MEMORANDUM

To: John Andrew **Date:** January 27, 2007

From: Eric Mosolgo, P.E.

Subject: **Beyer Community Park, San Ysidro, San Diego County, CA**

Topic: **Preliminary Drainage Assessment**

Per existing topo review and my site visit on January 21, four (4) major drainage outfall locations were identified.

1. Moody Canyon - The Moody Canyon watershed contributes 347 acres of offsite drainage area to the proposed park site. Canyon flows, which enter the site at the northeast project boundary and bisect the northern portion of the site via an incised canyon, eventually drain to an existing basin area in the northwest corner of the proposed site (just east of Enright Drive). The existing project site contributes an additional 13 acres of drainage area to the detention area. After routing though the existing detention area, routed outflows discharge to an existing storm drain system in Beyer Blvd.

SUMMARY:
- Existing Drainage Area to Basin Area = 360 acres
- Estimated Existing 100-Year Basin Inflow = 900 cfs
  (high Q/A ratio due to steepness of watershed and poor vegetative cover)
- Existing detention basin routing yet to be analyzed
- Existing capacity of receiving Beyer Blvd storm drain system yet to be analyzed

ACTION ITEMS:
- Regrade detention area as part of park development
- Install properly engineered detention basin outlet works
- Ensure that 2, 10, and 100-year routed outflows do not exceed existing levels
- Based on capacity analysis of Beyer Blvd SD system, outflows may need further reduction
- Provide sediment forebay in basin to collect sediment from natural offsite watershed.

2. Fantasy Lane Brow Ditch - Roughly 4 acres of the existing site drain to a brow ditch behind Fantasy Lane. Downstream of the project site, this brow ditch dives down a steep slope north of the adjacent Beyer School.

SUMMARY:
- Existing Drainage Area to Brow Ditch = 4 acres
- Estimated Existing 100-Year Flow = 6 cfs
- Existing capacity of receiving brow ditch yet to be analyzed

ACTION ITEMS:
- Minimize developed condition area to brow ditch - diversion to Moody detention possible
- Per Item 3 below, some additional drainage area may be diverted to this location (to prevent slope saturation - see Item 3 below)
- Ensure that 2, 10, and 100-year outflows are less than existing levels at brow ditch
- Based on capacity analysis of brow ditch system, outflows may need further reduction

3. Western Boundary Adjacent to Beyer School Slope - Roughly 17 acres of the existing site drains to the western boundary of the proposed project site. Portions of the this area drain to various low spots along an access road along the top of slope. A berm has been constructed to help prevent overflows over the slope. However, ponded flows to these locations could saturate the slope and potentially lead to slope failures. At the southwestern property boundary, a portion of this area discharges to a brow ditch that conveys runoff south of the adjacent Beyer School.

SUMMARY:
- Existing Drainage Area to Western Boundary = 17 acres
- Estimated Existing 100-Year Flow = 25 cfs
- Existing capacity of receiving brow ditch yet to be analyzed

ACTION ITEMS:
- Divert drainage currently draining to top of the adjacent slope to the SW brow ditch (some of this drainage may be diverted to Fantasy Lane brow ditch)
- 2, 10, and 100-year outflows should be reduced below existing levels at SW brow ditch
- Based on capacity analysis of brow ditch system, outflows may need further reduction
- To accomplish peak flow reductions, detention area will likely be required
- Potential detention areas should be located at a sufficient distance from adjacent slope
  (to prevent seepage into adjacent slope)
- Potential detention design should consider lining materials to prevent seepage

4. Southeast Canyon - Drainage from roughly 10 acres of the proposed site and 6 acres of offsite area will drain to a defined channel near the southeastern property boundary. No drainage improvements were observed in the vicinity of the site - though the canyon does eventually drain under the trolley line farther downstream.

SUMMARY:
- Existing Drainage Area to Southeastern Boundary = 16 acres
- Estimated Existing 100-Year Flow = 25 cfs

ACTION ITEMS:
- Ensure that 2, 10, and 100-year outflows are less than existing levels at canyon
- Energy dissipation device to be installed at canyon outfall to prevent erosion (due to flow concentration)

With any questions, please contact me.

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