

Response to Public Comment
One Total Maximum Daily Load for Bacteria in Oso Bay
 July 13, 2007

Tracking Number	Date Received	Affiliation of Commentor	Summary of Request or Comment	Summary of TCEQ Action or Explanation
001	June 5, 2007	Coastal Bend Bays & Estuaries Program	Separating the TMDL for Oso Bay from Oso Creek is very much appreciated and the justification is well documented in the TMDL.	TCEQ acknowledges and appreciates this statement of support for separation of the TMDLs. No changes have been made to the TMDL based on this comment.
002	June 5, 2007	Coastal Bend Bays & Estuaries Program	Commentor agrees with the conclusion cited in TMDL that the data for Oso Bay demonstrates that the area around Station 13441, known as the “Blind Oso”, is not representative of ambient conditions in Oso Bay. As noted in the TMDL this area is dominated by freshwater inflows from the Oso WWTP which has resulted in the establishment of marshes that attract literally thousands of birds to feed and roost in the area. This is a good thing.	TCEQ agrees that station 13441 is not representative of conditions in the rest of Oso Bay, and that use of that area by birds is a good thing. As stated in the TMDL, there is no intent that implementation will adversely affect wildlife use of that area. Multiple revisions to the TMDL text have been made based on this and similar comments.
003	June 5, 2007	Coastal Bend Bays & Estuaries Program	Commentor’s support for the TMDL’s focus on managing dry-day loading pertains primarily to Oso Creek. As correctly stated in the TMDL, the primary and most appropriate use in the area of Station 13441 on Oso Bay is for wildlife habitat. No attempt should be made to manage or discourage use of this area by native wildlife. Given the heavy usage of the area by wildlife, attempts to manage bacteria loads will prove to be futile. Commentor’s recommendation is that TMDL implementation should consist solely of the placement of signs that explains to the public that due to the large number of birds and other wildlife in the area that bacteria concentrations are at times elevated and it is recommended that people should avoid contact with the water.	TCEQ understands and agrees that reducing dry-day loading will be more important and desirable for Oso Creek than for Oso Bay. While TCEQ does not intend to discourage wildlife use in any way, the current regulatory framework for bacteria TMDLs may require unique or original approaches to address this particular situation. The recommendations provided in this comment will be considered as the TMDL is implemented. Multiple revisions to the TMDL text have been made based on this and similar comments.

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004	June 5, 2007	Nueces River Authority	On page 4, Table 1 of the draft TMDL, Oyster water is listed as a designated use for Oso Bay. Draft 2006 303(d) List shows Oso Bay as impaired for oyster water use. Oyster water use designation for Oso Bay is not relevant, and should be removed.	Designated uses can be reconsidered, but the process is lengthy and the prognosis uncertain. Methods for assessing oyster water use to determine impairment also may be reconsidered. However, this issue is not directly pertinent to the contact recreation use and criteria addressed by the Oso Bay TMDL. No changes have been made to the TMDL based on this comment.
005	June 5, 2007	Nueces River Authority	Why would the TMDL need to address permit conditions for one large municipal WWTP, one large cooling water discharge, and an MS4 permit if none of those sources are considered causes of impairment?	TMDL implementation must, by law, address permitted sources of relevant pollutants. Statements in the draft TMDL simply identify the nature of permitted sources present in the Oso Bay TMDL watershed that will need to be considered and addressed. How the individual sources are addressed will be determined based on their individual contribution, or potential to contribute, to impairment, when the Implementation Plan is developed. Some revisions to the TMDL text have been made based on this and similar comments.
006	June 9, 2007	Texas Parks & Wildlife Department	TPWD is surprised that station 13441 is included in the TMDL. Data suggest that station is not representative of the bay. Further, the station is located at Hans Suter Park, which is a wildlife area and well-known site for migratory and shore birds. Change the location of station 13441. TPWD recommends moving station 13441 away from the wildlife area and zone of freshwater influence to a location more representative of the bay as a whole.	Station 13441 had to be included because of its proximity to a major wastewater discharge. Data collected for the TMDL study identified or verified the unrepresentative character of the site. These recommendations regarding Station 13441 are also mentioned in the TMDL as possibilities for managing water quality in the area, and TCEQ will consider these recommendations when the Implementation Plan is developed.

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006, cont.				Multiple revisions to the TMDL text have been made based on this and similar comments concerning designated use and criteria issue in the Blind Oso area.
007	June 9, 2007	Texas Parks & Wildlife Department	TPWD does not recommend the Hans Suter Park area for swimming, nor is TPWD familiar with the use of the area for swimming. It is inappropriate to apply a contact recreation standard at Hans Suter Park. While TPWD is committed to assisting TCEQ in its efforts to restore full use of water bodies for which the contact recreation use is impaired, TPWD does not believe that this area has been used or will be used for contact recreation.	TCEQ agrees that these issues are concerns, and will consider these recommendations when the Implementation Plan is developed. Multiple revisions to the TMDL text have been made based on this and similar comments concerning designated use and criteria issue in the Blind Oso area.
008	June 9, 2007	Texas Parks & Wildlife Department	TPWD is very concerned that the draft TMDL recommends 100 percent reduction in annual dry loading for station 13441. The implications of this for Hans Suter Park and its role as a wildlife refuge are not clear. TPWD holds the opinion that the existence of wild animals, wild birds and aquatic animal life is both natural and desirable. As such, TPWD believes that bacterial loadings resulting from wildlife are a natural condition and that it is appropriate to consider such loadings as part of natural or ambient conditions. TPWD would vigorously object to any recommendations arising from the TMDL or its Implementation Plan that would impair the use of the Hans Suter Park as a wildlife refuge.	The TCEQ does not propose any implementation measure that would impair wildlife use of the Suter Park/Blind Oso area. Multiple revisions to the TMDL text have been made based on this and similar comments concerning designated use and criteria issue in the Blind Oso area.
009	June 15, 2007	City of Corpus Christi	The City has major concerns about using data from Station 13441. The latitude/longitude coordinates on record for that station indicate it to be in a marsh, not in Oso Bay. The station is unrepresentative of ambient conditions in Oso Bay and unsuitable for characterizing recreational uses of the bay. The TMDL report should exclude prior data collected at Station 13441 and call for eliminating the use of this inappropriate monitoring	The latitude/longitude coordinates on record for Station 13441 appear to be slightly inaccurate, causing the mapped station location to fall several hundred feet north to northwest from the discharge channel location actually sampled. Recognizing and acknowledging the unrepresentative character of Station 13441 as a result of the TMDL

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009, cont.			station for the impairment assessment of Oso Bay.	analyses, in the TMDL document, encourages the possibility of adjusting management perspectives relative to that site. Multiple revisions to the TMDL text have been made based on this and similar comments regarding the nature of the Station 13441 site.
010	June 15, 2007	City of Corpus Christi	<p>The only evidence that Oso Bay is noncompliant with bacteria water quality standards is the data summary in Table 2, which indicate that Oso Bay monitoring Stations 13440 and 13442 exhibit Enterococci densities that slightly exceed the assessment criteria. However, these data are contradicted by the modeling results.</p> <p>The disagreement between the data and the model could be the result of sampling being conducted in a manner such that a disproportionate number of samples represent wet-weather conditions. The samples may not provide a balanced representation of existing conditions. Based on the above concerns, the appropriate conclusions of this TMDL study would appear to be as follows:</p> <p>Oso Bay can assimilate bacterial loadings many times higher than existing loadings.</p> <p>Future monitoring programs should obtain a balanced representation of wet and dry weather conditions.</p>	<p>The TMDL analyses and modeling have concluded that Oso Bay as a whole can assimilate larger bacterial loadings than currently exist, although short term exceedances of contact recreation criteria may have occurred at some times and some places. Monitoring programs should obtain balanced representation of wet and dry conditions, but that is difficult and “balance” can only be assessed after the fact.</p> <p>No changes have been made to the TMDL based on this comment.</p>
011	June 15, 2007	City of Corpus Christi	<p>The City reaffirms the following conclusions reached in the TMDL Report with respect to Oso Bay:</p> <p>A. Monitoring Station 13441 is located within a marsh in an area adjacent to Oso Bay. The marsh has different uses and characteristics than Oso Bay. Hence, Station 13441 is unrepresentative of ambient conditions in Oso Bay and unsuitable for characterizing recreational uses of the bay (pages 25 and 34).</p> <p>B. With the exception of monitoring Station 13441, Oso Bay meets relevant goals for bacterial concentrations</p>	<p>TCEQ acknowledges the affirmation. Multiple revisions to the TMDL text have been made to clarify some of these issues, based on this and similar comments.</p>

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011, cont.			<p>(Page 21, Table 9 on Page 22, and Page 26).</p> <p>C. Permitted wastewater discharges to Oso Bay are not significant sources of bacteria loading to the bay (pages 26 and 33).</p> <p>D. Storm runoff loading has not impaired Oso Bay (Pages 26 and 33).</p> <p>E. The total allowable TMDLs for point and non point sources in Oso Bay substantially exceed existing loads (Table 8 on Page 21 and Table 16 on Page 29).</p>	
012	June 15, 2007	City of Corpus Christi	<p>"Implementation Processes to Address the TMDL," (beginning on Page 34). Much of this section appears inappropriate for this particular TMDL. The section should focus, not on adaptive management strategies for load reductions, but on data collection. The first sentence states that the purpose of the TMDL and associated Implementation Plan (I-Plan) is to "correct" unacceptable water quality conditions that exist in an impaired surface water. Oso Bay does not have unacceptable water quality and is not impaired, as documented by the remainder of the report.</p> <p>The lengthy discussions of strategies to reduce pollutant loads are not applicable, including the discussion of adaptive management approaches. It would seem more appropriate to use this section to summarize the findings of this report and, thus, set the groundwork for an I-Plan that is based on monitoring and, perhaps, a water quality standards adjustment.</p>	<p>The "Implementation Processes to Address the TMDL" section was drafted as general language to be included in all TMDLs, so some phrases may not seem applicable to particular water bodies and TMDLs. Indeed, some of the general processes described in that section will not be needed or used with regard to Oso Bay.</p> <p>Some changes to add specificity regarding Oso Bay have been made to the TMDL document text in that section based on this comment.</p>
013	June 15, 2007	City of Corpus Christi	<p>Given the conclusions that permitted wastewater and storm water discharges are not sources of impairment in Oso Bay, the TMDL report should not include the statement that permits for these discharges might need to be modified to address the TMDL. The City is willing to participate in a program to monitor wastewater and storm water discharges for bacterial levels, but</p>	<p>TMDL implementation must, by law, address permitted sources of relevant pollutants. Statements in the TMDL simply identify the nature of permitted sources present in the Oso Bay TMDL watershed to be considered and addressed. Specific effects on the City permits have not yet been determined.</p>

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013, cont.			objects to incorporating such efforts into permits and requests that TCEQ remove any suggestion regarding the same in this TMDL.	The TMDL text has been revised to some extent to make more clear that load or concentration reductions are not expected, but the permits may be modified regarding discharge monitoring requirements.
014	June 15, 2007	City of Corpus Christi	"Seasonal Trends," last paragraph, first sentence (Page 15). This sentence attributes "higher Enterococci values" to the Oso WWTP. This sentence should be revised to delete this statement since the report clearly states elsewhere that the Oso WWTP does not contribute to increased levels of Enterococci.	The sentence in question was revised to say: "The occurrence of time-oriented linear features at station 13441, such as elevated temperature during cold periods and persistently lower salinities, indicate that this station is strongly influenced by the neighboring Oso WWTF and is best treated as a tributary feeding into the Oso hydrologic system rather than as representative of broader conditions in Oso Bay."
015	June 15, 2007	City of Corpus Christi	Table 14 and the associated text describe the effects of a 100 percent reduction in the dry-day load (Page 26). It should be clarified that this analysis was done strictly for the purpose of determining the extent to which dry-day loads contributed to the exceedance of the bacteria and the results of this analysis are not meant to suggest that there should be a management program to achieve a 100% reduction, which is clearly infeasible.	Multiple revisions to the TMDL text have been made based on this and similar comments concerning designated use and criteria issue in the Blind Oso area. Among them, the following text was added to the TMDL document near Table 14: "To summarize and review the preceding paragraphs: <ul style="list-style-type: none"> ▪ The 100% load reduction shown in Table 14 for Station 13441 represents the only scenario modeled. Much less reduction than was modeled could suffice to meet the contact recreation standard, but modeling has not established a precise percent. • The primary source of the dry-day loading at Station 13441 is thought to be the bird colony. This TMDL does not propose or anticipate any effort to

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015, Cont.				disrupt wildlife use of that area, nor is such effort considered appropriate.”
016	June 15, 2007	City of Corpus Christi	"Pollutant Load Allocation," third paragraph, sentences 4 and 5 (Page2 7). These sentences state that no source of the dry-day loads has been identified. In fact, while a small measure of uncertainty remains, a highly probable source has been identified (i.e., the bird population at Station 13441), and it is a nonpoint source that is not subject to regulation by the Clean Water Act.	Those sentences did primarily refer to Oso Creek dry-day loading. As addressed in other comments, the bird population near Station 13441 is the only dry-day loading that affected the Oso Bay modeling. The two sentences pertinent to Oso Creek pointed out by this comment have been deleted from the Oso Bay TMDL document.
017	June 15, 2007	City of Corpus Christi	While a number of changes have been made to separate the Oso Creek and Oso Bay TMDLs, there is still extensive discussion of conditions and modeling for Oso Creek. It is recognized that some of this is necessary because Oso Creek is an input to Oso Bay; and, the modeling techniques and data used for Oso Bay were, in large part, derived on Oso Creek. However, at times the report is confusing as to which water body is being discussed. It is suggested that consideration be given to deleting from the Oso Bay TMDL report the following information related exclusively to Oso Creek: "Seasonal Trends," last paragraph, sentences 2 , 3, and 4 (page 15); "Dry-day Loading," paragraph 3 , sentence 3 (Page 19).	The sentences on page 15 about Seasonal Trends that referred only to Oso Creek stations are not needed for the Oso Bay TMDL, and were deleted from the document. The discussion of dry-day loading and possible sources on page 19 are part of the description of model development and use. Readers should understand that those paragraphs are discussing general possibilities and factors relevant to the modeled system, which encompassed both bay and creek. The page 19 discussion has been revised to make the distinction between creek and bay sources more clear.
018	June 19, 2007	US Fish & Wildlife Service	The Service does not concur that Oso Creek and Oso Bay should be split into two different TMDLs. If the purpose of the TMDL process is to improve water quality, the entire system should be considered as a whole. The document states that dry day loads are an important source of <i>Enterococcus</i> within the creek and yet is removed from the model. If the purpose of the TMDL is to facilitate removal of Oso Bay from the 303(d) list,	Data analyses and modeling did consider the watershed as a whole, and the Oso Bay TMDL document includes information concerning the creek simulation in order to illustrate that the bay and creek were modeled together. Producing the bay and creek TMDLs as separate documents does not in any way change the analyses or future

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018, cont.			without requiring actual improvements, then it would be appropriate to split the system into two TMDLs and omit the dry day loads.	management of either water body. Removing dry-day loads, or other types, from model simulations is how models are used to assess the relative impact of various sources and determine the load reductions needed. TCEQ sees that as including dry-day loads in the model analyses, not as omitting them. No changes have been made to the TMDL based on these comments.
019	June 19, 2007	US Fish & Wildlife Service	The Service recommends changing station 13441, as it is not representative of the Oso Bay, but acts as a mixing zone for the Oso WWTP. At that site, mixing is limited due to the prevailing southeast winds.	TCEQ agrees that the status and use of Station 13441 will need to be addressed as an implementation measure for the Oso Bay TMDL, as stated in the TMDL document. Multiple revisions to the TMDL text have been made based on this and similar comments concerning designated use and criteria issues in the Blind Oso area.
020	June 19, 2007	US Fish & Wildlife Service	Without doubt the population of the City of Corpus Christi and Nueces County will increase. The south side is currently experiencing heavy development, sometimes without the benefit of city wastewater treatment. In addition, storm water runoff will continue to degrade the quality of the bay system unless immediate steps are taken to reduce the impact of runoff. As properties are developed, opportunities to install best management practices through catchment basins, swales instead of concrete ditches, etc., will become more difficult. A TMDL for Oso Bay should address all those issues.	Analyses and modeling performed to develop TMDLs for the Oso Bay system indicated that bacterial loading to the bay is currently well below the level that would cause widespread or persistent exceedence of contact recreation criteria. Existing regulatory programs and processes regarding wastewater treatment and storm water management are structured to minimize adverse impacts to the extent possible, and to encourage wise use of best management practices (BMPs) as new areas develop. Details regarding BMP use as the watershed develops are not established in or by a TMDL, but may be addressed by storm water management permits and entities. City of Corpus Christi representatives have informed

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020, cont.				<p>TCEQ staff that the City development codes are already being revised to address runoff quality issues for future growth and development.</p> <p>No changes have been made to the TMDL based on this comment.</p>
021	June 19, 2007	Coastal Bend Bays Foundation	<p>There are many things going on currently that involve the Oso Watershed, and therefore, Oso Bay.</p> <p>~Impact of TCEQ Water Quality Permit Amendment WQ0001490000 and the uncertain status of future resource input provided by Barney M. Davis facility (page 9).</p> <p>~Current USDA run-off studies.</p> <p>~Storm water discharges. A large percent of area storm water, both County and City, drains into the Oso Watershed, and the urban areas adjacent to this area are growing quickly. We need to require best management practices for all drainages into the Oso Watershed.</p> <p>~Ability of developers and homeowners to still get permits for septic systems, even though the soils are not suited (page 19).</p> <p>~The lesser problems in Oso Bay are likely a result of dilution as at least a portion of the solution. When possible, it is best to identify and stop pollution and not rely on dilution to mitigate problems.</p>	<p>A permit amendment application and supporting study seeking an exemption from a pending total copper limit are currently being reviewed, but have no known connection to bacteria issues in Oso Bay. Uncertainty regarding future operation of the power plant cannot be resolved by the TMDL.</p> <p>Proposed run-off studies in the watershed should supply valuable information for managing nonpoint sources, especially in the Oso Creek watershed. Findings from the studies will support future implementation activities in the region, and may be used to revise TMDL allocations if appropriate.</p> <p>Existing regulatory programs and processes regarding storm water management are structured to minimize adverse impacts to the extent possible, and to encourage wise use of best management practices (BMPs) as new areas develop. Details regarding BMP use as the watershed develops are not established in or by a TMDL, but may be addressed by storm water management permits and entities. City of Corpus Christi representatives have informed TCEQ staff that the City development codes are already being revised to address runoff quality issues for future</p>

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021, cont.				<p>growth and development. Adverse soil conditions may require selection of alternative septic system types, and do require careful design of individual systems to assure adequate performance. TCEQ anticipates that the Oso Bay Implementation Plan will encourage site-appropriate types and design for septic systems, but also anticipates that authorization and regulation of septic systems in the watershed will remain with the current regional entity. While dilution plays some part, lower bacteria concentrations in bay water are also caused by enhanced settling due to changes in water velocity and circulation patterns, and by salinity differences. No changes have been made to the TMDL based on these comments.</p>
022	June 19, 2007	Coastal Bend Bays Foundation	<p>Areas of support: ~Majority of concern appears to be Oso Creek. ~Monitoring station in and alternative approaches for the bird rookery area (p34)</p>	<p>TCEQ acknowledges these statements of support. No changes have been made to the TMDL based on these comments.</p>