Project Submittal Requirements and Guidelines);
(https://www.cityofberkeley.info/Online_Service_Center/Home/Forms.aspx)
 - c. A Creek/Culverted Creek Permit Application form and checklist;
(https://www.cityofberkeley.info/Online_Service_Center/Home/Forms.aspx)
 - d. All required fees; and
 - e. A report completed by either a licensed engineer or licensed geologist with expertise in hydrology or slope stability, which demonstrates to the satisfaction of either the Zoning Officer or Zoning Adjustments Board that findings iii. – vi. listed in section f. below can be made.
6. If the project is to expand a building through an **AUP** application, provide information establishing the following required findings:
 - a. 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.
 - b. 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.
 - c. The expansion will not create, exacerbate, or prevent the abatement of, erosion and bank de-stabilization problems.
 - d. The expansion will not increase storm water runoff into the creek.
 - e. 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.
 - f. The expansion will not eliminate or degrade significant in-stream or riparian corridor habitat.⁴
7. If the project is to construct a deck through an **AUP** application, provide information establishing the following required findings:

⁴ 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.

- a. The deck will not create, exacerbate, or prevent the abatement of, erosion and bank de-stabilization problems.
 - b. The deck will not increase stormwater runoff into the creek.
 - c. 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.
 - d. The deck will not eliminate or degrade significant in-stream or riparian corridor.
8. If the project is limited to the following activities, the Creeks Ordinance typically does not apply; however, some aspects of a project may be regulated and/or prohibited, such as features that would obstruct or interfere with the watercourse (e.g. piers, retaining walls):
- Vegetation, landscaping;
 - Solar panels, skylights, awnings;
 - Interior remodeling; or
 - Building without a roof (unenclosed accessory structure).
9. The following types of hardscape materials are prohibited from interfering with a creek:
- Riprap (e.g., cobbles, rock, concrete pieces or other non-vegetative debris used to protect streambanks against erosion);
 - Cement channels; and
 - Box culverts.

Culverted Creeks

If your property is near a culverted creek, the Creeks Ordinance may apply to new construction located within 25 feet of the culverted creek centerline (measured horizontally).

The Creeks Ordinance regulates construction of new structures or construction that expands either the mass or footprint of an existing building within 15 feet of the centerline of a culverted creek. Public Works Department staff will review the application to determine the appropriate setback distance that will both promote safety and allow access for maintenance and repair. Staff will review the construction plan to ensure it is engineered in a way that avoids a negative impact on the culvert, and that the culvert will not negatively impact the project. Please refer to the attached matrix for a list of construction types and structures that are regulated near culverted creeks.

Culverted Creek - Application Submittal Guidelines

As described above, a Culverted Creek Permit is required for regulated construction types located within 15 feet of the creek centerline, which is issued by the Public Works Department; however, you must submit information if development is proposed within 25 feet of a culverted creek because the GIS mapping software is an approximate measurement of the location of the creek.

1. If the type of project is not regulated, no further information is needed.

2. If there is a culverted creek on the property that is subject to the Creeks Ordinance, and the project is located 25 feet or less from the culverted creek, you must submit the written results of an investigation, including a map with topographic features and two-foot contours, showing the depth and size of the culverted creek and its centerline. You must verify the location of the creek culvert, and clearly show the creek on the drawings. The creek culvert can be located with GPS/radio technology, ground penetrating radar, and/or exploratory trenching.
3. If the project is more than 15 feet from the centerline of the culverted creek, you must submit the documentation that shows the location of the culverted creek centerline with the building permit or other required land use permit applications.
4. If the project is located within 15 feet of the centerline, a **Culverted Creek Permit** is required and the following material must be submitted to The Public Works Department at the Permit Service Center prior to applying for a building permit:
 - a. The Creek/Culverted Creek Permit Application form and checklist;
 - e. A site plan which includes the location of the creek culvert in relation to the proposed construction activity;
 - f. A description of any physical defects in the culvert based on a visual inspection by closed circuit television or other technology approved by the City Engineer;
 - g. A structural analysis evaluating the stability of the culvert;
 - h. The proposed foundation design and the bearing strength of the soil; and
 - i. All required fees.

To approve a Culverted Creek Permit, the City Engineer must find that the following are true:

1. The structural integrity of the culvert under existing conditions is acceptable 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; and
3. The flow of the creek will not be impeded nor its water quality impaired.

Exemptions from the Culverted Creek requirements

The following project types are exempt from the Creek Ordinance requirements applicable to culverted creeks:

1. A fence, arbor, trellis, pergola, gazebo, play structure or other similar unenclosed accessory structure;
2. A retaining wall that is less than three feet in height;
3. Flag and light poles;
4. Solar energy equipment;
5. Mechanical lifts; and
6. Prefabricated or other moveable one-story detached accessory buildings that are not permanently attached to a foundation.

If you are planning to develop one of the project types listed above, you do not need to submit a topographic survey or apply for a Culverted Creek Permit. However, other building and zoning regulations may apply; refer to the Permit Service Center as well as the City forms, applications and guidelines web page:

https://www.cityofberkeley.info/Planning_and_Development/Home/Forms,_Applications,_and_Guidelines.aspx

Open and Culverted Creeks

If your property is near both an open and a culverted creek, both sets of regulations apply to the portion of creek that is adjacent to the proposed construction activity. Any analysis and/or permits required must be obtained prior to the issuance of a building permit.

Other applicable City and federal regulations

The Creeks Ordinance is one of several permit types required by the City of Berkeley for construction and development activities. **Please review** the Building Code and Zoning Ordinance and discuss your proposal with the Permit Service Center staff to determine which, if any, other City-issued permits and related fees would be needed to proceed with your proposed scope of work.

Separately from the City of Berkeley, several State and federal agencies regulate development and construction activity near protected waterways and sources; your project may require permits (or waivers) from these agencies, regardless of the City requirements. To help streamline the process, a Joint Aquatic Resources Permit Application (JARPA) can be completed and used to obtain permits (or waivers) from these agencies. More information about which projects require State and federal permits, as well as the JARPA application process, can be obtained from:

<https://bcdca.gov/forms/JARPA-Instructions.pdf>

Helpful Resources

What does the Topographic Survey need to include?

The topographic survey must be certified by either a registered civil engineer or a licensed land surveyor, and adequately identify drainage patterns to locate centerlines of channels, swales, or depressions within 30 feet of the applicant's parcel. This survey must show relevant parcel boundaries, relevant portions of existing structure footprints, and any features from which proposed development are referenced. Elevations must be measured from mean sea level.

Who can I speak with to learn more information about this process?

- For questions about the **Creek Permit** process, contact the Department of Public Works, Engineering Division at (510) 981-6400
- For questions about the **AUP and Variance** processes, contact the Department of Planning & Development, Land Use Division at (510) 981-7410

OPEN CREEKS: Requirements for development within 30 feet of an open creek centerline

Structure	Activity	Regulation ¹	Berkeley Municipal Code Section	Permit Required by the City of Berkeley Creeks Ordinance ²
Roofed Structures	Repair / Maintenance / Interior construction	Allowed		None
	New Roofed Structures (houses, garages)	0 - 30' = prohibited	17.08.050.D	Variance
	Vertical Expansion of Roofed Structures (up or down)	0 - 30' = allowed	17.08.050.B	Creek Permit
	Horizontal Expansion of Roofed Structure	0 - 25' = prohibited	17.08.050.D	Variance
		25' - 30' = allowed	17.08.050.C	Administrative Use Permit
	Replacement of Roofed Structure after Involuntary ³ Destruction	Allowed	17.08.055	By-right for strictly residential buildings with up to 4 units; otherwise Use Permit
Replacement of Roofed Structure after Voluntary Destruction ⁴	Allowed	17.08.058	Use Permit	
Decks	Repair / Maintenance	0 - 30' = allowed		None
	New decks / Expansion of deck	0 - 10' = prohibited	17.08.052.C	Variance
		10' - 30' = allowed	17.08.052.A; 17.08.052.D	Creek Permit
	Rebuild (50% or more)	0 - 10' = allowed	17.08.052.B; 17.08.052.D	Administrative Use Permit
10' - 30' = allowed		17.08.052.A; 17.08.052.D	Creek Permit	
Paving	Impervious paving	0 - 30' = prohibited	17.08.053.A	Variance
	Pervious (permeable) paving	0 - 10' = prohibited	17.08.053.C	Variance; except for footpaths which are allowed by right
		10' - 30' = allowed	17.08.053.B	None
Bridges	Repair / Maintenance	Allowed		None
	New / Replacement	clear span to pass water in 1:100 year storm event	17.08.054	By-right; Variance to build bridge not meeting the standard
Walls, drains, etc.	No interference with the watercourse is allowed. Walls, culverts, drains, bulkheads, riprap, debris in any open creek, in the channel or on the banks may be permitted if no other reasonable means are available.	Prohibited unless there are no other reasonable means available	17.08.040; 17.08.060	Creek Permit

¹All distances measured horizontally from the creek centerline.

²All development is also subject to the City of Berkeley Building Code, Zoning Ordinance and any other applicable State and local regulations. Building Permits, Zoning Permits and State permits may be required for specific projects. Variance may be granted by the Zoning Adjustments Board in certain cases were the Creeks Ordinance cannot be met and all required Variance findings can be met (BMC Chapter 23B.44).

³Involuntary destruction includes fire, earthquake and flood.

⁴Voluntary destruction is the demolition of a building or structure under the authority of the property owner (e.g. they want to tear down and rebuild). This generally requires a Use Permit under the Zoning Ordinance (BMC 23C.04.090 and 23C.08.020)

CULVERTED CREEKS: Requirements for development within 25 feet of a culverted creek centerline

Structure	Activity	Regulation ¹	Berkeley Municipal Code Section	Permit Required by the City of Berkeley Creeks Ordinance ²
New Structures & Expansion of building mass or footprint ³	Repair / Maintenance / Interior Construction	Allowed		None
	New structure or building	0-25'	17.08.045	Verification of the location of the culverted creek centerline
		0-15'	17.08.045	Culverted Creek Permit
	Vertical expansion of existing building or structure (up or down) ³	0-25'	17.08.045	Verification of the location of the culverted creek centerline
		0-15'	17.08.045	Culverted Creek Permit
	Horizontal expansion of building or structure ⁴	0-25'	17.08.045	Verification of the location of the culverted creek centerline
		0-15'	17.08.045	Culverted Creek Permit
	Replacement of buildings and structures after involuntary ⁵ destruction	0-15'	17.08.055.C	Report of structural integrity of culvert or no feasible alternative; rebuild by right if 4 or less residential units; otherwise Use Permit required.
Replacement of buildings after voluntary destruction ⁶		0-25'	17.08.045	Verification of the location of the culverted creek centerline
		0-15'	17.08.045	Culverted Creek Permit
	Replacement of structures (such as decks) after voluntary destruction	0-25'	17.08.045	Verification of the location of the culverted creek centerline
		0-15'	17.08.045	Culverted Creek Permit
Exemptions (Small Structures)	Fence, arbor, trellis, pergola, gazebo, play structure or other similar unenclosed accessory structure	Exempt from investigation of culverted creek centerline and Culverted Creek Permit	17.08.045.B	None
	Retaining walls less than 3' in height			
	Flag and light poles			
	Solar energy equipment			
	Mechanical lifts			
	Prefabricated or other moveable one-story detached accessory buildings that are not permanently attached to a foundation			

¹All distances measured horizontally from the culverted creek centerline.

²All development is also subject to the City of Berkeley Building Code, Zoning Ordinance and any other applicable State and local regulations. Building Permits, Zoning Permits and State permits may be required for specific projects.

³Decks and other structures not listed as exempt are subject to BMC Section 17.08.045

⁴The size and depth of a culvert may warrant additional information required for proposed development beyond 15' from the culverted creek, as determined by the City Engineer.

⁵Involuntary destruction includes fire, earthquake and flood.

⁶Voluntary destruction is the demolition of a building or structure under the authority of the property owner (e.g. they want to tear down and rebuild). This generally requires a Use Permit under the Zoning Ordinance (BMC 23C.04.090 and 23C.08.020)