

**CITY OF REHOBOTH BEACH, DELAWARE**

**HEARING OFFICER'S REPORT**

ON

**DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)  
FOR**

**WASTEWATER TREATMENT PLANT  
PROPOSED OCEAN OUTFALL**

CONDUCTED IN COMPLIANCE WITH  
TITLE 29, CHAPTER 80 OF DELAWARE CODES

JUNE, 2012

Timothy Bureau  
Timothy Bureau Consulting LLC  
Hearing Officer

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## **I. BACKGROUND AND CURRENT SITUATION**

The Draft Environmental Impact Statement (DEIS) (Exhibit 1) is the culmination of a decade long effort to replace the current point discharge into Rehoboth Bay from the City Wastewater Treatment Plant (WWTP). “Rehoboth Bay is a Clean Water Act Section 303(d) listed water body and has an approved Total Maximum Daily Load (TMDL) (Exhibit 83).” Under a Delaware Department of Natural Resources & Environmental Control (DNREC) consent order (DEIS, Appendix A) (2002), the City of Rehoboth Beach (hereinafter, City) must cease the point discharge into Rehoboth Bay by the end of 2014. The DEIS was prepared by the consulting firm of GHD.

The DEIS and the Hearing Record describe the lengthy process the City embarked upon to determine the most cost-effective and environmentally benign solution. The DEIS is extensive and covers a variety of potential alternatives, their viability, and their environmental consequences.

In order to obtain a State of Delaware Water Pollution Control Revolving Loan, the Environmental Review Procedures require an Environmental Impact Statement be prepared in accordance with 40 CFR, Part 6, Subpart B (Exhibit 36). As part of this process, the DEIS is subject to public and agency review, a Public Hearing, and an extended comment period (30 days). Various Record documents reveal the DEIS scope and preparation was coordinated with various agencies, including DNREC and USEPA. Comments, concerns, questions, and

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objections submitted during this progression form the Record, from which this report will derive recommendations for the City to revise, supplement, and modify the DEIS in order to create the Final Environmental Impact Statement (EIS).

Once the EIS is completed, and all Record comments have been considered and integrated into the document, it is submitted to the State for review, permitting, and potential approval of the sought after loan to proceed with the project.

## **II. CREATION OF THE RECORD AND SUMMARY OF EXHIBITS**

The Public Hearing Record consists of 88 Exhibits. Exhibit 39 has been omitted and combined with Exhibit 38 (various Legal Notices of Public Hearing), thus the Exhibit numbers extend to 89. Exhibit 76 is an email cover letter which is also duplicated in Exhibit 77 (DNREC). Exhibit 82 is a duplicate of Exhibit 69 (Tidewater), Exhibit 74 is a duplicate of Exhibit 66 (Park Place on the Canal Condominiums), Exhibit 87 is a duplicate of Exhibit 63 (Rosner) and Exhibit 85 is a duplicate of Exhibit 72 (Mikatavage).

Exhibit 1 is the DEIS. Exhibits 2-37 consist of various meeting minutes and documents which occurred from June of 2002, to October of 2011. These Exhibits were submitted and accepted into the Record at the Public Hearing held on April 10, 2012, at the City municipal facilities (Exhibit 41). Exhibit 38 comprises all of the various newspaper certifications of Legal Notice of the Public Hearing.

Exhibit 40 is the attendance record at the Hearing, which contains forty (40) names, in addition to the Hearing Officer and GHD/DNREC staff. Exhibit 41 is the transcript of the Hearing, which contains Record testimony from six (6) individuals. The Hearing Record remained open for 30-days after the Public Hearing, and closed on May 10, 2012.

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Exhibits 42-89 consist of all written comments to the Record, which include various agency comments, as well as public letters and emails received within the 30-day extended comment period.

All of the Hearing testimony and Record correspondence will be noted and discussed within the body of this report.

Exhibit 81 is an email sent by DNREC confirming the receipt of any submitted comments.

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### **III. SUMMARY OF PUBLIC HEARING COMMENTS**

The Public Hearing date was published by Legal Notice in several newspapers (Exhibit 38). I find the Notice adequate and note there was no objection in the Record to the process in its entirety. The Public Hearing was held on April 10, 2012, at the Rehoboth Beach Convention Center. This author presided as Hearing Officer.

DNREC opened the Public Hearing by presenting a power point presentation of the process involved to reach this point, the information on submitting further comments to the Record, and the future procedures once this Report is submitted to the City (Hearing Transcript, Exhibit 41).

Next, GHD presented a condensed version of the DEIS and the preferred alternative. The presentation outlined many of the important elements of the DEIS, and focused on dilution modeling and various alternatives (Exhibit 41). The Hearing was then opened for public comment and questions.

Six (6) individuals spoke at the Public Hearing. Of those six, two (2) spoke in detail of concerns regarding the potential adverse environmental impact of the ocean outfall, and five (5) spoke of alternatives, with the focus on land application. One of those speakers was concerned about land application, while the others were advocates. No governmental agency made a statement,

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although two organizations spoke: Delaware Farm Bureau and the Marine Education, Research & Rehabilitation Institute (MERR) (see also Exhibit 71).

The Hearing attendees were attentive and considerate, and the opportunity was provided to make a further statement or ask questions, and no one responded.

The Hearing was recorded and transcribed as required by the regulations.

I note the Record contains no objection or concern relating to either the Public Hearing or adequate time to provide a comment for the Record.

Exhibits 1-38 were formally entered into the Record at the close of the Hearing.

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#### **IV. SUMMARY OF AGENCY COMMENTS**

As mentioned previously, no governmental agency commented at the Public Hearing (Exhibit 41). There were, however, eleven written comments submitted by various agencies for the Record (Exhibits 44, 45, 46, 48, 54, 70, 75, 77, 78, 80 and 83).

Seven (7) of the agency comments were from various DNREC offices (Exhibits 44, 46, 54, 70, 75, 77 and 78). The remaining agency comments were received from the US Environmental Protection Agency (USEPA) (Exhibit 83), the Natural Resource Conservation Service (NRCS) (Exhibit 48), the Delaware State Housing Authority (Exhibit 45), and Sussex County (Exhibit 80).

Each of the substantive agency comments will be discussed in the appropriate section of the Record review and evaluation.

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**V. RECORD COMMENT REVIEW BY TOPIC  
FINDINGS & RECOMMENDATIONS**

This review of all comments received as a result of the Legal Notice and Public Hearing is presented in the same sequence as the DEIS contents. Those comments which refer to the DEIS in total will be presented prior to the comments focused on a particular component of the DEIS.

The USEPA (Exhibit 83) thanks the City and GHD for coordinating the development of modeling and the DEIS scope, including improvement to sections pertaining to purpose and need, alternatives, and cumulative impacts. USEPA concluded they have no substantial comments on the DEIS.

Several governmental entities submitted to the Record that they had no comment on the DEIS, including the Delaware State Housing Authority (Exhibit 45) and DNREC's Wetlands & Submerged Lands Section (Exhibit 70), Water Supply Section (Exhibit 46), and the Shoreline & Waterway Management Section (Exhibit 75).

DNREC Division of Parks and Recreation reviewed the historic/acheaological resources sections of the DEIS (4.3 to 4.4, 9.9.1 to 9.9.3) and stated "It all looks good." They had no further comment.

Sussex County (Exhibit 80) (via the County Engineer) indicated their support for the preferred alternative of constructing the ocean outfall, noting two nearby

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communities have operated WWTP ocean outfalls for many years with no impact to tourism, beach quality, or fisheries. The County Engineer listed further concerns with land application, which will be noted in that section of this report.

Peter Havens (Exhibit 50) requested he be kept informed of any further published action on the DEIS and the Final EIS (FEIS). He had no other comments.

There were several public letters which supported the DEIS process and the conclusions reached. Rich Baccino (Exhibit 51), who was the New Castle County Assistant Engineer in charge of operation and maintenance of wastewater collection and treatment, goes on record strongly supporting the ocean outfall alternative as the most environmentally sound and economical method to meet the present and future wastewater disposal needs in the City. His comments on land application will be included in that section of this report.

William K. Patton (Exhibit 55) did not object to the proposed ocean outfall, believing “there is virtually no danger of polluting the beaches...” He questioned what the anticipated discharge would be and what dilution will occur. I find these questions are answered by information contained within the DEIS.

Stanley and Betsey Heuisler (Exhibit 64) stated they strongly support the DEIS conclusions. They further believe the City conducted a thorough process, with ample public and expert involvement, reaching a reasoned and well-documented

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decision. They noted recent municipal elections, in which the people strongly supported those candidates in favor of the ocean outfall alternative, demonstrate the outfall choice is "...the will of the people."

Howard Menaker (Exhibit 65) also supports the DEIS conclusions, noting the City conducted an extensive process, culminating in a "...well-documented and carefully considered decision..."

Cindy and Paul Lovett (Exhibit 67) also submitted a letter in support of the DEIS and ocean outfall, believing the alternatives have been studied in full, concluding the City process was proper, thorough, and based on "...exhaustive research and discussion..."

Jennifer Duncan (Exhibit 73) wrote to Governor Markell, with a copy to this Record, advocating support of the City decision, and stating much of the press and blogs on the proposed outfall contain a "...considerable amount of misinformation..."

Guy Martin (Exhibit 86) states the DEIS confirms the wisdom of the City decision to select the ocean outfall for a variety of reasons. He notes the DEIS concludes the preferred alternative is the most feasible and least expensive to construct and operate, while having "...minimal environmental impact." Mr. Martin believes the "Ocean outfall is clearly the best choice .... for every reason..."

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There were several written comments to the Record which objected in general to the proposed ocean outfall and DEIS conclusions (Exhibits 56, 59, 60, 61, and 68). Jere Stephano (Exhibit 56) is concerned that the “minimal” amount of contaminants in the City discharge will add to a cumulative problem, in which a myriad of sources contribute minimal pollutants to the ocean, with uncertain future impacts.

Emily Van Alyne (Exhibit 59) feels the project will adversely affect tourism in the area, stating even the bad publicity regarding consideration of an ocean outfall may engender a 10-20% cost to the local economy. Her other comments will be discussed in the appropriate sections of this report.

K. C. Burgwin (Exhibit 60) commented the proposal is a very bad idea for the area, stating there must be another way to solve the problem. Elisabeth Stone (Exhibit 61) is concerned with possible adverse impacts and asks the City to find another, safer method to dispose of the wastewater. William and Melonie Ettinger (Exhibit 68) believe the effluent should be land applied, and while acknowledging the ocean outfall may be less expensive, they state discharge of pollutants to the ocean is a more important consideration.

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I find none of these general objections to the DEIS require modification of the document, and recommend no changes as a result of these comments, as several of these concerns will be addressed in the following topic discussions.

The remaining comments within the Record are more focused as to what aspect of the project the concerns relate to, and the responses to the Legal Notice can generally be grouped into the following major categories: Alternatives, land application, dilution/water quality, construction corridor, and biota impacts. Other submittals which do not fit into one of these categories will be noted at the end of this report section. The following numbering follows the Chapter notations contained within the DEIS.

### 3 Alternatives

There were six (6) comments submitted which addressed alternatives to the ocean outfall (other than land application, which will have a separate review). The DEIS (Exhibit 1), at 3.1, states: "A total of six (6) alternatives were identified for consideration through discussions with the City, the County, and DNREC."

Judy Adams (Exhibit 42) advocated requiring all WWTP users obtain an incinerator toilet which uses no water and would have a minimal amount of ash as the waste product. I recommend the City comment on whether individual treatment alternatives were ever considered, and if so, the basis for omission from the DEIS. Then modify Chapters 1 and 3 accordingly. Note individual

treatment options were not part of the listing of alternatives in Exhibit 35, the Public Notice for the EIS Scoping Meeting held in September of 2010. No minutes of this meeting are in the Record.

Samie Dozor (Exhibit 53), Emily Van Alyne (Exhibit 59), K. C. Burgwin (Exhibit 60), and the MERR Institute (Exhibit 71, 11/7/2009 letter) all advocated consideration of using constructed wetlands as an alternative to the ocean outfall or land application. The Record is silent on whether the wetland treatment option was considered. Although Exhibit 22 is the agenda for an Alternatives Workshop with DNREC (2008), there are no meeting notes in the Record. Similarly, there is no mention of constructed wetlands in Exhibit 23 (2008), "Review of Wastewater Discharge Alternatives Past and Present," a presentation by Stan Mills, or in the Lewes-Rehoboth Beach-Sussex County Wastewater Disposal Options Meeting (2002) (Exhibit 2). Constructed wetlands are not a listed option in Exhibit 35, the Public Notice for the EIS Scoping Meeting (9/21/2010). No minutes or transcript of this meeting are in the Record. I recommend the City comment on whether wetland treatment alternatives were ever considered, and if so, the basis for omission from the DEIS. Then modify Chapters 1 and 3 accordingly.

Gregg Rosner (Exhibit 63) inquired how much the annual municipal water supply costs, the source of funds, and how much it would cost to construct and operate a closed loop wastewater system. Mr. Rosner did not advocate consideration of

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a closed-loop system alternative and questions relating to municipal water supply are not pertinent, therefore, DEIS revisions are unnecessary.

Jack Musser, who spoke at the Public Hearing (Exhibit 41), believes using the ocean is short-sighted, will cause cumulative problems if everyone does it, and that there must be a more cost-effective way to recycle the water. Mr. Musser does not suggest any specific alternative, simply stating there must be a better way. No revisions to the DEIS are recommended.

### 3 Alternatives – Land Application

Thirteen (13) Exhibits pertain to the alternative of land application, in addition to the Public Hearing transcript (Exhibit 41). Six of those are submitted comments from Tidewater Environmental Services and Artesian Resources, which will be discussed at the end of this section.

There were three (3) submitted comments in general support of the land application alternative. Nettie Green (Exhibit 52) feels it is better to apply to the land rather than the ocean because it will fertilize the land, it is cheaper than an ocean outfall, the land will purify the effluent, and marine impacts will be avoided. Samie Dozer (Exhibit 53) thinks spray irrigation is possibly a good idea, considering the water will be recycled. The Delaware Chapter of the Surfrider Foundation (Exhibit 62) (representing over 130 members) “enthusiastically supports land based application as the better option...” because it will recharge

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groundwater, provide a weather independent irrigation supply, protect water quality via soil filtration and biological uptake, and protect against saltwater intrusion into the groundwater.

Terry O'Brien spoke at the Public Hearing (Exhibit 41), questioning the potential for accumulation of contaminants in the soils spray irrigated with water from the WWTP. At 9.7.2.2 the DEIS discusses this issue, finding pathogenic problems are negligible, soils can retain metals for hundreds of years (DNREC), and with a limit on public access and proper application, the risk from residual pharmaceuticals can be minimized.

Four (4) comments were submitted to the Record in support of the preferred alternative compared to the land application option. William K. Paton (Exhibit 55) opined because the water table is relatively shallow in Delaware, percolation may be inhibited and may cause mounding effects on the surface. He supports the ocean outfall alternative because the effluent is very clean, will not impact beaches, and is similar to precipitation volume, so salinity should not be impacted.

Mable Granke (Exhibit 88) observes land application is a viable option in some cases, but for Rehoboth Beach her concerns include requiring miles of piping, a back-up holding pond with potential leaching difficulties, and removing sludge

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with an unknown disposal site. She concludes the proposed ocean outfall is the best environmental and cost-effective option.

Rich Baccino, P.E. (Exhibit 51), who for 7 years had responsibility for operation and maintenance of the New Castle County wastewater collection and treatment systems, is strongly in favor of the proposed ocean outfall because it is the most environmentally sound, most reliable, and most cost effective option available. He submits several comments regarding spray irrigation to address common misconceptions, including the fact the volume of effluent is negligible compared to precipitation, runoff, and infiltration volumes. Since most public potable aquifers are deep and below confining strata (an aquaclude), and spray irrigation only infiltrates to the surface aquifer, it does not benefit public drinking water supplies. He further states the requirement for large storage lagoons greatly increases the construction and maintenance costs of land application. Mr. Baccino opines spray irrigation does not benefit agriculture, as many existing spray fields grow only marginal silage, which the utilities must pay to have harvested and removed. He states it is a common misconception that spray irrigation removes pollutants, like nitrogen, from the watershed, as nitrogen fertilizer must be added to sustain the cover crop, thereby adding nutrients to the watershed. He concludes by asking a rhetorical question of “Who benefits economically from spray irrigation...? ...private agricultural landowners... and private wastewater utilities...”

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Michael A. Izzo, County Engineer, (The Sussex County Engineering Department) (Exhibit 80) prefaces his comments by stating he has many years of experience in both land application (spray irrigation) and ocean outfalls, as Sussex County uses both an ocean outfall and three (3) WWTP which use spray irrigation to dispose of their effluent. He opines each option has benefits, and each situation must be reviewed and analyzed independently on it's own merits. Based upon the DEIS and his years of pertinent experience, Mr. Izzo supports the ocean outfall and as in the comments by Mr. Baccino (Exhibit 51), lists the following clarifications for the Record:

- The ocean outfall will have no effect on existing groundwater recharge, as the Rehoboth Beach WWTP discharges to the Lewes-Rehoboth Canal. Thus, there is no change in the probability of saltwater intrusion, which has not happened in the lifetime of the WWTP.

- Spray irrigation is not a beneficial re-use (recharge), as the lands proposed for spray irrigation are five (5) to ten (10) miles distant from municipal wells.

- Spray irrigation in Sussex County is not a beneficial re-use (recharge) because the subject aquifer is not depleted. In this case, use of the lands proposed for spray irrigation will result in mounding above the existing groundwater table.

- Spray irrigation as an agricultural resource is overstated. Land application is simply wastewater treatment, not a farming operation. Farmers only irrigate thirty (30) to forty (40) times a year, while the spray irrigation

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operates three hundred (300) days a year, whether or not it is beneficial to the crops. “Wastewater treatment concerns drive the farming, not the other way around, so benefits to the agricultural community are negligible.”

Mr. Izzo concludes by relating the existing ocean outfalls at Bethany Beach and Ocean City, MD, have operated for many years without impact to tourism, fisheries, or the beaches. Acknowledging this is a complicated issue, he observes “... the City of Rehoboth Beach is by the ocean, not abundant farmlands.”

In contrast, Tidewater Environmental Services, Inc. (TESI) (Exhibit 69), Artesian Resources (Exhibits 41, 57, 58, 79, 84, & 89), and Delaware Farm Bureau (Exhibit 41) all contend land application via spray irrigation is the best option for the City, disputing the DEIS conclusions. Exhibit 11, a DNREC presentation to the City (8/4/2008) on spray irrigation, also touts the benefits of land application, and the steps for permitting a land application system was presented by DNREC to the City in September of 2008 (Exhibit 15).

The Delaware Farm Bureau (Gary Warren, President) (Exhibit 41) spoke about the future food and water needs of the world population, and recycling water will be critical. He conveyed at Middletown, spray irrigation is benefitting agriculture, making it more productive. He believes that the statement “adequate land is not available” is a “... myth at best, and it’s a lie at worst.” He concluded by urging

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partnerships with the agricultural community, resulting in keeping more viable, open farms in the state.

TESI reiterates their previous offer to provide wastewater services to the City, stating significant progress has been made in permitting their proposed Wandendale Regional Wastewater Facility, which is a “permanent, cost-effective, and environmentally sound ... solution.” No details were provided in Exhibit 69, but rather TESI stated if the City has formal interest, they will endeavor to gather details suitable to meet City needs. Lacking the detail, or even a demonstrable viability of another alternative, in my opinion this nebulous offer does not warrant DEIS revision. Also note Exhibit 16, the Tidewater response (2008) to the City RFP (Request For Proposal) for land application (Exhibit 12), which also contains no proposal.

Artesian Resources, hereinafter Artesian, submitted several Exhibits (see above listing) in response the Public Hearing. These Exhibits are intended to show the availability, viability, and cost-effectiveness of their proposed land application alternative. Artesian also contends in Exhibit 89 that the cost estimates in the DEIS for spray irrigation are “... inconsistent with, and unexplainable based upon, our experience.” However, Artesian supplies no specifics to support this allegation.

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The issue of land application is the most contentious in the Record. Two basic topics are at issue (given the accepted viability of the alternative itself): Cost and land availability.

Cost estimates for spray irrigation are found in Table 3-4 of the DEIS. The total (in 2009 dollars) is \$69 million. Exhibit 18 (October, 2008) is the Artesian response to the City RFP (Exhibit 12) for land application. In that document, the Artesian bid is about \$45 million. In Exhibit 57, the current Artesian cost estimate is about \$24 million. The numbers are incongruent, however, as the DEIS cost estimate contains an \$18.5 million estimate for land costs, while the 2008 Artesian is \$0.5 million and 2012 Artesian is not comparable, as it combines land cost and lagoon construction (\$5.2 million). The DEIS applies a 30% contingency to construction cost (\$17 million) and includes 30% for engineering/administration (\$10 million), while 2008 Artesian does not specify contingency and estimates engineering at about \$1 million and the 2012 Artesian contains a 10% contingency (\$1.6 million) and engineering at about \$4 million. Therefore, there does not appear to be any large discrepancy and the differences compared to the DEIS are explained. The 2012 Artesian (Exhibit 57) also lists an estimated \$1 million per year charge to the City after the bonds are repaid for operation and maintenance of the spray irrigation system, compared to \$0.15 million for the ocean outfall. Also note the \$30 million estimate for the ocean outfall includes \$3.3 million for WWTP treatment upgrades, while the 2012 Artesian totals do not include the upgrade cost. Artesian contends the 2012

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estimated per user cost of \$686 for spray irrigation is comparable to the ocean outfall estimate of \$630 because they are within 10% (Exhibit 89). However, when the plant upgrade cost is added to the 2012 Artesian bid, the total becomes about \$27.2 million, which will result in the quoted cost per user charge going up about 13% (3.33/23.98). The resulting comparison then becomes \$630 for the ocean outfall and well over \$750 for spray irrigation. Therefore, based on the Record, I do not recommend any changes to the DEIS conclusion that the ocean outfall is the most cost-effective alternative (Table 3-16).

The topic of land availability is a key issue because it forms the basis of the City decision to conclude spray irrigation was not a viable alternative. The efforts made by the City to identify, contact, and/or acquire land for the purpose of spray irrigation is detailed in Exhibit 6 (Stearns & Wheler, 2005), Exhibit 30 (compendium of relevant City meeting minutes), and summarized within the DEIS at 3.1.3.3.1. GHD (Rhodes Copithorn) summarized the effort at the Public Hearing (Exhibit 41), imparting two years was expended looking for land and it could not be found. The City issued an RFP for spray irrigation (Exhibit 12, 8/2008) and although Artesian responded, the proposal proved impractical (GHD, Exhibit 41), as it was non-responsive to the RFP and mandated County involvement (Exhibit 30). Note many of the properties contacted during the search for land application sites (DEIS, Figure 3-3) are the same properties contained in the submitted Artesian proposal map (Exhibit 58), demonstrating much of the farmland previously considered remains in agriculture. The Artesian

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map can only be considered to show potential use areas as there is no evidence in the Record (acknowledging one Artesian Letter of Intent Purchase Agreement for unlocated lands – Exhibit 79) the depicted lands are available for spray irrigation.

The City spent years looking for adequate land for a spray irrigation facility (2005) to no avail. The City issued an RFP for spray irrigation at the behest of private utilities (2008) and received no viable response, although debating and waiting on the issue for months (Exhibit 30). Now four years later, in response to the DEIS Public Hearing, Artesian submits a proposal much different from that they submitted in 2008. I conclude there was ample moment of opportunity for Artesian to create a viable project and present it to the City. Submitting a new proposal in response to the DEIS is not timely, and careful and due consideration of the proposal would likely jeopardize compliance with the consent order (DEIS, Appendix A). The cost estimate is not a contractual number in response to an RFP and is subject to change. In my opinion it is unreasonable, after a decade of effort to resolve the current situation, to expect due consideration of a new proposal submitted at the very last moment in order to challenge the DEIS conclusion. The Record is clear the City made every effort to consider and accommodate the land application alternative, in fact accommodate Artesian, but the efforts were fruitless. I find although land application is certainly a feasible alternative, there remains no firm project upon which the City could reasonably act, and therefore, based on the Record, do not recommend any change to the

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DEIS conclusion that the ocean outfall is preferred. Note this conclusion is supported by the two Professional Engineers responsible for operating WWTP's in Delaware who commented for the Record (Exhibits 51 & 80).

#### 4.2 Existing Ocean Outfalls

Mr. Rosner (Exhibit 63) asserts the DEIS cites an outdated study (1994) and the discussion does not address the basis for Florida banning ocean outfalls in 2008 (DEIS, 4.2.5). However, the DEIS does cite later studies (Tichenor, 2004) which were, in part, the basis for the Florida legislative moratorium on constructing ocean outfalls. The DEIS further notes Florida has enacted subsequent legislation to extend compliance deadlines. Mr. Rosner asks the Final EIS comment on the economic impact of lost tourism, the science behind long-term impacts at Florida outfalls and the costs of "mitigating this matter in legislation and courts of law." This request appears to be outside the scope of the DEIS. Since impacts to coral reefs were the catalyst for Florida action, and Delaware has no coral reefs, such a discussion would not be applicable. Further, commenting on costs of mitigation, or litigation, is premature and unwarranted. No mitigation is proposed by the DEIS and it is up to DNREC and the US Army Corps of Engineers to determine whether mitigation is appropriate once the EIS is finalized, the requested loan is approved, and application for permits made to the regulatory agencies. Note the public will have an additional opportunity to comment on the proposed ocean outfall and request mitigation during the

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permitting process (DE Chapter 72 – Subaqueous Lands, USACE Sec. 10 of the Rivers and Harbors Act of 1899).

#### 4.4 Force Main (Corridor Concerns)(Also Appendix G)

There were four (4) letters received outlining concerns with two aspects of the proposed force main construction from the WWTP to the Deauville Beach access parking lot.

Mario Roche (Exhibit 49) is concerned with impact to the tree canopy along Henlopen Avenue. This letter makes a persuasive case for the City and utilities to take advantage of the open cut and place overhead lines underground, citing numerous benefits, including fulfillment of a portion of the City comprehensive development plan. The DEIS indicates every effort will be made to minimize tree impact during the force main construction. While burying utilities is an excellent idea, I find it is beyond the scope and requirements of the DEIS. Should any compensatory impact mitigation be contemplated, the societal benefit of buried utilities is apparent.

The remaining three (3) submitted comments relate to corridor construction adjacent to the Park Place on the Canal Condominiums. Exhibit 66 is a formal letter of concern from the Condominium Association President, Richard Byrne. Exhibit 72 (Mark A. Mikatavage) is actually a copy of the Association comment with a slight introductory modification. Mark and Karen Mikatavage submitted

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another email (Exhibit 47), which asks if the force main will be in front or behind the condominiums. I find the DEIS clearly states the Alternative A force main corridor will be located between the condominiums and the canal (behind the condominiums), and do not recommend a response to this Exhibit.

The Association raises four (4) issues, which are all related to the close proximity of the home foundations to the proposed force main. The first three (3) points raised involve concerns regarding bank stabilization within the construction corridor adjacent to the Lewes-Rehoboth Canal, and the fourth point identifies a discrepancy within the DEIS. The incongruity between DEIS Section 4-4 and Appendix G lies in construction methodology. Section 4-4 indicates the corridor adjacent to the condominiums will be an open-cut trench (4.4.2 & Figure 4-3), while in Appendix G it states: "In an effort to reduce the construction impact to Park Place residents, HDD (horizontal directional drill) construction is anticipated in this section (p. 7)." In addition, the DNREC protected species response included in Appendix G indicates the clearance (no known occurrences of threatened or endangered species) is dependent upon directionally drilling adjacent to the Canal. I find these discrepancies should be corrected, and the decision either heightens or resolves the bank stabilization concern. Note under the regulatory provisions of the Federal Clean Water Act (P.L. 92-500, as amended), construction adjacent to "waters of the U.S." must be stabilized and precautions undertaken to prevent any erosion or sedimentation into the Canal. Should the City decide to open-cut rather than bore the force main through this

section, additional precautions and careful methodology are warranted, both during construction and when stabilizing and vegetating the cut corridor. Open-cut construction also appears to require a revised protected species response from DNREC. A decision to horizontally bore this section addresses and resolves the concerns outlined in these Exhibits.

### 5 & 6 Water Quality & Dilution

There were four (4) comments received relating to concerns there will be adverse water quality impacts resulting from the preferred alternative. John G. Kleitz, Jr. (Exhibit 43), Samie Dozer (Exhibit 53), and Emily Van Alyne (Exhibit 59) were all concerned with impacts to beach recreational use and tourism. However, as the City endeavored to demonstrate through dilution modeling, there is no anticipated impact to beach use and swimming from a water quality perspective. This DEIS conclusion was confirmed by DNREC's Division of Parks & Recreation, who stated: "... due to mixing and water volume, there will be little or no significant impacts on water based recreation opportunities (swimming, fishing, etc) (Exhibit 78)." DNREC also strongly recommends beach construction occur in the off season months, which is also the stated goal of the City. There are no recommended changes to the DEIS as a result of these comments.

Gregg Rosner (Exhibit 63) lists twenty (20) questions or requests in his written comments. He inquires whether testing for enterococcus will be conducted along

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the beach and the results made public. I find at 7.4.2 of the DEIS it states this testing occurs at four (4) sites in Rehoboth Beach, therefore no modification is recommended. He further asks if the City will regularly test the beach for viruses, pathogens and oocysts, and make the results public. Finding no citation, the Final EIS could respond to this question. Mr. Rosner further requests more updated marine pathogen survival studies be cited. However, I find the DEIS at 9.7 adequately addresses pathogens and the outfall result should a worst-case scenario treatment failure occur. At the Public Hearing, GHD presented graphic information indicating the 100 to 1 dilution required to meet water quality standards for pathogens would occur within a few meters of the diffuser (Exhibit 41).

Mr. Rosner (Exhibit 63) asks that the final EIS calculate, in pounds, the annual total for each metal which will be discharged by the proposed ocean outfall. I find metal concentrations in the effluent are discussed in the DEIS at 5.4.3.1 and laboratory tests are contained in Appendix F, therefore the requested information can be derived from data contained within the DEIS (using annual discharge volume). Mr. Rosner asks the same for nitrogen and phosphorus, and again, those totals can be derived from the DEIS (5.2), and anticipated annual total nitrogen (47,470 lbs.) and total phosphorus (2,650 lbs.) is found in Table 2-3.

Mr. Rosner (Exhibit 63) requests more up-to-date PCB studies be cited, given the DEIS citation is twenty-two (22) years old. He requests PCB studies of all

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organisms in the food web, including all biological effects; total annual PCB discharge in pounds; and specifically potential for PCB physical adherence to fish larvae in the microlayer (ocean surface layer). The DEIS addresses PCB's at 5.4.3.5, and DNREC (Greene, 2011) found the discharge will be at a lower concentration than ambient seawater, is lower than similar WWTP's throughout the Delaware River Basin, and human health water quality criteria will be met by near-field dilution. Greene (DNREC) further concluded due to anticipated volatilization, even less PCB's will be available for bioaccumulation, and Rehoboth Beach effluent PCB concentration should be considered *de Minimus*. I find the DEIS adequately address the PCB concern and do not recommend any modifications.

Mr. Rosner (Exhibit 63) asks if the City is "in compliance with their storm water outfalls?" The City has five (5) storm water outfalls which are identified in the DEIS as a source of poor water quality (7.4.3.1, Figure 7-7). However, the question does not appear relevant to the DEIS focus, and since dilution modeling reveals no near shore impact, the cumulative question is appropriately not addressed in Section 10. I find the existing storm water discharges do not have a relation to the DEIS study and recommend no changes.

Mr. Rosner (Exhibit 63) inquires about potential salinity impacts to all EFH (Essential Fish Habitat) fish species and larvae in the vicinity of the diffuser. He advocates updating the DEIS with a recent NOAA study linking dolphin disease

and lower salinity, and creating an anticipated salinity gradient representation around the diffuser. The DEIS does not address salinity impacts from the diffuser, not having identified it as a primary concern. I recommend a discussion be added to 5.1, including rationale why near-field salinity impacts were not a concern.

On a similar note, Mr. Rosner (Exhibit 63) is concerned the diffuser effluent plume will off-gas chlorine, creating "...a migratory and indiscriminate killing machine, frying the organisms..." In another question, he inquires what the concentration of chlorine will be at the ocean surface (microlayer) and what is the resultant anticipated marine organism mortality, including plankton; asserting the DEIS revision should cite scientific sources specific to chlorine impacts. Note Table 2-2 indicates the NPDES permit specifies total residual chlorine be undetectable in the effluent, which is a sound basis for the lack of discussion regarding potential chlorine impacts within the DEIS. Thus, no revision to the DEIS is necessary in this regard.

#### 7.6 Prime Agricultural Land

The Natural Resource Conservation Service (NRCS) (Exhibit 48) noted the listing of prime farm land is incorrect (Tables 7-6 & 7-7) in the DEIS, opining outdated information was used. As a result, Figure 7-11 also needs to be updated to reflect the currently-designated prime agricultural soils on the most recent Soil Survey (Sussex County, USDA). I recommend the City update the referenced

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Tables and Figure with the information provided by the NRCS. Section 7-6 must then be reviewed to determine if any changes result to the narrative and conclusions.

The NRCS response also states if any federal funds are used for the proposed project, then the review provisions of the Farmland Protection Policy Act would apply. It appears this provision does not apply to the preferred alternative, but may to the Land Application alternative.

#### 8 Biological Environment (Biota Impact Concerns)

There were four (4) written comments submitted related to concerns with impact to the biological environment. The written submittals of Suzanne Thurman (MERR) (Exhibit 71) and Greg Rosner (Exhibit 63) cover their testimony at the Public Hearing; noting when these Exhibits are referenced, the information also appears in the Hearing Transcript (Exhibit 41).

DNREC's Natural Heritage and Endangered Species Program submitted a detailed critique of Chapter 8 (Exhibit 77). DNREC notes a similar critique was submitted to GHD on June 22, 2011, yet is not included in Chapter 12 – References, and was only partially used in the DEIS. I find the subject letter should be added to Chapter 12, and the incorrect date reference at 8.8.1.1 should be corrected.

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Exhibit 77 (DNREC) contains the following substantive comments on Chapter 8:

8.1.3.2 Land Application. DNREC had requested approval to visit the land application site (6/22/11 letter) to map vegetation communities and assess habitat, but received no response. Should land application be considered, they advocate upland buffers be left intact along forested and wetland margins. DNREC goes on to provide citations and narrative regarding potential land application impacts. I note such a review can only impede and adversely impact the land application alternative.

Should land application be reconsidered, it is recommended DNREC be allowed to conduct the requested study and plans should incorporate buffers where appropriate. The DEIS should be modified to add the information provided.

8.3.4 Fish. DNREC notes the Atlantic Sturgeon was not included in this section (endangered as of 4/6/12, NMFS, subsequent to the DEIS completion). Since the project falls within the species range, I recommend the City address potential impacts on this species. DNREC suggests consulting with Dr. DeWayne Fox at Delaware State University in determining potential species impacts. Gregg Rosner (Exhibit 63) further requests a detailed focus on the genetically distinct Atlantic Sturgeon population utilizing Delaware waters and further requests comments on related potential liability under the Endangered Species Act (16 U.S.C. 1531 *et seq.*). I find the previous recommendations should be adequate,

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and if applicable, could focus on the Delaware waters subspecies. Commenting on potential liability is outside the scope of the DEIS and I do not recommend a response.

8.3.5.1.1 Harbor Seal & 8.3.5.1.2 Gray Seal. DNREC notes Figures 8-24 and 8-25 are misleading, and the maps should be corrected to include Delaware waters from November to May. I recommend the changes be made to these figures.

8.3.5.1.3 Harp Seal. DNREC makes a similar comment in regard to Figure 8-26, and I recommend the figure be modified to include Delaware waters.

8.3.5.1.5 Bottlenose Dolphin. Gregg Rosner (Exhibit 63) asks the DEIS clarify the coastal morphotype of the Atlantic Bottlenose Dolphin in Delaware waters (Appendix N states Northern Migratory Stock). He further requests citations on loss of initial births and the toxicology of mammary milk. In addition, Mr. Rosner wants a breakdown of infant mortality from regional stranding organizations over the past five (5) years. Noting the DEIS confirms the Bottlenose Dolphin is not an endangered or protected species, the information requested does not augment the viability or voracity of the DEIS. While research could be conducted to respond to these questions, and the DEIS modified with the information gleaned, such efforts are beyond the scope of the DEIS, and will not alter the conclusion. Likewise the information on the Bottlenose Dolphin provided by MERR (Exhibit 71) could be used to augment the DEIS discussion. However,

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the information focuses on the effect of various environmental toxins and antibiotics on the dolphin, with comments on the likely consequences. Appendix N of the DEIS also addresses these issues, concluding since the dolphins will not be feeding continuously at the diffuser, bioaccumulation is unlikely. These concerns are also related to asserted ocean microlayer and benthic impacts, which are discussed below.

8.3.5.1.6 Harbor Porpoise. DNREC comments Figure 8-28 is misleading, as it only depicts time of year (summer) when Harbor Porpoises are minimally present in Delaware waters. I recommend this Figure be modified to include all seasonal ranges (or add seasonal additional maps).

8.3.5.1.7 Humpback Whale. DNREC made a similar comment to that above, being concerned Figure 8-29 does not reflect migratory routes from feeding to calving areas and back again. I recommend modifying the Figure, or adding additional Figures, to include all seasonal ranges.

8.3.5.1.8 Fin Whale. As in the above comments, DNREC objects to Figure 8-30 only depicting the summer range of the Fin Whale. I recommend modifying the Figure, or adding additional Figures, to include all seasonal ranges. In addition, DNREC provided narrative information which could be included in the Final EIS.

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8.3.5.1.9? North Atlantic Right Whale. DNREC observes the DEIS does not include discussion of this species. I recommend adding a section on the North Atlantic Right Whale, including information provided by DNREC.

8.4.1 Endangered Species. DNREC also recommends adding the North Atlantic Right Whale to this section discussion.

8.4.2.1 Sea Turtles. At 8.4.2.1, DNREC recommends adding that these turtle species are on the Delaware Endangered Species List. Again, DNREC recommends depicting a full year temporal occurrence of various sea turtles in Figures 8-32 through 8-35.

Note in all the above instances where the seasonal distribution of species is limited by the appropriate Figure, there may be insufficient data to complete a full year distribution Figure. Should this occur, research efforts and the findings should be added to the appropriate discussion, noting why a full year range is not depicted.

Emily Van Alyne (Exhibit 59) provided a list of endangered species and had a general concern regarding the potential impact of the proposed ocean outfall on all of them.

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Suzanne Thurman (MERR) (Exhibit 71) made extensive comments on this section. MERR and Gregg Rosner (Exhibit 63) observed the DEIS data on marine mammal and sea turtle occurrences did not include any information in this century, and MERR provided the data from 2000 to 2011. I recommend the DEIS be updated to include the data MERR provided. As in the DNREC comment discussed above, MERR also noted the temporal gaps in species survey Figures (previous recommendations will address this concern).

Exhibit 71 (MERR) provides additional information on the North Atlantic Right Whale, which should be integrated into the Final EIS as appropriate. As in the DNREC comments above, MERR also objects to the DEIS inference that marine mammals and sea turtles are only transitory through Delaware waters, and goes on to state the extended temporal visitation span of some species coincides with the maximum WWTP discharge volume (summertime).

Gregg Rosner (Exhibit 63) asks several questions relating to the benthic habitat and potential impacts resulting from the proposed pipe and diffuser installation. First, he inquires what benthic organisms will be impacted by dredging for the outfall pipe placement. I note this information is included in the DEIS at 8.3.1.1.2 (USACE, Scott, 2001), and therefore no revisions are necessary. He then questions whether the Corps of Engineers is an academy with credentials, insinuating the Scott study is flawed as it only found a limited number of

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organisms. The Corps of Engineers conducts biological studies nationwide, and I find there is no basis to question the veracity of the referenced report.

Mr. Rosner (Exhibit 63) then inquires whether there are any more recent studies on the benthic habitat of Rehoboth Bay, as the cited study is from 1972 (at 8.3.1.1.1). I find this question to be immaterial to the DEIS, as further benthic characterization of the Bay substrate communities has no bearing on, or applicability to, the proposed ocean outfall. Mr. Rosner further asks where the Diener, *et al*, study was located (at 8.3.1.3.3). I find this is a valid question and the Final EIS should include this information. Finally, he inquires how the potential loss of benthic diversity would impact fish species, in particular the Atlantic Sturgeon. Both the Scott and Diener studies answer this question. Scott found although there were immediate impacts resulting from disturbance, recolonization and resettling occur rapidly (8.3.1.2.3), while Diener found the benthic community around an existing ocean outfall was not a degraded community and diversity remained high (8.3.1.3.3). Given the limited disturbance corridor proposed by the ocean outfall construction, any benthic organism disturbance will be minimal, with negligible impacts to local benthic populations. Therefore, I find it is not necessary to revise the EIS in this regard.

Mr. Rosner (Exhibit 63) goes on to ask whether updated fisheries studies could be included in the Final EIS, as the two studies (USACE & NOAA) are from 2001

(8.3.4.1 & 8.3.4.2). I find if subsequent fishery population studies in the area of the proposed outfall are available, they could be reviewed and the new data cited. However, I find it is not necessary to revise the DEIS as the studies simply provide a listing of those species and essential habitat known to occur in the area. These sections of the DEIS are not addressing impact to fish species, and the potential impact, particularly to species of concern, are addressed elsewhere in the DEIS. Mr. Rosner goes on to ask whether fish liver toxicology studies would be available as a baseline for comparison to potential long-term effects of the outfall. The DEIS is silent on fish liver toxicology, and none of the information provided suggests such a study is warranted. This question is better asked of the regulatory agencies evaluating and permitting the proposed project, and they may require such studies as a condition or requirement of any issued permit. Therefore, I do not recommend any changes to the DEIS in this regard.

Mr. Rosner (Exhibit 63) requests the DEIS revision include information on specific diversity and populations of plankton at the proposed diffuser location. I find the referenced USACE study (1996) (at 8.3.2.1) adequate for purposes of the DEIS, and refer Mr. Rosner to that study for more detailed information.

#### 9.5.2 Examples of Beach Communities

Gregg Rosner (Exhibit 63) requests the conclusion Southern California beaches have not been impacted by ocean outfalls (9.5.2.4) be revised. He cites two

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applicable studies. I recommend these (and any other) pertinent studies be reviewed, and if found applicable, integrate the findings into 9.5.2.4.

Mr. Rosner (Exhibit 63) inquires whether there is any more recent data from the South Coastal WWTP, as the study cited is from 1992 (USEPA) (at 9.5.2.3). I recommend determining if additional studies or data is available, and unless more recent studies conclude there is an adverse impact from the South Coastal WWTP ocean outfall, further citations would not prompt revision of the DEIS.

#### 9.7.2.3 Environmental Consequences

Related to the concern over potential benthic impacts; Rosner (Exhibit 63), MERR (Exhibit 71), and Van Alyne (Exhibit 59), all submitted concerns regarding ocean microlayer impacts. The basis of concern is ingestion and bioaccumulation of toxics for benthic feeding fish, and marine mammals and turtles, which must surface to breathe and thereby interact with the microlayer. I find no specific discussion of the microlayer in the DEIS. The three (3) comments assert the proposed effluent will essentially contaminate both the microlayer and benthic substrate, adversely affecting the organisms contained therein, then bioaccumulating up the food web. Although there is no specific discussion of contaminant accumulation in either the benthic substrate or the microlayer, the DEIS does conclude that dispersion and dilution in the near-field immediate area of the diffuser (Figure 9-9) will result in nutrient concentrations below ambient seawater levels (9.7.2.3.1), pathogen concentrations meeting

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DNREC Surface Water Quality Standards even in the event of a catastrophic WWTP failure (9.7.2.3.2.3), metals and volatiles also meeting water quality standards (9.7.2.3.3), pharmaceuticals “too low to affect the environment or human health” (9.7.2.3.4), and a conclusion dolphin bioaccumulation is unlikely (DEIS, Appendix N). Therefore, although the comments assert detrimental impacts to the benthos and ocean surface, evidence within the DEIS suggests otherwise. Note none of the agency Record comments refer to either the microlayer or concerns regarding bioaccumulation of contaminants as a result of the proposed effluent outfall. Therefore, although it may be prudent to insert a discussion of the microlayer and potential impacts thereto, it does not appear necessary given the dilution modeling and resultant findings.

MERR (Exhibit 71) also asserts that since the 1970's, there is substantial information regarding detrimental impacts resulting from WWTP ocean outfalls on ocean, marine mammal, and human health. There were no citations provided which attribute such impacts to existing WWTP ocean outfalls, and research contained within the DEIS suggests otherwise. Therefore, I do not recommend revision of the DEIS in this regard.

### 10 Cumulative Impacts

John G. Kleitz, Jr. (Exhibit 43) asks if the preferred alternative will have any adverse impact on the quality of sand available for future beach replenishment. In Section 10.1.1.1 of the DEIS, the location of past borrow areas is depicted. I

find the preferred alternative will not adversely impact the ability to locate a borrow area to replenish the beach in the future. If Mr. Kleitz, Jr. meant the chemical quality of the benthic substrate in a future borrow area, Sections 5 and 6 of the DEIS demonstrate minimal potential for benthic chemical quality impact.

### Other Comments

Some comments in the Record do not fit easily into any DEIS category. For example, DNREC's Division of Waste & Hazardous Substances (WHS) (Exhibit 44) strongly recommends, but does not require, the City perform a Phase I Environmental Site Assessment (ESA). This Exhibit also contains regulatory information regarding the discovery or release of hazardous substances during the construction process. They further recommend if any contamination is discovered, that PVC pipe materials be replaced with ductile steel and nitrile rubber gaskets. I find it is not necessary to revise the DEIS, unless a Phase I ESA is performed (results should then be included). The regulatory requirements and suggestions can be incorporated into construction bid documents.

Samie Dozer (Exhibit 53) opined that no one had mentioned a potential earthquake and impact on the pipeline. My review does not reveal any discussion of natural disasters. I find Exhibit 36, the EIS content requirements, does not contain a provision to include consideration of natural disasters, and therefore I find the DEIS need not be modified and recommend no changes as a result of this comment.

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## **VI. SUMMARY OF FINDINGS & RECOMMENDATIONS TO THE CITY**

The following items are derived from the findings and recommendations in Section V of this report, and are summarized in a list format. I find and recommend the City address the following items in completing the Final EIS (DEIS locations noted).

### 1.4, 3.1, 3.2 Alternatives.

Comment on whether individual treatment alternatives were ever considered, and if so, the basis for omission from the DEIS. It may be this option was considered, but the Record contains no mention of consideration for any type of individual treatment alternative.

### 1.4, 3.1, 3.2 Alternatives.

Comment on whether wetland treatment alternatives were ever considered, and if so, the basis for omission from the DEIS. It may be this option was considered, but the Record contains no mention of consideration of a wetland treatment system.

### 4.4 Force Main Corridor (& Appendix G)

Correct construction methodology discrepancy between open-trench (4.4) or directional drilling (Appendix G) in the vicinity of the Park Place Condominiums. Should open-cut methodology be selected, extreme caution and immediate stabilization and plantings will be required, and implementing Best Management

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Practices for the erosion control and stabilization plan could be added as additional discussion in the Final EIS. Open-cut methodology appears to also require a revision of the DNREC protected species response letter. Boring this section appears to resolve all concerns.

Consider consolidating and burying utilities during open-cut placement of the proposed force main along Henlopen Avenue.

### 5.1 Effluent Concerns

Add rationale for determining near-field salinity impacts are not a concern.

### 7.6 Prime Agricultural Land.

Update listing of prime farmland and revise Figure 7-11 accordingly. Review entire section based upon revisions and modify as needed, including conclusions and any other unforeseen ramifications.

## 8 Biological Environment

Add DNREC (Stetzar) letter of June 22, 2011, to Chapter 12 – References.

Correct date at 8.8.1.1, which references the above letter.

Add provided information (Exhibit 77) at 8.1.3.2 and thereafter.

Add Atlantic Sturgeon to discussion of potential species impacts at 8.3.4.

Modify Figures 8-24 & 8-25 to depict seals in DE waters from Nov. to May.

Modify Figure 8-26 for the Harp Seal, same as Figures 8-24 & 8-25.

Modify Figure 8-28 for Harbor Porpoises, depicting all seasonal ranges.

Modify Figure 8-29 for Humpback Whales, depicting all seasonal ranges.

Modify Figure 8-30 for Fin Whales, depicting all seasonal ranges.

Add discussion of North Atlantic Right Whale to Section 8.3.5.1.

Add North Atlantic Right Whale to discussion at 8.4.1.

Modify Figures 8-32 through 35, depicting complete temporal occurrences.

Update marine mammal & sea turtle data provided by MERR (8.3.5 & 8.4.2).

Integrate MERR information on North Atlantic Right Whale at 8.4.1.

#### 9.5.2.4 Southern California Beaches

Review additional sources (Exhibit 63), and revise if warranted.

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## **VI. HEARING OFFICER COMMENTS**

Many of Exhibits 2-37 are not referenced in this Report. This progression of Exhibits documents various aspects of the process since 2002, including periodic status updates. Since these Exhibits were submitted by the City and are foundational to the DEIS, no comments or modifications are necessary.

At the end of 5.4.3 (p. 5-10), there is no conclusion and a misprint. That section should be revised and completed, with DNREC's (Greene, 2011) PCB study included in the discussion.

The DEIS has not addressed potential impacts to the diffuser assembly by fishing and boat anchors.

The type of dredging is unspecified in the DEIS, stating use of a clamshell is likely. Recommend DEIS state dredging will be mechanical and not hydraulic (which necessitates other considerations).

There is a discrepancy between Figure 4-7, which depicts 4-feet of ballast rock and 2.5-feet of armor stone as excavated trench backfill, and 8.3.1.2.3, which states "All excavations will be backfilled with the excavated material, which minimized changes to sediment composition and thus reduces the impact on the benthic community (Scott 2001)." I recommend resolving this dichotomy, as the DEIS conclusion of minimal benthic impact is based on the Chapter 8 statement.

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This could potentially be resolved by using stone for ballast/armoring, but the top 1-2 feet of the trench would be backfilled with the excavated substrate, thus the resulting substrate would be available for benthic organism recolonization.

In the third sentence from the end on page 8-10, there is a spelling error, as it should read “worms” rather than “works”.

In the first sentence at 9.7.2.3.3 it should read “metals” instead of “medals”.

Page 27 of Appendix C contains a non-applicable partially copied document.

Many of the comments and Exhibits regarding land application reflect the years of effort expended by the City in attempting to make the alternative a viable choice.

As a concluding comment, based on my experience, the DEIS is comprehensive and the conclusions sound. No major deficiencies or unidentified impacts have been acknowledged, and by integrating the recommended revisions, all concerns and comments resulting from the Public Hearing will have been considered and addressed in the Final EIS.

Respectfully submitted,

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Timothy Bureau  
Hearing Officer

### Exhibits Presented at Public Meeting

<b>Exhibit</b>	<b>Date</b>	<b>Exhibit Name</b>
1	Feb 2012	"City of Rehoboth Beach Wastewater Treatment Plant Ocean Outfall Project Environmental Impact Statement" Report by GHD
2	Jun 12, 2002	Lewes-Rehoboth Beach-Sussex County Wastewater Disposal Options Meeting Handout
3	Sep 16, 2002	Regional Ocean Outfall Study Meeting Minutes - GMB
4	May 13, 2003	Regional Wastewater Effluent Disposal Study Progress Meeting Minutes
5	Jun 23, 2005	"Rehoboth Beach Effluent Disposal Study Evaluation of Wastewater Discharge Alternatives" Presentation by Stearns & Wheler
6	Aug 2005	"Rehoboth Beach Wastewater Treatment Plant Effluent Disposal Study" Report by Stearns & Wheler
7	Dec 16, 2005	"Ocean Outfall Permit Requirements" Memo from Stearns & Wheler to Mayor Cooper
8	Jun 16, 2008	"City of Rehoboth Beach Wastewater Treatment Facilities: A Historical Narrative" Presentation by Bob Stenger
9	Jul 7, 2008	"Rehoboth Beach Effluent Disposal Study Evaluation of Wastewater Discharge Alternatives - Commissioners' Workshop" Presentation by Stearns & Wheler
10	Jul 21, 2008	Homeowner's Meeting and Water Budget Handout by William Ullman
11	Aug 4, 2008	"Spray Irrigation of Treated Wastewater: A Sensible Approach to Wastewater Promoting Beneficial Reuse of Reclaimed Water" Presentation by Ronald Graeber
12	Aug 5, 2008	"Request for Proposal - Construction and/or Services Agreement for the Disposal of Wastewater from the City of Rehoboth Beach Wastewater Treatment Plant via Land Application" from City of Rehoboth Beach
13	Aug 19, 2008	Construction and/or Services Agreement for the Disposal of Wastewater From the City of Rehoboth Beach WWTP via Land Application Pre-Proposal Meeting Minutes
14	Sep 2, 2008	"Coastal Zone Federal Consistency" Presentation by Sarah Cooksey
15	Sep 2, 2008	"Steps for Permitting a Wastewater Spray Irrigation System in Delaware" Presentation by Ronald Graeber
16	Sep 4, 2008	Response to Land Application RFP - Tidewater
17	Sep 15, 2008	"Rehoboth Beach Effluent Disposal Project Status Report" Presentation by Stearns and Wheler at Commissioner's Meeting
18	Oct 15, 2008	Response to Land Application RFP - Artesian
19	Oct 20, 2008	"Regulatory Background: Systematic Elimination of Point Sources in the Inland Bays Watershed" Presentation by Jennifer Volk (Updated Nov. 1)
20	Oct 20, 2008	"Regulations Governing Beach Protection and the Use of Beaches" and "The Beach Preservation Act" Presentation by Maria Sadler

<b>Exhibit</b>	<b>Date</b>	<b>Exhibit Name</b>
21	Oct 27, 2008	"Workshop Notes ..." Memo from Stan Mills
22	Nov 1, 2008	Wastewater Discharge Alternative Workshop Agenda and DNREC Contact Information
23	Dec 15, 2008	"Review of Wastewater Discharge Alternatives Past and Present" Presentation by Stan Mills
24	Dec 15, 2008	"Delaware Water Pollution Control Revolving Loan Fund" Presentation by Terry Deputy
25	Mar 2009	"Rehoboth Beach Wastewater Treatment Plant Alternate Discharge Cost Evaluation" Report by Stearns & Wheler
26	May 2009	"Treated Wastewater Effluent: A Reclaimable and Reusable Resource For Delaware Agriculture." Report by Irrigation Preservation Task Force Report
27	May 15, 2009	"Rehoboth Beach Update on Ocean Outfall Alternative" Presentation by Stearns & Wheler GHD to Commissioners
28	Aug 18, 2009	"A Regional Planning Report to Assess a Joint Sussex County/City of Rehoboth Land Application Project" Presentation by WR&A and Stearns & Wheler
29	Oct 2009	"A Regional Planning Report to Assess a Joint Sussex County/City of Rehoboth Land Application Project" Report by WR&A and Stearns & Wheler
30	Oct 29, 2009	Running Compilation of Board of Commissioners' Workshop and Regular Meeting Agenda Items and Portions of Approved Meeting Minutes Relating to Wastewater Discharge Alternative Discussions beginning June 16, 2008 - Last updated October 29, 2009
31	Nov 7, 2009	"Rehoboth Beach Wastewater Treatment Plant Alternative Discharge Evaluation" Presentation by GHD
32	Nov 7, 2009	Notice of Public Hearing - Alternate Wastewater Discharge Methods
33	Mar 23, 2010	Rehoboth Beach Ocean Outfall Project DNREC Permit Meeting Minutes
34	Jun 11, 2010	Rehoboth Beach Ocean Outfall Project DNREC Review Meeting Minutes
35	Sep 21, 2010	City of Rehoboth Beach Environmental Impact Statement Scoping Meeting Agenda
36	Nov 29, 2010	Environmental Impact Statement Format per the Environmental Review Procedures for the Water Pollution Control Revolving Fund
37	Oct 11, 2011	"Rehoboth Beach Ocean Outfall Project Progress Report" Presentation by GHD at Commissioner's Meeting
38	Apr 2, 2012	Legal Notice for the Public Hearing sent out to Cape Gazette, Coast Press, Delaware State News, and The News Journal. Includes Affidavits, Cut Sheets, and Actual Ads.

### Exhibits Presented During Public Comment Period

<b>Exhibit</b>	<b>Date</b>	<b>Exhibit Name</b>
39	Mar 15, 2012	NO EXHIBIT
40	Apr 10, 2012	Sign in sheet public hearing
41	Apr 10, 2012	Rehoboth Beach Public Hearing Transcript (April 10, 2012)
42	Apr 10, 2012	Judy Adams letter to Mayor Cooper
43	Mar 7, 2012	John Kleitz email 030712
44	Mar 21, 2012	Christina Wirtz, Div of Waste and Hazardous Substance email and attachment 032112
45	Mar 22, 2012	Andy Lorenz, Delaware State Housing Authority email 032212
46	Mar 28, 2012	Stewart Lovell, Water Supply Section email 032812
47	Apr 9, 2012	Mark and Karen Mikatavage email 040912
48	Apr 9, 2012	Diane Shields NRCS email and attachments 040912
49	Apr 11, 2012	Mario Rocha email 041112
50	Apr 12, 2012	Peter Havens, Sound and Sea Technology email 041212
51	Apr 15, 2012	Rich Baccino, P.E. email 041512
52	Apr 16, 2012	Nettie Green email 041612
53	Apr 19, 2012	Samie Dozor emails 1 and 2 041912
54	Apr 20, 2012	Cherie Clark, Cultural Heritage 042012
55	Apr 20, 2012	William Paton email 042212
56	Apr 23, 2012	Jere Stephano email 042312
57	Apr 25, 2012	John Thaeder Artesian Water Company email and attachment 042512
58	Apr 25, 2012	Adam Gould Artesian Water Company email and attachment 042512
59	Apr 26, 2012	Emily Van Alyne email 042612
60	Apr 28, 2012	kcburgwin email 042812
61	Apr 28, 2012	Elisabeth Stoner email 042812
62	May 2, 2012	Melissa Dombrowski, Delaware Surfriders email and attachment 050212
63	May 2, 2012	Gregg Rosner email and attachment 050212
64	May 3, 2012	Stanley and Betser Heuisler email 050312
65	May 3, 2012	Howard Meneker email 050312
66	May 5, 2012	Richard Byrne, Park Place on the Canal HOA email and attachment 050512
67	May 7, 2012	Cindy and Paul Lovett email and attachment 050712
68	May 8, 2012	Bill and Melonie Ettinger email and attachment 050812
69	May 8, 2012	Carol Murphy, Tidewater Utilities, email and attachment 050812
70	May 9, 2012	Laura Herr, Wetlands and Subaqueous Lands Section email 050912
71	May 9, 2012	Suzanne Thurman, MERR emails 1 and 2 and attachments 050912

<b>Exhibit</b>	<b>Date</b>	<b>Exhibit Name</b>
72	May 9, 2012	Dr. Mark Mikatavage email and attachment 050912
73	May 10, 2012	Jennifer Duncan email and attachment 051012
74	May 10, 2012	Richard Byrne, Park Place on the Canal HOA email and attachment 051012
75	May 10, 2012	Jennifer Luoma, DNREC email 051012
76	May 10, 2012	Edna Stetzar, National Heritage and Endangered Species program email 051012
77	May 10, 2012	Edna Stetzar, National Heritage and Endangered Species program attachment (secured) 051012
78	May 10, 2012	Kendall Sommers DNREC Parks and Recreation email 051012
79	May 10, 2012	Rodney Wyatt, Artesian Water Company email and attachment 051012
80	May 10, 2012	Mike Izzo, Sussex County Engineer, email and attachment 051012
81	May 10, 2012	Confirmation of email receipt Gpope 051012
82	May 10, 2012	Gerald Esposito letter received 051012
83	Apr 25, 2012	Barbara Rudnick, EPA region 3 letter received 042512
84	May 4, 2012	John Thaeder Artesian Water Company letter 042512
85	May 7, 2012	Mark Mikatavage letter received 050712
86	May 4, 2012	Guy Martin letter received 050412
87	May 4, 2012	Gregg Rosner letter received 050412
88	Apr 23, 2012	Mable Granke letter received 042312
89	Apr 10, 2012	John Thaeder Artesian Water Company letter and comments and map received at public hearing 041012