



CITY OF PALO ALTO OFFICE OF THE CITY CLERK

January 22, 2018

The Honorable City Council
Palo Alto, California

SECOND READING: Adoption of an Ordinance Amending Chapter 16.28 of Title 16 of the Palo Alto Municipal Code to Revise the Requirements for Dewatering During Construction of Below Ground Structures (FIRST READING: December 11, 2017 PASSED: 8-0 Fine absent)

This Ordinance was first heard by the City Council on December 11, 2017 and was passed 8-0 with Council Member Fine absent. It is now before you for the second reading. There were no changes made during the first hearing.

ATTACHMENTS:

- Attachment A: Ground Water Pumping Ordinance (PDF)

Department Head: Beth Minor, City Clerk

Ordinance No. ____

Ordinance of the Council of the City of Palo Alto Amending Sections 16.28.030 (Definitions), 16.28.060 (Permit required), 16.28.070 (General exemptions), and 16.28.155 (Additional requirements for temporary construction-related dewatering), and adding Section 16.28.156 (Requirements for temporary construction-related groundwater dewatering in groundwater plumes) to Chapter 16.28 (Grading and Erosion and Sediment Control) of Title 16 (Building Regulations) of the Palo Alto Municipal Code to Revise the Requirements for Dewatering During Construction of Below Ground Structures

Recitals

A. On March 7, 2017, the Council approved an ordinance establishing in the Palo Alto Municipal Code certain requirements related to temporary construction-related groundwater pumping.

B. After one construction season following the adoption of the ordinance, the City Council desires to clarify and enhance the requirements for testing, monitoring and protective measures to allow temporary construction-related groundwater pumping to continue, to continue gathering information, and address concerns about dewatering and its impacts.

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Section 16.28.030 (Definitions) of Chapter 16.28 (Grading and Erosion and Sediment Control) of Title 16 (Building Regulations) is hereby amended to read as follows:

16.28.030 Definitions.

When used in this chapter, the following words shall have the meanings ascribed to them in this section.

...

(e) "Best management practices" or "BMPs" means a technique or series of techniques which, when used in an erosion control plan, is proven to be effective in controlling construction-related runoff and erosion, erosion, and sedimentation.

...

(s) "Grading" means any land disturbance or land fill, or combination thereof, any civil engineering or landscape construction work that involves establishing a level base, or one with a specified slope, for foundations, surface drainage or other construction work.

(t) "Groundwater" means water that is found underground in the cracks and spaces in soil, sand and rock formations called aquifers.

(u) "Groundwater exclusionary techniques" means methods that use cut-off walls and other barriers to minimize or exclude groundwater from the excavation.

(v) "Groundwater plume" means a volume of contaminated (polluted) groundwater in an aquifer that extends downward and outward from a specific source (usually a site where pollutants have been released to the ground and entered groundwater).

(w) "Groundwater plume area" means a groundwater plume with a specific buffer of five hundred feet from the outer-boundary of the mapped groundwater plume, or a lesser distance from the outer-boundary as determined by the City Engineer and established in the regulations adopted under Section 16.28.155(i) of this Chapter.

~~(tx)~~ "Interim erosion and sediment control and ~~storm water~~stormwater pollution prevention plan" or "interim plan" ("interim plan") means a set of best management practices or equivalent measures designed to control surface runoff and erosion and to retain sediment on a particular site during the period in which pre-construction and construction-related land disturbances, fills, and soil storage occur, and before final improvements are completed.

~~(uy)~~ "Key" means a designed compacted fill placed in a trench excavated in earth material beneath the toe of a proposed fill slope.

~~(vz)~~ "Land disturbance" or "land-disturbing activities" means any moving or removing by manual or mechanical means of the soil mantle or top six inches (6") of soil, whichever is shallower, including but not limited to excavations.

~~(waa)~~ "Land fill" means any human activity depositing soil or other earth materials.

~~(xbb)~~ "Manual of standards" means a compilation of technical standards and design specifications published by the Association of Bay Area Governments.

~~(ycc)~~ "Permittee" means the applicant in whose name a valid permit is duly issued pursuant to this chapter and his/her agents, employees, and others acting under his/her direction.

~~(zdd)~~ "Sediment" means earth material deposited by water or wind.

~~(aeee)~~ "Site" means any lot or parcel of land, or contiguous combination under the same ownership where grading is performed or permitted.

~~(bbff)~~ "Slope" means an inclined ground surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

(~~ee~~gg) "Soil" means naturally occurring superficial deposits overlying bedrock.

(~~de~~hh) "Soils engineer" means a professional civil engineer experienced and knowledgeable in the practice of soils engineering and licensed by the state of California for practice in that field.

(~~ee~~ij) "Soils engineering" means the application of the principles of soils mechanics in the investigation, evaluation, and design of civil works involving the use of earth materials and the inspection and/or testing of the construction thereof.

(~~ff~~jj) "Temporary construction-related groundwater dewatering" means temporary pumping of groundwater to facilitate construction of underground below ground structures such as basements and garages. Discharge may occur to either the sanitary sewer or storm drain system, depending on project type.

(~~gg~~kk) "Wet season" means the period from October 1 to April 15.

SECTION 2. Section 16.28.060 (Permit required) of Chapter 16.28 (Grading and Erosion and Sediment Control) of Title 16 (Building Regulations) is hereby amended as follows:

16.28.060 Permit required.

No person ~~may~~shall grade, fill, excavate, store, or dispose of soil and earth materials, ~~or~~ perform any other land-disturbing or land-filling activity, or engage in temporary construction-related dewatering, without first obtaining a permit as set forth in this chapter, except when the activity is performed in accordance with one or more of the general or specific exemptions set forth in Sections 16.28.070 and 16.28.080. Exemption from the requirement to obtain a permit does not provide relief from the requirement to conduct all grading activities in conformance with the general grading requirements contained in Sections 16.28.270 through 16.28.340 of this chapter.

SECTION 3. New Section 16.28.065 (Minimization of impacts required) is hereby added to Chapter 16.28 (Grading and Erosion and Sediment Control) of Title 16 (Building Regulations) as follows:

16.28.065 Minimization of impacts required.

All land-disturbing, land-filling, soil storage, and grading activities, and all temporary construction-related groundwater dewatering, shall be undertaken in a manner designed to minimize surface runoff and erosion, and impacts to downstream waterbodies, and to safeguard life, limb, property, and the public welfare.

SECTION 4. Section 16.28.070 (General exemptions) of Chapter 16.28 (Grading and Erosion and Sediment Control) of Title 16 (Building Regulations) is hereby amended as follows:

16.28.070 General exemptions.

~~All land-disturbing or land-filling activities or soil storage, and all temporary construction-related dewatering, shall be undertaken in a manner designed to minimize surface runoff, erosion, and sedimentation and to safeguard life, limb, property, and the public welfare. A person performing such land-disturbing, land-filling, soil storage, and grading activities in conformance with Section 16.28.065, except where performing temporary construction-related dewatering,~~ need not apply for a permit pursuant to this chapter, if all the following criteria are met:

- (a) The site upon which land area is to be disturbed or filled is less than 10,000 square feet ~~or less, except where temporary construction-related dewatering will be required.~~
- (b) Natural and finished slopes are flatter than 10:1.
- (c) Volume of soil or earth materials stored is 100 cubic yards or less.
- (d) Rainwater runoff is diverted ~~either to a nearby pervious area (e.g., landscaped area) during or and~~ after construction, from an area smaller than 5,000 square feet.
- (e) An impervious surface, if any, of less than 5,000 square feet is created.
- (f) No drainageway is blocked or has its ~~storm water~~ stormwater carrying capacities or characteristics modified.
- (g) The activity does not take place within 100 feet by horizontal measurement from the top of the bank of a watercourse, the mean high watermark (line of vegetation) of a body of water or the boundary of the wetlands associated with a watercourse or water body, whichever distance is greater.

SECTION 5. Section 16.28.155 (Additional requirements for temporary construction-related dewatering) of Chapter 16.28 (Grading and Erosion and Sediment Control) of Title 16 (Building Regulations) is hereby amended to read as follows:

16.28.155 Additional requirements for temporary construction-related dewatering.

~~(a) In addition to applicable requirements in this Chapter 16.28, where temporary construction-related dewatering will be required, applicants also shall:~~

- ~~(1) Submit a dewatering geotechnical study conforming to regulations issued by the City Engineer, adhere to its findings, and make modifications as directed by the City Engineer.~~

~~(2) Install and maintain at least one fill station meeting standards established by the City Engineer.~~

~~(3) With the consent of neighboring property owners, water trees and other vegetation on adjacent properties.~~

~~(4) Verify the anticipated drawdown curve in the dewatering geotechnical study with a pump test performed on monitoring wells installed on the project site, as specified by the City Engineer.~~

~~(5) Prior to pumping, survey and mark elevations on structures on adjacent parcels.~~

~~(6) Submit periodic measurements and reports as required by the City Engineer.~~

~~(7) Continuously comply with all permit conditions, performance measures, regulations and requirements established by the City Engineer. Promptly implement corrective actions identified by the City to address any compliance issues.~~

~~(b) Prior to pouring a basement slab, groundwater may be pumped no deeper than three feet below the depth of the slab, measured at the center. After the slab is poured, groundwater may be pumped no deeper than one foot below the center.~~

~~(c) Dewatering may not be conducted before April 1 or after October 31. Pumping permits for single family residential basements are limited to ten weeks, with an additional two week start-up period. At the end of the start-up period, the applicant must demonstrate compliance with all performance and water quality standards established by the City Engineer. The City Engineer may adopt a regulation specifying time limitations for commercial property pumping.~~

~~(d) The City Engineer is authorized to establish and from time to time revise regulations to implement this section and advance the goals of minimizing temporary construction related dewatering and reducing its impacts.~~

~~(e) Where pumping is continuously limited to no more than thirty gallons per minute, the City Engineer is authorized to waive requirements for a geotechnical study, verification procedures and pump time limitations.~~

(a) Compliance with Regulations. Where temporary construction-related groundwater dewatering will be required, applicants shall conduct dewatering in full compliance with the provisions of this Chapter, including this Section, the regulations established by the City Engineer, and all permit conditions. Applicants shall promptly implement corrective actions identified and required by the City Engineer, including, but not limited to, directives requiring immediate cessation of discharge.

(b) Types of Dewatering. Temporary construction-related groundwater dewatering may be conducted using 1) groundwater exclusionary techniques (e.g., secant wall), or 2) controlled groundwater pumping.

(c) Groundwater Exclusionary Technique Submittal Requirements. When groundwater exclusionary techniques will be required or utilized, applicants shall submit to the City Engineer a street work permit application, and a dewatering plan and traffic control plan in a form approved by the City Engineer.

(d) Groundwater Exclusionary Technique Operational Requirements. Temporary construction-related groundwater dewatering through groundwater exclusionary techniques shall be conducted in compliance with the following:

- (i) The rate of discharge of groundwater shall be limited to thirty (30) gallons per minute or less.
- (ii) Groundwater discharge shall be percolated onto the same property where pumping is occurring rather than discharged into the storm drain system, if feasible.
- (iii) The approved dewatering plan and traffic control plan for the project, approved by the City Engineer, shall be followed during dewatering activities. The traffic control plan shall include, among other provisions, an appropriate schedule for an attendant to be present on the street during the period of the installation of groundwater exclusionary technique.
- (iv) Discharge of groundwater to the City storm drain or sanitary sewer systems shall only occur from April 1 through October 31. The City may grant an exemption and allow discharge from November 1 through March 31, upon application, if:
 - (a) The discharge is limited to an average of ten (10) gallons per minute over a 24 hour period and other conditions warrant allowance of discharge; or
 - (b) It is demonstrated that a 10 year storm event can be accommodated by the receiving storm drain system and water system to the satisfaction of the City Engineer.
 - (c) Any such exemption granted under subsections (a) or (b) above shall be subject to immediate cessation orders from the City. A cessation order may be issued for reasons including, but not limited to: capacity issues in the storm drain or sanitary sewer systems; the discharge is causing or contributing to surcharging in the storm drain or sanitary sewer systems; the storm drain or sanitary sewer systems fail; excess flow entering the Palo Alto Regional Water Quality Control Plant; emergency or routine maintenance of City infrastructure; and protection of the environment, public health, safety and welfare. The applicant shall immediately comply with any cessation order issued.

- (v) The applicant shall install a groundwater monitoring well, and during the construction period of the underground structure, submit periodic groundwater level and other measurements and reports as required by the City Engineer. During pumping, the groundwater monitoring water level shall be measured at a monitoring well located at a farthest feasible point on the subject site from the underground structure. This monitoring shall be conducted daily for the first two weeks, then weekly thereafter.
- (vi) Designs and plans submitted to the City Engineer for approval shall incorporate all of the requirements hereinabove.

(e) When Controlled Groundwater Pumping Required. If the rate of groundwater discharge is greater than thirty (30) gallons per minute, the requirements of subsections (f) and (g) below shall be followed.

(f) Controlled Groundwater Pumping Submittal Requirements. When controlled groundwater pumping will be required, applicants shall submit the following to the City Engineer:

- (i) The applicant shall prepare and submit a street work permit application, a dewatering plan and a groundwater use plan, all in a form approved by the City Engineer. The groundwater use plan shall show how the groundwater will be used to the maximum extent practicable and incorporate the operational requirements of subsection (h) below.
- (ii) The applicant shall submit a dewatering hydrogeological study conforming to the regulations issued by the City Engineer, adhere to the study's findings, and make modifications as directed by the City Engineer. Avoidance measures identified in the study shall be employed to the maximum extent practicable to minimize the flow rate and duration of the pumping, even when off-site effects are not specifically identified. The dewatering hydrogeological study shall be stamped by a California licensed hydrogeologist or equivalent and submitted to the City.
- (iii) The applicant shall submit a pre-construction building condition survey and report on structures on adjacent parcels prepared by a qualified professional and meeting the standards established by the City Engineer. The survey shall include a photographic and narrative report on the interior and external condition of each structure and surveyed and marked elevations of adjacent parcels, with particular attention to the condition of concrete foundations, structural connections, brickwork, plasterwork and other architectural finishes that are susceptible to cracking. The report shall assess the likelihood that the proposed dewatering would cause effects (including but not limited to settlement

or movement) on off-site private or public structures or infrastructure, including the right-of-way, easements, and utilities within public utility easements, and the health or viability of vegetation or trees. To the extent that report concludes that off-site effects are reasonably likely to occur, the applicant shall identify avoidance measures to be implemented that will minimize the type and severity of those effects, and shall develop a monitoring plan to assess any actual effects on vegetation, trees, structures and infrastructure.

(g) Controlled Groundwater Pumping Operational Requirements. Temporary construction-related groundwater dewatering through controlled groundwater pumping shall be conducted in compliance with the following:

- (i) Dewatering shall only occur April 1 through October 31, if discharge to the storm drain or sanitary sewer system is required. The City may grant an exemption and allow discharge from November 1 through March 31, upon application, if it is demonstrated that a 10 year storm event can be accommodated by the receiving storm drain system and water system to the satisfaction of the City Engineer. Any such exemption shall be subject to immediate cessation orders from the City, which shall be complied with immediately upon issuance.
- (ii) Groundwater pumping for underground residential structures shall be limited to ten weeks, with an additional two week start-up period. At the end of the start-up period, the applicant must demonstrate compliance with all performance and water quality standards established by the City Engineer.
- (iii) The applicant shall verify the anticipated drawdown curve in the dewatering hydrogeological study with a pump test performed on monitoring wells installed on the project site, as specified by the City Engineer. Following the two-week start-up period, the dewatering, pumping rates and maximum amount of water pumped on a daily basis shall be limited to the values calculated in verification study.
- (iv) Fill station(s) shall be designed to provide the minimum delivery flowrates and incorporate instructional and public safety signage in accordance with the regulations issued by the City Engineer.
- (v) The applicant shall deliver pumped groundwater to any nearby parks and schools as requested by the City.
- (vi) The applicant shall truck water one full day (8 hours) per week from the project site to irrigation sites as directed by the City during the first six weeks of dewatering activities (not including the two-week start-up

- period). The applicant shall truck water five days per week (8 hours per day) during the remainder of the dewatering period.
- (vii) The applicant shall allow adjacent properties to use hoses connected to the fill station(s). If used, applicant must set up hoses with bridges along sidewalks. Hoses shall be placed in a manner that is safe to the public and does not cause damage to neighboring or City property, and shall not cross the street. The City Engineer may modify these requirements as circumstances require.
- (viii) Prior to the commencement of dewatering activities, the applicant shall notify occupants of neighboring properties of the temporary construction and availability of water.
- (ix) The applicant shall use the pumped groundwater on-site for dust suppression and other construction needs.
- (x) Prior to pouring a basement slab, groundwater may be pumped no deeper than three feet below the depth of the slab, measured at the center. After the slab is poured, groundwater may be pumped no deeper than one foot below the center.
- (xi) The applicant shall install a groundwater monitoring well prior to the commencement of dewatering, and during the construction period of the underground structure, submit periodic groundwater level and other measurements and reports as required by the City Engineer.
- a. During pumping, the groundwater monitoring water level shall be measured at a monitoring well located at a farthest feasible point on the subject site from the underground structure. This monitoring shall be conducted daily for the first week, then weekly thereafter. At the end of the start-up period or thereafter, if drawdown results are greater than anticipated, the applicant shall submit a revised dewatering hydrogeological study and any revised conclusions on impacts of the groundwater drawdown.
- b. Survey and mark land elevations on structures on adjacent parcels weekly, if allowed by the adjacent property owners. These locations should coincide with the pre-construction building condition survey. If permission is not granted, inform the City immediately.
- (xii) While discharging to the storm drain system, construction work on the underground structure shall be continuous, occurring daily, and make progress towards completion of the underground structure without delay.

(h) City Engineer Authority to Issue Regulations. The City Engineer is authorized to establish and from time to time revise regulations to implement this Section and related provisions of this Chapter and to advance the goals of minimizing temporary construction-related dewatering and reducing its impacts.

SECTION 6. New Section 16.28.156 (Requirements for temporary construction-related groundwater dewatering in groundwater plumes) is hereby added to read as follows:

16.28.156 Additional requirements for temporary construction-related groundwater dewatering in groundwater plume areas.

For temporary construction-related groundwater dewatering in the groundwater plume area, the following additional requirements must be followed:

(a) The applicant shall contact the City’s Watershed Protection Group for guidance and requirements on sampling, treatment and disposal of temporary construction-related groundwater.

(b) The City Engineer may require monitoring and an associated plan for specific pollutants. The applicant shall adhere to any such requirements established by the City Engineer.

SECTION 7. Severability. If any provision, clause, sentence or paragraph of this ordinance, or the application to any person or circumstances, shall be held invalid, such invalidity shall not affect the other provisions of this Ordinance which can be given effect without the invalid provision or application and, to this end, the provisions of this Ordinance are hereby declared to be severable.

SECTION 8. CEQA. The City Council finds and determines that this Ordinance is not a project within the meaning of section 15378 of the California Environmental Quality Act (“CEQA”) because it has no potential for resulting in physical change in the environment, either directly or ultimately. In the event that this Ordinance is found to be a project under CEQA, it is subject to the CEQA exemption contained in CEQA Guidelines section 15061(b)(3) because it can be seen with certainty to have no possibility of a significant effect on the environment in that this Ordinance simply clarifies existing local regulations.

//
//
//
//
//
//

Attachment10.a: Attachment A: Red-lined Ordinance Amending Chapter 16.28 Groundwater Dewatering 20Nov17 (8580 : Groundwater

SECTION 9. Effective Date. This ordinance shall be effective on the thirty-first date after the date of its adoption.

INTRODUCED:

PASSED:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

ATTEST:

APPROVED:

City Clerk

Mayor

APPROVED AS TO FORM:

City Manager

Assistant City Attorney

Director of Public Works/
City Engineer

Attachment 10.a: Attachment A: Red-lined Ordinance Amending Chapter 16.28 Groundwater Dewatering 20Nov17 (8580 : Groundwater