

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

Page*	Section	Comment	Response
1	Introduction	<p>One major issue is missing, the bulk of the storm water discharged either from pipes owned by the City of Pacific Grove or pipes owned by Hopkins Marine Station (HMS) is urban runoff from the City. In fact, the discharge from five locations is made up exclusively of water from Pacific Grove. Table 1 in section 7.3 accurately reflects this fact, but the reader does not see this table until Page 18 of the document. Accordingly, Stanford recommends that the Board insert the following text after the words “China Point since 1918” in the first paragraph of the introductory section:</p> <ul style="list-style-type: none"> • “HMS is bordered along the entire length of its southwest side by the City of Pacific Grove. Urban runoff from Pacific Grove contains all the pollutants normally present in urban runoff, which materially impacts the quality of stormwater discharged from the HMS facility.” 	<p>We thank you for the comment and agree that the City of Pacific Grove is responsible for the bulk of the storm water discharged into the ASBS. But Table 1 adequately reflects this, so we disagree with the need to change the text.</p>
15	Agassiz Building Discharge	<p>There is not one but two discharges from this building. Accordingly, Stanford recommends that the following text replace the first sentence on page 15:</p> <ul style="list-style-type: none"> • “PCG246 discharges 100% seawater from the tanks in the Agassiz and DeNault buildings; PCG247 discharges 	<p>The original exception application identified these discharges as PCG247 and PCG248, however upon review of the SCCWRP 2003 Survey Report staff determined that the</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>stormwater originating from roof drains on the Agassiz building. PCG246 previously discharged a mixture of seawater and stormwater, but the stormwater was redirected to PCG247 as part of a building remodel in 2006.”</p> <ul style="list-style-type: none"> • The sentence “This pipe corresponds to SCCWRP outfall PCG247” becomes redundant with this suggested text, so should be struck. 	<p>two discharges are in fact PCG 246 and PCG247. During the survey PCG247 drained flowing waste seawater, and PCG246 was not flowing. When preparing the Initial Study staff used the language in the exception application (“A single 4” pipe discharges water from the DeNault Building and Agassiz Building near the base of the cliff face above Agassiz beach.”) Thank you for the clarification and status of these discharges. Changes have been made to correct the Initial Study to more accurately describe PCG246 and PCG247.</p>
		<p>Please note: PCG246 was sampled and analyzed once before the remodeling, and once after on 3/22/05 and 8/31/06. The Copper and Zinc levels were substantially reduced in the 8/31/06 sample; all metals were well below the most stringent Ocean Plan limits, the six month median. For this reason, Stanford recommends that no</p>	<p>Although this information is correct, there is not sufficient reason to eliminate monitoring completely at PCG246. The result from a single sample may indicate good water quality, but there is</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		monitoring be required at this discharge location.	no guarantee that future results will be similar.
17	Section 7.2 – Storm Water Discharges	<p>The text explaining the number and types of storm water discharge outfalls in paragraph #3 is incorrect. Accordingly, Stanford recommends that the first 3 sentences of the third paragraph be modified to read:</p> <ul style="list-style-type: none"> • “There are ten stormwater discharge outfalls on HMS property. Five discharge points are made up entirely of urban runoff from the City of Pacific Grove, two of which are non-point sources. Three of the ten discharges are a mixture of Pacific Grove urban runoff mixed with a very small amount of stormwater generated from rainfall on HMS property. The remaining two discharges are primarily stormwater generated from rainfall on HMS property.” 	<p>Thank you for bringing this to our attention. Changes have been made to Section 7.2 in the Initial Study to better describe the storm drains.</p>
		<p>It should be noted that the two HMS pipes are smaller than the smallest of the city pipes crossing HMS (4” & 9” vs. 10”-36” respectively) and well below the 18” required sampling size.</p>	<p>These comments are noted, but there will be no changes in the document regarding relative sizes of drains.</p> <p>Regarding reference to an 18” required storm drain sample size, there is no minimum requirement in the</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

			exception for storm drains, i.e., HMS storm drains would need to be monitored regardless of size.
18	Section 7.3 Table 1 "Hopkins Marine Station SCC , WRP 2003 Discharge Points and Status 2010"	Drain discharge PCG248 does not exist, and PCG259 has been removed as part of the TRCC backsplash project and no longer exists.	<p>Thank you for your comments. PCG248 did in fact exist at the time of the survey (there is photo documentation) and was described as a groundwater seep. The initial study was in part based on that survey. However, staff has determined that an error was made in Table 1 with PCG 248 described as "Storm drain Agassiz" and this has now been corrected to correctly describe PCG248 as a groundwater seep with no corrective action.</p> <p>Changes are also being made to Table 1 to indicate that for PCG259 has been removed and no further corrective action is needed.</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>“Sheet runoff” is a mischaracterization of the water resulting from the “Dive gear/ boat rinse area.” Boats and dive gear are rinsed near the Boatworks to prevent corrosion, but they are only rinsed with tap water. No soaps or solvents are used and the quantity of water used is limited. It tends to pool on the grass, not run straight into the ocean as implied. No lead paints or other toxic materials are used to paint or protect this equipment. Therefore, the nature of the runoff is identical from runoff from adjacent sidewalks and grassy areas. As such, we recommend that no “Corrective Action” is needed.</p>	<p>Regarding the dive gear/ boat rinse area, sheet runoff is a term used to best describe discharges and their origin. The best way to address the potential source of pollutants from this would be to include preventative or corrective actions as part of the waterfront management plan. The term corrective action is also a common term used to convey whether or not an issue has been resolved, and is intended to include preventative actions.</p>
		<p>“PCG unid” is a seawater outfall from the Loeb building, and was sampled and analyzed on 6/15/06 and 8/31/06. All results were substantially below Ocean Plan limits. Toxicity testing on samples collected on 6/15/06 and 9/10/07 showed no toxicity to aquatic species. Accordingly, we recommend that no “Corrective Action” is needed.</p>	<p>The three sampling events in 2006 and 2007 represent only a snapshot in time and part of the exception application process. Any discharge must be routinely monitored as part of a discharge permit. Further monitoring may indicate an effect on receiving water (natural water quality) and</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

			<p>while not envisioned now corrective action may be required in the future. Staff therefore will not change Table 1 to address this comment.</p>
		<p>One discharge is missing from the table, it doesn't have a PCG# and it was not noted during the SCCWRP survey. It is a 10" concrete pipe that discharges onto the beach adjacent to the Boatworks Building. The water discharged at this location is a mixture of PG urban runoff that enters the HMS property at the foot of Dewey Street, flows under the fence through an open swale, and enters a storm drain which is also fed by runoff from the grassy swale area behind the Boatworks Building. This discharge was tested for chemical constituents at two locations: the PG urban runoff at the HMS fence line, and at the discharge location. The data submitted to the board demonstrated that the discharge contamination contained significantly lower levels of Ocean Plan metals and PAHs at the discharge point, compared to levels found in the water as it entered the HMS property. Accordingly, we recommend that while the City of Pacific Grove may need to monitor or take other actions, no corrective action by Hopkins is</p>	<p>We appreciate your comment and have added this discharge to Table 1. However, because runoff is contributed from Hopkins property, this is a joint discharge and will need to be further monitored. Corrective action may be needed if there is an alteration of natural water quality in the ASBS. If this occurs it will be HMS responsibility to work with the City of Pacific Grove on appropriate solutions.</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		needed.	
		The existing table is very confusing to the reader and it is difficult to extract meaning from it. Stanford proposes that rather than organizing the table by PCG #, which is somewhat arbitrary, that the table be organized so that it clearly conveys the status and ownership of each discharge location as follows: Status, Responsible Party, Number of Discharge Points, SCCWRP ID, Description (ex: Seawater Outfall Agassiz), and Action Needed by HMS.	We appreciate your comments, but there is no compelling reason to make that particular change to the table.
31	“General Considerations for Toxicity Testing”; paragraph beginning with “Use of pass/fail tests”	The tests performed on Stanford’s samples may “not accurately reflect...response to toxicity endpoints.” In fact, if a test organism shows no negative response to an <u>undiluted</u> sample, it stands to reason that the test organism would also show no negative response to a diluted sample. Stanford suggests that the final paragraph in this section be replaced by the following: <ul style="list-style-type: none"> • “Use of pass/fail tests consisting of undiluted effluent is a common method to screen samples for toxicity prior to conducting a full dilution series, but is not recommended by EPA. A dilution series protocol was not followed for either the acute or chronic bioassays and the test organisms were exposed to 100% 	We appreciate the comment, however, this is language directly taken from the US EPA guidelines, as part of the regulatory framework.

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>concentration. Accordingly, the test results (Table 6) may be overly conservative, and not adequately reflect organism response to toxicity endpoints.”</p>	
32-33	<p>“Seawater Chemical and Physical Constituents”</p>	<p>Stanford agrees that the chemical and toxicity data as reported in the tables on p.32 are accurate, but does not agree with the characterization on p. 33 that the discharge from the aquaria is a “waste”.</p>	<p>“Waste” is the regulatory term for adequately characterizing discharges under the NPDES Program. The Ocean Plan defines waste as the total (not net) flow. Any responsible party that conveys a discharge following use in a process (in this case laboratory seawater supply) to surface waters is considered to discharge waste.</p>
		<p>The copper and zinc detected in the Agassiz sample collected on 3/22/05 were due to the cross connection with roof drain water. Once the roof drain was separated, and the Agassiz aquaria re-sampled on 9/1/06, all metals were below Ocean Plan Limits. The Description for the sample collected from site #2, Agassiz on 3/22/05 should be “Seawater and Roof Drain Mix, 3/22/05”. In addition, the data for “Site #12 TRCC” should be annotated as follows: “TRCC discharge was redirected back to MBA system, and no longer</p>	<p>Thank you for the clarification regarding the Agassiz discharge samples and corrective actions, and we have added this information to the Initial Study. However we are not changing the description of the disposition of the TRCC discharge, which is accurate in the Initial Study.</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>directly enter the ASBS.”</p>	
		<p>The Ocean Plan does not have a numerical standard for nitrate-nitrogen, and comparing the level found in the two samples to a “pilot Study” reference is not appropriate. The OP does have a non-numerical standard for nutrients of: “Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.” Based on the receiving water appearance and toxicity data, the Hopkins discharge appears to meet this standard. Additionally, the USEPA has set the drinking water standard for nitrate-n at 10 mg/L (10,000 ug/L). The HMS data are well below these standards. In addition, any nitrate present in HMS discharges is dwarfed by the nitrate levels in the receiving waters due to the native seals and birds that are abundant on China Point. Stanford suggest that the first paragraph on page 33 be replaced by the following:</p> <ul style="list-style-type: none"> • “In terms of the water quality objectives, all seawater discharge samples met all Ocean Plan standards after HMS took corrective actions regarding cross connections. The Agassiz sample collected on 3/22/05 exceeded standards for copper, but after removing cross connection with roof 	<p>We respectfully disagree about the nitrate standards. The comment is not relevant because they are not for the same beneficial use. The beneficial use central to the exception is marine aquatic life, with a requirement of no alteration of natural water quality, not drinking water. Therefore, the pilot study is currently the only available data that can be used as a proxy for natural water quality. Because the pilot study data is limited in terms of samples, we are recommending additional reference monitoring in the exception. The requested change will not be made to the Initial Study.</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>drains, the subsequent sample, collected on 9/1/06, met all distinguished standards. The discharge from the TRCC backflush exceeded copper standards on 6/15/06 prior to rerouting to the Monterey Bay Aquarium (MBA). This discharge now goes through the MBA treatment system prior to discharge at MBA. Receiving water samples met all Ocean Plan Objectives.</p>	
		<ul style="list-style-type: none"> • In terms of nitrate nitrogen levels applicable to aquaria discharge, the Ocean Plan has established the following non-numeric standard. "Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota." While measured levels of 80 ug/L at the Loeb Aquaria were higher than recent statewide pilot study reference results, these results are not an Ocean Plan objective. Therefore it is not clear if these measured levels would violate the non-numerical standard. Measured levels of 870 ug/L at the TRCC have been addressed by rerouting the discharge to the MBA treatment system." 	<p>We agree that routing the TRCC discharges to the Monterey Bay Aquarium will reduce nutrient inputs from HMS into the ASBS. However the Initial Study already clearly states that the TRCC discharge has been routed to MBA.</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

33	"Storm Water Toxicity Results"	<p>The paragraph describing the giant kelp chronic toxicity tests accurately reflects the results obtained by the testing lab regarding germination in the PGAF, HTRC, PGSW and PGWB samples. Stanford would like to point out, however, that there is considerable scientific debate regarding the reliability of these specific species tests. In fact, the State Board's own "Natural Water Quality Committee" has noted in their September 2010 "Technical Report", that these tests are "of particular concern" regarding potential positive results.</p>	<p>Staff disagrees that there is considerable scientific debate regarding the giant kelp chronic (critical life stage) toxicity test. The Natural Water Quality Committee did express concern about "acute toxicity interpretations" which were in relation to situations where control tests had lower survival than in un-diluted effluent samples. This concern did not relate to chronic toxicity tests using giant kelp.</p>
		<p>In addition, storm water collected at PGAF is exclusively urban runoff from Pacific Grove, not primarily HMS as noted. The PGAF location is the open grate immediately adjacent to the fence at the property line of Pacific Grove., and contains runoff from Ocean View Blvd as shown on the map provided by Stanford (Figure 2, p. 18). Accordingly, Stanford requests that the second sentence in the fourth paragraph under "Storm Water Toxicity Tests" be replaced by:</p> <ul style="list-style-type: none"> • "The PGAF storm water sample, which is exclusively runoff from 	<p>The information presented in the Initial Study was provided by Hopkins as part of the exception application. PGAF was not clearly indicated as a storm drain on maps provided by HMS in the application (which was the origin of Figure 2). Figure 2 indicates that the municipal storm drains drain >99% runoff from the City, but not 100%.</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>the City of Pacific Grove, was acutely toxic to mysids (TUa = 1.17), but the other storm drains samples...were not acutely toxic”</p>	<p>However, the Initial Study has been changed to describe PGAF as “exclusively runoff from the City of Pacific Grove representing run-on storm water quality as it enters HMS...”</p>
34	<p>Table 9 “HMS Storm water Runoff Chronic Toxicity Analysis, 2006”</p>	<p>This table is confusing as it includes results from two distinct types of storm water, but does not distinguish them. HGAZ (PCG250) is runoff made up primarily of rainwater which falls on the HMS parking lot with some contribution from Pacific Grove</p>	<p>Thank you for your comments. The exception application was unclear and confusing regarding some of the sampling locations, and these comments provide welcome clarity. Staff has added information to Table 9 to provide more complete and accurate descriptions of the storm water sampling locations, including for HGAZ.</p>
		<p>HTRC was collected from a storm drain grate up-gradient of PCG258 and previously contained TRCC back flush waters as well as rainwater from around the TRCC building. At the time this sample was collected, no TRCC back flush was occurring, and sheet runoff from Pacific Grove was mixed with the TRCC runoff. The TRCC back flush was subsequently removed from this discharge location and plumbed to the Monterey Bay</p>	<p>Staff has has added information to Table 9 to provide a more complete and accurate description for HTRC.</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		Aquarium treatment system.	
		PGWB, PGAF and PGSW are exclusively urban runoff from the City of Pacific Grove.	The text of the Initial Study already states that PGWB, PGAF and PGSW primarily drain runoff from the City of Pacific Grove. However, staff has added information to Table 9 to provide more complete and accurate descriptions for these sample locations.
		Accordingly, Stanford recommends that Table 9 be reformatted as below to properly describe the source of the stormwater represented by the toxicity testing results. Section titles: Water Body Description, Site Description, Toxicity Test Type, Mysids, Kelp, Fish	Staff disagrees with the need to reformat the table and considers the above described changes to Table 9 to be adequate.
34	Table 10 "Metals and Ammonia-Storm Drain Discharge Water"	PG numbers have been incorrectly assigned to several samples. The results shown for PCG241 are actually for PCG238. (This sample was named PGWB by HMS during the sampling.) The results shown for PCG249 are actually for PCG250. (This sample location was named HGAZ by HMS during the 3/22/05 sampling.) It was	The exception application was unclear and confusing regarding some of the sampling locations, and these comments provide welcome clarity. Thank you for the clarifications and Table 10 has been

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>resampled on 3/6/06 but those results are not shown in this table. The results shown for PCG256 are actually for a location without a PCG number. (This sample location was named HBBW by HMS during the sampling.) The results shown for PCG259 are actually for a location without a PCG number. (This sample location was named PGAF by HMS during the sampling. It is important to note that this last sample (PGAF) location is not a discharge location, but a sample of Urban Runoff from PG entering the HMS property building behind the Fisher Building. Accordingly, Stanford requests that Table 10 be reformatted as below to accurately show the data.</p>	<p>edited to include more accurate information.</p>
35	<p>“Storm Water Chemical Constituents”</p>	<p>In addition to the misidentified PCG numbers, the first paragraph on p. 34 contains discussion of three distinctly different types of samples without clearly differentiating them. PCG238 (misidentified as 241) is made up exclusively urban runoff from the City of Pacific Grove. It contains the highest concentrations of copper, lead and zinc among all samples collected. PCG250 is comprised of runoff from the HMS parking lot and landscaped areas. This discharge was sampled twice on 3/22/05 and 3/2/06 with varying results PCG Unid (a) (misidentified as PCG256) contains discharge from the grassy swale area behind the Boatworks building with a very</p>	<p>Thank you for your comments. This information provides additional clarity to the results presented in Table 10. The text in the paragraph following Table 10 has been edited. The description of storm water quality in relation to objectives has been clarified. A statement was added regarding the improvement of storm water quality at PCG 250 between 2005 and 2006. A statement was also added to</p>

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>significant contribution from urban runoff. The results from the urban run-on that mixes with the grassy swale landscape area stormwater is not shown on this table. (No PCG # denoted PGWS by HMS) Levels of all OP metals found in this run-on sample exceeded the eventual discharge levels found at PCG Unid (a). PCG257 is primarily PG urban runoff with a very small contribution from the downspouts at the Fisher building. PCG258 contains primarily urban runoff from PG with a minor contribution from HMS. PCG Unid (b) (misidentified as PCG259) is a sample of urban runoff as it enters the HMS property as discussed above. Accordingly, Stanford requests that this paragraph be replaced with the following:</p> <ul style="list-style-type: none"> • “Discharges of HMS storm water and urban runoff discharged from or entering the HMS property contained levels of selected Ocean Plan chemical constituents exceeding the six month median objective for copper, zinc and lead. Urban runoff from the City of Pacific Grove contained the highest levels of these constituents, exceeding the instantaneous maximum for copper and zinc (PCG 238). • Results for urban runoff 	<p>make it clear that PGAF represents storm water quality from Pacific Grove before co-mingling with HMS runoff.</p> <p>Due to the somewhat complex nature of the storm water drainage, particularly for the municipal drains, staff will work with the Regional Board, the municipalities, and HMS during the development phase of the monitoring program to identify appropriate sampling points.</p>
--	--	--	---

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		<p>entering the HMS property exceeded the six month objective for Arsenic, Copper, Lead, and Zinc at one location (PCG Unid (b)), and exceeded the six month median objective for Copper and zinc at the second location (PCG257). In addition, results for lead exceeded the instantaneous maximum at PCG257.</p> <ul style="list-style-type: none">• Results for urban runoff mixed with stormwater from HMS landscaped areas and the open swale (PCG Unid(a)) exceeded the six month median for copper, lead, and zinc. However, as noted above, samples collected at the fence line representing urban runoff prior to flowing through the open swale and mixing with HMS storm water (PCG257) had significantly higher levels of these constituents. Results for urban runoff mixed with a very small amount of storm water from HMS landscaped areas (PCG258) exceeded the six month median for arsenic, copper and zinc).• Results for runoff from the HMS parking lot and landscaped areas (PCG250) exceeded the six month median	
--	--	--	--

Comments on the Hopkins Marine Station Initial Study Submitted by the Hopkins Marine Station

		objective for chromium, lead, and zinc and the instantaneous maximum for copper in the first round of sampling. During follow-up sampling in 2006 all these were substantially reduced with no analytes exceeding the instantaneous maximum and only copper and zinc exceeding the six month median.	
--	--	--	--

* Page numbers in this table are based on the original version of the Initial Study dated January 12, 2011.