6.8 SURFACE WATER HYDROLOGY

This section evaluates surface run-off and sediment control impacts at Scholl Canyon Landfill (SCLF) under the proposed project for both final fill variations. Included in this discussion is an evaluation of surface water drainage under rainy and/or flooding conditions. A comprehensive analysis of surface water quality considerations is included in Section 6.9 (Water Quality) of the Draft Environmental Impact Report (DEIR). For all hydrology calculations and backup data, please refer to Appendix J of the DEIR.

6.8.1 EXISTING CONDITIONS

6.8.1.1 Regulatory Setting

The quality and quantity of stormwater drainage at the SCLF are both subject to comprehensive federal, state, and local regulations. The surface water drainage system at the SCLF has been optimized to meet these regulatory requirements by implementing measures such as preventing run-on into the active landfill area, minimizing surface water contact with refuse, diverting any stormwater from the active disposal area away from the local storm drain, and minimizing the erosion potential of surface water drainage. A brief discussion of the regulations pertaining to surface water quality is included below. However, for a more comprehensive discussion of the regulatory setting and efforts to protect water quality, please refer to Section 6.9 (Water Quality) of the DEIR.

Federal Regulations

Subtitle D (Title 40 CFR Part 258) prohibits a municipal solid waste landfill (MSWLF) from discharging pollutants into waters of the United States, including wetlands, which would result in a violation of any requirement of the Clean Water Act. In addition, it prohibits a MSWLF from discharging non-point sources of pollution into waters of the United States that would result in a violation of any requirement of an area-wide or State-wide water quality management plan that has been approved under section 208 or 319 of the Clean Water Act.

In 1972, the Federal Clean Water Act (CWA) was amended to prohibit the discharge of pollutants in waters of the United States from any point source unless the discharge is in compliance with the National Pollution Discharge Elimination System Permit (NPDES). The 1987 amendments to the CWA added Section 402 (p) that established a framework for regulating municipal and industrial stormwater discharges under the NPDES program. In 1990, the Environmental Protection Agency (EPA) published final regulations (Title 40, Code of Federal Regulations, Parts 122-124) that established application requirements for stormwater permits. The regulations require that stormwater associated with industrial activities, if discharged to surface waters directly or indirectly through municipal storm sewers, must be regulated by an NPDES permit. Relevant industrial activities include municipal solid waste disposal operations and landfill gas processing for energy generation. Therefore, an NPDES permit is required for the SCLF.

State Regulations

The Federal EPA regulations allow authorized states, such as California, to issue general NPDES permits to regulate stormwater discharges. In 1991, the California State Water Resources Control Board (SWRCB) issued a statewide General Permit that applied to all stormwater discharges requiring a permit, except construction activity (a separate statewide general permit has been issued for construction activity). The monitoring requirements of this General Permit were amended in 1992. The Sanitation Districts of Los Angeles County (Sanitation Districts) filed a Notice of Intent with the SWRCB on March

27, 1992 to obtain coverage under the General Permit for continued and future stormwater discharges from SCLF.

In 1997, the SWRCB adopted a revised General Permit as a replacement for the expired 1992 NPDES General Permit. Pursuant to the revised General Permit, the Sanitation Districts revised the Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Program and filed a Notice of Intent (NOI) on May 22, 1997. According to the best management practices (BMPs) in the SWPPP at the SCLF, and pursuant to the General Permit, the Sanitation Districts have implemented a stormwater run-off monitoring program during each wet season (October through May). Monitoring results as well as records of site inspections and evaluations of all BMPs, conducted during both the wet and dry seasons, are submitted to the Regional Water Quality Control Board (RWQCB) by July 1 of each year in the Annual Report for Storm Water Discharges Associated with Industrial Activities.

Title 27 of the California Code of Regulations (CCR) §20365 requires that drainage and sediment control structures (e.g., desiltation basins) for Class III municipal solid waste (MSW) landfill sites be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout and overtopping for a 100-year, 24-hour storm event. A 100-year, 24-hour storm event is defined as the maximum 24-hour storm with a probability to be equaled or exceeded once within a 100-year time period.

Closure and post-closure regulations require that drainage and erosion control systems be designed and maintained to ensure integrity of post-closure land uses, roads, and structures; to prevent public contact with waste and leachate; to ensure integrity of gas monitoring and control systems; to prevent safety hazards; and to prevent exposure of waste (Title 27 CCR §21150). The Department of Resources Recycling and Recovery (CalRecycle) and the Local Enforcement Agency (Los Angeles County Department of Public Health) are responsible for enforcing and overseeing the implementation of Title 27 regulations at the state and local levels, respectively.

Regional Setting

The SCLF is part of the Los Angeles River Watershed, which receives drainage from an 834 square-mile area of Los Angeles County, with headwaters in the Santa Monica Mountains, Simi Hills, Santa Susana Mountains and San Gabriel Mountains. The upper watershed contains a network of flood control dams and debris basins that flow to the Los Angeles River. The lower part of the river flows in a concrete-lined channel through a heavily urbanized portion of the county before becoming a soft bottom channel as it discharges into the San Pedro Bay. The Los Angeles River passes the SCLF approximately four miles to the west. Stormwater from the SCLF enters the Los Angeles River south of the Glendale Narrows via a storm drain system with a tributary in Glen Oaks Boulevard just west of the SCLF.

Three separate agencies are responsible for regional drainage and flood control within the County: the U.S. Army Corps of Engineers (Corps), Los Angeles County Department of Public Works (LADPW), and the local city. Generally, the Corps is responsible for improving larger streams that traverse the region and regulating impacts to wetlands and other waters of the United States. Corps projects are built to protect against severe storms that occur on an average of about once every 100 years. County channels are typically built to accommodate 50-year storms, while the local city normally designs its facilities for a 10- or 25-year storm.

Local Setting

The Federal Emergency Management Agency (FEMA) sponsors the National Flood Insurance Program and has categorized the SCLF as Zone D on the Flood Insurance Rate Map, indicating the absence of any flood hazard. The SCLF is at the headwaters of the Scholl Canyon sub-watershed. The majority of the annual rainfall in the region occurs from November through April. The LADPW estimates the average seasonal rainfall of Los Angeles County to be 15.65 inches. Typical rainfall at SCLF averages approximately 18.32 inches per year (based on actual rainfall measurements recorded by an on site precipitation gauge between 1982 and 2010). The yearly variation is much greater at Scholl Canyon compared to Los Angeles County as a whole. For example, Scholl Canyon has had a low rain year of 4.49 inches and a high rain year of 54.27 inches during the last 30-year period. The 50-year, 24-hour storm isohyet[1] for Scholl Canyon varies (west to east) between 7.0 and 7.6 inches. In accordance with State requirements, the current permanent stormwater diversion and control facilities at the SCLF have been designed to accommodate the calculated 100-year, 24-hour storm. The system of down drains and drainage structures transport stormwater via a concrete box culvert under Scholl Canyon Park to the Scholl Debris Basin, which is owned and operated by the LADPW. The debris basin has a design debris capacity of 8,400 cubic yards and an 80-feet wide concrete spillway that discharges to a concrete box culvert at the upstream end of a branch of the LADPW's stormwater collection and conveyance system.

Existing Landfill Operations

The purpose of the surface water drainage system is to convey run-off away from the SCLF; divert potential run-on from entering the landfilled refuse; prevent inundation or washout of facilities and structures due to flooding or uncontrolled water movement; prevent stormwater that has come into contact with refuse from contributing to downstream receiving waters, and protect receiving water quality by limiting erosion. These goals are achieved through various measures, including the following:

- Minimize the direct contact of rainfall with refuse in hauling vehicles by requiring tarps. All vehicles arriving to the site must have the refuse covered or be subject to a surcharge. In addition, site staff are tasked with keeping all haul roads and adjacent areas free from litter.

- The active area of refuse unloading is limited to the extent possible to minimize the potential for stormwater to come into contact with refuse or for run-off to infiltrate into the fill.

- During wet weather conditions, all stormwater that drains from the active disposal area is collected, stored in a lined stormwater basin, and reused for dust control.

- All refuse is covered with soils or other approved cover material at the close of each working day to minimize direct contact of stormwater with refuse.

- The final solid waste fill grades, which include both side slopes and a top deck, are designed to provide for rapid removal of stormwater without creating excessive velocities that would cause erosion of the final grade surface.

- Stormwater conveyance systems are located along the perimeter of the refuse footprint to eliminate run-on from adjacent areas.

- All permanent drainage and sediment control structures are designed and constructed to limit ponding, infiltration, inundation, erosion, slope failure, washout and overtopping for a 100-year, 24-hour storm event.

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1 An isohyet is a contour-like line on a map that shows areas of equal rainfall over a specified period of time. A 50-year, 24-hour storm event is defined as the maximum 24-hour storm with a probability to be equaled or exceeded once within a 50-year time period. The 2002 LADPW Hydrology Manual provides factors for converting the 50-yr isohyet to the isohyets of other return periods; the 100-yr isohyet = 1.122 x 50-yr isohyet. The isohyetal map used to determine the 100-yr., 24-hr. storm is included in Appendix J of the DEIR.

The SCLF can be divided into the following areas: 1) the active operating area that currently receives refuse for disposal is in the main canyon and encompasses approximately 314 acres; 2) a side canyon to the north of the main canyon of approximately 126 acres contains a closed fill with a golf course on the top deck that is operated and maintained by the City of Glendale; and 3) an area to the south of the main canyon, outside the operating limits of the SCLF, which contains the access road for refuse trucks (i.e., Scholl Canyon Road) and connects to the 134 Freeway at Figueroa Street. The drainage watershed for the SCLF's active and closed disposal areas consists of the main and north canyons. The access road is in a separate watershed, south of the active disposal area.

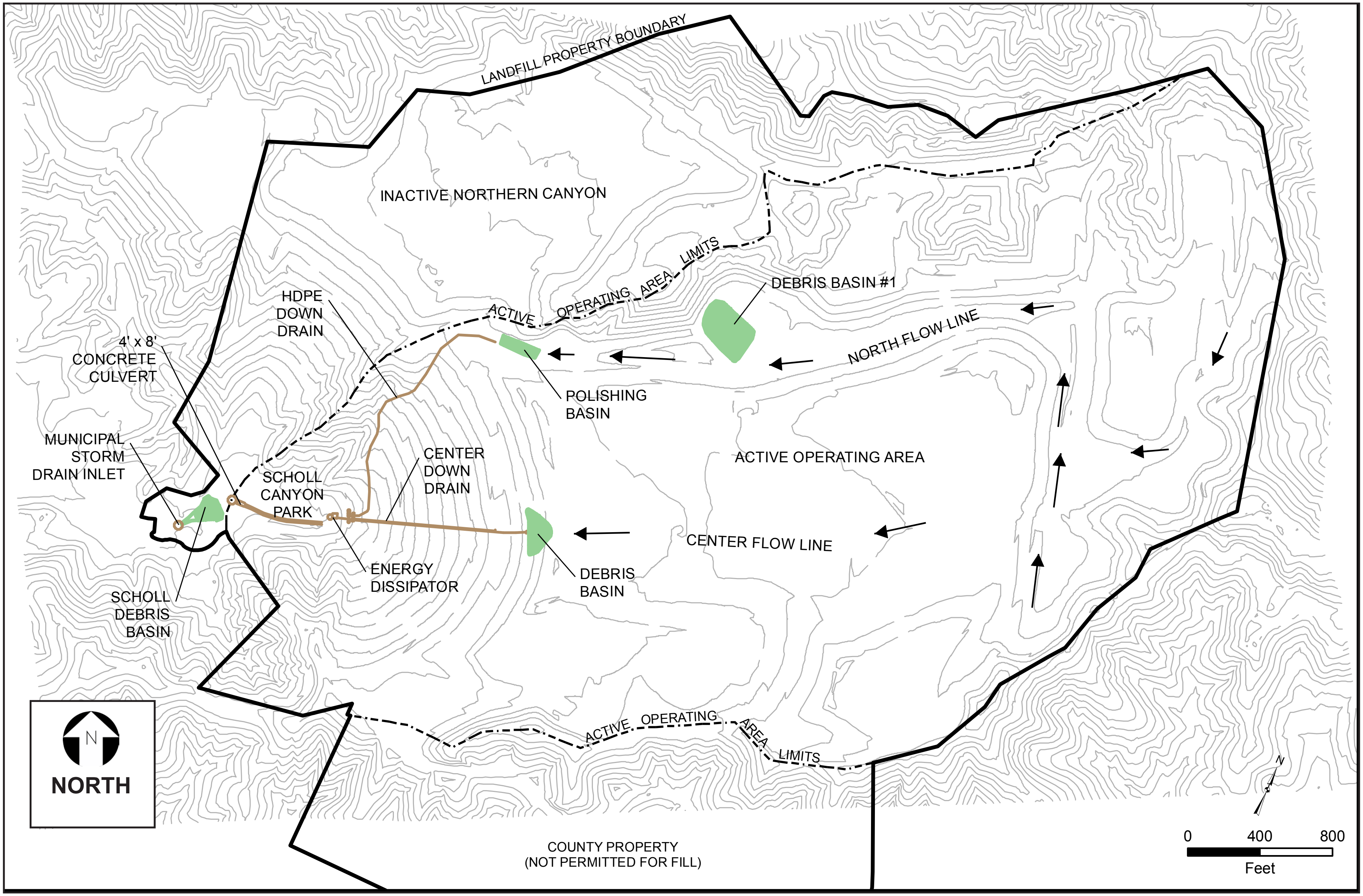
The SCLF has an extensive surface water drainage system that consists of bench drains at approximately 40-foot vertical intervals on the front face and exposed side slopes of the refuse fill, down drain pipes, open channels, culverts, silt capture and retention structures, energy dissipating structures, a sedimentation basin, and a concrete culvert conveyance under Scholl Canyon Park that discharges into the LADPW's Scholl Debris Basin at the west side of the park. Basin #1, the SCLF's sedimentation basin, is located on SCLF property and is maintained by the Sanitation Districts. Figure 6.8-1 shows the existing drainage system.

The active fill area can be divided into two sub-watersheds. The top deck of the active fill and the front face slopes all drain to a center flow line, which consists of an open channel across the top deck and pipe down drains and drop inlet structures at each front face bench. A second flow line at the north side of the active fill area drains the eastern portion of the site and the north and east facing refuse fill slopes. This north flow line collects the majority of run-off from native slopes, soil stockpiles and recently covered refuse fill slopes, and conveys it to Basin #1, a desiltation basin located on native ground to the north of the fill. The north flow line has a dedicated down drain pipe to convey stormwater to a concrete energy dissipation structure at the toe of the SCLF front face. The center down drain also terminates at this energy dissipater. Stormwater is conveyed from the energy dissipater to the Scholl Debris Basin through a concrete box culvert under Scholl Canyon Park. Approximately 80 acres of the 126 acres of inactive fill area drain to the Scholl Debris Basin via a concrete lined open channel down the front face of the inactive fill. Approximately 30 acres of native vegetated area and portions of the golf course drain to Glen Oaks Boulevard, adjacent to the golf course. The remaining 16 acres drain onto the active portion of the SCLF and are managed by the active landfill's drainage system.

As noted above, the existing surface water drainage system has been optimized to control erosion. Examples of BMPs used at the SCLF to control or reduce erosion include, but are not limited to:

- Check dams
- Track walking of slopes (compaction using track dozer)
- Straw wattles[2], soil stabilizers, and/or vegetation on slopes
- Erosion control fabric and netting or turf reinforcement mats (TRMs)
- Silt fences
- Silt retention structures at down drain inlets

[2] Straw wattles are tubes of rice straw or other materials used for erosion control, sediment control and stormwater run-off control. A typical straw wattle is 8 - 9 inches in diameter, 25 feet long, and weighs about 40 pounds. Straw wattles can be made with UV degradable plastic netting for longevity, or with 100% bio-degradable burlap for sensitive sites.



Source: Sanitation Districts of Los Angeles County 2011

Figure 6.8-1
Existing Drainage System

Features such as check dams reduce flow velocities and allow silt to settle out from stormwater. Vegetation on slopes reduces the erosion potential of stormwater as well as the resulting run-off because plant roots help hold soil in place. Vegetation and straw wattles reduce flow velocity on slopes, which reduces erosion and acts as a living filter to recapture silt or soil particles. Culverts are used to convey stormwater under roads or embankments. Culverts and down drains are typically made from High Density Polyethylene or Corrugated Steel Pipe. Flow lines to convey stormwater along flatter grades like benches or decks are typically unlined. Erosion control fabric or TRMs are used to reduce erosion in larger or steeper channels and around culvert inlets. A sedimentation basin is used to detain stormwater in a partially quiescent (low energy/velocity) state to allow suspended solids to settle out and be removed. Stormwater collects in the basin and flows out in a slower, restricted manner, thus reducing the peak flow. Basins also capture debris from native canyons, which are susceptible to mud and debris flows after wild fires.

Ongoing landfill activities regularly change the grades of the active solid waste and soil stockpile areas. These changes modify the stormwater sub-areas and flow routing. To adapt to these dynamic conditions, site operations employ a number of temporary stormwater control measures to minimize erosion and alter stormwater pathways. These techniques are applied along flow lines to either slow or reroute flow and include check dams, small temporary impoundments, temporary culvert inlet structures and silt fences. As required by the NPDES permit, these BMPs are inspected, evaluated, and modified as needed throughout the rainy season to ensure that the performance of the site's permanent drainage structures is optimized.

Water Quality Monitoring

A surface water monitoring plan for the SCLF has been developed and implemented since 1992. The current monitoring program is in compliance with the NPDES general permit requirements, as well as all applicable state and local requirements for such monitoring. The RWQCB is responsible for reviewing and approving surface water monitoring plans and permits. Details of water quality monitoring are included in Section 6.9 (Water Quality) of the DEIR.

Maintenance of Surface Drainage Facilities

Prior to the rainy season, all drainage facilities are routinely inspected, and any required maintenance is performed to ensure that drainage structures and sedimentation basins function properly and meet Title 27 CCR §20365. Maintenance includes removal of sediment from the basins, as necessary, to maintain design capacity.

After each major storm, the drainage structures are inspected to ensure that no damage has occurred. Any needed repairs are made to ensure a reliable stormwater drainage system.

6.8.2 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the GEQA Guidelines, implementation of the proposed project would result in a significant adverse impact on the environment related to surface water hydrology if it would:

- Substantially alter the existing drainage pattern of the site or area, including through the alternation of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site.

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface run-off in a manner which would result in flooding on or off site.

- Create or contribute run-off water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted run-off.

- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

6.8.3 METHODOLOGY

Permanent drainage structures at the SCLF are sized to accommodate design flows that are calculated using the LADPW modified rational method, as described in the 2002 Addendum to the 1991 *Hydrology/Sedimentation Manual*, prepared by the Water Resources Division of the LADPW. The modified rational method uses the Rational Formula: Q = C*I*A, which is an empirical formula that considers the rainfall intensity, in inches/hour, for a specific design storm frequency. The intensity "I" is a function of the time of concentration, or time it takes for run-off to travel from the distal point of a watershed, to its outlet point, and the geometric characteristics (length and slope) of the watershed; the run-off coefficient "C" is a function of the soil type and the percent of impermeable surface (buildings or pavement); the area "A" of the watershed (or subarea) is measured in acres. An isohyetal map is used to determine the rainfall in inches from the 50-year frequency, 24-hour storm at the project site. An adjustment factor of 1.122[3] multiplied by the 50-year storm value is used to calculate the 100-yr, 24-hour rainfall. The rainfall intensity for a specific frequency storm is a function of the time of concentration and soil type. Calculation of the time of concentration is an iterative process using a regression equation developed from over 50 years of data from watershed run-off flows at gauging stations in response to recorded rainfall. The first step in the process has been automated, by LADPW, using visual basic programming, in a spreadsheet called the Tc calculator, which is available for download from the LADPW web site. The Tc calculator can generate a run-off hydrograph for each subarea under study. The second step is to use a routing methodology such as the dynamic wave or Modified Puls method (or a computer program incorporating the routing method) to route the subarea hydrographs through the watershed using the hydraulic characteristics of the conveyances to the outlet point. LADPW recommends several computer programs for this step, including the EPA's stormwater management model (SWMM). SWMM, which has an option to use the dynamic wave routing method as well as a basin modeling option, was used to calculate the 100-year storm flows at SCLF.

6.8.4 IMPACTS

6.8.4.1 Variation 1

The Sanitation Districts would continue to design, construct, and operate permanent stormwater run-off control measures to minimize erosion and prevent flooding of downstream users from the 100-year, 24-hour storm. The final cover of the proposed project would be designed in accordance with applicable stormwater drainage regulations and approved by the RWQCB, CalRecycle, and the Local Enforcement Agency (Los Angeles County Department of Public Health). In addition to the continued rapid diversion of water into lined channels and pipes, vegetated final cover would reduce flow velocity, as well as bind the soil to prevent erosion.

[3] LADPW 2002 Hydrology Manual

Table 6.8-1 shows the peak run-off flow rates[4] under existing baseline conditions compared to those that would result from the current final fill plan and .Variation 1. Figure 6.8-2 depicts the existing baseline condition, based on the May 2010 topographical map, Figure 6.8-3 depicts the currently approved final fill plan as revised in July 2010, and Figure 6.8-4 depicts the fill plan for Variation 1.

Per the CEQA Guidelines, the following analysis of significance relies upon a comparison of the peak flows under the proposed project (Variation 1) versus the baseline condition. The peak run-off flow rates for the currently approved final fill plan are being provided for informational purposes only.

TABLE 6.8-1. COMPARISON OF PEAK RUN-OFF FLOW RATES FOR VARIATION 1

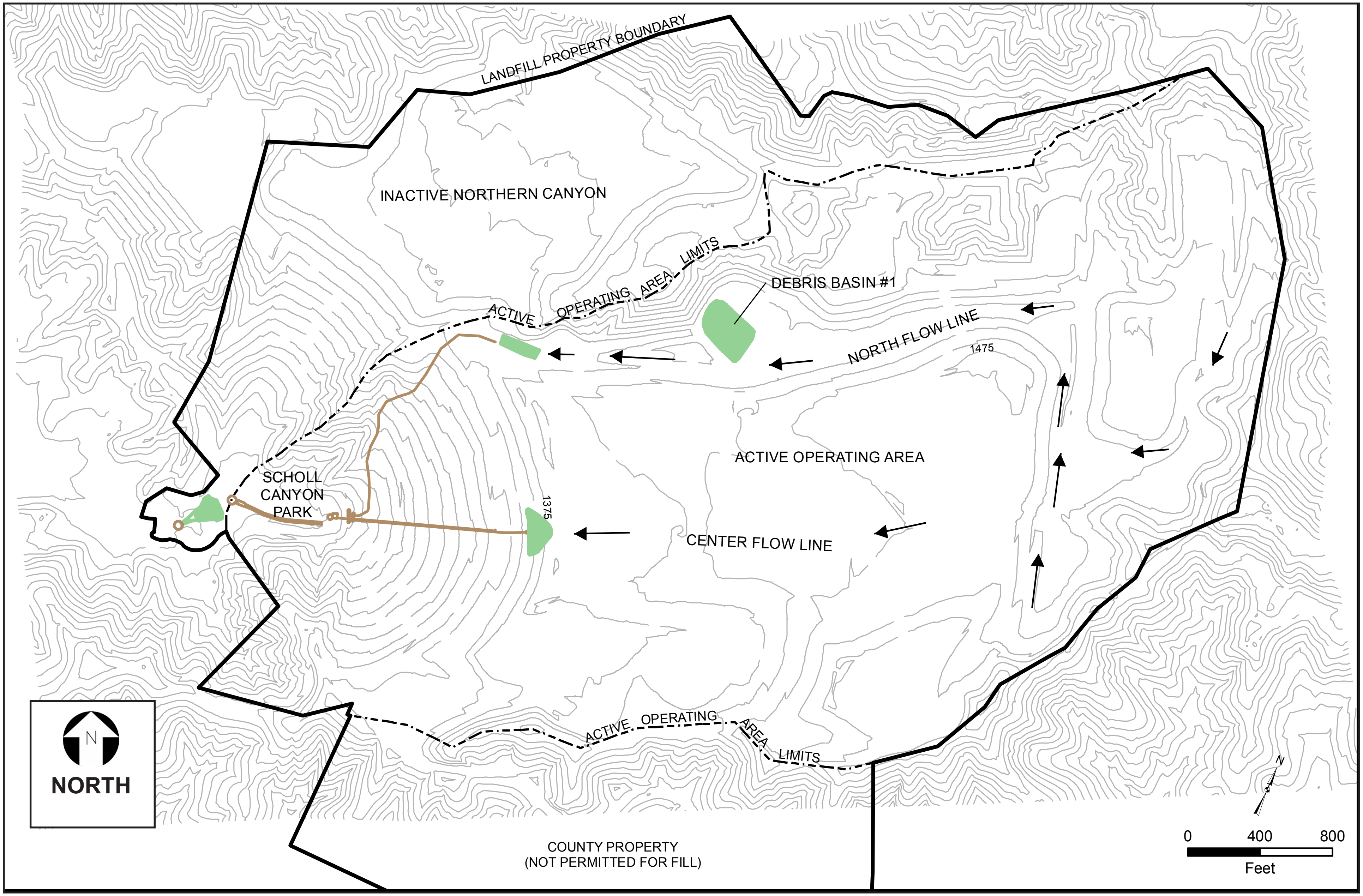
CONFLUENCE POINTS	**EXISTING BASELINE CONDITIONS – MAY 2010**		**CURRENT FINAL FILL PLAN**		**VERTICAL EXPANSION VARIATION 1 FILL PLAN**	
	Watershed (acres)	Peak Q (cfs)	Watershed (acres)	Peak Q (cfs)	Watershed (acres)	Peak Q (cfs)
Center Down Drain	125	252	119	223	95	202
Basin #1 In	143	319	148	328	172	359
Basin #1 Out	143	171	148	164	172	167
4’x8’ Box Culvert In	371	523	317	468	317	442
Scholl Debris Basin In	396	681	396	628	396	605
Scholl Debris Basin Out	396	671	396	618	396	594

Source: Sanitation Districts 2011.

Under Variation 1, the additional fill will increase the side slope area of the final fill and decrease the area of the final top deck. Slopes typically generate more run-off than the flatter decks. Nevertheless, all run-offs from the top deck would continue to be routed down the center down drain and out to the Scholl Debris Basin as all existing structures have sufficient capacity to accommodate the flow associated with the proposed fill under Variation 1. Drainage benches and associated down drains will continue to be constructed along the side slopes at approximately 40-foot vertical intervals. New benches built during the expansion above the truck access road on the north face will be sloped to the east allowing them to drain to the north flow line and Basin #1. All the slopes and benches on the east end of the main fill will also drain to the north flow line. Variation 1 will allow a larger percentage (approximately 14% increase) of slope and bench run-off to be routed to the north flow line and through Basin #1, which would reduce the peak flow entering the north down drain and as a result, reduce the peak discharge from the SCLF. Therefore, the final peak flow from the Scholl Debris Basin would be less under the Variation 1 fill plan than the existing peak.

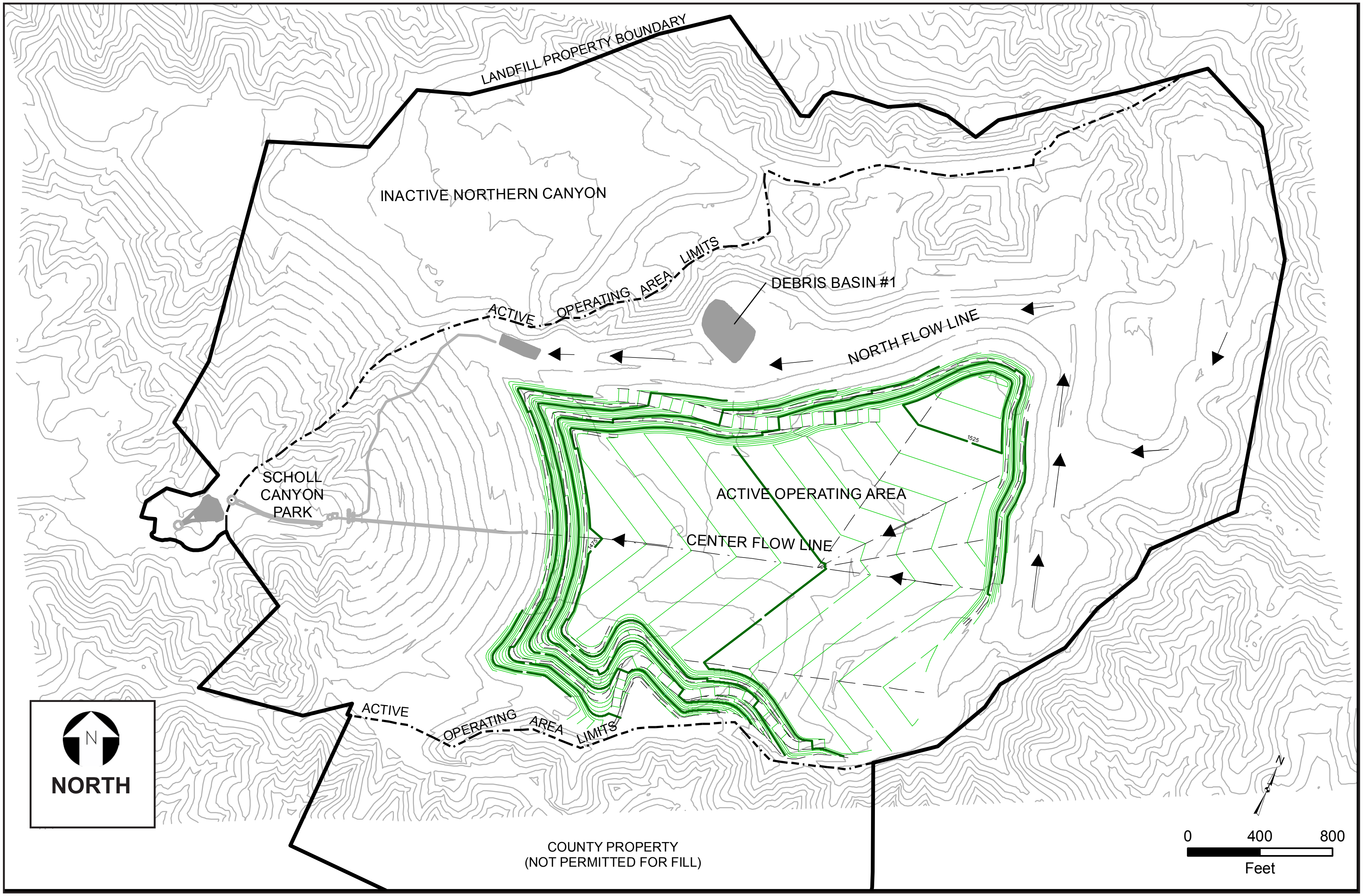
It should be noted that the watershed for the center down drain (and flow line) decreases and the watershed for the north flow line through Basin #1 increases. Thus, Variation 1 would route more flow into Basin #1 as compared to existing conditions. The rerouting of flow is a beneficial impact under Variation 1 from a water quality and peak flow perspective, because Basin #1 serves as both a desiltation and an attenuation basin. As Basin #1 is used to reduce flow, downstream structures will function more effectively. Routing more flow to Basin #1 would improve water quality as a greater portion of the site’s run-off will benefit from Basin #1’s ability to remove silt.

[4] See Appendix J of the DEIR for details on the peak flow modeling including hydrology maps and model output data sheets.



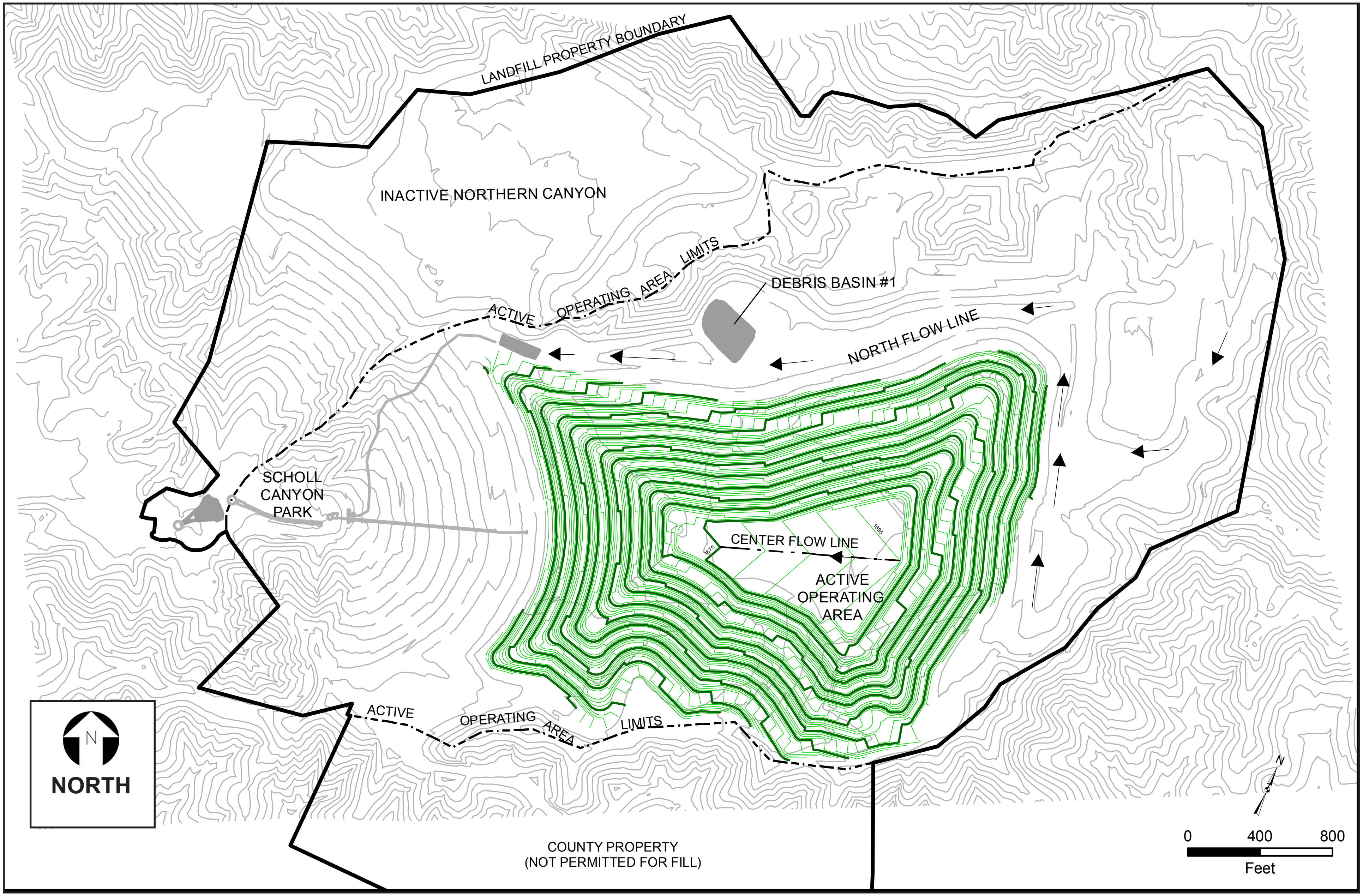
Source: Sanitation Districts of Los Angeles County 2011

Figure 6.8-2
Existing Baseline Conditions (based on May 2010 Topographical Map)



Source: Sanitation Districts of Los Angeles County 2011

Figure 6.8-3
Current Final Fill Plan (Revised July 2010)



Source: Sanitation Districts of Los Angeles County 2011

Figure 6.8-4
Proposed Project's Variation 1 Fill Plan

Variation 1 will not change the size or run-off from the southernmost watershed containing the access road. Thus, the Variation 1 will have no impact on surface water hydrology for that area.

The modeling effort was also used to confirm that the existing storm drainage structures have sufficient capacity to accommodate the flow associated with the 100-year, 24-hour storm event under Variation 1. As shown in Table 6.8-1, lower flows occur at all major conveyances and outlets under Variation 1. Therefore, Variation 1 would improve the ability of existing conveyance facilities to drain the site. It should be noted that since existing structures were constructed, the design rainfall event for the Scholl Canyon area has changed considerably such that the design event for the 100-year, 24-hour storm is considerably smaller (approximately 40 percent smaller) less than previously estimated flow values. As a result, these existing structures have more than adequate capacity to accommodate the peak flows from the 100-year, 24-hour storm event.

Therefore, impacts related to altering the existing drainage pattern of the site, creating or contributing to run-off, and construction or expansion of stormwater drainage facilities would be considered less than significant. In addition, Variation 1 would have a beneficial impact to water quality and peak flow compared to existing conditions, related to greater flow attenuation and desiltation.

6.8.4.2 Variation 2

Table 6.8-2 shows the peak run-off flow rates[5] under existing baseline conditions compared to those that would result from the current final fill plan and Variation 2. Figure 6.8-5 depicts the Variation 2 fill plan.

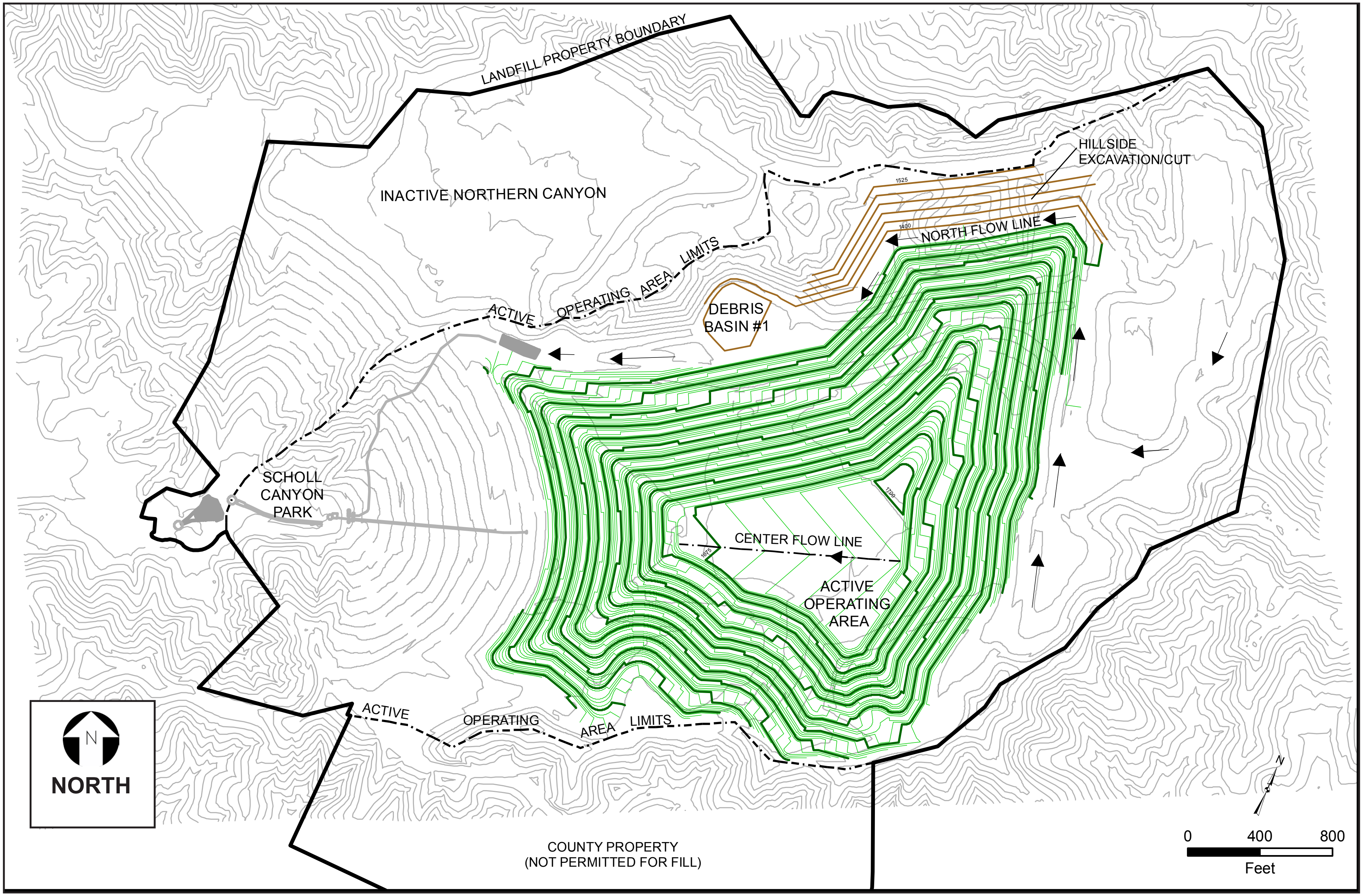
Per the CEQA Guidelines, the analysis of significance relies upon a comparison of the peak flows under the proposed project (Variation 2) versus the baseline condition. The peak run-off flow rates for the currently approved final fill plan are being provided for informational purposes only.

TABLE 6.8-2. COMPARISON OF PEAK RUN-OFF FLOW RATES FOR VARIATION 2

CONFLUENCE POINTS	EXISTING BASELINE CONDITIONS – MAY 2010		CURRENT FINAL FILL PLAN		HORIZONTAL/ VERTICAL EXPANSION VARIATION 2 FILL PLAN	
	Watershed (acres)	Peak Q (cfs)	Watershed (acres)	Peak Q (cfs)	Watershed (acres)	Peak Q (cfs)
Center Down Drain	125	252	119	223	97	209
Basin #1 In	143	319	148	328	170	353
Basin #1 Out	143	171	148	164	170	169
4’x8’ Box Culvert In	371	523	317	468	317	451
Scholl Debris Basin In	396	681	396	628	396	614
Scholl Debris Basin Out	396	671	396	618	396	603

Source: Sanitation Districts 2011.

5 See Appendix J of the DEIR for details on the peak flow modeling including hydrology maps and model output data sheets.



Source: Sanitation Districts of Los Angeles County 2011

Figure 6.8-5
Proposed Project's Variation 2 Fill Plan

The Variation 2 fill plan would result in similar changes and impacts to surface drainage as described above for Variation 1.

Variation 2 would also result in clearing and excavation of existing land on the north side of the SCLF, relocating the north flow line northward, and deepening Basin #1 to accommodate the relocated flow line. After construction of the expansion, the exposed rock cuts would behave as impermeable surfaces allowing 95% run-off. However, the increased run-off from these cut slopes would all be routed through Basin #1, which would capture any additional silt load and would also attenuate the slightly increased run-off flow rate. As a result, the peak flow from the Scholl Debris Basin would be less under the Variation 2 fill plan than the existing peak.

In summary, existing structures have the capacity to accommodate the peaks flows under Variation 2 for a 100-year, 24-hour design storm. As such, impacts related to altering the existing drainage pattern of the site, creating or contributing to run-off, and construction or expansion of stormwater drainage facilities would be considered less than significant. In addition, Variation 2 would have a beneficial impact to both water quality and peak flow compared to existing conditions, related to greater flow attenuation and desiltation.

6.8.5 MITIGATION MEASURES

6.8.5.1 Variation 1

No mitigation measures are required.

6.8.5.2 Variation 2

No mitigation measures are required.

6.8.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

6.8.6.1 Variation 1

Implementation of Variation 1 would result in less than significant impacts related to surface water hydrology.

6.8.6.2 Variation 2

Implementation of Variation 2 would result in less than significant impacts related to surface water hydrology.