SUMMARY OF LIMESTONE BOULDER LOCATIONS AND IMPACTS ASSOCIATED WITH REMOVAL
PERMANENTE CREEK ADJACENT TO THE WEST MATERIALS STORAGE AREA AND PERMANENTE QUARRY PIT
LEHIGH PERMANENTE QUARRY
CUPERTINO, CALIFORNIA
(UPDATED 2/25/13 VERSION)

Feature No.	Feature Type	Latitude	Longitude	UTM Coordinates (Zone 10)		Approximate diameter (feet)	Permanente Creek Impacts
				Easting	Northing		
1	Boulder	37.32036	-122.13242	576870	4130765	3	Description: this boulder is located on the side of the creek channel, clustered with a group of trees. Impacts: extracting the boulder from the hillside and the surrounding tree cluster would destabilize the hillside and mobilize sediments; removal also would involve the deployment of mechanical equipment with potential impacts to the riparian zone.
2	Cluster of 4 boulders	37.32085	-122.13218	576890	4130819	8,6,6,4	Description: boulders 2-5 comprise a portion of the creek bottom in the upper segment of the creek, and "hard points" that protect creek from scouring and erosion. Impacts: removal would require excavation of the creek bed in the locations of the boulders, which will destabilize the creek bed and mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
3	Boulder	37.32077	-122.13216	576892	4130811	1x2	Description: boulders 2-5 comprise a portion of the creek bottom in the upper segment of the creek, and "hard points" that protect creek from scouring and erosion. Impacts: removal would require excavation of the creek bed in the locations of the boulders, which will destabilize the creek bed and mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
4	Cluster of 3 boulders	37.32079	-122.13213	576895	4130813	6, 2, 1.3	Description: boulders 2-5 comprise a portion of the creek bottom in the upper segment of the creek, and "hard points" that protect creek from scouring and erosion. Impacts: removal would require excavation of the creek bed in the locations of the boulders, which will destabilize the creek bed and mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
5	Boulder	37.32073	-122.13215	576893	4130806	3.5	Description: boulders 2-5 comprise a portion of the creek bottom in the upper segment of the creek, and "hard points" that protect creek from scouring and erosion. Impacts: removal would require excavation of the creek bed in the locations of the boulders, which will destabilize the creek bed and mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
6	Boulder	37.32001	-122.13014	577072	4130728	6	Description: this is a large boulder that is deeply embedded in the upper survey area, adjacent to the 100-year flood level. Impacts: extraction of the embedded boulder and the excavation required for removal would destabilize the creek bottom and mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
7	Boulder	37.32015	-122.12925	577151	4130744	7	Description: this is a large boulder located within the 100-year flood level which forms a structural hard point in the creek. Impacts: removal of the boulder from the creek would remove a hard point which provides stability to the creek channel and would mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
8	Boulder	37.32013	-122.12910	577164	4130742	3.5	Description: this boulder appears deeply embedded within the 100-year flood level (making actual size difficult to estimate). Impacts: removal of the boulder from the creek bottom would result in the loss of a major structural element of the creek bed and create a scour point that will in turn mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
9	Boulder	37.31971	-122.12778	577281	4130697	4	Description: boulders 9-11 are large boulders in standing water (during dry-season conditions) and form a portion of the creek bed. Impacts: removal would cause the loss of major structural elements of the creek bed and channel; removal is likely to alter creek flows and result in scouring and release of sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
10	Boulder	37.31970	-122.12778	577281	4130695	5	Description: boulders 9-11 are large boulders in standing water (during dry-season conditions) and form a portion of the creek bed. Impacts: removal would cause the loss of major structural elements of the creek bed and channel; removal is likely to alter creek flows and result in scouring and release of sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
11	Boulder	37.31974	-122.12767	577291	4130700	4x6	Description: boulders 9-11 are large boulders found in standing water (during dry-season conditions) that form a portion of the creek bed. Impacts: removal would cause the loss of major structural elements of the creek bed and channel; removal is likely to alter creek flows and result in scouring and release of sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
12	Boulder	37.31959	-122.12746	577310	4130683	1.5,6	Description: this is a large boulder located in a heavily-vegetated portion of the creek bed. Impacts: removal would result in the loss of a hard point embedded in the creek, require vegetation removal, and is likely to result in scouring and mobilization of sediments during storms; removal also would require use of heavy mechanical equipment in the creek with likely impacts to riparian vegetation and the creek zone.
13	Boulder	37.31944	-122.12736	577319	4130667	1	Description: this boulder is deeply embedded in the creek bed with only the surface showing, and comprises a hard point in the creek bottom that protects the creek from scouring and erosion. Impacts: removal would require excavation of the creek bed and the removal of a hard point, which will destabilize the creek bed and mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
14	Boulder	37.31913	-122.12682	577367	4130633	4	Description: this is a large boulder in the creek bed which forms part of a natural step-channel. Impacts: removal would result in the loss of a major structural element of the creek bed, and require excavation of a hard point in creek; boulder removal will significantly destabilize the creek bed, alter creek flows, and mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
15	Boulder	37.31916	-122.12675	577373	4130636	1	Description: this boulder is deeply embedded in the bank of the creek with only the surface showing, and is a hard point in the creek bank that protects against scouring and erosion. Impacts: removal would result in the loss of a hard point in the creek bank, which will destabilize the creek and mobilize sediments; removal also may involve use of mechanical equipment with potential impacts to the riparian zone.
16	Boulder	37.31914	-122.12660	577387	4130634	4x8	Description: this is a large boulder deeply embedded in an area adjacent to the 100-year flood level and is a structural element of the channel. Impacts: extraction of the boulder will result in the loss of a structural hard point in the creek; the excavation required would destabilize the creek and mobilize sediments; removal also would involve the use of mechanical equipment with potential impacts to the riparian zone.
17	Boulder	37.31901	-122.12610	577431	4130620	3x4	Description: the boulder is partially buried and forms a structural element within the 100-year flood level. Impacts: extraction of the boulder will result in the loss of a significant hard point in the creek, destabilize the channel and mobilize sediments; removal also would involve the use of mechanical equipment with potential impacts to the riparian zone.
18	Boulder	37.31877	-122.12511	577519	4130594	6	Description: this is a large boulder embedded in a vegetated portion of the creek bed. Impacts: removal would result in the loss of a structural hard point embedded in the creek, require vegetation removal and likely to result in scouring and mobilization of sediments during storms; removal also would require use of heavy mechanical equipment in the creek with likely impacts to riparian vegetation and the creek zone.
19	Boulder	37.31642	-122.11895	578067	4130339	2	Description: this boulder is split into two parts which comprise part of the structural channel in this location. Impacts: removal would result in the loss of a structural element of the creek and require excavation of a hard point; the result will destabilize the creek channel, alter creek flows, and mobilize sediments; removal also may involve the use of mechanical equipment with potential impacts to the riparian zone.
20	Boulder	37.31647	-122.11859	578099	4130345	4x5	Description: boulders 20-22 are large boulders which comprise structural hard points in the 100-year flood level. Impacts: removal of the boulders would result in the loss of structural hard points which provides stability to the creek channel and would mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
21	Boulder	37.31649	-122.11859	578099	4130347	5	Description: boulders 20-22 are large boulders which comprise structural hard points in the 100-year flood level. Impacts: removal of the boulders would result in the loss of structural hard points which provides stability to the creek channel and would mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
22	Boulder	37.31657	-122.11860	578102	4130356	2.5	Description: boulders 20-22 are large boulders which comprise structural hard points in the 100-year flood level. Impacts: removal of the boulders would result in the loss of structural hard points which provides stability to the creek channel and would mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
23	Boulder	37.31661	-122.11849	578108	4130360	2	This boulder will be removed.
24	Boulder	37.31670	-122.11842	578114	4130370	2	Description: this boulder is deeply embedded in the 100-year flood level with only a portion of the surface showing, and forms a hard point in the creek channel. Impacts: removal would result in the loss of a hard point in the creek channel which will destabilize the creek and mobilize sediments; removal also may involve use of mechanical equipment with potential impacts to the riparian zone.
25	Cluster of 4 boulders	37.31673	-122.11842	578114	4130374	1,1.5,1.5,2	Description: this is a cluster of boulders forming hard points adjacent to the 100-year flood level. Impacts: removal of this cluster would require excavation of the creek channel in the locations of the boulders, which would destabilize the channel and mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
26	Boulder	37.31678	-122.11852	578105	4130379	2	Description: the boulder is partially buried and forms a structural element of the channel adjacent to the 100-year flood level. Impacts: extraction of the boulder will result in the loss of a significant structural component of the channel, destabilize the creek and mobilize sediments; removal also would involve the use of mechanical equipment with potential impacts to the riparian zone.
27	Boulder	37.31704	-122.11807	578144	4130408	3.5	Description: this is a larger boulder which forms a hard point in the 100-year flood level. Impacts: removal of the boulder would result in the loss of a hard point which provides stability to the creek channel and would mobilize sediments; removal also would involve the use of mechanical equipment with potential impacts to the riparian zone.
28	Boulder	37.31725	-122.11800	578150	4130432	2.5	Description: this is a large boulder located in a vegetated portion of the creek channel within the 100-year flood level. Impacts: removal would result in the loss of a hard point in the creek, require vegetation removal and likely to result in mobilization of sediments during storms; removal also would require use of heavy mechanical equipment in the creek with likely impacts to riparian vegetation and the creek zone.
29	Boulder	37.31762	-122.11681	578256	4130474	2	Description: boulders 29-30 form structural hard points in the creek bed. Impacts: removal of the boulders from the creek bed would result in the loss of boulders which provide stability to the creek bank and would mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
30	Boulder	37.31763	-122.11681	578256	4130475	4	Description: boulders 29-30 form structural hard points in the creek bed. Impacts: removal of the boulders from the creek bed would result in the loss of boulders which provide stability to the creek bank and would mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
31	Boulder	37.31761	-122.11608	578320	4130473	3x5	Description: this boulder is a large structural element of the creek channel in the 100-year flood level. Impacts: removal of the boulders from the creek would result in the loss of boulders which provide stability to the creek and would mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
32	Boulder	37.31759	-122.11624	578306	4130471	2.5	Description: this boulder is embedded in the creek channel within the 100-year flood level and forms a hard point which protects against erosion and scouring. Impacts: removal of the boulder would result in the loss of a hard point which provides stability to the creek and would mobilize sediments; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
33	Cluster of 11 boulders	37.31758	-122.11625	578305	4130470	Max size 2.5 feet, average 1.5 feet.	Description: this is a cluster of boulders forming hard points in the side of the creek channel in and adjacent to the 100-year flood level, and give stability to the hillside. Impacts: removal of this cluster would require excavation of the channel side in the locations of the boulders, which would destabilize the side of the channel, mobilize sediments and potentially destabilize the toe of the adjacent hillside; removal also would involve deployment of mechanical equipment with potential impacts to the riparian zone.
34	Boulder	37.31756	-122.11610	578319	4130468	2	Description: this boulder is embedded adjacent to the 100-year flood level with a portion of the surface showing, and forms a hard point in the channel side. Impacts: removal would result in the loss of a hard point which would destabilize the creek and mobilize sediments; removal also may involve use of mechanical equipment with potential impacts to the riparian zone.
35	Boulder	37.31758	-122.11608	578320	4130470	3	Description: this boulder forms part of the channel structure within the 100-year flood level and forms part of the toe of the adjacent hillside. Impacts: removal would result in the loss of a hard point in the creek channel which would destabilize the creek, remove support from the adjacent hillside, and mobilize sediments; removal also may involve use of mechanical equipment with potential impacts to the riparian zone.