

**SUPPLEMENTAL PRELIMINARY HYDROLOGY
ANALYSIS OF OFF-SITE FLOWS**

**FOR
PROPOSED EAGLE MARKET
S.E. CORNER OF STATE HWY 38 & STATE LANE
IN
SAN BERNARDINO, CALIFORNIA
(A.P.N. 0315-231-17)**

**FOR

STEENO DESIGN STUDIO
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PURPOSE

This supplemental hydrological analysis of off-site flows is prepared in response to a response letter from the State of California Department of Fish and Wildlife, dated April 16, 2014. This response letter questions the proposed hydrologic and hydraulic impacts of the proposed subject development (convenience store and gas station) on the stream drainage along State Highway 38 (identified by Fish and Wildlife as “Shay Creek”). This supplemental preliminary report will address the impacts to the proposed development to this off-site stream drainage.

DESCRIPTION OF OFF-SITE DRAINAGE AREA

The subject lot is located at the southeast corner of State Highway 38 and State Lane. The site is generally located along the easterly right-of-way of State Highway 38 and south and west of State Lane. A “blue line” stream is shown on the USGS quadrangle topographic map and ends at Highway 38 south of the subject site (see Off-Site Topography below). This stream extends south and slight west for approximately 2.5 miles. The subject stream flow intersects the west side of State Highway 38 south of the subject site. These flows are contained in a ditch along the west side of the highway and conducted north to a catch basin just south of the intersection with State Lane (see Photos 2 & 3). The stream flows are then conducted under the highway in a storm drain pipe to the east side of the highway to a ditch that crosses the highway right-of-way northeasterly to the south side of the State Lane right-of-way (see Photo 4). These flows then cross northerly State Lane in a culvert pipe and continue northeasterly. It appears that off-site stream flows do not enter or cross the subject site.

DISCUSSION OF ON-SITE DRAINAGE FLOWS

On-site flows will be contained on-site and treated by on-site BMP’s in an effort to contain pollutants, trash and sediments generated by the proposed use. The on-site 100-year 1-hour storm generated will be captured and contained in an off-site BMP underground retention basin and allowed to percolate. A proposed concrete swale along the subject site’s westerly boundary will conduct any off-site flows northerly, in an effort to keep off-site flows from entering the site.

SUMMARY

The stream flows in Shay Creek have previously been altered by construction of State Highway 38. These altered stream flows do not appear to impact the subject property. Proposed on-site improvements will direct any stream flow northerly to the culvert under State Lane. On-site flows are required by County NDPES requirements to be contained and treated on-site. Therefore, on-site proposed BMP’s will contain the 100-year 1-hour on-site flows and allow these flows to percolate. These retained flows from the less than one acre developed site will be a minimal decrease in flow from the stream flows which are generated from a tributary area of greater than 300 acres. The stream flow volume of Shay Creek will only be minimally affected by the development because of required NDPES requirements. The stream flow location was previously altered by the highway construction and will be unaffected by the proposed development.

OFF-SITE TOPOGRAPHY

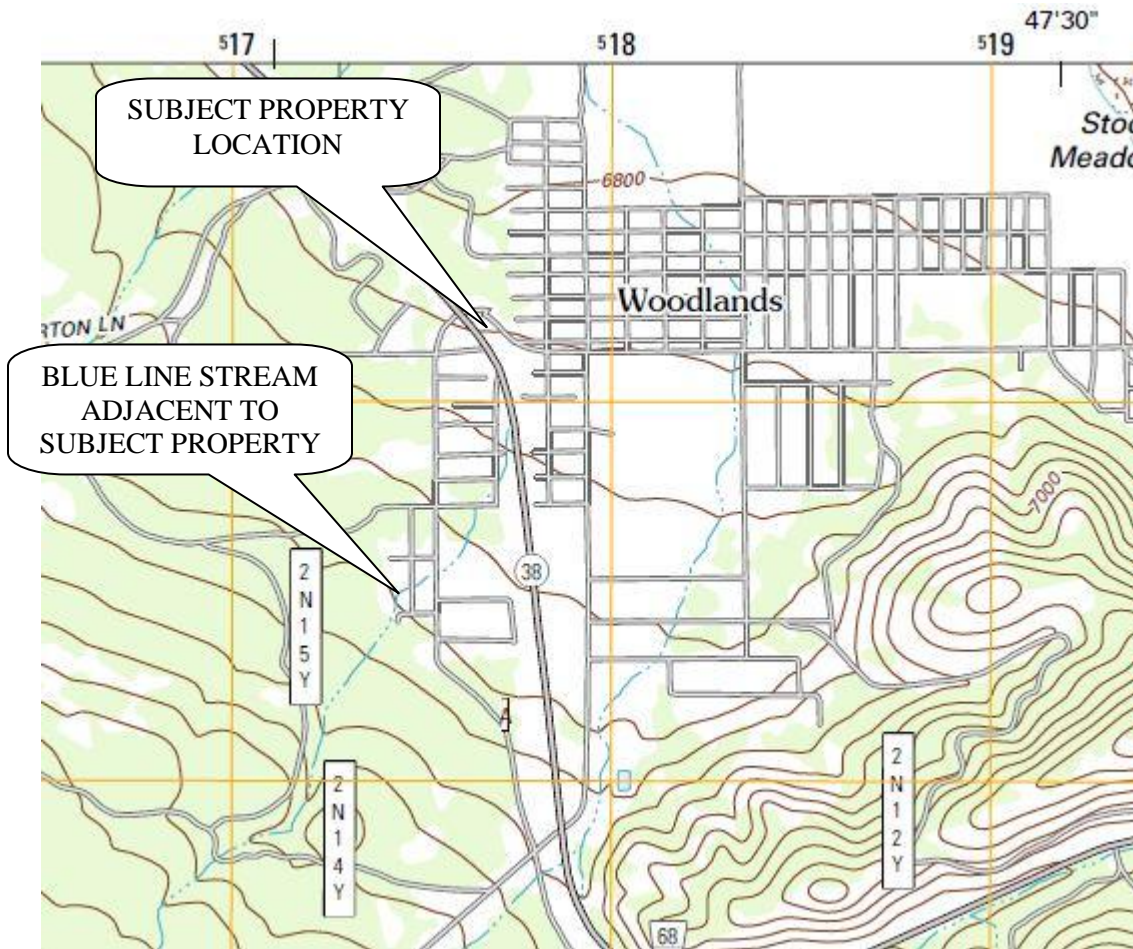


PHOTO 1

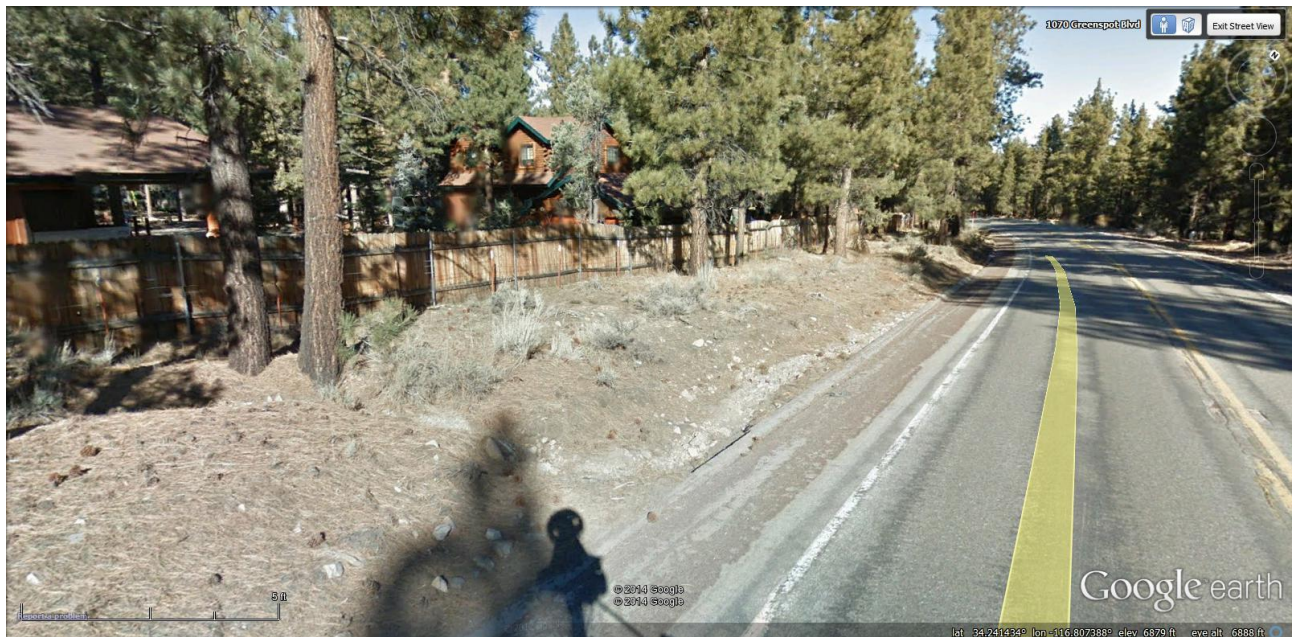


PHOTO 2

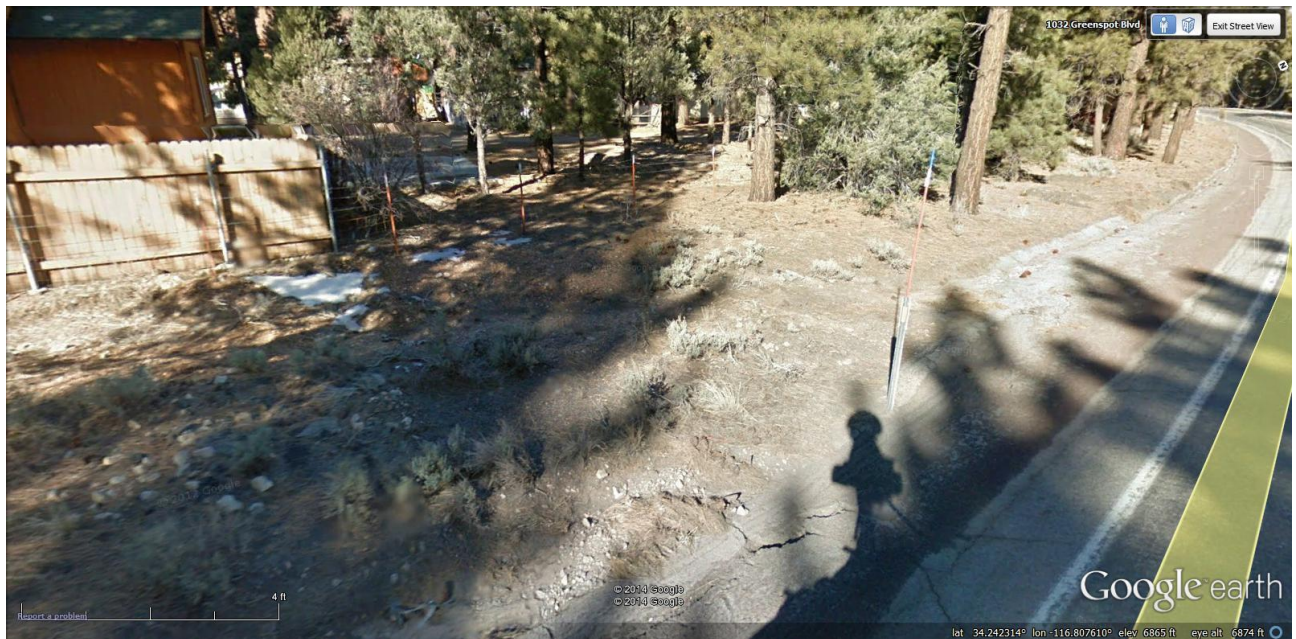


PHOTO 3



PHOTO 4



SAN BERNARDINO COUNTY DRAINAGE AREA AERIAL

