



PUBLIC WORKS DEPARTMENT

CITY OF PORTSMOUTH

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October 30, 2015

Mark Pollins
Director of Water Enforcement
U.S. Environmental Protection Agency
Room # 3142
USEPA Ariel Rios Building (AR)
1200 Pennsylvania Avenue N.W.
Washington, D.C. 20004

Re: Consent Decree 09-cv-283-PB
Quarterly Report No. 24
Portsmouth, New Hampshire

Dear Mr. Pollins:

In accordance with Consent Decree 09-cv-283-PB, Section V, item paragraph 20, dated August 12, 2009, and as amended by Consent Decree Modification filed July 2, 2012, and approved by the Court February 15, 2013, the City of Portsmouth is submitting this quarterly status report.

The modified Consent Decree requires the filing of quarterly reports as follows:

Within 30 days after the end of each calendar quarter (i.e., by April 30, July 30, October 30, and January 30) after the Effective Date of this Consent Decree, until termination of this Decree pursuant to Section XVI, the City shall submit a written report for the preceding calendar quarter that shall include a description of the following: i) the status of any construction or compliance measures, including whether any such construction or compliance measure could be completed prior to relevant milestones contained herein consistent with sound engineering practice and normal construction practices; ii) the status of all Consent Decree milestones, including whether any have been achieved prior to the date for doing so; iii) any problems encountered or anticipated, together with the proposed or implemented solutions; iv) the status of permit applications; v) operation and maintenance operations; and vi) reports to State agencies.

The following is the list of compliance requirements listed in Section IV of the Consent Decree including additional requirements listed in the Consent Decree Modification. For clarity the requirements are listed in plain text and the status of the item is shown in ***Bold Italics***.

Preface

By letter dated June 27, 2013, the City formally notified EPA and NHDES that it was initiating the "Dispute Resolution" process set forth in the current Consent Decree paragraphs 41 et seq. relating to the City's request for an 18 month extension of the compliance schedule. This extension is necessary because the scope of the project increased dramatically from the basis of the original Consent Decree schedule, a 4.3 million gallon per day (MGD) secondary treatment facility, to the current project, a 6.1 MGD total nitrogen of 8 mg/L treatment facility (season rolling average basis). The size of the treatment facility has increased based on discussions with the regulators, the loads to be treated were determined to be higher as discovered during piloting, and the treatment level has changed from secondary to seasonal rolling average total nitrogen. Since the June letter, the City provided written support for its extension request in August 2013 and met with EPA and DES representatives in September and November 2013 as part of the informal dispute resolution process. The City has reached a tentative agreement with EPA and DES relative to the extension of the schedule and next steps and is in the process of documenting such.

At the request of the City Council in the Fall of 2014, and with the support of EPA and DES, staff evaluated a regional wastewater treatment option at the City's Pease Wastewater Treatment Facility location. The evaluation was performed concurrently with the design of the upgrade to the Peirce Island Wastewater Treatment Facility. City staff presented the results of this study to the City Council on April 27, 2015 and May 18, 2015 and the City Council reaffirmed a previous vote to move forward with the Peirce Island location. As part of the discussion, there was continued concern over the costs of the proposed facility, which is estimated at \$80 million. The City Council requested a work session with City staff to discuss the costs and cost minimization measures including the potential of using only secondary level treatment. The work session regarding this information was held on June 29, 2015 and additional information was presented in a follow up presentation to the Council on August 3, 2015. It was anticipated the Council would vote at the August 3, 2015 meeting on final cost reduction measures, but the uncertainty over the required treatment level for nitrogen continued to be the primary focus. Given the significant cost of the project and the undefined permit limits, the City Council directed City staff to update them once additional discussions had taken place with EPA. The City continued correspondence with the EPA permitting and enforcement divisions regarding a solution that would incorporate nitrogen level treatment targets in the Consent Decree and adjust the schedule to meet the changed conditions. Following these discussions, the City received correspondence on October 26, 2015 indicating EPA's position that the informal dispute resolution process had failed to result in agreement. At this time, the City is preparing to enter into formal dispute resolution to modify the consent decree milestones for the project.

Specific Consent Decree Items

8. Nine Minimum Controls Compliance Plan. Attached (*in the referenced CD*) as Appendix A is the Nine Minimum Controls Compliance Plan. The City shall implement the Nine Minimum Controls Compliance Plan in accordance with the schedule specified in Appendix A.

i) There are no construction related activities with this item. The compliance measures associated with this item are on-going. The EPA performed an enforcement inspection of the City's wastewater collection and pumping system on July 27, 2015. Although the inspection report has not been completed, the inspection team found the City's systems and records were in acceptable condition. Comments included the following: adding CSO signs; providing

backup on the work order records that support the amount of sewer collection system TV inspection and cleaning performed annually; and an update on the City's ongoing infiltration and inflow and Post Construction Monitoring Program studies. The City provided the requested information by follow-up letter on September 25, 2015.

- ii) There is no Consent Decree milestone associated with this item.*
- iii) There have been no problems encountered or anticipated with this item. The items requested in follow-up to the collection system inspection have been addressed by separate letter to the EPA as noted in Item i) above.*
- iv) There are no permit applications associated with this item.*
- v) Operation and maintenance is on-going. The Infiltration and Inflow study and Post Construction Monitoring Program study are ongoing.*
- vi) There are no reports to State Agencies associated with this item.*

9. Wastewater Master Plan. Attached as Appendix B is the WMP SOW dated May 17, 2007. The City shall implement the WMP in Appendix B, and comply with all milestones and schedules in Appendix B.1.

The Schedule listed in Appendix B.1 has been modified by the Consent Decree Modification to include additional tasks and a revised schedule. The Consent Decree Modification includes a schedule for completion of secondary treatment upgrades at the Peirce Island Treatment Plant, as well as, adjustments to the Long Term Control Plan project schedule. Final completion for the wastewater treatment plant upgrades, including compliance with permit requirements, is required by May 2017. The City has requested an extension of this date and that request was being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree. As indicated in EPA's correspondence of October 26, 2015, this request will be addressed through the formal dispute resolution process outlined in the Consent Decree.

The additional requirements of the amended Consent Decree are listed below as items g through n:

g. By June 30, 2012, the City shall complete pilot testing of potential treatment technologies for achieving secondary treatment, including, but not necessarily limited to: Biologically Aerated Filters (BAF), BioMag, Moving Bed Biofilm Reactors (MBBR) w/ Dissolved Air Flotation (DAF), and Conventional Activated Sludge with BioMag. By July 30, 2012, the City shall complete a data summary relative to the pilot testing.

This milestone has been met. No further action required of the City.

h. By October 1, 2012, the City shall submit a Piloting Technical Memorandum that includes data from piloting and a recommendation on the design and capacity of secondary treatment facilities.

This milestone has been met. No further action is required of the City.

i. By July 1, 2013, the City shall commence final design of secondary treatment facilities.

This milestone has been met. No further action is required of the City.

j. By August 31, 2014, the City shall complete design of secondary treatment facilities.

i) *The City held a kickoff meeting for Design Engineering Services with AECOM on June 18, 2013. The consultant's scope of work includes design of a 6.1 MGD Biological Aerated Filter (BAF) capable of meeting a total nitrogen effluent limit of 8 mg/L on a seasonal rolling average basis. Design of the treatment facilities is underway. The Design Phase 1 Summary Memorandum forwarded to EPA on May 27, 2014, outlined the initial phase of design including field work, evaluation of existing facilities, development of the upgraded site and facilities layouts, site visits at similar facilities, and establishment of design criteria. The 30% Final Design Report forwarded to EPA on July 31, 2014, included design plans, basis of design and updated cost estimates. The 30% estimate of project cost was \$86 million. Value Engineering was performed the first week of August 2014 by ARCADIS U.S., Inc. The value engineering workshop resulted in a number of recommendations being incorporated into the design. The plans were updated and the costs estimate was reduced to \$80 million. The 60% Design drawings and specifications were forwarded to EPA on October 20, 2014. The 75% Design drawings and specifications were forwarded to EPA on July 1, 2015. The 90% Design drawings and specifications were forwarded to EPA on September 15, 2015. The City executed a contract amendment with AECOM on October 24, 2014, for Final Design Phase 3A and an amendment for Phase 3B on March 23, 2015, to advance design to the 75% completion level. An amendment for Phase 3C was signed on June 30, 2015, to advance design to the 90% completion level and another amendment was signed to continue the design toward the 95% completion level. The City met with the New Hampshire Department of Environmental Services on January 14, 2015, to review the 60% Design drawings with the design review team. The Department of Environmental Services design review team toured the Peirce Island Wastewater Treatment Facility on January 29, 2015. The City met with the New Hampshire Department of Environmental Services on August 7, 2015, to review the 75% Design drawings. The City plans to meet with the New Hampshire Department of Environmental Services in November to review the 90% Design drawings and specifications.*

The City asked AECOM to expedite the design of the existing primary clarifier and gravity thickener mechanism replacement. This portion of the work was expedited due to the age and condition of this mechanical equipment as determined during the Phase 1 Design. These mechanisms had been operating since the early 1990's and had exceeded their intended design life and were in poor mechanical condition. In order to avoid a mechanical failure in the midst of the full treatment plant upgrade, the City chose to expedite the work. Bids for the Primary Clarifier and Gravity Thickener Replacement portion of the project were received on July 24, 2014. Methuen Construction was the successful bidder and a contract was executed for this work on September 4, 2014, and substantial completion was achieved in September 2015. See Item k. for additional details.

There are no construction activities with this item.

ii) *The City's consultant is designing a WWTF upgrade capable of nitrogen removal. As noted in*

previous quarterly reports and separate correspondence, designing for nutrient removal will require substantial additional effort above that for the plant required under the Consent Decree which achieves only secondary treatment and so this Consent Decree milestone is unlikely to be met. The City has requested an extension of this deadline and that request was being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree. As indicated in EPA's correspondence of October 26, 2015, (see Preface to this report), this request will be addressed through the formal dispute resolution process outlined in the Consent Decree.

The City's concurrent study of regional wastewater treatment options at the City's Pease WWTF location is complete and the City Council reaffirmed moving forward with the Peirce Island location. The City continues to review the costs associated with this project and cost reduction options including eliminating the nitrogen treatment component of the project. In order to manage the City's resources, there may be delay in meeting this deadline in addition to the time already being discussed. See the first paragraph of the Preface.

- iii) See response to ii above. The City expedited the design of the Primary Clarifier and Gravity Thickener Replacement and will continue to make efforts to expedite the schedule if possible and consistent with sound engineering practice.*
- iv) The Peirce Island WWTF NPDES permit reapplication was submitted in December, 2011. A draft NPDES permit has not yet been received. Design related permitting is underway. This work includes an archaeological assessment related to a review of the National Register of Historic Places as required per Section 106 of the National Historic Preservation Act. The final report for this work was submitted and accepted by the New Hampshire Division of Historical Resources (DHR). DHR concurred with the finding and indicated no additional studies were required by letter dated May 27, 2014. The City submitted the application for the natural resources, standard dredge and fill and shoreland protection permits. The New Hampshire Department of Environmental Services provided approval on the wetland permits in October 2015. The City met with the New Hampshire Department of Environmental Services on December 18, 2014, to discuss the Alteration of Terrain permit application and this application will be submitted in the near future. The City will submit an application for site plan review once state permit approvals are received. The City forwarded a Remedial Action Plan (RAP) to the polychlorinated biphenyls (PCB) Coordinator at EPA on September July 2, 2015. The RAP is for the existing Solids Processing Building at the Peirce Island WWTF, which was constructed in 1964. PCBs were found during investigations of the building paint and caulking. The basement of this building will be repurposed and remain for the proposed final project and the RAP summarizes the proposed remedial actions and long term monitoring. The City's consultant is working to address EPA's comments on the RAP. Additional permits may be required and will be defined as the final layout is developed and finalized. Construction permits will be required and will be the responsibility of the selected Contractor.*
- v) There are no operation and maintenance activities with this item.*
- vi) There is no specific report associated with this milestone to be submitted to State Agencies. A Design Phase 1 Summary Memorandum, 30% Final Design Memorandum, 60% Final Design plans and specifications, 75% Design plans and specifications, and 90% Design plans and specifications were forwarded under separate cover.*

k. By March 1, 2015, the City shall commence construction of secondary treatment facilities.

- i) *The City awarded the Primary Clarifier and Gravity Thickener Replacement project to Methuen Construction, Inc. in the amount of \$1,375,114. A notice to proceed was issued on September 12, 2014, and substantial completion has been achieved. The City has requested an extension of this deadline and that request was being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree. As indicated in EPA's correspondence of October 26, 2015, (see Preface to this report), this request will be addressed through the formal dispute resolution process outlined in the Consent Decree. The construction schedule will be finalized as part of the Consent Decree procedures referenced in requirement j above.*

The City's consultant is designing a WWTF upgrade capable of nitrogen removal. As noted in previous quarterly reports and separate correspondence, designing for nutrient removal will require substantial additional effort beyond that for constructing a secondary only plant required by the Consent Decree and so this Consent Decree milestone is unlikely to be met to the extent that construction of the Biological Aerated Filter will not commence until after March 1, 2015. The Primary Clarifier and Gravity Thickener Replacement project has been expedited ahead of the bigger construction effort for the secondary facilities. This work would have been necessary for the secondary treatment upgrade and is being advanced due to avoid the risk of mechanical failure during the larger construction effort. A contract with AECOM was executed for bidding and construction oversight of the Primary Clarifier and Gravity Thickener Replacement on June 5, 2014, in the amount of \$348,390. This work is substantially complete.

- ii) *See response to ii above. The Primary Clarifier and Gravity Thickener Replacement project has been completed in advance of the larger facility upgrade and additional efforts will be made to expedite the schedule if possible and consistent with sound engineering and construction practices.*
- iii) *The Peirce Island WWTF NPDES permit reapplication was submitted in December, 2011. A draft permit has not yet been received. Applications have been submitted for natural resource type permits, other permits and approvals will soon be submitted. Construction related permits will be the responsibility of the selected Contractor. No special permits were required as part of the Primary Clarifier and Gravity Thickener Replacement project.*
- iv) *There are no operation and maintenance activities with this item.*
- v) *There is no report associated with this milestone to be submitted to State Agencies.*

1. By March 1, 2017, the City shall complete construction of secondary treatment facilities.

- i) *The Primary Clarifier and Gravity Thickener Replacement Project is substantially complete. The City has requested an extension of this deadline and that request was being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree. As indicated in EPA's correspondence of October 26, 2015 (see Preface to this report), this request will be addressed through the formal dispute resolution process outlined in the Consent Decree. The construction schedule will be finalized as part of Consent Decree procedures referenced in requirement j above.*
- ii) *This milestone is unlikely to be met for the larger WWTF upgrade. The completion of construction will be impacted by resolution of the issues raised in the previous Quarterly*

Reports, in the preface and separate correspondence. The City's concurrent study of regional wastewater treatment options at the City's Pease WWTF location is complete and the City Council reaffirmed moving forward with the Peirce Island location.

- iii) See response to ii above. The Primary Clarifier and Gravity Thickener Replacement project has been completed in advance of the larger facility upgrade and additional efforts will be made to expedite the schedule if possible and consistent with sound engineering and construction practices.*
- iv) The Peirce Island WWTF NPDES permit reapplication was submitted in December, 2011. A draft permit has not yet been received. Applications have been submitted for natural resource type permits and other permits and approvals will soon be submitted. Construction related permits will be the responsibility of the selected Contractor. Any additional permits will be defined as the design is finalized.*
- v) There are no operation and maintenance activities with this item.*
- vi) There is no report associated with this milestone to be submitted to State Agencies.*

m. By May 1, 2017, the City shall achieve compliance with secondary treatment limits in the Permit.

- i) There are no construction activities with this item yet. The construction schedule will be finalized as part of Consent Decree requirement j above.*
- ii) This milestone is unlikely to be met. The City has requested an extension of this deadline and that request was being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree. As indicated in EPA's correspondence of October 26, 2015 (see Preface to this report), this request will be addressed through the formal dispute resolution process outlined in the Consent Decree. The date for achieving secondary compliance will be impacted by resolution of the issues raised in the previous Quarterly Reports, in the preface and separate correspondence. The City's concurrent study of regional wastewater treatment options at the City's Pease WWTF location is complete and the City Council reaffirmed moving forward with the Peirce Island location. (See response to i) and ii) above. Efforts will be made to expedite the schedule if possible and consistent with sound engineering and construction practices.*
- iii) The Peirce Island WWTF NPDES permit reapplication was submitted in December, 2011. Applications have been submitted for natural resource type permits and other permits and approvals will soon be submitted. Construction related permits will be the responsibility of the selected Contractor. Any additional permits will be defined as the design is finalized.*
- iv) There are no operation and maintenance activities with this item.*
- v) There is no report associated with this milestone to be submitted to State Agencies.*

n. Whenever feasible, the City shall commence work in advance of milestones and complete such work as expeditiously as practicable, consistent with sound engineering practice and normal construction practices.

The City understands this measure and when consistent with sound engineering practice and normal construction practices will strive to meet its intent.

10. Combined Sewer Overflow Facility Upgrades. The City shall implement its April 2005 Final CSO Long Term Control Plan in accordance with the following schedule and shall complete all construction for implementation of the 2005 LTCP by October, 2012:

A revised schedule was included with the Consent Decree Modification which was filed on July 2, 2012.

Original LTCP Schedule *

Planning Area I.D.	Contract I.D.	Project Completion Date
Lincoln 3	Phase I	10/1/2011
Lincoln 3	Phase II	10/1/2012
Lincoln 3	Phase III	10/1/2013
Court/State	Court #3	1/1/2012
Islington	Islington #1	10/1/2010
Islington	Islington #2	1/1/2012

Revised LTCP Schedule **

<i>Planning Area I.D.</i>	<i>Contract I.D.</i>	<i>Project Status</i>	<i>Project Completion Date</i>
<i>Lincoln 3</i>	<i>Phase I</i>	<i>Complete</i>	<i>6/1/2012</i>
<i>Lincoln 3</i>	<i>Phase II</i>	<i>Complete</i>	<i>10/29/14 10/1/2014</i>
<i>Lincoln 3</i>	<i>Phase III</i>	<i>Complete</i>	<i>10/1/2013</i>
<i>Islington</i>	<i>Islington #2</i>	<i>Complete</i>	<i>7/30/13 6/1/2013</i>

* Original Schedule

** As filed July 2, 2012 Consent Decree Modification.

- i) *The construction related activities with this item are shown in the table above. The compliance measures associated with this item are complete. The City has expanded the scope of work on the Lincoln 3 Phase II project to include a portion of Willard Street and Marston Street. This work was completed during the summer and fall of 2015. This work provides an outlet for an area of combined sewer on South Street in advance of South Street reconstruction. This work was not part of the scope of the original Consent Decree, but resulted in additional sewer separation work.*
- ii) *Consent Decree milestones associated with this item have been met.*
- iii) *Work associated with this item is complete and no problems are anticipated.*
- iv) *Work associated with this item is complete and there is no permit application pending associated with this item.*
- v) *There are no operation and maintenance activities with this item.*
- vi) *There are no reports to State Agencies associated with this item.*

11. Interim Emissions/Effluent Limits. Until the City completes construction of, and achieves full operation of secondary treatment facilities in accordance with the schedule contained in this Consent Decree, the City shall comply with the interim limits and measures set forth in Appendix C. (See Current AO effluent limits). Thereafter, the City shall comply with the applicable NPDES permit limits then in effect.

- i) The Peirce Island WWTF has met the interim permit limits for the Quarter covered by this report. The compliance measures associated with this item are on-going. There are no construction related activities with this item.*
- ii) There are no Consent Decree milestones associated with this item.*
- iii) The wastewater BOD₅ strength coming to Peirce Island appears to increase in the soluble form during periods of low flow. This occurred in the late summer and fall of 2012 and 2013. The soluble component passes through the physical CEPT process and makes it difficult to meet permit limits. The City anticipates that this issue will be resolved by construction of the new facility.*
- iv) There is no permit application pending associated with this item.*
- v) There have been no exceptional operations and maintenance activities outside of routine wastewater treatment facility operations associated with this item.*
- vi) There are no reports to State Agencies associated with this item that have not also been submitted to the EPA as part of the milestone deadlines.*

12. Post Construction Monitoring Plan.

This item was submitted as part of the June 4, 2010, Wastewater Master Plan Draft submission. Following the WMP submission, the Consent Decree deadlines for the sewer separation projects were modified (see Item 10). The implementation schedule for the post construction monitoring plan (PCMP) therefore had to be adjusted. The adjusted PCMP implementation schedule is shown below.

- i) The City received statements of qualifications and interviewed consultants in response to RFQ 37-14 I/I and PCMP. Based on the consultants' experience, the City chose to separate the projects. The PCMP project includes implementation of the post construction monitoring plan as required in the City's Consent Decree and will update the implementation schedule as identified in the introductory paragraph to this item. The project was awarded to Hazen & Sawyer and a contract was executed September 15, 2014. Wastewater flow meters were deployed and were removed in July 2015 for in-field measurements. The next phase of work is to perform an update of the collection system hydraulic model. Hazen & Sawyer will submit on the City's behalf a revised PCMP under separate cover. See updated implementation schedule in item ii) below.*

The infiltration and inflow (I/I) project includes a sewer system evaluation survey of all portions of the collection system except the reconstructed Lincoln basin and a sump pump removal program for the City. This work will identify sources of extraneous flow in the collection system and make recommendations for sewer system rehabilitation to reduce extraneous flow. A contract was executed on February 9, 2015, with Woodard & Curran for this work. Wastewater flow meters were deployed and were removed in June 2015 for in-field measurements. The City's consultant is drafting a report with their initial findings and recommendations for future work.

- ii) In Volume 2 of the 2010 Draft Wastewater Master Plan (WMP), there was a PCMP implementation schedule. The City is providing an updated implementation schedule to be consistent with Hazen & Sawyer's anticipated schedule and with Item 10 as follows:*

Revised PCMP Schedule

PCMP Elements and Schedule			
Element	WMP Date	Rev Date	Status
Implementation of the sewer separation projects identified in the 2010 LTCP Update	Through 2012	10/29/14*	Complete
Re-establish monitoring program based on 2008 meter and rain gauge sites	2013	Spring 2015	Complete
Update and re-calibration of the collection system model using the 2008 monitoring data	2014	2016	Ongoing
Assessment of progress made towards meeting the goals of the 2010 LTCP Update	2015	2017	
Report to EPA and the New Hampshire DES	2015	2017	

* *Lincoln 3 Phase II Sewer Separation Completion Date*

- The Consent Decree milestones as revised above associated with this item will be met.*
- iii) The Consent Decree milestones as revised above associated with this item will be met.*
 - iv) There is no permit application pending associated with this item.*
 - v) There are no operation and maintenance activities associated with this item.*
 - vi) There are no reports to State Agencies associated with this item that have not also been submitted to the EPA as part of the milestone deadlines.*

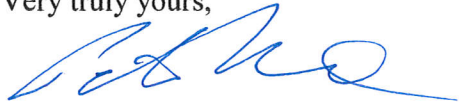
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Mr. Mark Pollins
October 30, 2015

As required by the Consent Decree:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact me at (603) 766-1416 if you have any questions or require additional information.

Very truly yours,



Peter H. Rice, P.E.
Director of Public Works

cc: Chief, Environmental Enforcement Section
Joy Hilton, USEPA Region 1
Tracy L. Wood, P.E., NHDES Wastewater Engineering Bureau
Allen Brooks, Esq., Department of Justice, Environmental Protection Bureau
John P. Bohenko, City Manager, City of Portsmouth
Suzanne Woodland, Deputy City Attorney
David S. Allen, P.E., Deputy City Manager
Brian Goetz, Deputy Director of Public Works