Response to Public Comments

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the draft National Pollutant Discharge Elimination System ("NPDES") Permit MA0101630. The response to comments explains and supports the EPA determinations that form the basis of the final permit. From December 9, 2015 to January 22, 2016, the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("MassDEP") (together, the "Agencies") solicited public comments on a draft NPDES permit (MA0101630) developed pursuant to a permit application from the City of Holyoke, MA, for the reissuance of a NPDES permit to discharge secondary wastewater treatment plant effluent from outfall number 001 and 11 combined sewer overflows to the Connecticut River in Holyoke, Massachusetts.

EPA received comments from the City of Holyoke, from the Connecticut River Watershed Council, joint comments from the Connecticut Fund for the Environment and Save the Sound, from the Connecticut Department of Energy & Environmental Protection, and from the United States Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service. EPA's decision-making process has benefitted from the public comments and additional information submitted. After a review of the comments received, EPA and MassDEP have made a final decision to issue this permit authorizing the discharge. The final permit is substantially identical to the draft permit that was available for public comment, with the exception of the following changes which are explained within this response to comments:

1. The total residual chlorine limitations for outfall 001 proposed in the draft permit have been changed from "0.63 mg/l monthly average and 0.63 mg/l maximum daily" to "0.74 mg/l monthly average and 1.0 mg/l maximum daily" in the final permit. See Response to Comment 1.

2. The final permit has been changed to include a schedule of compliance for aluminum. See Response to Comment 2.

3. The nitrogen species monitoring frequency in the final permit has been changed from "1/week" to "1/month" during the winter season. See Response to Comment 4.

4. The total residual chlorine limitation for the Berkshire Street CSO treatment facility's outfall 009 proposed in the draft permit has been changed from a "0.14 mg/l monthly average limitation" to "report the monthly average" in the final permit. See Response to Comment 5.

5. The whole effluent toxicity testing for CSO outfall 009 has been changed from using the fathead minnow, *Pimephales promelas* to the daphnid, *Ceriodaphnia dubia* in the final permit. See Response to Comment 18.

In addition, the final permit has been changed under Part I.H., Monitoring and Reporting to reflect the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, published in the Federal Register on October 22, 2015 and became effective on December 21, 2015. The rule requires all individual NPDES Permit holders to submit DMRs electronically after December 21, 2016. The start dates for electronic reporting are provided in 40 CFR Part 127.16. The City of Holyoke's draft permit proposed a six month period from the effective date of the permit to submit DMRs electronically using NetDMR. Since a six month period would not bring the permittee into compliance with the December

deadline, the final permit requires the permittee to report DMR information using NetDMR on or before December 21, 2016. Additional information about NetDMR can be found at: http://www.epa.gov/netdmr. In addition, EPA made a minor change on page 2 of the final permit by adding a flow reporting requirement for coding purposes.

A copy of the final permit and this response to comments document will be posted on the EPA Region 1 website: http://www.epa.gov/region1/npdes/permits_listing_ma.html.

A copy of the final permit may also be obtained by writing or calling Janet Deshais, United States Environmental Protection Agency, 5 Post Office Square, Suite 100 (Mail Code: OEP06-1), Boston, MA 02109-3912; Telephone: (617) 918-1667.

Comments submitted by the City of Holyoke

Comment 1:
The Fact Sheet uses an overly stringent dilution rate to determine the acute (or daily) concentration of total residual chlorine (TRC) that may discharge to the Connecticut River. The Fact Sheet calculates the acute dilution rate using the ratio of the peak discharge flow rate of 37 MGD to the 7Q10 river volume, which occurs during prolonged, extremely dry conditions. This calculation method results in an acute TRC limit that is more stringent than even the calculated chronic limit for TRC. Therefore, it is the City's opinion that using the 7Q10 flow rate and peak discharge flow rate for this ratio results in an impractical value. The City requests that the acute TRC limit remain at the pre-existing permit limit.

The Fact Sheet calculates the total chlorine residual chronic (or monthly average) limit to be 0.76 mg/L. However, since acute limits are typically higher than the chronic limit, the Fact Sheet states that the chronic limit should be lowered to the acute level, regardless of the calculations. This appears to be further evidence that the method of calculating the acute limit is overly conservative. Implementing this logic could further burden the City such that any exceedances would violate two limits rather than one. The City requests that the permit use the calculated chronic limit of 0.76 mg/L, and that EPA reconsider the method of calculating the acute limit.

Response to Comment 1:
The final permit has been changed from including an outfall 001 total residual chlorine acute limit that was calculated using the peak discharge flow rate of 37 MGD to a total residual chlorine acute limit that was calculated using the plant's design flow rate of 17.5 MGD. Since higher instream flows are expected to occur during high discharge flow events, this is expected to be protective of water quality standards in the receiving water, even though peak discharge flows are much higher than the design flow. Therefore, the calculated total residual chlorine maximum daily limitation and monthly average limitation of 0.63 mg/l has been changed to a calculated value of 0.76 mg/l as a monthly average limit and 1.0 mg/l as a maximum daily limit. The TRC permit limit calculations based on the dilution factor of 69 are shown below.

Chronic chlorine limit	11 µg/l * 69 (DF) = 759 µg/l = 0.76 mg/l
Acute chlorine limit	19 µg/l * 69 (DF) = 1,131 µg/l = 1.13 mg/l

However, the calculated average monthly limit of 0.76 mg/l is less stringent than the current permit limit of 0.74 mg/l. Based on anti-backsliding, the final permit maintains the average monthly limit of 0.74 mg/l. Similarly, the calculated maximum daily limit of 1.13 mg/l is less stringent than the current permit limit of 1.0 mg/l. Based on anti-backsliding, the final permit maintains the maximum daily limit of 1.0 mg/l.

Comment 2:
The immediate compliance with aluminum limits is unachievable especially since any issues with aluminum have only most recently been identified in this draft permit. The City has been unable to identify an economically feasible treatment technology capable of achieving the proposed reductions of aluminum, copper, and lead. The treatment technology that is available would be cost prohibitive and is not likely capable of providing the reductions desired by EPA and MassDEP. Typically, lowering heavy metal concentrations would be accomplished through prevention via the industrial pretreatment program and community education. However, even this may not be possible, as industrial point sources in the City are regulated and monitored and do not generally contribute to the copper or lead discharged. The concentrations of copper and lead are suspected to originate at the municipal water supply. Holyoke Water Works consumer confidence reports from 2012-2014 report the 90th percentile concentrations for copper and lead at 260 to 410 pg/L and 8.1 to 15 pg/L, respectively. Addressing heavy metals in the water supply would require treatment at a considerable expense to the City.

The City believes that the objectives of the EPA and MassDEP to improve water quality would be best served by provisions similar to those in the permit for the Chicopee WPCF (NPDES Permit No. MA0101508, issued August, 2012). The Chicopee WPCF is located less than three (3) miles downstream of the Facility and also discharges comparable volumes of effluent to the Connecticut River. The City recommends that the interim period in Part I.G.2 include a study characterizing the sources contributing to the WPCF. After the study is completed, EPA and MassDEP could use the information to develop achievable limits for the Facility.

Response to Comment 2:
The final permit has been changed to include a schedule of compliance for aluminum. The schedule includes the following elements: (1) a requirement to minimize the discharge of aluminum to the greatest extent practicable until the limit is met, (2) within 24 months after the final permit becomes effective, the permittee will provide an evaluation of alternatives and an implementation schedule for achieving the new limit, (3) the permittee will submit an annual progress report, and (4) the limit will become effective within 60 months after the final permit becomes effective. The Holyoke WPCF is not required to meet an interim aluminum limit. In addition to a schedule, permittees are allowed to collect data, perform studies, and submit their findings to the permitting agencies anytime for consideration. Permittees may also request a permit modification during the life of their permits. If new information becomes available that was not available during the public notice period that justifies modifying the permit's limits or conditions, the permit may be opened for public comment and modified in accordance with 40 CFR 122.62 or 122.63, as appropriate.

Comment 3:
The new limits for aluminum, copper, and lead present an undue burden on the City that EPA and MassDEP have not placed upon other wastewater treatment facilities in the area. As mentioned above, the Chicopee WPCF permit has no limits for copper or lead, and includes an allowance of four years to characterize sources of aluminum in their system, analyze alternatives, and establish a schedule for implementation of source reduction methods or an alternative treatment system. Further, the Chicopee WPCF is not subject to an interim aluminum limit during the evaluation period. The City requests that the conditions in the draft permit relating to metals be revised to be consistent with the conditions of the Chicopee WPCF permit. Otherwise, EPA and MassDEP should provide justification for the stricter standards being applied to the City.

Response to Comment 3:
The permitting agencies understand the City's concerns regarding the burden to implement the new limits. However, in accordance with federal regulations at 40 CFR 122.44, water quality-based effluent limits are derived to ensure that discharges do not cause or contribute to a violation of water quality criteria, regardless of cost or other challenges to meeting the limit. Cost or other practical implementation challenges may be considered in justifying a compliance schedule (see 40 C.F.R. §122.47), a state-adopted, time-limited variances (see 40 C.F.R. §131.14), or a state-adopted removal or modification of the designated aquatic life use from water quality standards (see 40 C.F.R. §131.10(g)). The final permit does incorporate a compliance schedule to meet the new aluminum, copper and lead limits. The Commonwealth of Massachusetts has not adopted any variances or removed any designated uses related to the City's discharge.

As permits are renewed, the Region has been considering the background concentration of metals when calculating metals permit limitations, in order to ensure that the discharge does not cause or contribute to a violation of the water quality criteria. As explained in the Fact Sheet, it is our best professional judgement that this approach is necessary to protect the receiving water from impacts due to state water quality criteria exceedances.

Comment 4:
The Facility already has a well-established baseline of analytical results for total Kjeldahl nitrogen (TKN), nitrite, nitrate, ammonia, and total nitrogen, which demonstrate relatively consistent concentrations of each parameter. Results have been reported consistently on a monthly basis in accordance with the 2009 NPDES permit. The draft permit increases the measurement frequency from monthly to weekly at expense to the City and local taxpayers without properly justifying the change in the Fact Sheet. The City believes this should be corrected in the draft permit Part I.A.1 to monthly monitoring.

Response to Comment 4:
The permitting agencies understand the City's financial concerns. However, the Region is in the process of applying a more consistent approach for monitoring requirements associated with nitrogen loading. This approach is being applied to Region I EPA NPDES permits in Massachusetts and New Hampshire, and to Vermont NPDES permits issued by the state. It is EPA's best professional judgment that wastewater treatment plants greater than 1.0 mgd design flow require more frequent monitoring of total nitrogen would provide better information than the past requirement of "1/month sampling" and EPA is in the process of proposing new monitoring requirements as each permit is reissued.

The annual nitrogen data reported from 2006 to 2015 indicates only a periodic lowering of total nitrogen, and this has typically been observed when the effluent flow is lower. For example, during the years 2011 and 2015 when effluent flow was 8.13 mgd and 7.16 mgd, corresponding annual average TN loadings were 569 lbs/day and 643 lbs/day, respectively. During 2006, 2012, and 2013 when effluent flows were higher, at 10.28 mgd, 9.09 mgd, and 9.39 mgd, annual average TN were also higher at 803 lbs/day, 741 lbs/day, and 779 lbs/day, respectively. A summary total nitrogen annual loading for outfall 001 using data from the permittee's discharge monitoring reports, are provided in Table 1.

Table 1: Total Nitrogen Annual Average Effluent Data

Year	Total Nitrogen Annual Loading	Effluent Flow, Annual Monthly Average
2006	803 lbs/day	10.28 mgd
2008	423 lbs/day	8.69 mgd
2009	645 lbs/day	8.39 mgd
2011	569 lbs/day	8.13 mgd
2012	741 lbs/day	9.09 mgd
2013	779 lbs/day	9.39 mgd
2015	643 lbs/day	7.16 mgd

Generally, if the permittee is able to demonstrate that all practicable steps have been taken to optimize the removal of total nitrogen, then EPA will consider, in a future permit action, the appropriateness of reducing nitrogen monitoring frequency during the summer, low flow season. Part I.G.1.a. of the draft and final permit requires the permittee to continue to operate the WPCF to optimize nitrogen removal in accordance with its 2010 evaluation in order to maintain the mass discharge of total nitrogen less than the existing mass loading of total nitrogen. The baseline annual average total nitrogen load from this facility is estimated to be 696 lbs/day. The goal of optimizing nitrogen removal to the greatest extent practicable is not limited to alternative methods of operating the existing wastewater treatment, but also includes evaluating source controls, septic management, and side-stream management. Additionally, the permittee should maximize ammonia removal. This optimization approach is also discussed within the Fact Sheet under Part VII.C.

Based on the permittee's request, and since the winter season is a less critical period relative to nitrogen impacts, the monitoring frequency during the winter season in the final permit has been changed from a "1/week" to "1/month".

Comment 5:
Page 21 of the Fact Sheet includes a mathematical error. The proposed TRC chronic limit for the Berkshire Street CSO Treatment Facility should be corrected to 0.76 mg/I, not 0.14 mg/I as the calculations on the Fact Sheet demonstrate. This error should also be corrected in the Part 1.13.6.b of the draft permit.

Response to Comment 5:
The proposed TRC chronic limit for the Berkshire Street CSO Treatment Facility in the draft permit was 0.14 mg/l and was correct. The fact sheet included an error for the dilution factor. Using the dilution factor estimated for this outfall, the calculation is expressed as follows: "[chronic criterion x dilution factor = monthly average limit] = [(11 ug/l x 12.6) = 0.14 mg/l]. Since this treated CSO effluent is an intermittent discharge, it is the Region's best professional judgement that imposing an acute TRC limitation without imposing a chronic TRC limit would protect the receiving water from adverse water quality impacts. Therefore, the final permit has been changed from a "0.14 mg/l" monthly average limitation to a "report only" requirement. Since fact sheets cannot be changed, this response to comments document serves as clarification of this permit limitation for the administrative record.

Comment 6:
Increasing the TRC limits for the Berkshire Street CSO Treatment Facility is contrary to the objective of the Facility. The goal of the Berkshire CSO Treatment Facility is to disinfect prior to discharge into the Connecticut River when wastewater flow rates to the Facility exceed peak design flow and available storage.

On the rare occasions that it does receive flow, the volume can be as high as 103 million gallons per day (MGD). As the flow rate through the CSO treatment facility increases, the chlorine contact time decreases. In order to properly disinfect the CSO treatment facility effluent, the concentration of chlorine must be increased. After disinfection, the Facility performs dechlorination to the maximum extent practicable and discharges to the river.

The Fact Sheet cited the data in Table 4a as evidence that the proposed limit can be achieved. This is an erroneous conclusion. Table 4a includes TRC effluent concentrations from every CSO event in a one-year period. In that time, the Facility discharged chlorine at concentrations greater than the proposed limit on seven occasions.

It is the City's opinion that the limits from the pre-existing permit appropriately weighted disinfection limits as more critical to water quality than TRC. The City requests the TRC limits for the Berkshire Street CSO Treatment Facility remain the same as the existing permit and the approved facility design.

Response to Comment 6:
While the objective of the CSO treatment facility is to screen and disinfect, it is not acceptable under the Clean Water Act for the permit to allow potentially toxic levels of chlorine to be discharged from the facility. This total residual chlorine limitation is necessary to protect the receiving water from adverse water quality impacts. While receiving water flows may be higher than 7Q10 during CSO discharge events, the conservative calculation is appropriate given that the capacity to assimilate chlorine at 7Q10 flow conditions has already been fully allocated to the outfall 001 discharge. Furthermore, as pointed out in the fact sheet, the CSO facility frequently discharges in connection with high intensity summer storms when river flows are relatively low.

The difficulties of consistently achieving adequate disinfection of a minimally treated high flow discharge while also preventing toxic impacts from the added chlorine highlights the fact that these types of CSO remediation are interim solutions only. As an interim solution for CSO management, while the City works towards a more final solution, every effort should be made to comply with both the bacteria and chlorine

limits. To the extent the City is unable to consistently comply with both limits, an administrative order may be issued that establishes interim limits while the City pursues the necessary steps for full compliance with CSO requirements.

Comment 7:
Permit section I.G.2 includes provisions for an interim period during which the Facility would develop a plan to reduce copper and lead discharge concentrations. The interim provisions allow the Facility time to determine the sources of copper and lead and implement a plan to reduce concentrations. There is no treatment system currently in place at the Facility to control these constituents, and no means for the Facility to immediately meet the proposed interim limits. The City asks that the interim program be extended to 4 years.

Response to Comment 7:
The permit is currently written to allow an interim period during which the permit limits do not have to be met for 5 years. During the first 5 years of the permit, the City will be given time to develop a plan to reduce the aluminum, copper, and lead, and implement source reduction.

Comment 8:
The City requests that EPA and MassDEP include similar provisions for aluminum as included for copper and lead. This would permit the Facility to investigate sources of aluminum and present the findings to EPA and MassDEP. At that time, the City can work with EPA and MassDEP to develop a reduction plan during an interim time period. The Facility will require time to develop methods to control concentrations of aluminum in the WPCF influent and/or effluent.

Response to Comment 8:
The permit has been changed to include a schedule of compliance for aluminum, similar to the schedule of compliance for copper and lead, in order to investigate sources of aluminum, implement source reduction, and identify modifications at the treatment facility that will reduce and control concentrations of aluminum in the WPCF influent and effluent.

Comment 9:
The table of discharge limitations in Part I.A.1 contains the following errors and inconsistencies with the Fact Sheet:

- The measurement frequency for TRC should be corrected to "1/day" to be consistent with page 10 of the Fact Sheet;
- The average monthly and maximum daily discharge limitations for TRC should be reconsidered as discussed in earlier comments; and
- The measurement frequency for TKN, nitrite, nitrate, ammonia, and total nitrogen should be revised to "1/month".

If left as proposed, these changes to the NPDES permit will have profound financial impacts on the City of Holyoke. I appreciate your review and consideration of these comments and look forward to working out reasonable accommodations, within the City's means, that attain benefits to the environment acceptable to all.

Response to Comment 9:
The 3/day measurement frequency for TRC in the draft permit was correct. The fact sheet was in error. Given that chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life and given the magnitude of the discharge flow, EPA finds that 3 times per day monitoring during the summer season is appropriate, as discussed also in Response to Comment 13. While fact sheets cannot be changed, this response to comments document will serve as documentation for the permit administrative record.

- The average monthly and maximum daily discharge limitations for TRC have been clarified in Response to Comment 1; and
- As discussed in the Response to Comment 4, the measurement frequency for TKN, nitrite, nitrate, ammonia, and total nitrogen has been changed during the winter months to "1/month".

Comments submitted by Connecticut River Watershed Council

Comment 10:
I am submitting comments on the draft National Pollutant Discharge Elimination System (NPDES) permit for the Holyoke Wastewater Treatment Plant (WWTP) on behalf the Connecticut River Watershed Council (CRWC). The Connecticut River, an American Heritage River and America's only National Blueway, is a regional resource that merits the highest level of protection. The Connecticut River downstream of the Holyoke Dam is listed as an impaired water body due to priority organics, pathogens, and total suspended solids. CRWC is particularly interested in improving water quality in the Connecticut River so that it can support existing primary and secondary contact uses, even during wet weather. CRWC believes that the Connecticut River can meet Class B water quality during wet weather and be made safe for swimming, if state and federal regulators work aggressively with other stakeholders to ensure compliance with Clean Water Act goals.

Response to Comment 10:
The permitting agencies agree that working aggressively and proactively with other stakeholders to ensure compliance with Clean Water Act goals needs to remain a high priority, even to address wet weather discharges. EPA-New England's application of the National Combined Sewer Overflow Policy strives to implement a results-oriented, flexible approach. For instance, the Region does not mandate a preferred set of technologies that a municipality should use to address CSO issues. Rather, through its enforcement actions, the Region allows a community to develop abatement programs tailored to its individual circumstances. Provided that communities are making solid progress within time frames the Region agrees make sense, the Region allows communities to select the most appropriate resolution to CSO problems from a variety of approaches. The Region also recognizes that a community's knowledge about its sewer system often develops through the course of abatement work. This is due not only to the fact that collection systems are underground and therefore not readily observed, but also because the systems in New England are old and historical mapping is often unavailable. As a result, the Region often phases work required under CSO enforcement actions so that communities can build upon knowledge gained about their systems during initial stages. The Region is amenable to communities recommending modifications to abatement plans based on new information as long as there are equivalent or better environmental protections. In order to ensure that tangible progress is made during the life of this permit, the City of Holyoke was recently issued an EPA order requiring the City to complete their CSO Long Term Control Plan. See Response to Comment 22.

Comment 11:
The protection of existing uses is required under 40 CFR 131.12(a)(1). Below is our understanding of existing uses in Holyoke along the Connecticut River.

A boat launch owned and operated by the City of Holyoke is located about a mile downstream of the City's main outfall pipe. This site, the Jones Ferry River Access Center, is the launching point for a group called Holyoke Rows (http://www.holyokerows.org/), which offers rowing, kayaking, and canoeing programs for children and adults. The general public uses this site as a launching point, mainly for canoes and kayaks. In addition, anglers use the wooden docks at this access point as a fishing spot. Holyoke has eliminated the CSO closest to this site.

Just downstream of the Holyoke dam is a peninsula of land nicknamed "Slim Shad Point" that is one of the best riverbank shad fishing locations in Massachusetts. This location is just downstream of one of the canal outflow points, which means it would be affected by CSO 016 and outfalls upstream of the dam. Riverbank angling and swimming takes place informally at other, scattered locations along Holyoke's shoreline.

A state-owned boat ramp (Medina Street) is located on the Chicopee side of the river approximately three miles downstream of outfall 001. This boat ramp is extremely busy with motor boat launching on most weekend days in the spring, summer, and fall. This is especially true during the height of the spring fish migration period. This section of the river, though urbanized, also contains important fish and wildlife habitat. As the Holyoke dam is the first substantial barrier to migratory fish between Long Island Sound and sites upstream, many fish congregate in the section of the River below the dam and either never make it upstream or wait for passage via the fish lifts and eel ladders. These fish include the endangered shortnose sturgeon. The dam is also a barrier to resident fish. Last summer, Holyoke Gas & Electric Department (HG&E) ran the fish lift all summer and identified 20 different species of fish that used the lift to move upstream (Report prepared by Kleinschmidt, dated March 2007).

Migratory fish such as American shad that do pass upstream via Holyoke Gas & Electric's fish lift in the Spring could potentially be affected by all or any of the CSO discharges located upstream of the dam on the same side of the river as the fish lift. In 2015, migratory fish numbers that passed above Holyoke are as follows: 13 Atlantic salmon; 412,656 American shad; 87 blueback herring; 21 striped bass; 1 shortnose sturgeon; 84 gizzard shad; and 22,245 sea lamprey. A total of 17 other species were lifted during the spring and American eel passage numbers were their third highest at 20,038, despite construction of sturgeon passage facilities at the dam during 2015.

Response to Comment 11:
The permitting agencies concur with your characterization of the existing uses in Holyoke along the Connecticut River and agree that 40 CFR 131.12(a)(1) requires the protection of the existing uses. In accordance with 40 CFR 131.12, the state has developed and adopted a statewide antidegradation policy that, at a minimum, maintains the necessary level of water quality in order to protect the instream existing uses. Your comment has been entered into the permit administrative record for clarification purposes.

Comment 12:
CRWC notes that the average monthly and maximum daily discharge limits for total residual chlorine (TRC) have been reduced, despite a higher 7Q10 used to calculate the dilution factor at the site. The new TRC limits are based on a calculation using a peak design flow dilution factor to calculate the acute criterion for TRC. Using the peak design flow is new for this permit, and was not used in other permits (Chicopee, for example). The permit sets an average monthly effluent flow limit based on the design flow of the water pollution control facility (WPCF), 17.5 million gallons per day (mgd). The Fact Sheet explains that the WPCF has been upgraded to handle up to 37 mgd on a short-term basis. CRWC believes that using the design flow of 17.5 mgd to calculate the dilution factor is appropriate and consistent with other permits. Though we understand EPA's rationale to calculate limits based on a reasonable worst-case scenario, we think that using the 7Q10 and the design flow does that. Using the peak design flow with the 7Q10 is not realistic – anytime the facility is at peak flow is during a significant rain event during which the Connecticut River will not be running at 7Q10 flows. Though we typically support lower limits, we also recognize lower limits require the use of additional dechlorination chemicals. In addition, setting limits using the peak design flow may be a disincentive for permittees to upgrade and expand the capacity of treating higher volumes on a short-term basis.

Response to Comment 12:
Please see Response to Comment 1.

Comment 13:
The draft permit in Part I, A.1 indicates the TRC measurement frequency has increased from 1/day to 3/day. However, the Fact Sheet on page 11 says that there were no violations of the TRC limit between 2011 and 2014, and the monitoring frequency "is maintained at once per day." Please clarify which frequency EPA intends to establish, and the rationale if changing to 3 times per day.

Response to Comment 13:
Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. A total residual chlorine sampling frequency of 3/day is necessary for a treated wastewater discharge of this magnitude in order to provide a more comprehensive evaluation of the potential impacts associated with chlorine toxicity. As the fact sheet cannot be revised or corrected, this response to comments document serves as clarification for EPA's final permit decision.

Comment 14:
The draft permit establishes a discharge limit for total recoverable aluminum at 87 µg/L. This limit is the same that was set for the Chicopee permit in 2012. Chicopee uses aluminum in its treatment process; Holyoke apparently does not. Table 2 in the Fact Sheet indicates the Al concentration in the receiving water is typically much higher than in the effluent. We understand the calculation EPA used to establish the limit, but we don't necessarily see how the discharge will cause or contribute to an impairment when the discharge concentrations are less than the receiving water concentrations.

Response to Comment 14:
Permit limitations are calculated to meet state water quality standards instream. Even when discharge concentrations are less than receiving water concentrations, the discharge cannot contribute to further impacts to the receiving water. When the upstream water quality level exceeds the water quality criteria, for example, discharge permit limits are set at the criteria in order to protect the receiving water from further degradation.

Comment 15:
The draft permit sets only an annual load of nitrogen. The 2009 permit required an evaluation of alternate methods of operating the existing wastewater treatment plant to optimize the removal of nitrogen and annual reports on optimizing activities. Other than providing annual loading values for the years 2007, 2010, and 2014, no information was provided in the Fact Sheet as to what the permittee's evaluation consisted of, or what annual activities have been accomplished. What were the loading values of the years 2008, 2009, 2011, 2012, 2013? That would be helpful to evaluate if the trend is truly downward.

Response to Comment 15:
The permittee is required to meet a total nitrogen (TN) annual average limit and this cap is based on the 2004-2005 TMDL developed for this watershed. A new allocation will be developed, and a lower water quality-based TN limit may be required in a future permit action. The City has evaluated alternative methods of operating the wastewater treatment plant to optimize the removal of TN. Unfortunately, there are challenges and limitations associated with optimizing TN removal at this treatment facility. The maximum flow to the treatment plant, for example, needs to be balanced with maintaining solids at the plant in order to be able to reduce the nitrogen load. The City was able to achieve a 57% nitrogen reduction and a 31% ammonia reduction during the past couple of years, but, this requires the City to carry a higher solids concentration, resulting in increased sludge blankets. When the Berkshire Street CSO outfall 009 activates, there is 35 mgd peak flow entering the WWTP before excess flow is diverted to their Berkshire CSO facility. Under this scenario, there is a risk of washing out the sludge blankets when managing the higher flows. In summary, one of the challenges with optimization at this facility is finding a balance between nitrogen removal and preventing a plant upset.

The total nitrogen annual loading values for the years 2008, 2009, 2011, 2012, and 2013 were: 423 lbs/day, 645 lbs/day, 569 lbs/day, 741 lbs/day, and 779 lbs/day (See Response to Comment 4, Table 1).

Comment 16:
CRWC agrees with the comment letter submitted by the Connecticut Fund for the Environment on the subject of nitrogen limits.

Response to Comment 16:
The permitting agencies have entered your comment conveying that you agree with the Connecticut Fund for the Environment on the subject of nitrogen limits into the permit administrative record.

Comment 17:
CRWC supports testing and reporting of metals along with the Whole Effluent Toxicity testing.

Response to Comment 17:
These requirements have been retained in the final permit. The permitting agencies have entered your comment that CRWC supports testing and reporting of metals along with the WET testing into the permit administrative record.

Comment 18:
The draft permit requires toxicity testing using the daphnid *Ceriodaphia dubia* at outfall 001. The permit requires testing for the fathead minnow, *Pimephales promelas*, at CSO 9. We aren't sure why the different outfalls require different species. The Chicopee NPDES permit requires toxicity testing for the minnow and brook trout, *Salvelinus fontinalis*. Holyoke's discharge is not that far upstream from Chicopee's; CRWC requests that the Holyoke permit be made consistent with that of Chicopee.

Response to Comment 18:
Whether daphnia or fathead minnows are selected for testing depends on which one is expected to be the most sensitive to a particular discharge. While the data for outfall 001 indicates that daphnia is the more sensitive species, there is no data available for the CSO treatment facility. However, the final permit has been changed to require WET testing for the Ceriodaphnia dubia for CSO outfall 009, in order to provide consistent testing with outfall 001. Brook trout has been used as a test species in very rare occasions where a compelling reason has been established.

Comment 19:
The draft permit states in section Part I.B(3), footnote f. says that the permittee, "shall continue to implement its enhanced public notification plan." Neither CRWC nor the permittee is aware of what this plan is or what it entails. Nevertheless, CRWC is very eager to have public access to CSO activations, and we support the requirement to post information on CSO discharges on a website, so we welcome clarification as to what this plan is or should be. We would also like to see more information on EPA's databases about CSO discharges at facilities along the Connecticut River. We find EPA's DMR Pollutant Loading Tool close to impossible to use, so are requesting this information directly.

Response to Comment 19:
Currently, EPA does not have a database of MA facilities with CSO discharges along the CT River. However, the City of Holyoke currently provides, through its website, emergency notifications to any interested member of the public after they sign in with a user name and password by logging into the Citizen's Alert at http://www.holyoke.org/services/. The permit, after it becomes effective, will require the permittee to post public information of CSO activations and the amount of flow discharged from the City's CSOs directly on the City of Holyoke's website that is accessible to users without a password. This information will be available to anyone that visits the City's website, and this notification procedure is required to be implemented within one year after the permit becomes effective.

In addition to the permittee's website, the permit also requires the permittee to report their CSO discharge information on their monthly discharge monitoring reports (DMRs). After the permittee begins submitting its DMRs electronically, this information will become accessible by logging into the Enforcement and Compliance History Online (ECHO) data base at https://echo.epa.gov/?redirect=echo, If you are experiencing problems using EPA's DMR Pollutant Loading Tool, and would like assistance resolving a technical issue, you may contact Carey Johnston at EPA-HQ. He may be reached at: (202) 566-1014 or johnston.carey@epa.gov.

Comment 20:
The draft permit sets bacteria and chlorine limits on outfall 009 in section 1.B.6.b of the draft permit, as well as other monitoring and reporting requirements. CRWC requested this back in 2007 during the last permit renewal. However, at the time, EPA responded as follows: "It is EPA's intent to include interim limits for the Berkshire St. CSO facility in an enforcement order, and to not include numeric limits in the NPDES permit unless a UAA is completed and MAWQS are adjusted to allow the discharge." (Response H.13 on page 23 of 2009 response to comments document). As far as we know, there was never an enforcement action that set interim limits on the Berkshire Street facility. There have also not been any updates to the MAWQS. Page 4 of the Fact Sheet indicates no use attainability analysis has been submitted or approved. Other than being confused, we're pleased that EPA has inserted requirements this time around.

Response to Comment 20:
Although the commenter is correct that interim limits were not imposed by EPA in the past, the City of Holyoke has been required to meet effluent limits and requirements subject to their state permit (See Attachment A of this Response to Comments document). Additionally, EPA is now including effluent limits and other monitoring requirements for the Berkshire Street CSO facility's outfall 009 discharge in the permit.

Comment 21:
Upon our request, EPA provided information showing that in 2013, the Berkshire St. CSO facility discharged untreated water to the Connecticut River on 7 occasions, on days where precipitation amounts in the range of 0.9 inches to 3.85 inches occurred. In 2014, the Berkshire St. CSO facility discharged untreated water to the Connecticut River on 6 occasions, on days where precipitation amounts in the range of no precipitation to 3.4 inches occurred. The EPA stated in Response H.13 on page 23 of 2009 response to comments document that the Berkshire Street CSO facility "will provide screening, preliminary treatment, and disinfection for a 3-month storm." The 2000 Draft Long-Term CSO Control Plan (LTCP) for Holyoke also referred to a 3-month storm but we could not find information on what level of rainfall this is. The LTCP also referred to a "1-year design storm" of 2.5 inches. What is the 3-month storm, and is the Berkshire Street facility meeting the design requirements? How many times was it predicted to discharge untreated water into the Connecticut River, and how many times is it actually discharging for the years of operation 2009-2015? This information is vital for understanding how modelling assumptions are playing out in the real world.

Response to Comment 21:
The Berkshire Street CSO facility was designed to provide screening, preliminary treatment, and disinfection to treat discharge flows during a 3-month storm event and has been performing as intended, meeting its water quality limitations for total fecal coliform bacteria and total residual chlorine required in the City's state permit (See Attachment A).

Although the Berkshire Street CSO facility was designed to treat discharge flows during a 3-month storm event, direct comparisons of the resultant runoff patterns and CSO activations are not appropriate given that design storms and actual precipitation events can differ in the hourly precipitation levels, the antecedent rainfall and other conditions. Storm events are categorized by their recurrence interval in years, their probability of occurrence in any given year, their percent chance of occurrence in any given year (i.e., a 50-year rainfall event has a 1 in 50 or 2% chance of occurring in a year), and each locality has its own criteria for how much rain must fall within 24 hours to classify it as a particular rain event. This criteria is not comparable to flows that occur after a treatment facility is fully operational. There are many factors (weather-related variables are the most common) that lead to higher than expected flow rates. For example, higher than model-predicted flowrates often occur when heavy rain falls on frozen ground, or when snowmelt is greater than expected.

The number of untreated overflow discharge events that have occurred per year from the Berkshire Street CSO Treatment Facility (CSO Outfall 009) are listed below in Table 2 for informational purposes.

Table 2: Untreated CSO Discharges from Outfall 009

Year	Number of Untreated Overflows from Outfall 009
2009	5
2010	12
2011	15
2012	8
2013	9
2014	7

Comment 22:
CRWC is aware of Holyoke's inability to fund a final LTCP given the many fiscal constraints the City faces. Understanding that, we can only express extreme disappointment that 15 years has passed since the draft LTCP was submitted and there is still not a final document and overall plan to eliminate CSO discharges into the Connecticut River.

Response to Comment 22:
The permitting agencies understand your disappointment with the length of time since the City's draft LTCP was submitted and agree that working with other stakeholders to ensure compliance with Clean Water Act goals needs to remain a high priority in order to address wet weather discharges. The City of Holyoke was recently issued an EPA order in August 2016, requiring the City to complete their CSO Long Term Control Plan within three years. Please see Response to Comment 10.

Comment 23:
The Fact Sheet on page 3 states that the Holyoke WPCF and the CSO outfalls discharge to the Connecticut River segment MA34-05, which runs from the Holyoke Dam to the MA/CT border. We would like to point out that CSOs 18, 19, 20, 21, and 23 all discharge to the Connecticut River upstream of the Holyoke Dam. This segment, MA34-04, runs from the confluence with the Deerfield River to the Holyoke Dam and is also considered impaired for pathogens, mainly because of the Holyoke CSOs present in the lower end of the segment.

Response to Comment 23:
The permitting agencies agree with your statements and have entered your comment into the permit administrative record.

Comment 24:
The Fact Sheet in 2007 contained information about CSO activations and the amount of process wastewater coming from each of the significant industrial users. The information was helpful. None of that information was provided in the 2015 Fact Sheet. Please include this in the final version of the permit or response to comments document.

Response to Comment 24:
The 2015 Fact Sheet contains a detailed summary of CSO activities and the overall impacts associated with CSO discharges (See also Table 2). Going forward, this permit requires the permittee to provide detailed data on each CSO activation, including frequency, number of activations, and discharge volume reported in the permittee's DMRs. This will improve the flow of information, identify trends more easily, and provide more transparency for the public.

Please also see Response to Comment 21 for information about CSO activations.

Regarding process wastewater coming from each of the significant industrial users, see Table 3 below, which includes the amount of process wastewater coming from each of the significant industrial users (SIUs). Since the fact sheet is not being modified, this response to comments document serves as documentation for the permit administrative file.

Table 3: Process Wastewater from SIUs

Name Of Significant Industrial User (SIU)	Amount of Process Wastewater from each SIU	Intermittent or Continuous Discharge
Bay State Plating	7,000 gallons/day	Intermittent
D & S Plating	5,000 gallons/day	Intermittent
New England Etching Company	1,500 gallons/day	Intermittent
Sonco Products Company	500,000 gallons/day	Continuous
RR LeDuc Corporation	750,000 gallons/day	Intermittent
Hazen Paper Company	500 gallons/day	Intermittent
Marox Corporation	2,000 gallons/day	Intermittent

Comments submitted by the Connecticut Fund for the Environment & Save the Sound

Comment 25:
The Connecticut Fund For the Environment and its bi-state program Save the Sound submit the following comments on the draft National Pollutant Discharge Elimination System (NPDES) Permit for the Holyoke, MA Water Pollution Control Facility and Combined Sewer Overflow (CSC') discharges at 11 locations.

The segment of the Connecticut River where the Holyoke Water Pollution Control Facility (WPCF) discharges treated waste water and CSOs has been designated by the Commonwealth of Massachusetts as a Class B water, warm water fishery, with a CSO designator. The CSO designator for these waters indicates that these waters are impacted by the discharge of combined sewer overflows. The Fact Sheet that accompanies the draft permit acknowledges that no variance or use attainability analysis has been submitted or approved by the permitting authority for the Holyoke WPCF. Therefore, CSO discharges must comply with all applicable water quality standards.[1] NPDES permits must also insure compliance with applicable water quality requirements of any other state whenever such discharge will affect the quality of the waters of such other state. [2] It is also acknowledged in the Fact Sheet that Connecticut is the "downstream affected state" and that excess nitrogen loading is causing significant water quality problems in Long Island Sound. [3] Despite these requirements and the known impact of nitrogen loading in

Long Island Sound from out-of-basin sources, this draft permit, as well as the previous 2000 and 2009 permits issued by EPA to the Holyoke WPCF, contains no limit for nitrogen.

The Clean Water Act requires that NPDES permits establish effluent limitations necessary to meet Water Quality Standards[4], consider and ensure compliance with attainment and maintenance of Water Quality Standards of downstream waters[5], and when necessary, authorizes EPA to translate narrative Water Quality Standards into chemical specific limitations for the permit[6]. "EPA has developed nutrient criteria recommendations that are numeric values for both causative (phosphorus and nitrogen) and response (chlorophyll *a* and turbidity) variables associated with the prevention assessment of eutrophic conditions."[7] The draft permit like earlier permits requires only monitoring and reporting of the average monthly discharge. Monitoring and reporting requirements are not equivalent to effluent limitations. Water quality based limits (WQBLs) are required in a permit for pollutants that have the reasonable potential to cause or contribute to exceedances of water quality standards.[8] After 15 years of monitoring and reporting, EPA should have sufficient data to set numeric nitrogen effluent limitations for the Holyoke WPCF using the options provided in 40 C.F.R. § 122.44(d).

Recently, EPA Regions 1 and 2 have acknowledged that current and planned actions by four of the five New England states and New York will fall short of fully implementing the 2000 TMDL and will be insufficient to address other adverse impacts to water quality in Long Island Sound. Additionally, the Region 1 and 2 Administrators acknowledge that alternatives to control nitrogen sources such as ambient aeration or bioextraction have not been implemented to the scale needed and that the modeling and monitoring of Long Island Sound "give us a sense of urgency and also compel us to do more." Despite this, numeric limits on nitrogen concentration are not included in the permit and all that is required is continued monitoring and reporting of nitrogen with the requirement to optimize nitrogen consistent with the requirements of the Long Island Sound TMDL based on the assertion that the TMDL target 25 percent aggregate reduction from baseline loadings is currently being met. The Fact Sheet accompanying the draft permit justifies this lack of numeric limits with the assertion that the TMDL target 25 percent aggregate reduction from baseline loadings is currently being met. This justification for failing to incorporate numeric nitrogen limits in the draft permit conflicts with the above position of the EPA Region 1 Administrator and ignores the cumulative impact that out-of-basin nitrogen discharges continue to have on the health and environment of Long Island Sound. Based upon predictive modeling performed by NEIWPCC and recent EPA data on Massachusetts Point Source Nitrogen Loads", it is our estimate that nitrogen from Massachusetts point sources on the Connecticut River account for 29% of the daily nitrogen load in Long Island Sound. Given this, and based upon long accepted modeling, it is beyond question that such discharges cause or contribute to water quality violations in Long Island Sound.

Western Long Island Sound is exceeding water quality standards and will continue to do so despite current and planned actions in the 2000 TMDL, EPA has created a strategy to deal with this situation and has set forth a timeline in its strategy. If the agency is not going to impose numeric limits at this time, as we believe is required by law, we ask that the agency indicate when, within its strategy time frame, such limits will be imposed.

Response to Comment 25:
The permitting agencies understand and share your concern and agree that Massachusetts point sources may cause or contribute to water quality violations in Long Island Sound. In accordance with the permitting regulations, the permit is consistent with the existing TMDL. While the current TMDL has resulted in significant reductions and measureable water quality improvement, EPA recognizes more needs to be done and is fast tracking an evaluation of further reductions that may be necessary. It is

anticipated that this total nitrogen threshold will consider both the DO effects in Long Island Sound as well as the more localized effects of nitrogen loading in the Connecticut River Estuary. EPA is currently in the process of developing a total nitrogen allowable threshold for the Connecticut watershed.

EPA is committed to ensuring continuous progress on nitrogen reduction in Long Island Sound to meet water quality standards for dissolved oxygen and addressing other eutrophication-related impacts. In December 2015, EPA signed a letter detailing an EPA Nitrogen Reduction Strategy. EPA's strategy recognizes that more work must be done to reduce nitrogen levels, further improve dissolved oxygen conditions, and attain other related water quality standards in Long Island Sound. Over the next twelve months, EPA will work to establish thresholds for Western Long Island Sound and several coastal embayments, including the Connecticut River. Upon completion of establishing thresholds, an allocation of total nitrogen loadings will be conducted that determines where the necessary reductions will occur. If further reductions will be needed for the Holyoke discharge, a water quality-based limit will be added in a future permit action.

EPA is actively conducting outreach and seeking stakeholder participation regarding the LIS nitrogen reduction strategy. EPA's informational outreach for the Long Island Sound Nitrogen Reduction Strategy has included a letter to each state in the watershed, a public webinar on February 26, 2016, five individual meetings during the spring of 2016 with state environmental permitting agencies in CT, NY, MA, NH, and VT, and public meetings held on April 13, 2016 (Stamford, CT), April 15, 2016 (Huntington, NY), and May 12, 2016 (Springfield, MA). EPA is committed to continuing public outreach engagement with states, municipalities, monitoring groups, and other stakeholders, as EPA works to translate existing state narrative nutrient criteria into numeric nitrogen thresholds that are protective of designated uses of Long Island Sound.

Comment 26:
Finally, the Clean Water Act prohibits" backsliding", allowing a lesser standard in a renewed permit from what was required in the prior permit.[2] Because the draft permit again fails to set limits on nitrogen discharges, the prohibition against backsliding becomes an ineffective and inapplicable statutory and regulatory requirement for this permit.

Therefore, it is respectfully requested that the 2015 draft permit for the Holyoke WPCF be revised to include a numeric nitrogen limit.

Response to Comment 26:
The commenter is correct, the Clean Water Act prohibits "backsliding" (i.e., unless certain criteria are met). The final permit does not allow backsliding. In order to establish a new nitrogen effluent limit in the permit, a total nitrogen threshold needs to be developed. Please see Response to Comment 25.

References:
[1] EPA Fact Sheet for NPDES Permit No. MA0101630, p. 4.
[2] CWA § 401(a)(2), 33 U.S.C. § 1341(a)(2); 40 C.F.R. § 122.44(d)(4).
[3] EPA Fact Sheet for NPDES Permit No. MA0101630, pp.5, 16.
[4] CWA § 301(b)(1)(C), 33 U.S.C. §1311(b)(1)(C).

[5] CWA § 401(a)(2), 33 U.S.C. § 1341(a)(2); 40 C.F.R. § 122.44(d)(4).
[6] 40 C.F.R. § 122.44(d)(1)(vi).
[7] EPA's NPDES Permit Writers' Manual, September 2010, Sec.6-6.
[8] 40 C.F.R. § 122.44(d)(1)(vi).
[9] December 23, 2015 letter from Regional Administrators Spalding and Enck to the Connecticut. Massachusetts, Vermont, New Hampshire and New York commissioners of state environmental agencies.
[10] *Id.*, p. 2.
[11] NEIWPCC, *An Overview of the Long Island Sound Total Maximum Daily Load for Dissolved Oxygen and the Connecticut River Workgroup,* August 2010.
[12] LIS2014NELVT MAPointSourceNitrogenLoads.xlsx.

Comments submitted by the Connecticut Department of Energy & Environmental Protection

Comment 27:
The Connecticut Department of Energy and Environmental Protection (CTDEEP) is providing comment on the draft NPDES permit for the City of Holyoke's wastewater treatment plant (WWTP) and combined sewer outfall (CSO) discharges. The draft permit authorizes discharges of treated, untreated, and partially treated wastewater to the Connecticut River which subsequently flows through Connecticut to Long Island Sound (LIS).

As a downstream state, Connecticut has a keen interest in both the WWTP and CSO discharges and potential impacts to both the Connecticut River and LIS. LIS has been affected by hypoxic conditions, which occur annually in the summer, and have been well documented to result from excessive amounts of nitrogen. Discharges from wastewater treatment plants and combined sewer overflows contribute to the nitrogen loading to LIS. In response to hypoxic conditions, Connecticut and New York jointly developed a Total Maximum Daily Load (TMDL) for nitrogen which was approved by the Federal Environmental Protection Agency (EPA) in April, 2001.

Response to Comment 27:
The permitting agencies appreciate your information and your active role in reduction of nitrogen loading to Long Island Sound and CSO discharges to the Connecticut River. We entered your comment into the permit administrative record. As described in the Fact Sheet the nitrogen conditions in the draft and final permit are informed by the 2001 TMDL for nitrogen.

Comment 28:
In addition to a number of nitrogen reduction efforts, the TMDL specifies a 25% reduction in the estimated nitrogen load from states upstream of Connecticut (MA, NH, and VT). As a follow-up to the TMDL, the five watershed states (CT, NY, MA, NH, VT) and EPA agreed upon an Enhanced Implementation Plan in 2011 (EIP). The plan requires EPA and the tributary states to implement a tributary state wastewater treatment plant (WWTP) permitting strategy with a goal of essentially capping existing WWTP total nitrogen loads at or near existing levels until agreement is reached on final allocations and how they will be achieved.

Under the permit special conditions, the WWTP is to maintain a nitrogen load of approximately 696 pounds/day based on a 2004 and 2005 annual average. This section also requires the WWTP permittee "to optimize nitrogen removal in accordance with it 2010 evaluation in order to maintain the mass discharge of total nitrogen less than the existing mass loading of total nitrogen." The annual average load in 2014 was 538 pounds/day. The Holyoke WWTP has optimized to a nitrogen load which is lower than the 2004-

2005 cap of 696 pounds/day. CTDEEP believes this reduced load is the existing mass load of which the WWTP must now comply and not the 2004-2005 "cap". Very little to no attenuation occurs in the Connecticut River (Smith et al. 2008) so this entire load is essentially transported directly to LIS. For comparison, Connecticut's Enfield WWTP is located approximately 15 miles south of the Holyoke WWTP and also discharges treated wastewater into the Connecticut River. The baseline nitrogen load for the Enfield WWTP was 763 pounds/day. However, the Enfield WWTP was given a target nitrogen load of 278 pounds/day and in 2015, achieved an average discharge of 243 pounds/day through nitrogen moderate reduction efforts. This plants discharge flow is about half (5.5 mgd) of Holyoke's current flow, yet it has been able to achieve a nitrogen reduction greater than 63% from the base load. CTDEEP believes that holding Holyoke's WWTP nitrogen discharge to 538 pounds/day is not an unreasonable action.

While we appreciate the EPA's work to increase collective efforts and broaden the lens through which we have been looking at the impact of nitrogen pollution in LIS, actions speak loudly. We feel this permit is an important step to advance the implementation of strategic nitrogen reductions throughout LIS and to demonstrate EPA's commitment to lead through example by EPA requiring a load limit of no more than 538 pounds/day in Holyoke's NPDES permit.

Response to Comment 28:
MA NPDES permits, must be consistent with an existing approved TMDL, and EPA has done this in the Holyoke permit. When and if the ongoing evaluation of the CT River watershed concludes that more stringent limits in permits are needed in order to ensure attainment of water quality standards and EPA concurs with this conclusion as a basis for permitting, then EPA will act to ensure permits in MA as well as CT, NH, and VT will be consistent with the new water quality evaluation and allocations. Until then, basing permit limits on the lowest levels achieved would be counterproductive as permittees will have a disincentive to optimize removals. Current progress is being made toward establishing thresholds under EPA's nitrogen strategy contract. EPA's contractor was hired two weeks ago and began working on this project. EPA intends to perform the analysis for developing an allocation of total nitrogen loadings as soon as the pertinent data and necessary information is available.

Comment 29:
Concerning the CSOs, we appreciate efforts by the City of Holyoke to reduce the impact from combined sewer overflows through retrofits and increased partial treatment capacity. We note however that completion of the Long Term Control Plan for CSOs is almost two years overdue. CTDEEP requests that EPA and Holyoke make completion of the plan a priority.

Response to Comment 29:
Reducing Combine Sewer Overflow (CSO) discharges to the Connecticut River is an EPA priority. The City of Holyoke has completed six CSO remediation projects from their 2000 CSO Long Term Control Plan (LTCP) (see Table 4 below, CSO Remediation Projects). In addition, EPA issued an Order to the City of Holyoke in August 2016 to complete a new LTCP and to undertake an additional CSO remediation project. The Order requires a new LTCP and elimination of the Jackson Street CSO by December 2019.

Table 4: CSO Remediation Projects (6 Completed + 9 Remaining)

Completed CSO Projects:
Berkshire Street Treatment Facility
Move Drainage Area 9 and 16 Flows to Treatment Facility
Green Brook Separation
Drainage Area 3 Separation
Drainage Area 13 Separation
Drainage Area 14 Separation
Future CSO Remediation Projects:
Move Drainage Area 7 Flows to South Interceptor
Highland Park Treatment Facility
Move Drainage Area 19, 20, 21 and 23 Flows to Treatment Facility
Day Brook Detention Basin
Drainage Area 18A Separation
Drainage Area 23 Separation
Drainage Area 2 Separation
Drainage Area 8 Separation
Drainage Area 11 Separation

Comment 30:
It should also be noted that a recent study of nitrogen loads to LIS from New England states found that approximately 50% of the nitrogen load to LIS comes from areas north of Connecticut (Mullaney and Schwarz, 2013). This study was based on 10 years (1999-2009) of data and compared computed nitrogen loads from four gaging stations located along the Connecticut-Massachusetts border to the total nitrogen load computer from gages (and estimates) within Connecticut. As Connecticut continues to achieve greater nitrogen reductions at its WWTPs, the load from Massachusetts and other upstream states (New Hampshire and Vermont) consequently becomes a greater portion of the load and will need to be more fully addressed.

Response to Comment 30:
EPA agrees that attaining water quality standards in Long Island Sound will require accounting for the contributions from four New England states: Massachusetts, Connecticut, New Hampshire and Vermont. See Response to Comment 25 for more information on plans to evaluation the nitrogen waste loads allocations in those states which is likely to affect nitrogen limits for Holyoke and other MA POTWs in future permits.

Comment 31:
In closing, we trust you are aware of the recent December 23, 2015 letter from the EPA Regional Administrator to CTDEEP and the other LIS watershed states indicating a strong desire to work in close collaboration with the states in development and application of a comprehensive Long Island Sound nitrogen reduction strategy. We agree that developing and implementing this strategy will require actions both at the state and federal level to protect Long Island Sound. The letter includes developing watershed

reduction plans, enhanced nonpoint source management plans, and stronger NPDES permits where warranted. It also indicates that EPA will use technical information developed as part of this strategy to inform its permitting activities in the upstream states where EPA issues permits. This approach is consistent with Section 30 1(b)(1)(C) of the Clean Water Act, which provides EPA with the independent authority to ensure that NPDES permits issued by it or by the authorized states it oversees comply with applicable water quality standards, which would include protection of downstream states waters.

Response to Comment 31:
EPA agrees and reiterates its strong desire to work in close collaboration with the states in development and application of a comprehensive Long Island Sound nitrogen reduction strategy. Also, please see Response to Comment 25 regarding this strategy and current evaluation.

Comments submitted by the United States Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service, during the public comment period

Comment 32:
We have completed an Endangered Species Act (ESA) section 7 consultation in response to your letter received December 14, 2015, regarding the proposed reissuance of the National Pollutant Discharge Elimination System (NPDES) permit for the Holyoke Water Pollution Control Facility (WPCF) (Permit No. MA0101630). We concur with your determination that the proposed action may affect, but is not likely to adversely affect, any species listed by us as threatened or endangered under the ESA of 1973, as amended. Our supporting analysis is provided below.

Proposed Project
The Environmental Protection Agency (EPA) proposes to re-issue the NPDES permit for the Holyoke WPCF in Holyoke, MA. The permittee discharges treated domestic and industrial wastewater, and combined sewer overflow effluent through eleven combined sewer overflow (CSO) discharge points. The WPCF design flow average is 17.5 million gallons per day (mgd), with a peak flow of 37.0 mgd.

The facility serves a population of approximately 37,000 people and seven Categorical Industrial Users including paper manufacturers, sheet metal manufacturer and metal finishers, and a medical device manufacturer. The collection system is 6.7% combined and 33% separate. The WPCF was upgraded to a secondary treatment biological facility in 1979. The facility uses a pure oxygen activated sludge process. The treatment process includes mechanical screens, grit removal, influent submersible pumps, primary clarification, pure oxygen activation sludge biological treatment, secondary clarification, chlorine disinfection, sludge thickening and sludge dewatering. Effluent pumps are also included in the event of high water in the receiving stream (Connecticut River). The treatment plant discharges to the Connecticut River through a submerged outfall about 61 meters from the western bank of the river. The facility is operated by United Water, Inc. under a long term Operation and Maintenance contract with the City of Holyoke covering the treatment plant, collection system, CSOs and CSO treatment facility.

The draft permit includes numeric limits for biochemical oxygen demand (BOD5), total suspended solids (TSS), pH, total residual chlorine (TRC), bacteria, nitrogen and metals including aluminum, lead, and copper.

Description of the Action Area

The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR § 402.02). For this project, the action area includes the underwater areas where the effects of the discharge may be experienced in the receiving waterbody. In Massachusetts, mixing zones must be as small as feasibly possible, may not interfere with the migration or movement of fish, and must not occupy more than one-half of the waterbody's area. Holyoke WPCF and the CSO outfalls from the Holyoke system are located on the west bank of the mainstem Connecticut River, in the vicinity of the 1-391 Bridge in Holyoke, Massachusetts, approximately river kilometer (rkm) 136. The outfalls discharge into Connecticut River Segment MA34-05, which runs from the Holyoke Dam to the Massachusetts/Connecticut border, a length of 25.5 kilometers. Outfall #016 discharges into the Connecticut River via the Holyoke Canal System. The Massachusetts 2012 Integrated List of Waters list this segment of the Connecticut River as category 5, "waters requiring a TDML," with listed impairments caused by E. coli, Polychlorinated biphenyl (PCB) in fish tissue and Total Suspended Sediment (TSS). The 2006 MassDEP Water Quality Assessment Report for the Connecticut River watershed indicated that this segment did not support primary contact recreation or fish consumption uses, and that aquatic life use was in alert status due to "potential toxicity and habitat impacts of the coal tar deposits and the risks that fish tissue contaminants pose to fish-eating wildlife."

NMFS Listed Species in Action Area

Atlantic Sturgeon

There are five Distinct Population Segments (DPSs) of Atlantic sturgeon *(Acipenser oxyrinchus oxyrinchus)* listed as threatened or endangered. Atlantic sturgeon originating from the New York Bight, Chesapeake Bay, South Atlantic and Carolina DPSs are listed as endangered, while the Gulf of Maine DPS is listed as threatened. The marine range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida and includes the action area. Atlantic sturgeon spawn in their natal river, with spawning migrations generally occurring during February-March in southern systems, April-May in Mid-Atlantic systems, and May-July in Canadian systems (Murawski and Pacheco 1977; Smith, 1985; Bain 1997; Smith and Clugston 1997; Caron *et al.* 2002). Young remain in the river/estuary until approximately age 2 and at lengths of 30-36 inches before emigrating to open ocean as subadults (Holland and Yelverton 1973; Dovel and Berggen 1983; Dadswell 2006; ASSRT 2007).

After emigration from other natal estuaries, subadult and adult Atlantic sturgeon forage within the marine environment, typically in waters less than 50 meters in depth, using coastal bays, sounds, and ocean waters (ASSRT 2007). Subadult and adult Atlantic sturgeon may also occur in shallow waters (i.e., no less than 1 meter deep) while foraging (Dadswell 1984). Adult and subadult Atlantic sturgeon use the Connecticut River estuary for foraging during the spring, summer, and early fall (ASSRT 2007, Savoy and Pacileo 2003). There is only one modem record of an Atlantic sturgeon caught in the Massachusetts portion of the Connecticut River. On August 31, 2006, a 152.4 cm TL Atlantic sturgeon was observed in the Holyoke Dam spillway lift. Prior to this capture, Atlantic sturgeon were thought to occur only as far upstream as the fall line, located near Hartford, CT.

Most Atlantic sturgeon captured within tidal waters or freshwater in Connecticut are thought to be migrant subadults from the Hudson River (ASSRT 2007). Based on the lack of evidence of spawning adults, the Atlantic sturgeon status review team determined stocks of Atlantic sturgeon native to Connecticut waters are extirpated (ASSRT 2007). However, in June 2014, several presumed age-0 Atlantic sturgeon were captured in the Connecticut section of the Connecticut River (T. Savoy, CT DEEP, pers. comm.). These captures represent

the only contemporary records of possible natal Atlantic sturgeon in the Connecticut River. Capture of age-0 Atlantic sturgeon strongly suggests that spawning is occurring in that river (T. Savoy, CT DEEP, pers. comm.; Connecticut Weekly Diadromous Fish Report, May 20, 2014). Genetic analysis of tissues collected from these individuals is not yet available and will help to determine if these individuals represent a unique Connecticut River Atlantic sturgeon spawning population. The capture of these individuals follows the documentation of a dead adult Atlantic sturgeon in the river in May 2014.

Although there is no specific evidence that Atlantic sturgeon spawn in the Massachusetts section of the Connecticut River, the presence of age-0 sturgeon downriver strongly suggests that it is occurring somewhere in the river. If Atlantic sturgeon are spawning in this part of the river, it is likely that they would use the habitat within three kilometers of the Holyoke Dam, which has been identified as containing the requisite characteristics for spawning habitat for shortnose sturgeon (Kynard *et al* 2012, Buckley and Kynard 1985). No other spawning sites for Atlantic sturgeon have been identified in the Massachusetts section of the Connecticut River downstream of the Holyoke Dam. If spawning is occurring near the Holyoke Dam, spawning adults or early life stages (ELS) could be present within the action area, but their presence has not been confirmed.

Shortnose Sturgeon

Shortnose sturgeon occur in rivers and estuaries along the East Coast of the U.S. and Canada (SSSRT 2010). There are 19 documented populations of shortnose sturgeon ranging from the St. Johns River, Florida (possibly extirpated from this system) to the Minas Basin in Nova Scotia, Canada (NMFS 1998; Dadswell *et al.* 2013), and a population is present in the Connecticut River. Shortnose sturgeon are known to occur at a wide range of depths. It is assumed that a water depth of about 0.6 meters is needed for unimpeded swimming by adults (Crance 1986). Water depths of summer foraging areas used by shortnose sturgeon are highly variable. For example, Mcleave *et al.* (1977), tracked shortnose sturgeon adults in summer in areas with depths ranging from 1-27 meters. In the Kennebec River, shortnose sturgeon are known to forage in areas with depths less than 1 meter (Squiers *et al.* 1982). Additionally, shortnose sturgeon feed on a variety of benthic and epibenthic invertebrates including mollusks, crustaceans (amphipods, chironomids, isopods), and oligochaete worms (Vladykov and Greeley 1963, Dadswell 1979 *in* NMFS 1998). They prefer highly productive foraging habitat that includes tidal/mud flats and shellfish beds.

The Holyoke Dam divides the Connecticut River shortnose population as there is currently limited successful passage downstream of the Dam. No shortnose sturgeon have passed upstream of the Dam since 1999 and passage between 1975-1999 was an average of four fish per year. The number of sturgeon passing downstream of the Dam is unknown. Despite this separation, the populations are not genetically distinct (Kynard 1997, Wirgin *et al.* 2005, Kynard *et* a1.2012). Population estimates have been completed for shortnose sturgeon occurring both upstream and downstream of the Dam. Taubert (1980a) conducted the earliest population estimate: a Peterson mark-recapture model for sturgeon upstream the Dam resulted in an estimate of 370-714 adults. More recently, a Schnabel mark-recapture estimate upstream the Dam during the summer-fall foraging period of 1994 indicated an abundance estimate of 328 adults (CI = 188-1,264 adults; B. Kynard, USGS, unpubl. data). Lastly, during studies of spawning ecology upstream the Dam at the Montague spawning site, abundance of pre-spawning adults was estimated each spring between 1994-2001 at a mean of 142.5 spawning adults (CI = 14-360 spawning adults; Kynard *et al.* 2012). Downstream of the Dam (rkm 100-0), researchers conducted annual estimates of foraging and wintering adults using the Schnabel mark-recapture technique during 1989-2002: mean abundance was 1,042 adults, with the average estimates almost doubling between the sampling periods of 1989-1994 at 788 adults and 1996-2002 at 1,297 adults (Savoy 2004).

Shortnose sturgeon spawn in the spring at two distinct sites upstream of Holyoke Dam located within a two kilometer reach near Montague, MA (rkm 194-193; Kynard *et al.* 2012). The sites are both located approximately four kilometers downstream of the Turners Falls Dam (Kynard *et al.* 2012). Researchers refer to the main site as "Cabot Station" because it occurs in the tailrace of the Cabot Station Electrical Generation Facility (rkm 193). This site is approximately 2.7 hectares (ha) in area and receives water from above Turner's Falls Dam that has been diverted through a power canal for the Station. The secondary, smaller site (0.4 ha in area) is located at Rock Dam (rkm 194). Rock Dam is .a natural rock barrier located at the end of a.natural river reach also flowing from the Turner's Falls Dam.

Shortnose sturgeon ELS were captured below Holyoke Dam in a 1998-1999 (Kynard *et al.* 2012). Researchers used a similar evaluation as in 1993-1997 including ELS sampling. Eight unfertilized eggs (one in 1998 and seven in 1999) were captured along with mature males and females. Although ELS were captured with similar effort at Holyoke and Montague during the same years, low capture numbers of ELS below Holyoke Dam in 1999 (seven eggs) versus those found at Montague (113 eggs and 14 embryos) and the absence of spawning behavior (localization) by tracked Holyoke adults showed minimal spawning success.

Adults overwinter in several discrete areas upstream of Holyoke Dam (Kynard *et al.* 2012). In the study by Kynard *et al.* (2012), day length appeared to be the driving factor for the onset of wintering behavior. When decreasing day lengths fell below 11.0 h, adults began moving to winter concentration areas, By the time day length had diminished to 9.82-9.60 h, most (>80%) tagged individuals had stopped moving and formed several dense concentrations, corresponding to winter-period dates of roughly 15 November-15 April. Wintering sites have been identified below the Holyoke Dam as well. Buckley and Kynard (1985) identified four wintering sites in the downstream segment: Agawam (rkm 117), Holyoke (rkm 140), Hartford, CT (rkm 86-82) and the lower river reach (rkm 25-0). Several years later, in 1988, CT DEP began annual gillnetting and tracking surveys, confirming a wintering site at Hartford, CT (- rkm 85), and identifying a site at Portland, CT (- rkm 50) using telemetry tracking, gillnetting, and observations by SCUBA divers (Savoy 1991a and b).

We expect that juvenile and adult shortnose sturgeon will be present in the stretch of the river that contains the action area, foraging, migrating, and overwintering. The action area is located approximately 45 kilometers downstream from the known spawning grounds at Cabot Station, but may also be occurring below the Holyoke Dam, in the vicinity of the action area. If spawning is occurring near the Holyoke Dam, spawning adults or early life stages (ELS) may be present, but any observations of their presence has been limited thus far.

Effects of the Action

Water quality criteria are developed by EPA for protection of aquatic life. Both acute (short term exposure) and chronic (long term exposure) water quality criteria are developed by EPA based on toxicity data for plants and animals. Often, both saltwater and freshwater criteria are developed, based on the suite of species likely to occur in the freshwater or saltwater environment. For aquatic life, the national recommended toxics criteria are derived using a methodology published in *Guidelines for Deriving Numeric National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses.* Under these guidelines, criteria are developed from data quantifying the sensitivity of species to toxic compounds in controlled chronic and acute toxicity studies. The final recommended criteria are based on multiple species and toxicity tests. The groups of organisms are selected so that the diversity and sensitivities of a broad range of aquatic life are represented in the criteria values. To develop a valid criterion, toxicity data must be available for at least one species in each of eight families of aquatic

organisms. The eight taxa required are as follows: (1) salmonid (e.g., trout, salmon); (2) a fish other than a salmonid (e.g., bass, fathead minnow); (3) chordata (e.g., salamander, frog); (4) planktonic crustacean (e.g., daphnia); (5) benthic crustacean (e.g., crayfish); (6) insect (e.g., stonefly, mayfly); (7) rotifer, annelid (worm), or mollusk (e.g., mussel, snail); and, (8) a second insect or mollusk not already represented. Where toxicity data are available for multiple life stages of the same species (e.g., eggs, juveniles, and adults), the procedure requires that the data from the most sensitive life stage be used for that species.

The result of the above analysis is the calculation of acute (CMC) and chronic (CCC) criteria. CMC is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly (i.e., for no more than one hour) without resulting in an unacceptable effect. The CCC is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect. EPA defines "unacceptable acute effects" as effects that are lethal or immobilize an organism during short term exposure to a pollutant and defines "unacceptable chronic effects" as effects that will impair growth, survival, and reproduction of an organism following long term exposure to a pollutant. The CCC and CMC levels are designed to ensure that aquatic species exposed to pollutants in compliance with these levels will not experience any impairment of growth, survival or reproduction.

Very few toxicity tests have been conducted with sturgeon. In the absence of species specific chronic and acute toxicity data, the EPA aquatic life criteria represent the best available scientific information. Absent species specific data, we believe it is reasonable to consider that the CMC and CCC criteria for pollutants are applicable to ESA listed species under our jurisdiction as these criteria are derived from data using the most sensitive species and life stages for which information is available. As explained above, a suite of species is utilized to develop criteria and these species are intended to be representative of the entire ecosystem, including shortnose and Atlantic sturgeon as well as their benthic prey. These criteria are designed to not only prevent mortality but to prevent all "unacceptable effects," which, as noted above, are defined by EPA to include not only lethal effects but also effects that impair growth, survival and reproduction. Therefore, discharges in compliance with water quality standards will result in effects to listed species that will be so small they would not be meaningfully detected. As such, effects are insignificant.

Biological Oxygen Demand (BOD5)

BOD5 is a measure of the amount of oxygen being used by aerobic microorganisms in the water to decompose organic matter and to ensure there remains sufficient oxygen for other aquatic life in the receiving water. The current and draft permit allows monthly average concentrations of 30 mg/l and weekly average concentrations of 45 mg/l. As discussed, effluent in compliance with these limitations will have insignificant effects on aquatic life, including shortnose and Atlantic sturgeon and their prey.

Total Suspended Solids

TSS can affect aquatic life by reducing growth rates, resistance to disease, by preventing the successful development of fish eggs and larvae, by modifying natural movements and migration, and by reducing the abundance of food (EPA 1986). Studies on the effects of turbid waters on fish suggest that concentrations of suspended solids can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993).

Atlantic and shortnose sturgeon eggs and ELS are less tolerant to sediment levels than juveniles and adults. Observations in the Delaware River indicated that larval populations may be decimated when suspended material settles out of the water column (Hastings, 1983). Larval survival studies conducted by Auld and Schubel (1978) showed that striped bass larvae tolerated 50 mg/1 and 100 mg/1 suspended sediment concentrations and that survival was significantly reduced at 1,000 mg/l. According to Wilber and Clarke (2001), hatching is delayed for striped bass and white perch eggs exposed for one day to sediment concentrations of 800 and 100 mg/1, respectively. In a study on the effects of suspended sediment on white perch and striped bass eggs and larvae performed by the Army Corps of Engineers (ACOE) (Morgan *et al.* 1973), researchers found that sediment began to adhere to the eggs when sediment levels of over 1 000 parts per million (ppm) were reached. No adverse effects to demersal eggs and larvae have been documented at levels of 45mg/L or below. The TSS levels permitted for the facility are monthly average concentrations of 30 mg/I and weekly average concentrations of 45 mg/1 which are well below those shown to have an adverse effect on fish (580.0 mg/L for the most sensitive species, with 1,000.0 mg/L more typical; see summary of scientific literature in Burton 1993) and benthic communities (390.0 mg/L (EPA 1986)), and are in compliance with your recommended water quality standards which are shown to have insignificant effects on aquatic life, including shortnose and Atlantic sturgeon and their prey. Therefore, effects of increased TSS on ELS shortnose and Atlantic sturgeon will not be able to be meaningfully measured or detected, and are insignificant.

pH

The draft permit limits the range of pH to 6.5 to 8.3 standard units (SU) consistent with water quality standards. A pH of 6.0 to 9.0 is harmless to most aquatic life; therefore, discharges in compliance with the permit limits will have insignificant effects to aquatic life, including both sturgeons and their prey.

Total Residual Chlorine

Based on the design flow of the Holyoke WPCF and the dilution calculations (dilution factor 69:1), EPA has determined that all discharge limits will be met at the end of the pipe, and a monthly average limit and maximum limit of 0.63 mg/L of Total Residual Chlorine (TRC) would assure that the facility does not exceed the chronic and acute TRC standards (11 gg/L and 19 µg/L, respectively).

There are a number of studies that have examined the effects of TRC (Post 1987; Buckley 1976; EPA 1986) on fish; however, no directed studies have examined the effects of TRC on shortnose sturgeon. EPA has set the Criteria Maximum Concentration (CMC or acute criteria; defined for a short period of time (up to 96 hours) without deleterious effects) at 0.019 mg/L based on analysis of exposure of 33 freshwater species in 28 genera (EPA 1986) where acute effect concentration ranged from 28 µg/L (0.028 mg/L) for Daphia magnum to 710 gg/L (0.710 mg/L) for the threespine stickleback. The CMC is set well below the minimum effect values observed in any species tested to ensure that the Lowest Observable Effect Level is near zero. As the water quality criteria levels have been set to be protective of even the most sensitive of the 33 freshwater species tested, EPA has judged that the criteria are also protective of Atlantic and shortnose sturgeon. The anticipated TRC level at the WPCF satisfies the EPA's ambient water quality criteria and is lower than the TRC levels known to affect aquatic life. As such, EPA has made the preliminary determination that the effects of TRC levels on sturgeon proposed by the Draft permit will be insignificant.

Bacteria
The Massachusetts Water Quality Standards include criteria for two bacterial indicators for Class SB waters. Fecal coliform bacteria are applicable in water designated for shellfishing and enterococci criteria have been established to protect recreational uses. Bacteria are not known to be toxic to aquatic life; however, overall water quality may be affected by increased concentrations of bacteria in the aquatic environment. Effluent limits for *E. coli* in the draft permit (monthly average limit 126 cfu/100 ml, maximum daily limit 409 cfu/100/ml) are in compliance with the Massachusetts State Water Quality Standards for Class B Inland Waters and bacteria limits will be met at the end of the pipe without a dilution factor. It has been determined that these limits have insignificant effects on aquatic life, including shortnose and Atlantic sturgeon and their prey.

Nitrogen
Nitrogen causes impairment via excessive primary productivity and is not known to be directly toxic to aquatic life, including shortnose sturgeon. Elevated nitrogen levels, however, are associated with eutrophication and indicative of water quality problems that may include lowered dissolved oxygen levels. The Draft Permit contains conditions, to ensure that the Waste Load Allocation continues to be met by requiring optimization of nitrogen removal, so that nitrogen loads do not increase over the 2004-2005 baseline of 1,618 lbs/day (average) at the WPCF. The Draft Permit continues the reporting requirements for total Kjeldahl nitrogen, nitrite, nitrate, ammonia and total nitrogen. Therefore, any effects are extremely unlikely to occur, and are discountable.

Metals
According to the reasonable potential analysis performed by you, and based on the maximum measured effluent concentrations from the facility, there is no reasonable potential (for chronic or acute conditions) that the discharge of aluminum, copper, or lead will cause or contribute to an exceedance of the applicable water quality standards. At the discharge point, combined with the high dilution factor, the applicable criteria are magnitudes larger than any potential in-stream concentrations of these metals. Monitoring and reporting for all metals will continue and be part of the annual Whole Effluent Toxicity (WET) tests that are required for the facility. Therefore, any effects are extremely unlikely to occur, and are discountable.

Summary of Effects
The effluent from the MTGS meets all applicable water quality standards at the end of the discharge pipe, before entering the Connecticut River. As discussed, the applicable water quality standards have been derived through toxicity tests using a suite of taxa, and the results indicate that no unacceptable effects will occur to aquatic life. These results are used as a surrogate to assess effects to listed species and their prey. Based on this information, we conclude that any effects to Atlantic and shortnose sturgeon or their prey in the action area would be so small they would not be able to be meaningfully detected, and are, therefore, insignificant.

Conclusions:
Based on the analysis that any effects to listed shortnose or Atlantic sturgeon will be insignificant or discountable, we are able to concur with your determination that the proposed projects are not likely to adversely affect any listed species under our jurisdiction. Therefore, no further consultation pursuant to section 7 of the ESA is required.

Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the actions that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) If the identified actions are subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the consultation; or (c) If a new species is listed or critical habitat designated that may be affected by the identified actions. No take is anticipated or exempted. If there is any incidental take of a listed species, reinitiation would be required.

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Response to Comment 32:
The permitting agencies appreciate your thorough review and have entered your comments into the permit administrative record.

ATTACHMENT A
(Response to Comments)

Interim Limits for Berkshire Street CSO Treatment Facility
Holyoke, MA

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE
436 Dwight Street • Springfield, Massachusetts 01103 • (413) 784-1100 • FAX (413) 784-1149

JB DEP Approve Permit Corrections

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

STEPHEN R. PRITCHARD
Secretary

ROBERT W. GOLLEDGE, Jr.
Commissioner

JUN 14 2006

Mr. William D. Fuqua, Superintendent
Holyoke Department of Public Works
63 North Canal Street
Holyoke, MA 01040

Re: Holyoke - WWM
Berkshire Street CSO Treatment Facility
Proposed Treatment Works: BRP WP 68
CW SRF # 2786

DEP Project # 137-002
Transmittal # W073302

Dear Mr. Fuqua

The Department of Environmental Protection- Western Regional Office has completed its review of the design plans and specifications referenced above, prepared on the City of Holyoke's behalf by Metcalf and Eddy, consisting of 101 sheets titled:

City of Holyoke, Massachusetts
Berkshire Street CSO Treatment Facility
CW SRF #2786
April 19, 2006

The overall project consists of treating the estimated peak flow rate of 128 million gallons per day (MGD) of combined sewer overflow (CSO) emanating from the Berkshire Street CSO regulator (CSO #09) during a 3 month design storm. This 3 month level of control will be accomplished by directing the first 25 MGD flow rate from CSO 09 to the Holyoke WWTP, and the subsequent 103 MGD to the Berkshire Street CSO Treatment Facility. The Berkshire Street CSO Treatment Facility is designed to meet the ***Interim Limits and Monitoring Requirements*** enclosed with this approval letter.

The Berkshire Street CSO regulator (CSO #09) has been identified in Holyoke's Draft CSO Long Term Control Plan as the largest CSO discharge in Holyoke, discharging approximately 290 million gallons per year of CSO to the Connecticut River. The project is supported by the Department as a Phase 1 CSO abatement project, as detailed in Attachment F of Holyoke's September 26, 2005 MEPA Notice of Project Change (NPC), and in the Department's October 28, 2005 NPC comment letter.

In accordance with G.L. c.21 §§ 26-53 and 314 CMR 12.03(1), the Department hereby approves the submitted design plans and specifications for the design plans and specifications for the above

referenced Berkshire Street CSO Treatment Facility. This approval is in addition to any approval to be issued by DEP Division of Municipal Services for CW SRF purposes.

If there are any questions regarding this project, please contact Kurt Boisjolie at (413)-755-2284.

Sincerely,

Mark A. Schleeweis
Program Chief
Wastewater Management

Enclosure: Interim Limits for Berkshire Street CSO Treatment Facility

cc: Metcalf and Eddy, Scott Thibault, 701 Edgewater Drive, Wakefield MA 01880
DEP-MS-Boston: Don St Marie and Mark Casella
EPA Region 1: Doug Koopman and Mike Wagner

CSO/KHolykBrkStCSOTrtFacilFA6.06

Holyoke Berkshire Street CSO Treatment Facility (CSO 09) —Interim Limits and Monitoring Requirements
Explanation of Footnotes *1 and *2

*1: For the first 2 years of operation of this facility, hourly E. coli bacteria samples are required to be taken coincident with the hourly fecal coliform samples, for at least one bypass event per month (12 months per year). Results of the E. coli samples are to be reported side by side with results of fecal coliform samples. After 2 years of operation, the hourly E. coli bacteria samples can be eliminated, while the requirement for hourly fecal coliform samples will continue.

*2: LC 50 to use daphnid (Ceriodaphnia dubia). Outfall composite analysis, similar to those performed for the Holyoke Wastewater Treatment Plant toxicity tests, are also required for this Berkshire Street CSO Treatment Facility.

Holyoke Berkshire Street CSO Treatment Facility (CSO 09) –Interim Limits and Monitoring Requirements

Note: All effluent limits and monitoring requirements for all parameters are applicable year-round for this facility. Disinfection is required year-round for every wet weather event at this facility; chlorination will not be limited to a particular season.

Parameter	Effluent Limits Maximum Daily	Effluent Limits Monthly Average	Monitoring Requirements
Fecal Coliform	**200 fcu/100 ml** (if 1 day/month sampled) **400 fcu/100 ml** (if > 1 day/month sampled)	**200 fcu/100 ml** (geometric mean)	Once/month minimum for any month with a discharge from the facility. One grab sample every hour for duration of discharge.
Total Residual Chlorine (TRC) (after de-chlorination)	**0.74 mg/l** (if 1 day/month sampled) **1.00 mg/l** (if > 1 day/month sampled)	**0.74 mg/l**	Once/month. One grab sample/event within one hour of overflow, and one additional grab sample every 4 hours thereafter, or continuous chlorine analyzer.

The Parameters below are Report only

Parameter	Report	Monitoring Requirements
Chlorine residual in CCT (before de-chlorination)	Report mg/l of total residual chlorine at discharge end of chlorine contact tank (CCT), prior to de-chlorination	Once/month. One grab sample/event within one hour of overflow, and one additional grab sample every 4 hours thereafter, or continuous chlorine analyzer.
E. coli *1	Report colonies/100 ml	Once/month, hourly during discharge event.
pH	Report	Once/month. One grab sample per event.
BOD	Report mg/l and pounds/day	Once/6 months. Time proportioned composite sample.
TSS	Report mg/l and pounds/day	Once/6 months. Time proportioned composite sample.
Ammonia Nitrogen, NO3, NO2, TKN	Report mg/l and pounds/day	Once/6 months. Time proportioned composite sample.
Acute Toxicity *2	LC 50, outfall composite, and receiving water	Once/6 months. Time proportioned composite sample.
Rainfall	Report inches of rainfall/day	Each rain event, as recorded at WWTP.
Flow: A. From Facility to River; B. Bypass around Facility; and C. From Facility back to Collection System	For A and B: Total daily flow (gallons per day), maximum hourly flow (gallons/minute) , and duration of flow (hours) For B: Include flow rate of CSO Pump Station during Bypass. No Bypass allowed unless CSO Pump Station flow rate is more than 113 MGD. For C: Total daily flow (gallons per day)	Each wet weather event. Continuous effluent flow recorder. (Note: Flow C, flow pumped from CSO facility back to WWTP, should only occur when WWTP flow rates are below 35 MGD).

See following page for explanation of footnotes # *1 and *2.