

**LEED CREDIT 6.2**  
**STORMWATER QUALITY**  
**NARRATIVE**



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The grading, drainage, and utilities of the Ohlone Newark College Campus were designed not only to convey runoff off-site, but also to slow and cleanse stormwater prior to discharge. Rather than “hard-piping” runoff directly to the discharge point, the storm drainage system utilized various landscape-based and mechanical elements that were incorporated into the site and landscape design meant to reduce pollutants in stormwater flowing off-site

The Ohlone College storm drainage system actually consists of two independent systems that ultimately feed into a large vegetated swale/retention pond south of the campus. The system was split in two to separate relatively “clean” runoff from roof, site hardscape, and landscaping areas from “dirty” water coming from parking lots and vehicular access areas.



*Aerial view of the project during construction*

The storm drainage system installed in the center of the College collects runoff from the main building roof, landscaping areas, and site hardscaping surrounding the building. Much of the site hardscape drains to landscaping areas prior to being collected by area drains, which effectively filters out suspended solids and allows much of the dissolved organics and phosphorous to be removed by natural biological processes. Roof downspouts were allowed to directly connect to the underground system as no significant introduced chemicals were anticipated



*Landscaped areas draining to central SD system*



*Stormwater garden during low-flow event*

from roof runoff. After being collected by downspouts and area drains, runoff is transported via. underground pipe to a vegetated swale aptly nicknamed the “stormwater garden” due to the visible stormwater flow in this area and the natural grasses and vegetation. The “stormwater garden” further filters and cleanses runoff prior to collection and discharge into the large swale/retention pond south of the site.

The storm drainage system installed at the periphery of the campus collects runoff from the two major parking lots, landscape islands, and drive aisles. Additional BMP measures were provided for runoff from this system due to the increased potential for suspended solids and toxins. Bioswales were incorporated along the east and west property lines to provide suspended solids and chemical removal for drive aisles. To further aid in pollutant removal, two hydrodynamic separators were installed immediately upstream of the large retention pond to capture suspended solids. As a tertiary measure, discharge from the hydrodynamic separators was directed to two sedimentation ponds that spill into the large swale/retention pond.

Both on-site systems collecting runoff from the Campus discharge into a large vegetated retention basin that extends approximately 900' to the south. After passing through the stormwater garden, hydrodynamic separators, and sedimentation basins, stormwater flows through this long grassed channel that further filters out suspended solids. Being fully planted year-round, the swale also serves as a biological filter that reduces dissolved toxins and chemicals such as nitrogen and phosphorous which have the potential to cause eutrophication in local streams and the San Francisco Bay. The primary discharge point of the retention pond is through a 12” restrictive outlet pipe that limits the flow such that stormwater is stored during heavy storms, reducing the potential for downstream flooding and bank erosion.



*Views of the stormwater swale/retention pond prior to hydroseeding*

Through careful site planning with stormwater quality in mind, the designers of the Ohlone Newark Campus were deliver a product that was not only functional but aesthetically pleasing as well.



*View of site during construction in the Southern direction*