

## **SUNSET CLIFFS ASSOCIATION (SCA) DETAILED OBSERVATIONS AND RECOMMENDATIONS FOR THE:**

### **JULY 20, 2011 CITY/DUDEK DRAINAGE STUDY**

In response to the City of San Diego and Dudek & Associates, Inc. (City/Dudek) July 20, 2011 presentation the “Sunset Cliffs Natural Park (SCNP) Comprehensive Drainage Study”, SCA offers the following observations and recommendations. The proposed piping infrastructure study does not comprehensively deal with the SCNP drainage problems, since there are areas of the park not covered and it does not look at usage of alternative green methods that would eliminate or reduce in size the piped solutions. Consequently, the City/Dudek study needs added elements that comprehensively deal with the park drainage problems. We refer to the July 20, 2011 drainage study as the City/Dudek Drainage Backbone Study, that with modifications can become the Comprehensive Drainage System required by the SCNP Master Plan.

The SCA narrative is based on the principles that the drainage plan and system:

- Comprehensively deal with all runoff and erosion;
- System elements control runoff as close to the source as possible, so it doesn't flow across parkland causing erosion;
- System elements function independently of one another, so they can be staged to correspond with funding availability;
- Esthetically, system elements are in keeping with the natural park concept;
- Costs are minimized.

Sections of the SCA report include:

- Three tables with detailed comments, referenced to the Dudek Hydrology Drainage Basins, listing the overall SCA response to the study;
- An accompanying SCA map showing the locations where runoff control is omitted and existing erosion features;
- An accompanying table showing the meaning of SCA map symbols for various runoff control approaches;
- An accompanying listing of the sites where runoff or erosion features have been omitted by Dudek.
- Accompanying figures to help illustrate runoff and erosion features.

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**Table 1.** Recommended SCNP Drainage Runoff Control Alternatives For the Linear Park Basins X & A Keyed To Dudek Figure LN-1

SYSTEM LOCATION	DUDEK LOCATION NUMBER	CITY/DUDEK ALTERNATIVE	SCA ALTERNATIVE	INTERIM ALTERNATIVE	COMMENTS
Sunset Cliffs Blvd.	1	Raise curb and build X4 inlet structure.	None	None	Reasonable solution, keeps street runoff from running into Park.
Parking Lots 1 and 2	1	Redesign parking lots to drain towards street.	Put asphalt curbs under guardrails and add grated drain channels in pavement to drain lots.	Place sand bags or wattles under guard rails to slowdown westward running runoff. If use wattles, add wildflower seeds to help control erosion.	Provides cost savings, drains runoff to Sunset Cliffs Blvd.
Parking Lot 3	2	Redesign parking lot to drain towards street.	Install bio-swale along west edge of parking lot and erosion BMP to prevent slope erosion. If Osprey St. outfall is rebuilt, bio-swale runoff could be discharged to it.	Place sand bags or wattles under guard rails to slowdown westward running runoff. If use wattles, add wildflower seeds to help control erosion.	SCA alternative treats and eliminates erosion causing runoff and sediment discharges to the sea. Improves slope appearance.
Parking Lot 4	2	Redesign parking lots to drain towards street.	Install bio-swale along west edge of parking lot and erosion BMP to prevent slope erosion.	Place sand bags or wattles under guard rails to slowdown westward running runoff. If use wattles, add wildflower seeds to help control erosion.	SCA alternative treats and eliminates erosion causing runoff and sediment discharges to the ocean.

**Table 2.** Recommended SCNP Drainage Runoff Control Alternatives for the Linear Park Basins B – E, Keyed to Dudek Figure L1-2

SYSTEM LOCATION	DUDEK LOCATION NUMBER	CITY/DUDEK ALTERNATIVE	SCA ALTERNATIVE	INTERIM ALTERNATIVE	COMMENTS
Basins B - E			No new outfalls or storm drains		This is SCNP Master Plan recommendation.
	1	Okay as is		None	
	2	Add 660 linear feet of 8" curbing.		Seasonally place sand bags along the curb and in the curb notch at the Gabion to keep runoff from eroding the cliff.	

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Table 3. Recommended SCNP Drainage Runoff Control Alternatives For the Hillside Park Basins F –Q, Keyed to Dudek Figure H-1.

<b>SYSTEM LOCATION</b>	<b>DUDEK LOCATION NUMBER</b>	<b>CITY/DUDEK ALTERNATIVE</b>	<b>SCA ALTERNATIVE</b>	<b>INTERIM ALTERNATIVE</b>	<b>COMMENTS</b>
Basin F, Lower Parking Lot driveway area	4	Divert runoff with curbing and a brow ditch to Lower Parking Lot in Basin G.	Install bio-swale and erosion BMP to prevent slope erosion.	None	SCA Alternative would control incident runoff on site.
Basins G & H above the multi-use trail	1	No erosion control proposed for parkland above the sludge line trail.	<p>Capture and redirect all runoff, that runs off Lomaland Drive in the vicinity of the PLNU Public Safety Building, back to the roadway further down slope.</p> <hr/> <p>Resurface road and all impervious surfaces on Park property down slope of the PLNU Public Safety Building with a permeable surface such as DG, and spread and infiltrate remaining runoff.</p> <hr/> <p>Redirect the ResCom Storm Drain (see Figure 2) runoff that exits south of the Road leading to the private residence, so it drains northward into Basin E.</p> <hr/> <p>Capture, control, and retain runoff that enters the NE corner of the Hillside Park, and infiltrate into the ground near Amiford Drive.</p> <hr/> <p>Redirect all Lomaland Property runoff from roof drains and hard surfaces onto Lomaland Drive to keep it from flowing into drainage basins G and I or the Upper Parking Lot in Drainage Basin J.</p>	Contour land downslope of hardscape to facilitate re-vegetation with native plants.	Omission of runoff control measures for the northeast corner of the Hillside Park above the multi-use trail (see arrow A on contour map in Figure 1), means erosion due to runoff above the multi-use trail will not be abated, and trail measures designed to protect the multi-use trail will be compromised. Sediment in the runoff will likely compromise the planned treatment station in the southwest corner of the Lower Parking Lot, or at the least increase maintenance costs.
<b>SYSTEM LOCATION</b>	<b>DUDEK LOCATION NUMBER</b>	<b>CITY/DUDEK ALTERNATIVE</b>	<b>SCA ALTERNATIVE</b>	<b>INTERIM ALTERNATIVE</b>	<b>COMMENTS</b>

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<p><b>Basin G below the multi-use trail</b></p>	<p>4</p>	<p>Directs runoff to the western edge of the Lower Parking Lot, then treats and pipes it to the 36" main line that discharges it to the ocean at the "notch"(see Figure 3).</p>	<p>Redirect all runoff from the Lomaland property roof drains and impervious surfaces onto Lomaland Drive to keep it from flowing into drainage basins G, I or the Upper Parking Lot in Drainage Basin J.</p> <hr/> <p>Assumes all runoff from upslope has been controlled close to the point of origin and only incident rainfall on the Lower Parking Lot needs to be controlled. Re-grade Lower Parking Lot and add permeable surface to facilitate infiltration. Use bio-swales for treatment of high levels of incident rainfall falling on the parking lot.</p>	<p>None</p>	<p>This will abate upslope runoff flowing into the Lower Parking Lot in Basins G &amp; I.</p> <p>If the SCA alternatives are economically feasible and are implemented, it may be possible to eliminate running an 18" line across the Badlands to the 36" main line, or the pipe line diameter could be reduced to 12" or less.</p>
<p><b>Basin I</b></p>	<p>1</p>	<p>Collect runoff at the western edge of the Lower Parking lot after is has caused up slope erosion, treat and pipe it to the 36" main line for discharge to the ocean.</p> <hr/>	<p>Redirect all runoff from the Lomaland property roof drains and impervious surfaces (see Figure 4) onto Lomaland Drive to prevent it from flowing into drainage basins G, I or the Upper Parking Lot in Drainage Basin J.</p> <hr/> <p>Assumes all runoff from upslope has been controlled close to the point of origin and only incident rainfall on the Lower Parking Lot needs to be controlled. Re-grade Lower Parking Lot and add permeable surface to facilitate infiltration. Use bio-swales for treatment of high levels of incident rainfall falling on the parking lot before harvesting the water for irrigation, or infiltration.</p>	<p>Contour land downslope of hardscape to facilitate re-vegetation with native plants</p> <hr/> <p>Install sand bags (seasonally), or asphalt curbs, and a deflection bump in the Lower Parking Lot to deflect runoff to the southwest corner drain.</p>	<p>SCA Alternatives for the Lower Parking Lot have the potential to eliminate the need for running a storm drain line across the Badlands, and they minimize ocean discharges.</p>
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<b>Basin J - Upper Parking Lot drains into this basin.</b>	1 & 4	Collect runoff from the Upper Parking Lot and discharge into new 18/24" storm drain pipe running to the east of the Western Loop Road.	Build a system using media filters for treatment and storage of runoff at the lower end of the Upper Parking Lot, and harvest or infiltrate or slowly release it to parkland.	None	The SCA Alternative would reduce the flow to the 36" main line that discharges to the ocean.
<b>The slope below the Western Loop Road in Basins L and K</b>	4	Install 1,440 feet of 6" dike and connect existing PLNU drainage pipes to new 18/24" drain pipe running along the eastern edge of Western Loop Road	Same as City/Dudek Alternative 1 for the new 18/24" pipe east of the loop road and 6" dikes.	PLNU CUP Condition 38 drainage plan for areas B and C will use curbs and a brow ditch along the eastern edge of the Western Loop Road.	All alternatives should eliminate the major erosion downslope of the Western Loop Road that is not due to incident rainfall.
<b>PLNU Campus runoff in Basins M1 and M2</b>	3	Build a 36" diameter storm drain through Culvert Canyon and discharge the runoff into large dissipater structure placed at the "Notch" and discharge to ocean.	Same as City/Dudek Alternative 1 for the new 18/24" pipe east of the Western Loop Road and 6" dikes.	PLNU CUP Condition 38 mitigation drainage plan for areas B and C will use curbs and a brow ditch along the eastern edge of the Western Loop Road.	City/Dudek & SCA alternatives will eliminate the erosion and mass wasting in Culvert Canyon. Laying back the canyon walls and filling in the canyon, should minimize the existing public safety hazards. Recommend protecting the paleontology educational sites in Culvert Canyon where feasible, and provide safe access to them.
<b>Incident rainfall falling on Basin N</b>		Not covered	Use standard land management techniques for minimizing runoff from incident rainfall.	Same as the SCA Alternative	
<b>Basins O, P and Q</b>	5	715 lineal feet of 6' dike, roll over berm for driveway to the Young Hall Parking Lots from Lomaland Drive, Arizona Crossing repair, and construction of a Modified Type F Catchment Basin  595 lineal feet of 6" dike, an 18" pipe and a treatment stage with a Type B Cleanout to connect with the 36" main line & discharge to ocean.	Same as the City/Dudek Alternative 1 for the Western Loop Road system  Build a system using media filters for treatment and storage of runoff below Young Hall, and harvest for irrigating Young Hall turf, ornamental plants, and native plants to meet seasonal evaporation/transpiration needs, or infiltrate or slowly release it to parkland.	PLNU CUP Condition 38 requires a mitigation drainage plan for areas B and C. It will likely use curbs and a brow ditch along the eastern edge of the Western Loop Road, and construct a runoff control system below Young Hall.	PLNU should build the interim plan in a way that it can be used for the permanent drainage system.