



Practical Tips for Construction Site Phasing

What is construction site phasing and why is it important? These questions are frequently asked by both developers and regulators seeking to implement erosion and sediment controls at construction sites. Construction phasing is different than construction sequencing. As most contractors and developers will tell you, construction sequencing is the standard practice of completing one portion or aspect of a project at a time, with site grading typically completed in a single step. In many circumstances, the time difference between building and actual building construction can take years. Table 1 illustrates a typical construction sequence for a single family residential subdivision.

Construction site *phasing* minimizes soil erosion through a somewhat more complex construction process. Only one portion of a site is disturbed at any one time to construct the infrastructure necessary to complete that phase. Subsequent phases are not started until earlier phases are substantially completed and exposed soils are mostly stabilized. This “just-in-time” construction practice can dramatically reduce disturbed soil exposure times and resulting erosion problems.

Despite the value of construction phasing, very few projects are successfully phased. Because many *sediment control* practices are at best 90% efficient in removing suspended solids, *erosion prevention* techniques that limit the erosion of sediments in the first place can have dramatic results in reducing sediment loss from construction sites (Corish, 1995). Uncontrolled urban construction sites can lose between 20 and 200 tons/acre of sediment per year (Dreher and Mertz-Erwin, 1991). Contrast this with an undisturbed meadow or forest, which loses less than one ton/acre of sediment per year. Clearly, a great reduction in sediment export is possible when clearing is reduced. As can be seen in Table 2, a carefully phased project can reduce sediment loss by more than 40% over a typical mass-graded site.

Construction phasing is only one of several *erosion prevention* techniques that can be used to reduce soil loss. Instead of relying on trapping already suspended solids, the phasing techniques rely on erosion prevention. Other erosion prevention strategies involve minimizing disturbed areas through various techniques such as fitting the de-

Table 1: Typical Construction Sequence of a Single Phase Residential Subdivision

1. Hold preconstruction meeting
2. Clear/grub areas necessary to construct ESC practices
3. Construct ESC practices
4. Construct stormwater management measures to be used for temporary ESC
5. Clear/grub remaining site areas
6. Grade site to rough grades
7. Construct utilities (water, sewer, storm drain, etc.)
8. Construct roads (paving, curb and gutter, sidewalks)
9. Construct housing (provide on-lot ESC practices)
10. Stabilize disturbed areas
11. Convert stormwater management measures to permanent functions
12. Remove ESC measures
13. Stabilize remaining disturbed areas