Unified Port of San Diego

3165 Pacific Highway, San Diego, CA 92101
P.O. Box 120488, San Diego, CA 92112-0488
619.686.6200 • www.portofsandiego.org

VIA EMAIL

August 11, 2016

California Water Quality Control Board – San Diego Region
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700
Attention: Xueyuan Yu
Email: sandiego@waterboards.ca.gov

Subject: **Comment – CWA Section 305(b)/303(d) Integrated Report, Attn: Xueyuan Yu**

Dear Ms. Yu:

The San Diego Unified Port District (District) appreciates the opportunity to provide comments in response to the Draft Clean Water Act Sections 305(b) and 303(d) Integrated Report for the San Diego Region (Draft Report), which provides recommendations for changes to both the Clean Water Act (CWA) Section 303(d) List of Water Quality Limited Waterbodies, and the CWA Section 305(b) report on the condition of waterbodies within the San Diego Region. As the public trustee of San Diego Bay (Bay), the District shares a common interest with the San Diego Regional Water Quality Control Board (Regional Board) in ensuring the protection of the Bay's beneficial uses. The District supports the Regional Board's continued efforts to address water quality issues within the Bay, and remains committed to working collaboratively with the Regional Board to fulfill our agencies' shared goals. To this end, the District respectfully submits the following comments on the Draft Report. General comments are listed below, while supporting materials for points referenced below are enclosed as Attachments A and B.

1. **Understanding and controlling upstream loading and upstream areas of sediment toxicity is critical to achieving long-term improvements in the Bay.**

   The current waterbody segment listings and their associated management plan timelines (i.e. TMDL, TMDL Alternative or other actions) do not fully take into consideration the interconnectedness of the watershed as a whole and the role that upstream source loading may play in current Bay conditions. The District is committed to preservation and enhancement of the Bay and its resources, and recognizes that in addition to upstream loading issues associated with certain waterbody segments, legacy contaminants such as PCBs continue to flow into the Bay from upstream sources. These upstream sources should be eliminated through TMDLs, TMDL alternatives or other actions prior to or in tandem with Bay remediation efforts to avoid recontamination.

2. **There is concern that many of the scheduled TMDL completion dates pertaining to the Bay may not be achievable.**

   In the current Draft Report, 50 waterbodies or waterbody segments that affect (in, or adjacent to) the Bay are listed as Category 5 (defined as a water segment where standards are not met and a TMDL is required, but not yet completed), whereas 46 segments are designated as Category 5A (defined as a TMDL is still required), with TMDL scheduled

completion dates ranging from 2005-2027. The District fully supports the restoration of beneficial uses for these water segments; however it prefers to see programs adopted in a more expedited fashion than the projected TMDL completion timelines listed in Appendix B of the Draft Report. As such, the District offers the following recommendations:

a. TMDLs or TMDL alternatives should factor in the completed or near-term cleanup efforts in the Bay. Many impaired segments are adjacent to portions of the Bay in which clean up orders were recently completed. Moreover, some recent data suggests that recontamination of cleanup sites may be occurring from ongoing sources. For the most effective and efficient long-term improvements, both ongoing sources and legacy contaminants must be concurrently addressed.
b. Explore expedited management options (i.e. programs other than a TMDL or TMDL alternatives) so that restoration of the Bay's beneficial uses occurs in a timely manner.
c. Reprioritize TMDLs or TMDL alternatives based on the management goals identified within the San Diego Bay Strategy; adjust resources strategically to align timelines with the prioritized management goals.

3. **The Regional Board should accurately list the sources of PCB contamination in San Diego Bay.**

Decision ID 33669 for San Diego Bay lists several "sources" for PCBs including "Contaminated Sediments," "Dredging," and "Historic Land Management Activities" (Appendix I, page 155).

The following categories, however, are not accurate representations of sources of PCBs in San Diego Bay:

- **Contaminated sediments** were not contaminated prior to the discharge of PCBs from another source.
- **Dredging projects** are not a source of PCBs. Rather dredging projects are intended to remove PCBs and other contaminants from the Bay.
- **Historic land *management activities***, at most, designated acceptable or unacceptable uses for property but did not result in discharges of PCBs or any other contaminant. Rather, the facility activities, whether they were authorized or not resulted in these discharges.

These three categories of "sources" should be removed from the list and replaced with actual sources of PCBs. Examples include: paint, dielectric and coolant fluids, hydraulic fluids, pesticide extenders, sealants, caulking, adhesives, waterproofing compounds, industrial operations within the San Diego Bay watershed, and atmospheric deposition.

4. **Decision ID 52947 LOE ID 75595 San Diego Bay - Arsenic (Shellfish Tissue): The data analysis methodologies utilized to calculate inorganic arsenic and the spatial assumptions made with the inclusion of data from only two sampling locations may not appropriately estimate inorganic arsenic concentrations and therefore incorrectly categorize the entire waterbody.**

The District is concerned that the sampling and methodologies used by the Regional Board to estimate inorganic arsenic concentrations from measured dry-weight total arsenic concentrations may not represent the actual concentrations in San Diego Bay shellfish. Samples used were composited for multiple species of *Mytilus*, negating differences in tissue uptake that may be species specific. The State Mussel Watch data used for this listing failed to

distinguish between species of *Mytilus.* In California, Oregon and Washington, *Mytlius californianus* has been found to contain slightly higher concentrations of total arsenic than *Mytilus edulis* from the same general locations (Neff 2002), which given the methodologies used for this listing, may result in different actual concentrations of inorganic arsenic that a 10% estimate on a multi-species composite may fail to identify.

The District recommends the Regional Board reconsider the reliability of using a 10% inorganic arsenic proportion factor, or more appropriately, use available data with *measured* (not estimated) inorganic arsenic concentrations to determine how San Diego Bay shellfish tissue concentrations screen against OEHHA guidelines, thus affecting 303(d) listing decisions. If using measured concentrations is not feasible, then at the very least the proportion factor should be recalculated reflecting more realistic conditions. This can be achieved by comparing calculated proportion factors to hard data collected at the same sampling locations using the same species used for this listing. This methodology has been successfully employed and has assisted in determining listing decisions in other regions such as in the state of Washington (see Washington State Dept. of Ecology 2002). Globally, other studies have specifically tested both total arsenic and inorganic arsenic for exact (i.e. not estimated) concentrations in both mussels and other bivalves and have found that inorganic arsenic often comprises much less and in rarer cases much greater (spatially dependent) than 10% of the total arsenic concentrations in both mussels and other shellfish alike (refer to Attachment A, Table A1). While the District understands the importance of monitoring data that comes from programs like State Mussel Watch, we feel this data should be reviewed to get an overall idea of pollutant concentrations in the Bay, but caution that this data set is not specific nor reliable enough both in its methodologies and sample size to use for 303(d) listings of an entire waterbody.

Further, the Bay has been identified as a multi-use, partitioned waterbody with known eco-regions distinguished by complex circulation and stratification components (San Diego Bay Integrated Natural Resources Management Plan, Port of San Diego 2013). As such, known concentration gradients on a spatial scale have been overlooked when listing the entire Bay based on data from only two sampling locations. The District also encourages the Regional Board to exude caution and review additional sediment, shellfish tissue and water chemistry data at more than two sampling locations before listing the entire Bay under Decision ID 52947. For example, 2013 Regional Harbor Monitoring (RHMP) data[1] compared sediment total arsenic concentrations by eco-region in San Diego Bay, and a potential decreasing trend in arsenic sediment chemistry emerged from north to south (refer to Attachment A, Figure A1). Such an example illustrates how spatial differences in total arsenic exist within the Bay, both at a macro- and micro-level within and across eco-regions. These key factors may be missed and/or overlooked when using just two sample locations coupled with an estimated 10% proportion factor for a Bay-wide listing.

5. The District requests the removal of the Mercury (tissue) listing under Decision ID 33669 LOE ID 80842.

Decision ID 33669 identified PCBs as the pollutant driving a "Do Not Delist" decision for San Diego Bay. However, LOE ID 80842 under Decision ID 33669 lists both Mercury and PCBs for tissue when it should only list PCBs based on the pollutant listed under the Decision ID. If LOE

[1]Supporting information can be found in the final RHMP 2013 report. https://www.portofsandiego.org/document/environment/regional-harbor-monitoring-program/rhmp-2013/7289-final-2013-rhmp-report/file.html

ID 80842 also applies to Mercury, this portion of the LOE ID 80842 should be listed separately under Decision ID 52824.

6. **Indicator Bacteria Levels at Tidelands Park along the San Diego Bay Shoreline have improved over time and in addition are being actively addressed through the San Diego Bay Water Quality Improvement Plan (WQIP). It is recommended that this listing be re-categorized from Category 5 Waterbody Segments (Appendix B) to Category 4B Waterbody Segments (Appendix D).**

   Decision ID 44200 (Appendix I: Fact Sheet) states a Final Listing Decision to "not delist" this waterbody segment from the 303(d) list (TMDL required, Category 5). The District recognizes the past issues with indicator bacteria at this site related to the beneficial uses of water contact recreation and shellfish harvesting; however routine monitoring has shown indicator bacteria levels have decreased over time without a TMDL in place. In addition to the observed improvements identified via routine monitoring, increased and improved management and monitoring efforts are now also in place as part of the WQIP, further supporting water quality improvements at this location. Recent data (compiled since the data acquisition cutoff of 2010) further suggests that it may be inappropriate to place this waterbody segment within Category 5a. The District recommends a change in listing category for Tidelands Park to Category 4B, given that recent data demonstrate improved conditions and indicator bacteria (and therefore all 303(d) listings associated with this location) are being addressed via the San Diego Bay WQIP (an acceptable action other than a TMDL). See Attachment B for further justification and supporting data.

The District is committed to participating in and supporting cleanup, monitoring, and management programs that assist in achieving our agencies' shared goal of improving water quality in San Diego Bay. The District greatly appreciates the Regional Boards continued efforts and looks forward to continued collaboration on cleanup and monitoring efforts throughout the Bay.

If you have any questions or would like additional information related to the comments submitted herein, please contact Kelly Tait at (619) 686-6372 or via email at ktait@portofsandiego.org.

Sincerely,

Karen Holman
Principal
Planning & Green Port

KT/te
CC: Randa Coniglio, Jason Giffen, John Carter, and Paul Brown
Enclosures (2):
Attachment A: Justification and Data Supporting a Change in Inorganic Arsenic Calculations
Attachment B: Justification and Data Supporting a Change in Listing Category for Tidelands Park

Attachment A

Justification and Data Supporting a Change in Inorganic Arsenic Calculations

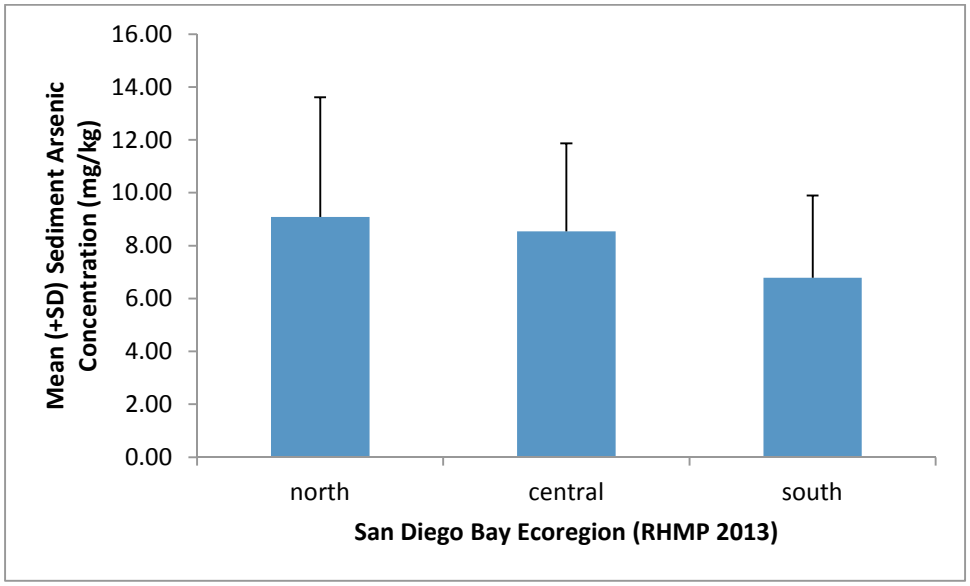
Arsenic is a naturally occurring element that is found in water, soil, plants and animals with two main forms: inorganic and organic. Typically, organic arsenic accumulates in both fish and shellfish and is not considered toxic (Washington State Department of Health 2014). Inorganic arsenic is of concern to human health and occurs in typically lower levels (Washington State Department of Health 2014).

Table A1. Literature Review Highlighting the Range of Percent Inorganic Arsenic found in Bivalve Tissues World Wide

Study	Study Species	Total Arsenic (mg/kg ww)	Inorganic Arsenic (mg/kg ww)	Percent of Inorganic Arsenic comprising Total Arsenic Result	Notes
Sloth and Julshamn 2008	*M. edulis* L.	< 3	< 0.25	< 9%	78% of samples in the study resulted in this overall pattern, however two specific sampling sites demonstrated a 42% inorganic arsenic concentration, futher suggesting that a ballpark estimate of 10% may not be in the Regional Board's best interest for data interpretation
Washington State Department of Ecology 2002	Mixed Native and Japanese Littlneck Clams	1.9-4.2	0.015-0.035	0.4-1.2%	Data ranges represent 15 sampling locations throughout 6 waterways of the Puget Sound; Sample size is approximately 363 individuals
Schoof and Yager 2007	Mollusks	NA*	0.00004-0.0065	1.80%	Literature review of 20 studies providing data on total and inorganic arsenic concentrations
Greenberg et al. 2014	Mussels	NA*	NA*	0.035-2.4%	Literature review of 24 studies, calculated using a sample size of 205
Steward and Turnbull 2015	*Mytilus* sp.	NA*	NA*	0.8-7.3%	Australian study using a sample size of 14

**- Raw data was not available in published articles, and in studies such as Schoof and Yager 2007, Greenberg et al. 2014 and Steward and Turnbull 2015, sometimes only the percent of Inorganic Arsenic comprising Total Arsenic was presented.*

Figure A1. Mean Sediment Total Arsenic Concentrations by Ecoregion in San Diego Bay



Note: Data displayed above was collected as part of the 2013 Regional Harbor Monitoring Program

References:

Greenberg, G.L., Lynch, H.N., and A.S. Lewis. 2014. A Literature Review of Inorganic Arsenic in Seafood and Its Implication in Dietary Intake Analyses. Poster Presentation at SETAC North America 35th Annual Meeting. Vancouver, BC, CAN. November 9-13, 2014.

Neff, J.M. 2002. Bioaccumulation in Marine Organisms: Effect of Contaminants from Oil Well Produced Water. Elsevier.

Port of San Diego et al. 2013. San Diego Bay Integrated Natural Resources Management Plan. San Diego, CA. November 19, 2013.

Schoof, R.A. and Yager, J.W. 2007. Variation of total and speciated arsenic in commonly consumed fish and seafood. Human and Ecological Risk Assessment. 13:946-965.

Sloth J.J. and Julshamn, K. 2008. Survey of total and inorganic arsenic content in blue mussels (Mytulus edulis L.) from Norwegian fiords: revelation of unusual high levels of inorganic arsenic; J Agric. Food Chem. 56(4): 1269-73.

Stewart, I. and Turnbull, A. 2015. Arsenic in Australian Seafood: A Review and Analysis of Monitoring Data 2000-2013. South Australian Research and Development Institute.

Washington State Department of Health. 2014. “Arsenic in Shellfish”. Document DOH 332-145. 1/06/2014.

Washington State Department of Ecology. 2002. Inorganic Arsenic Levels in Puget Sound Fish and Shellfish from 303(d) Listed Waterbodies and Other Areas. Olympia, WA. December 2002.

Attachment B

Justification and Data Supporting a Change in Listing Category for Tidelands Park

In the absence of a TMDL requirement or alternative program, ongoing monitoring data has shown that over time a general decrease in Indicator Bacteria levels has occurred at Tidelands Park. In addition to this observed improvement, a management plan has been developed to further protect beneficial uses at this location. The MS4 Permit Adoption that occurred on May 8, 2013 required a Water Quality Improvement Plan (WQIP) as well as the development of a Monitoring and Assessment Program (MAP) to assess impacts of MS4 discharges on receiving water conditions.

Tidelands Park bacteria monitoring of swimmable waters was designated within the MAP as a Focused Priority Condition (for the full monitoring schedule of the integrated monitoring programs, see Table B1), thus addressing the REC1/Water Contact Recreation Beneficial Use. A comparison of data exceedances by time period for Enterococcus (1999-2010 versus 2011-2016, see Figure B1) illustrates the reductions in the number of average exceedances for single samples, monthly geomeans and rolling geomeans as it relates to the REC1/Water Contact Recreation Beneficial Use. Table B2 numerically illustrates this same pattern, where the number of Fecal Coliform, Total Coliform and Enterococcus exceedances from 2011 through the present all fall below both the number of allowable exceedances as well as the percent allowable exceedances for single samples, monthly geomeans and rolling geomeans.

Similar patterns have been observed for data relating to the Shellfish Harvesting beneficial use (see Table B3 and Figure B2). Both the 30 day median and single sample water quality objectives have demonstrated improvement when comparing data from 1999-2010 (the time period used in the Draft Report) versus the 2011-present time period. In terms of allowable exceedances, both the 30 day median and the single sample maximum were below the allowance (Total Coliform 30 Day Median= 11/29, Single Sample=9/29; see Table B3).

All aforementioned data is publically available through CEDEN, via the Beach Watch program. Given that: a) all pollutants and beneficial uses addressed in the 303d listings at this site have shown reduction in exceedances by actions other than a TMDL, and (b) that the WQIP now acts as a management plan, the District recommends Tidelands Park be listed as Category 4B.

Table B1. Swimmable Waters Monitoring Summary for Tidelands Park
(adapted from *San Diego Bay WMA Water Quality Improvement Plan* June 2015)

	Receiving Water Wet Weather Monitoring	**Receiving Water Dry Season, Dry Weather Monitoring**	**Receiving Water Wet weather season, Dry Weather Monitoring**	**MS4 Monitoring**
Monitoring Approach	Monitor at Tidelands Park	• Tidelands Park[1]: Current San Diego County Department of Environmental Health (DEH) sites. (No additional monitoring to be done by RPs at these sites during this period)	• Expand DEH's dry weather monitoring to occur during the wet weather season. • Monitoring at Tidelands Park	• Paired Sampling: Perform MS4 monitoring at all beach sites at same time as monitoring receiving water quality • Sample three wet weather events during wet season at Tidelands Park in conjunction with receiving water, if feasible
Frequency (Number of Monitoring Events)	Annually sample three wet weather events during wet season at Tidelands Park	• Tidelands Park site: Weekly	• Monthly at Tidelands Park (November 1 – March 31)	Inspect MS4 monthly, year round
Timing of monitoring	Sample within 72 hours of a storm (consistent with Bacteria I TMDL[1])	During dry weather season (April 1 – October 31)	During dry periods, 72 hours or more after storm event	Take sample at MS4 if there is flow/discharge

Note: Monitoring Plans described within Table B1 specifically address REC1 beneficial uses.

[1]Regional Board. 2010. *Revised TMDL for Indicator Bacteria, Project I—Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek)*. Resolution No. R9-2010-0001. Approved February 10, 2010. http://www.waterboards.ca.gov/sandiego/water_issues/programs/ tmdls/docs/bacteria/updates_022410/2010-0210_BactiI_Resolution&BPA_FINAL.pdf.

Table B2. Tidelands Park REC-1 Indicator Bacteria Exceedances 2011-2016

Tidelands Park REC-1 Entero Exceedances, 2011-2016					
Single Sample	**# Samples**	**# Exceedances**	**% Exceedance**	**Allowable Exceedances**	**Allowable Exceedance %**
Fecal Coliforms	176	3	1.70%	29	16.48%
Total Coliforms	177	2	1.13%	29	16.38%
Enterococcus	175	17	9.71%	28	16.00%
Monthly Geomean	**# Samples**	**# Exceedances**	**% Exceedance**	**Allowable Exceedances**	**Allowable Exceedance %**
Fecal Coliforms	33	0	0.00%	5	15.15%
Total Coliforms	33	0	0.00%	5	15.15%
Enterococcus	37	3	8.11%	6	16.22%
Rolling Geomean	**# Samples**	**# Exceedances**	**% Exceedance**	**Allowable Exceedances**	**Allowable Exceedance %**
Fecal Coliforms	110	0	0.00%	18	16.36%
Total Coliforms	111	0	0.00%	18	16.22%
Enterococcus	107	14	13.08%	17	15.89%

Figure B1. Average Annual Enterococcus Exceedances at Tidelands Park in 1999-2010 (data period used for the Draft Report) versus 2011-2016

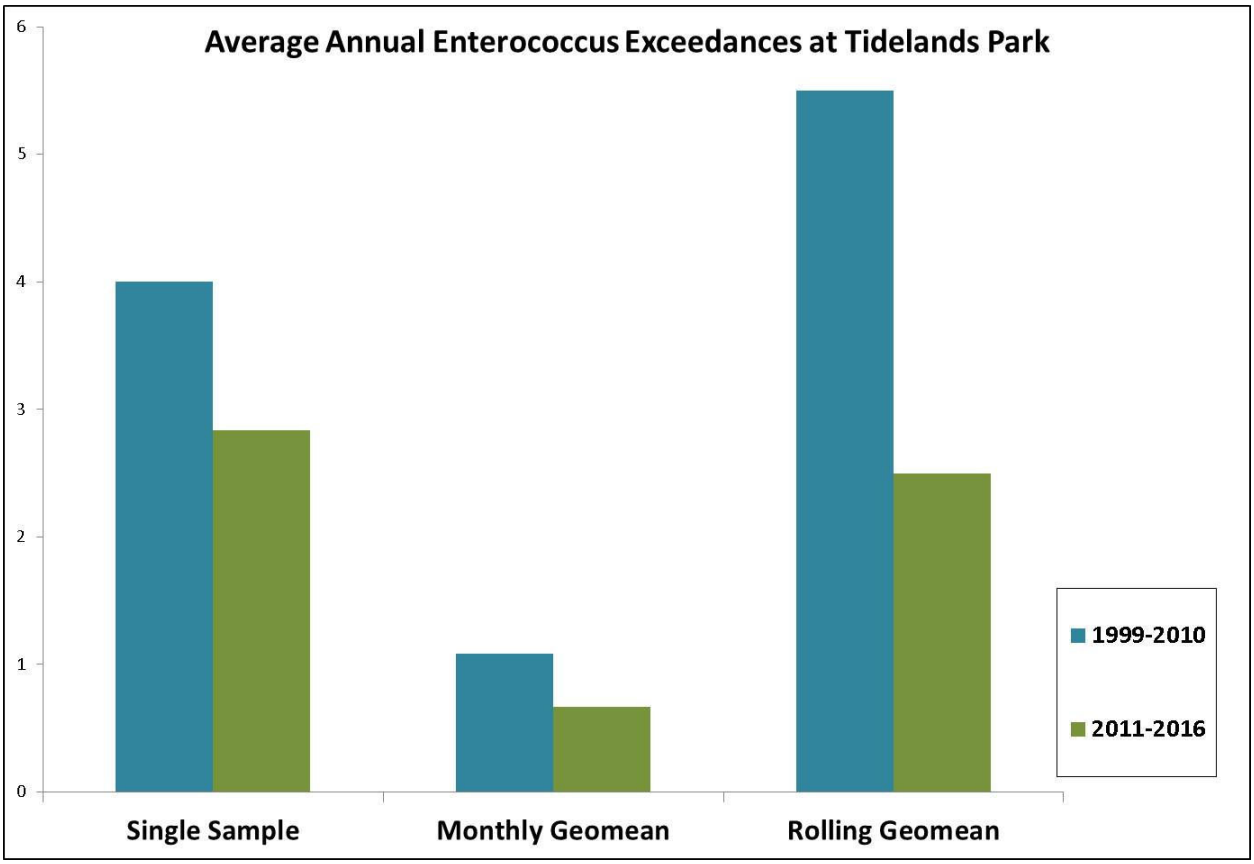


Table B3. Tidelands Park SHELL Indicator Bacteria Exceedances 2011-2016

Tidelands Park SHELL Total Coliform Exceedances, 2011-2016					
30-day Median	# Samples	# Exceedances	% Exceedance	Allowable Exceedances	Allowable Exceedance %
Total Coliforms	177	11	6.21%	29	16.38%
Single Sample	# Samples	# Exceedances	% Exceedance	Allowable Exceedances	Allowable Exceedance %
Total Coliforms	177	9	5.08%	29	16.38%

Figure B2. Average Annual SHELL Indicator Bacteria Exceedances at Tidelands Park in 1999-2010 (data period used for the Draft Report) versus 2011-2016