



## Rainy Season Grading

### Regulations

Section 15.36.600 B. of the grading ordinance provides:

No grading operations shall be conducted during the rainy season except upon a clear demonstration, to the satisfaction of the director of public works, that at no stage of the work will there be any substantial risk of increased sediment discharge from the site.

Rainy season is defined in Section 15.36.030 as:

"Rainy season" means the period of the year during which there is a substantial risk of rainfall. For the purpose of this chapter, the rainy season is defined as from October 1st to April 30th, inclusive.

One of the purposes of the grading ordinance per 15.36.020 is:

To avoid pollution of watercourses with nutrients, sediments, or other earthen materials generated on or caused by surface runoff on or across graded or denuded areas where permits have been issued.

### Discussion

Alameda County is concerned that every yard of sediment that is transported from a grading site will eventually deposit itself in our streams or in County maintained settlement basins such as Don Castro or Cull reservoir (above). The cost for removal of additional sediment placed in these basins or our streams due to construction activity is a very expensive burden our taxpayers currently bear.



Erosion control is a significant environmental issue that our Ordinances and our National Pollutant Discharge Elimination System (NPDES) permit with the Regional Water Quality Control Board





(RWQCB) places distinct duties and responsibilities on the County and its developers. Members of our staff recently attended a local Erosion Control conference where featured speakers were members of the RWQCB. The speakers regularly emphasized enforcement activities this year would be centered not only on the developer but also on the local agency issuing the grading permit. The current feeling of the RWQCB is that the NPDES permit they have with the local Agency makes the

local permitting authority responsible for the effective implementation of erosion control on construction sites. The RWQCB has the authority to invoke fines that can be as great as \$25,000 a day for each day of violation.

The ordinance clearly communicates that if grading during the rainy season is desired the applicant must demonstrate how he will prevent erosion and sediment discharges at each stage of construction throughout the October to April period. He must also show that it is unlikely that sediment discharge will increase over that from a completed and properly prepared site. These photos show the same site before and during grading with resulting increase of erosion and sediment discharge. As can be seen the erosion control measures in place when the rains came were significantly ineffective.



From a thorough reading of the ordinance it is clear the framers sought to control erosion on grading sites and prevent sediment discharges. It is also clear they recognized that this risk is increased if grading is performed during rainy periods. So they wrote the more stringent rainy season erosion control provisions. Since they thought to include a rainy season prohibition it stands to reason that a higher standard of erosion control was intended should anyone seek to set aside the prohibition. Thus, a typical erosion control plan (one which merely shows the stabilization of an already graded site) cannot meet the burden of section 15.36.600 B. And typically, such plans are not staged and only fit the site as it is finally configured. They also presume that all storm drainage facilities are in place and functioning and this is not typically the case on a working grading project.

The burden of making the required clear demonstration rests with the applicant. He must show how he will conduct grading so that no sediment discharges will result at any stage of the work. As a comparison, it is notable that this burden is not placed on an applicant who conducts grading during the non-rainy season. In that case the applicant merely has to show how he will stabilize the completed project and prepare for the upcoming rains. In this case the site is not graded during the rainy season.

While the grading ordinance and our NPDES permit does prohibit wintertime grading in the absence of the clear demonstration discussed above, it is not Alameda County's desire to categorically prohibit such grading. We recognize the prohibition is not complete and includes a provision that can allow responsible grading during that time period when that responsibility is clearly demonstrated. The County encourages all of its developers to produce responsible erosion control plans and other documentation and make the clear demonstration required of them. The County has granted permits to developers who were able to make the required demonstration and were willing to plan for and implement effective measures.

The following are some suggestions that should be helpful in this regard:

1. Divide the development site into manageable sections that make sense with the overall grading scheme. Grade the least practicable area at a time and stabilize it before disturbing the next. This is the idea of grading and stabilizing. See ordinance section 15.36.600 C. for the basic requirement here.
2. A comprehensive and dynamic erosion and sediment control plan that fits the site at all stages of construction can be a part of any effort to clearly demonstrate that no increase in sediment discharge will occur if grading during the rainy season is approved. By dynamic is meant the plan and the proposed erosion control measures are adaptable to the site and cover it at all stages of construction. The site configuration will change as grading proceeds – the protective and stabilization measures have to be applicable to the site at each stage.
3. There are some temporary hydraulically applied, erosion protection applications available on the market. They can be applied on short notice (day before rains) and but require minor preparation of the soils. They are reported to be compatible with soils and can be worked into fills without deleterious effects. They can provide a means of temporarily protecting a portion of a site during short periods of inactivity and don't have to be removed when commencing grading. Check with the project geotechnical engineer for compatibility.
4. If storm drain systems are not complete during one or more stages of grading, sediment ponds and other devices can be employed to retain and treat storm waters on site. They have to be large enough to allow sediment to settle out before the



runoff is discharged from the pond to an acceptable receiving system. The Erosion and Sediment Control Field Manual described below provides methods for designing such facilities.

5. The provisions of any plan approved in connection with a request to grade during the rainy season must be implemented. Thus it behooves the developer to propose only real and workable erosion control measures. And the timing and sequencing of them should be coordinated with the project's critical path. It is frequently suggested that such a plan be the result of input from engineering team and construction team members so that it is practical, efficient and effective.
6. Seek to use measures that stop erosion from occurring before it starts. This can take the form of site stabilization by natural (vegetation) and artificial (erosion control blankets, etc.) materials applied to disturbed lands. This is almost always more successful and *cost effective* than attempting to control the sediment resulting from denuded/unprotected slopes. In other words, work to keep the soils in place rather than attempt to control, contain and maintain the sediment loads once washed from the site.



7. Someone with experience and expertise can best accomplish the design of erosion and sediment control plans. Certified Professionals in Erosion and Sediment Control can be found by contacting the International Erosion Control Association by telephone (970) 879-3010 or visiting <http://www.ieca.org/directory/membership.cfm>
8. The "Erosion and Sediment Control Field Manual" published by the Regional Water Quality Control Board (fourth edition August 2002) contains much valuable information to assist in designing facilities and preparing erosion control plans. A



copy of the manual can be obtained through the San Francisco Bay Region offices of RWQCB at (510) 622-2300. A copy of a form to order the \$25.00 manual can be obtained from their website <http://www.swrcb.ca.gov/stormwtr/orderform.html>.



9. Scheduling is important and erosion control materials must be installed in time to be effective. Natural means like hydro seeding must be given adequate time to establish rooting and aboveground material to be effective. In the case above the hydro seeding was installed too late. Each cubic yard of soil eroded from the slopes had to be controlled to keep it from an adjacent creek. This incurred additional costs. And, in order to establish permanent slope protection these soils may have to be re-deposited to provide a cover to support vegetation growth.
10. Erosion and sediment control measures should receive regular inspection and maintenance appropriate for conditions. This is true whether grading is completed before the rains come but especially true if grading is conducted during the winter. Sediment ponds will have to be de-silted, silt fences repaired, minor slope failures and erosion gullies and rills will need to be filled and erosion control measures restored. Remember, stop erosion from starting by controlling it at the source and repair failures immediately to stay ahead of it all.

The prevention of storm water pollution is a responsibility shared by everyone involved in the development and construction process. Before, during and after construction various entities have decision-making authority and as such, have a responsibility to do what they can to prevent pollution. Alameda County takes this responsibility seriously and must hold developers and grading contractors to the higher pollution prevention standards necessary to permit grading during the rainy season. It is our hope the foregoing provides some insight into the means and methods that might be employed in meeting the ordinance requirement.