THE CITY OF SAN DIEGO

October 21, 2011

Electronic Submission: commentletters@waterboards.ca.gov

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Subject: **Comment Letter – California Ocean Plan Amendments**

Dear Ms. Townsend,

The City of San Diego, Transportation & Storm Water Department (City) appreciates the opportunity to provide comments on the Proposed Amendments to the California Ocean Plan Regarding Model Monitoring, Control of Commercial Vessel Discharges and Invasive Species, and Non-Substantive Administrative Changes and the Draft Substitute Environmental Documentation dated August 24, 2011. The City's general comments are contained in this letter, and our detailed comments are included in the attached table.

The Proposed Model Monitoring requirements are similar to those drafted and implemented over the past few years for point and non-point source discharges to Areas of Special Biological Significance (ASBSs). A great deal of information has now been gathered statewide and is available for review and analysis for programs such as this one. A limited summary of this data was provided in the 2011 Program Draft Environmental Impact Report (PDEIR) for the ASBS special exceptions. Water chemistry and toxicity data collected after 2006, including the Southern California Bight 2008 Regional Monitoring Program: II. Area of Special Biological Significance, dated February 2011 was not included in the development of this proposed amendment. Results from several studies highlighted in the PDEIR document suggest little to no effect on biological communities at several intertidal locations where outfalls exist in ASBS, with a few isolated locations that appear to be impacted based on obvious differences in macroalgae cover. These differences may be due to freshwater discharges, and/or differences in physical habitat. We are concerned that available data were not analyzed sufficiently to justify such an extensive and costly effort outside of the ASBS; and the release of this amendment was premature.

The proposed amendment emphasizes that storm water exposures are, by nature, highly variable (both flow and concentrations) and intermittent. Freshwater discharges to marine environments will create conditions in the immediate zone of influence that are not tolerable by marine species, regardless of the level of storm water cleanliness.

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Transportation & Storm Water Department
9370 Chesapeake Drive, Suite 100, MS 1900 • San Diego, CA 92123
Hotline (619) 235-1000 Fax (858) 541-4350

For meaningful results, sample locations should always be collected at a point where marine species can tolerate the receiving water salinity. The proposed aquatic life toxicity test requirement to use marine species in freshwater captured directly below the outfall will always result in unacceptable mortality rates because marine species die in freshwater. Consideration needs to be given to the natural storm water runoff condition with no salinity that includes a dilution zone, which is allowed in Ocean Plan Appendix I – Definition of Terms. A dilution zone will determine the proper sample locations, and so marine species will not automatically die. At the request of the State Board Ocean Unit staff, the Southern California ASBS dischargers with the Southern California Coastal Waters Research Project spent 3 years and over $1,000,000 to assess 14 Areas of Special Biological Significance (ASBS) against reference station conditions. The ASBS data results found that there was little difference between the ASBS and the reference stations, and these results were not considered in the development of this proposed amendment. We recommend a more thorough review of currently available water quality, toxicity, and biological data collected for the ASBS programs as a responsible approach before extending such efforts to other areas of the state's coastline.

The current proposed amendments treat all discharges the same based on greater than 36 inch pipe diameter. A minimum pipe diameter criterion does not necessarily provide for greater environmental protection. For example, a small pipe less than 18 inches in diameter with a continuous discharge could have a much greater ecological impact than a large pipe with intermittent or no flows. Simple visual observations and photo documentation *in lieu* of extensive sampling and analysis are valuable and cost-effective tools to prioritize future efforts where needs are greatest. We do agree at this time that an initial survey of all discharges to receiving waters is important. The City performs annual landside surveys as required by the Municipal Storm Water Permit.

The question-driven approach with site-specific flexibility is a good start; however, the proposed monitoring requirements reflect a broad scale approach without prioritization. The monitoring requirements have the potential to generate inconclusive results while diminishing limited resources needed for other storm water quality programs or projects. We recommend that the site selection and monitoring requirements be modified to allow for prioritization, and focused monitoring efforts based on available data. Additionally, sampling conducted in the immediate vicinity of a discharge needs to include a dilution zone with clarification and consistency as described in the Ocean Plan Appendix I. This clarification should establish: 1) a quantitative site-specific dilution factor; and, 2) a practical method for determining the collection point(s) to obtain a representative receiving water sample. It is recommended that site-specific mixing zone studies be included to establish meaningful sample collection points of compliance. A targeted approach is more cost-effective and will provide the dischargers with the ability to conduct more thorough evaluations at sites of known concern to address the driving questions.

The Federal Clean Water Act (CWA) requires the development of an Ocean Plan; however, there are no requirements regarding the monitoring as proposed in this amendment. Therefore, the Draft Ocean Plan Amendment may constitute an unfunded mandate that will require the State to reimburse the City and other municipalities to comply with these requirements.

The City is advocating for consistency in regulations and reasonable requirements based on the best available science and prioritization to improve water quality. The proposed Ocean Plan Amendment requirements do not equate to water quality improvements. This program will dramatically increase costs and draw resources away from other necessary storm water quality programs and projects. Currently the City of San Diego spends an average of $300,000 annually to monitor water quality at 2 ASBS outfalls. This proposed program will require us to perform the same monitoring at 13 additionally locations with an estimated cost of $1,950,000. Based on these projections, the City strongly recommends that the State Board provide documentation justifying why these intensive efforts at locations outside of the ASBSs are justified during this time of scarce and limited resources.

If you have additional questions, please contact Ruth Kolb at (858) 541-4328 or at rkolb@sandiego.gov.

Sincerely,

Kris McFadden
Deputy Director

KM\rk

Attachment: City of San Diego Draft Ocean Plan Amendment Comment Table

cc: Almis Udrys, Deputy Director, Office of the Mayor
Garth K. Sturdevan, Interim Director, Transportation & Storm Water Department
Ruth Kolb, Program Manager, Transportation & Storm Water Department

Section-Specific Comments: Appendix III Standard Monitoring Procedures

#	Page	Section	Topic	Comments
1	37	Introduction, paragraph 1	Numeric Water Quality Standards	Derivation and establishment of numeric water quality standards needs further consideration and clarification. "Natural" or "background" water quality has been considered, but defining this state-wide is extremely problematic due to site-specific physical processes and geomorphology. It has been widely recognized that the Ocean Plan water quality objectives, many derived in the 1970s from deep ocean water, are overdue revision based on more recent and applicable data collected relevant to storm water discharges. Furthermore, SCCWRP's recently released Bight '08 natural water quality survey of ASBSs in southern California found no consistent trends in water quality within or outside areas of discharge influence. Instead of biasing monitoring to a numeric water quality limit, a more meaningful compliance endpoint should be based on a multiple line-of-evidence approach including biological community measures and toxicity in addition to chemistry, which is a more direct measurement of beneficial use attainment. Ocean environments are much too complex to meaningfully regulate based on a single chemical concentration line of evidence approach, in particular for episodic non-point source discharges. An approach similar to the recently developed Sediment Quality Objective (SQO) methods for the State of California should be considered, in particular given the proposed Ocean Plan requirements to collect data for all three of these metrics (chemistry, biology, and toxicity). This is intensive and expensive monitoring, so it needs prioritization with a focus on those areas of primary concern as described in General Comment #2.

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2	37	Introduction paragraph 4	Sampling location	Sampling conducted in the immediate vicinity of a discharge needs further clarification and consistency with that described elsewhere in the Ocean Plan. A surface discharge dilution zone is allowed by the Ocean Plan, and is ecologically meaningful in a dynamic coastal environment (see Section III C 4.D). The current guidance allows for a dilution factor based on observations. This definition should be clarified to establish 1) a quantitative site-specific dilution factor, and 2) a practical method for determining the collection point(s) to obtain a representative receiving water sample (e.g., site-specific salinity thresholds near freshwater discharges. It is recommended that site-specific mixing zone studies be included to establish meaningful sample collection points of compliance.
3	39-40	Section 4.2 and 4.3 Indicator Bacteria	Sampling location	See Item No. 2. In this case human contact is the primary concern. During a storm such contact would be highly unlikely at any ankle depth point zero discharge location. A more meaningful zone where exposure is likely by those that might enter the water (i.e., waist deep down current from the input) is warranted. Monitoring should only occur where human contact is likely (i.e., popular surfing spots). Site selection also needs consideration and should be prioritized to focus efforts on areas of potential concern and minimize wasted resources. For example, many coastal areas in the vicinity of a 36-inch outfall are dangerous or inaccessible, thus highly unlikely to result in human exposure during a rain event.
4	41	Section 5.2 Chemical constituents in storm water	Water quality standards	See Item #1
5	41	Section 5.2	Question	See general comment #3. The proposed expanded monitoring based on the >36"

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		Chemical constituents in storm water	driven monitoring - trends, magnitude of the problem, contribution to receiving water quality	pipe diameter criteria will produce other unintended byproducts. The magnitude of additional monitoring generates a disincentive for dischargers to seek more thorough and meaningful monitoring methods, in addition to not effectively prioritizing effort at sites of greatest potential threat. The widespread constrained and costly approach proposed will inevitably lead to the least expensive, least representative, and least informative monitoring methods (i.e., single grab samples strategically timed). These efforts will still be very costly, but will unfortunately provide little headway on understanding the potential for true receiving water impacts as we have been finding to date in many of the regulatory-driven efforts already underway across the State.
6	41	Section 5.2 Chemical constituents in non-point sources	Frequency	Please clarify whether Phase I and II MS4 dischargers are to sample 10% of the outfalls greater than 36 inches on a rotating basis e.g., with the other 90%, consistent with the draft ASBS PDEIR document monitoring requirements.
7	41	Section 5.3 Chemical constituents in non-point sources	Primary Question 3	Please clarify "condition" of the receiving waters. This is listed under the Chemical Constituents section. Does this refer to the (chemical) conditions getting better or worse relative to Ocean Plan objectives, or are these biological conditions? A multiple line-of-evidence approach should be considered (See Comment #1).
8	41	Section 5.3 Chemical constituents in non-point sources	Representative sample	Please clarify "statistically representative" sample? Is this meant to be just "representative sample?" Statistical implies some sort of comparison to another sample or trend analysis (e.g., Appendix VI, Reasonable Potential Analysis).
9	42	Section 6. Sediment	Primary Question 1 –	Please justify the reasoning behind the dissolved sulfide monitoring requirement and comparison to "natural" conditions. Have anthropogenic sources of dissolved

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		monitoring	Dissolved sulfide monitoring	sulfide been implicated as causing degraded biological communities in the State? Sulfide is naturally occurring and elevated in estuaries and wetlands due to healthy biological activity. Determining what is or should be natural versus unnatural will be extremely challenging. Please clarify the following statement "concentrations of waters in sediments." Presumably this is meant to refer to a measurement in sediment pore water. Significantly is a statistical term. Defining and achieving this is dependent on experimental design.
10	42	Section 6. Sediment monitoring	Primary Question 3	It is not possible to tell if chemical concentrations alone will cause degraded biological communities. Several screening-level objectives have been used over the years (i.e., ERLs, and ERMs), but it is well documented that these objectives cannot accurately predict effects. This has led to the development of a multiple line-of-evidence SQO approach in the state of California. Is toxicity testing the means to measure a degraded benthic community, or methods as specified in EPA/600/4-90/030 (see p. 47 paragraph 3 reference)? A multiple line-of-evidence approach is recommended. Similar to water quality monitoring, sediment testing is intensive and expensive, and, therefore, warrants prioritization on primary areas of concern as described in General Comment #2.
11	42	Section 6. 1 Sediment Monitoring	Point Sources - Monitoring frequency	What criteria are applied to available water column monitoring results to reduce monitoring frequency of sediments? Please justify and define what is considered sufficient data.
12	42	Section 6.1 and 6. 2 Sediment Monitoring	Point Sources and Stormwater Chemical	Please justify the requirements to monitor chlorinated hydrocarbons and OP pesticides in sediment samples at all locations. Many rural and urban discharges and receiving waters are unlikely to have direct and meaningful inputs and impacts from these constituents (i.e., chlorinated pesticides have never been

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			Constituents	detected above Ocean Plan objectives in sediments during dry or wet weather events off Scripps Institution of Oceanography). These analyses are very expensive, so requiring them everywhere, regardless of potential sources, will lead to excessive waste of valuable resources. It is recommended that analyses be site-specific based on known activity and anticipated inputs. Less expensive screening-level analyses, an evaluation of potential chemical constituents of concern, and the proposed multiple line-of-evidence approach in the receiving waters (at sites deemed a priority) should be used first to determine whether additional and more rigorous monitoring might be required.
13	43	Section 7. 1 Aquatic Life Toxicity	Point Sources, last paragraph Text edit	"…utilize alternative amphipod species". "Alternative" should be replaced with "<u>one of the following</u>" amphipod species.
14	43	Section 7. 2 and 7.3 Aquatic Life Toxicity	Primary Questions – 7.2.1 and 7.3.1 Stormwater Toxicity Standards	Please clarify meeting standards in the receiving water? Current monitoring methods and compliance limits need re-evaluation for episodic non-point source discharges. EPA whole effluent toxicity test methods and Ocean Plan objectives were developed for <u>continuous</u> point source discharges, but are now being applied to short-term storm water and other non-point source events. Meaningful sampling locations and mixing zones need further consideration for episodic events as described in Comment #2. Toxicity test exposures and test duration also need further consideration (i.e. the requirement to perform a 7-day chronic test on a storm water sample that may exist in the environment for only minutes or hours).
15	44	Section 8.1 Benthic Community Health	Point Sources (8.1.1.b.)	"…or b. those discharges one nautical mile from shore or less, or…" This does not reference a flow requirement, pipe size, inferring any point source discharge would be subject to benthic community monitoring. Please clarify discharge criteria. Biological assessments to tease out potential effects and trends are very expensive when done properly, so sites need to be carefully prioritized to focus

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				resources productively (see General Comment #2). The inconclusive results for many of the ASBS intertidal biological studies mentioned in the 2011 PDEIR document highlight and exemplify this concern. In addition, new and innovate test methods are being developed. Pilot testing of these methods could provide for more accurate and reliable indicators of biological health (e.g., new protocols for rapid sequencing of bacterial diversity and abundance along shorelines).
16	44	Section 8.1 Benthic Community Health	Point Sources (8.1.1.c.)	What is the justification for benthic community monitoring one nautical mile from state protected areas?
17	44	Section 9.1 Bioaccumulation	Point Sources (8.1.1.b.)	"…or b. those discharges one nautical mile from shore or less, or…" This does not reference a flow requirement, pipe size, inferring any point source discharge would be subject to bioaccumulation monitoring. Please clarify discharge location criteria. Biological assessments to tease out potential effects and trends are very expensive when done properly, so sites need to be carefully prioritized to focus resources productively (see General Comment #2). The inconclusive results for many of the intertidal biological studies mentioned in the 2011 PDEIR document for ASBS highlight and exemplify this critical concern.
18	44	Section 9.1 Bioaccumulation	Point Sources, (9.1.1.c.)	What is the justification for bioaccumulation monitoring one nautical mile from state protected areas?
19	45	Section 9.1 Bioaccumulation	Point Sources	Resident mussels are a much preferred alternative to transplanted mussels and bioaccumulation testing should utilize the referenced State Mussel Watch program guidelines. However, accommodation in the study design should be based on the site-specific availability or presence of mussel species to assess near

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				field and far field bioaccumulation as best as possible.
20	45	Section 9. 1 and 9.2 Bioaccumulation	Point Sources	Sand crabs are susceptible to large variability in tissue concentrations due to the reproductive status or age of the test animals and are transient in many locations (reference Natural Water Quality Committee summation of findings). More consistent and wide spread test species are recommended as potential viable alternatives to mussels (e.g., *Donax spp, Littorina spp, Pagurus spp).*
21	44-45	Section 9.1 and 9.2 Bioaccumulation	Point Sources and Storm water	Please justify the requirements to monitor OP pesticides in tissue samples at <u>all locations</u>. Many rural discharge locations and receiving waters are unlikely to have direct and meaningful inputs and impacts from these pesticides. These analyses are very expensive, so requiring them everywhere, regardless of potential sources, will lead to excessive waste of valuable resources.
22	45	Section 10. Receiving Water Characteristics	Primary Question 1 - Natural light reduction	Due to natural processes, storm water runoff will result in increased turbidity and decreased light attenuation of the receiving waters well outside of immediate mixing zones. Satellite imagery has shown visible plumes reaching more than 20 miles out to the Channel Islands during large storm events. The zone of initial dilution also needs further consideration, in particular for episodic runoff events, as described further in Comment #2. Storm water in itself should not be defined as "waste" In all circumstances.

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				Storm water runoff is a natural phenomenon. Strongly recommend deleting the word "waste" in this question.
23	45	Section 10. Receiving Water Characteristics	Primary Question 2 - Water discoloration	Same as comment #22. Due to natural processes, storm water runoff will result in discoloration of the receiving waters well outside of immediate mixing zones. Satellite imagery has shown visible plumes reaching more than 20 miles out to the Channel Islands during large storm events. Highly variable ocean dynamics make comparisons to natural water discoloration problematic.
24	45	Section 10. Receiving Water Characteristics	Primary Questions 4 and 5 - pH and salinity	Please clarify the proposed metrics referring to a 0.2 unit change in pH and 10% change in salinity relative to "natural" conditions. Most point and non-point discharges to ocean waters are fresh water with a naturally lower pH and salinity from that in the ocean. Natural mixing zones are highly site-specific. What might be considered natural may be very difficult to discern, in particular for storm water discharges. Furthermore, due to its lower density, freshwater will form a lens over saltwater, which is a natural phenomenon that further complicates such metrics.
25	46	Section 10. Receiving Water Characteristics	10.3. Non-point Sources	The proposed sampling frequency for agricultural and golf course discharges is unclear as written. The minimum frequency stated is twice annually, but then refers to two storm events and irrigation season (stet). Please clarify.
26	46	Section 11. Analytical Requirements	Paragraph 3. Text edit	As stated "Laboratories analyzing monitoring data……" Clarify to read "Laboratories analyzing samples shall be certified…."
27	47	Section 11. Analytical	Paragraph 2 – Toxicity	After a screening period, monitoring can be reduced to the most sensitive species. Please define the minimum requirements for the screening period (i.e., 3

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		Requirements	Monitoring	samples?).
28	47	Section 11. Analytical Requirements	Paragraph 2 – Toxicity Monitoring	The paragraph highlights an important point regarding sampling location and meaningful mixing zones as described in Comment 2. Monitoring shall only use marine species. This is scientifically sound to address potential receiving water impacts in a marine environment. Freshwater discharges to marine environments will create conditions in the immediate zone of influence that are not tolerable by marine species, regardless of how clean the water is. For meaningful exposures, samples for toxicity testing should always be collected at a point where marine species can tolerate receiving water salinity.

Appendix A Ocean Plan Comments

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29	7	Table 1 Acute Toxicity Criterion	Acute Toxic Unit (TUa) Calculation	As agreed upon in past discussions with SWRCB and RWQCB staff at the Natural Water Quality Committee meetings, the current Ocean Plan TUa limit of 0.3 is not achievable with the EPA acute test design unless there is 100% survival in the sample. The TUa limit should be re-evaluated and should not be set for anything less than 0.59, which represents 90% survival in the sample (90% survival is the USEPA criterion for laboratory control performance). A more meaningful criterion consistent with most NPDES permits would include a statistically significant effect relative to the control (Attachment A).
30	14	Table 3 (former Table C)	Background Seawater Concentrations	Background seawater concentrations are based on limited and from results over 30 years old from an open ocean deep water source. The proposed updates to this Ocean Plan emphasize that storm water exposures are by nature, highly variable (both flow and concentrations) and intermittent. The background concentrations should be revised to reflect other known near shore and post-storm conditions.