

**EXHIBIT 6**



## SPRINGFIELD WATER AND SEWER COMMISSION

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October 15, 2018

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**RE: Revised Draft NPDES Permit Comments  
Springfield Water and Sewer Commission  
Springfield Regional Wastewater Treatment Facility  
NPDES Permit No. MA0101613**

Dear Ms. Finegan and Ms. Golden:

On February 9, 2018, the Springfield Water and Sewer Commission (SWSC) submitted comments on the draft National Pollutant Discharge Elimination System (NPDES) permit (Permit), dated November 15, 2017, for the Springfield Regional Wastewater Treatment Facility (SRWTF). On April 2, 2018, SWSC submitted additional comments on the Permit to supplement our February 9, 2018 submission based upon the public hearing. SWSC takes this opportunity to submit comments on the Revised Draft Permit.

The SWSC owns and operates both the SRWTF and the combined sewer collection system, which includes 23 combined sewer overflow (CSO) outfalls within the City of Springfield. It also operates and maintains 33 pumping stations and 475 miles of collection system pipe. In addition to the named permittee (SWSC), the Revised Draft Permit is also issued to six co-permittees: the towns of Agawam, East Longmeadow, Longmeadow, Ludlow, West Springfield, and Wilbraham.

The SWSC has expended considerable resources to compile meaningful and constructive comments in order to provide EPA with additional information to consider in finalizing this NPDES Permit. This permit is considered to be critically important to the out-of-basin watersheds tributary to the Connecticut River in Massachusetts, New Hampshire, and Vermont. As a result of the

impact on the SWSC's NPDES permit, the SWSC has closely followed EPA's Long Island Sound (LIS) Nitrogen Reduction Strategy. The SWSC has been openly critical of EPA's decision to not include the out-of-basin POTW community in its strategy development as well as EPA's failure not to require the collection of new, relevant data in determining both the out-of-basin nitrogen impacts on LIS and the effectiveness of nutrient reduction programs in New York and Connecticut.

The SWSC is re-affirming its request that the TMDL for LIS be updated before any new enforceable limits are implemented for out-of-basin POTWs. As has always been the case, the SWSC's priorities has been balancing regulatory compliance and infrastructure investment across all areas of its system, and maintaining reliable service at an affordable cost to our customers. With aging infrastructure, Combined Sewer Overflows (CSO), and now nutrients as our biggest challenges, there is no room to invest in approaches or infrastructure without proven and verifiable outcomes.

Data is the driving force in the SWSC's decision-making, unfortunately we have grave concerns that there is not enough data supporting the decision to include an enforceable Total Nitrogen limit in this permit. We see no supporting documentation from CT DEEP or others that would support moving from what was originally proposed as an optimization goal to an enforceable limit, especially given that the LIS Nitrogen Reduction Strategy implementation and findings are incomplete and the TMDL has yet to be reviewed let alone updated since 2000.

Diverting funds from aging infrastructure and CSOs to fund nitrogen reduction strategies that may not have any impact on LIS would significantly impact the SWSC's ability to provide the expected level of service and concurrently maintain regulatory compliance. For this reason, the SWSC partnered with the United States Geological Survey (USGS) and Massachusetts Department of Environmental Protection (MassDEP) to install monitoring equipment and sampling programs to better understand the impacts and fate of nitrogen in the Connecticut River.

To be clear, the SWSC fully supports the LIS initiative in its clean water efforts and has proposed additional financial support to gather data to make informed decisions to that effect. However, we cannot support, and our ratepayers simply cannot afford, infrastructure investment driven by outdated data and unsupported documentation as part of a NPDES Permit. This draft permit is being issued with little to no updated information for the out-of-basin tributary areas of Massachusetts, New Hampshire, and Vermont. Yet EPA is proposing to move ahead with a permit, that if applied consistently across the watershed, could result in hundreds of millions of dollars of investment in nitrogen reduction with no certainty of benefit.

The SWSC has a long history of supporting EPA initiatives, working closely with the agency on compliance issues, and being a leader in this region in collaborating with other POTWs and agencies in solving complex environmental issues. The SWSC is concerned that the Revised Draft Permit as written is not only unsupported by relevant data, but would eliminate opportunities for innovative and regional solutions to both the nitrogen issue in LIS as well as other critical wastewater challenges.

Listed below are additional comments with respect to the Revised Draft Permit, for consideration together with our previous comments:

1. **Pages 12-13 of 25, Public Notification Plan (Part I.B.3.g (sub parts 1-4))**: Detailed comments are provided below:

- a) Submittal Date for Public Notification Plan: The January 2018 Draft Permit required submittal of the Public Notification Plan within 90 days of the effective date of the permit (EDP), with implementation required at 180 days from EDP. The Revised Draft Permit now proposes plan submittal and plan implementation both be completed at EDP+180 days.

SWSC takes exception that EPA has failed to address the issues raised in our January 8, 2018 letter. Detailed comments were provided to EPA previously, demonstrating implementation of a public notification plan in EDP+180 days is simply not feasible.

See comment 4.b of our February 9, 2018 comment letter and incorporated herein by reference. SWSC again asserts that a minimum of 36 months is needed to develop and implement a meaningful public notification plan.

The development and implementation of an extensive public notification plan, particularly the implementation of a web-based notification system, simply cannot be achieved within 180 days. Notwithstanding the significant degree of effort involved in developing the web-based notification system, SWSC's and the Commonwealth of Massachusetts procedures for bidding and procurement are extensive and require adequate time for each phase of the design, construction bidding, award, and implementation process. These procedures include, but are not limited to: budgeting and obtaining funding from our Board, procurement of engineering services to assist in the program development and design, development and bidding plans and specifications, advertising and bidding process, and contract award – all of which must occur prior to beginning work on the contract.

Additionally, EPA, in a recent rule adoption for CSO dischargers in the Great Lakes, states that a public notification plan is not enforceable unless contained within an adopted permit. Specifically, EPA states:

*“The details and content of the public notification plan, however, are not enforceable...unless the document or the specific details of the plan are specifically incorporated into the permit. Under the final rule, the contents of the public notification plan are instead intended to provide a road map for how the permittee would comply with the requirements (emphasis added)...The details within the plan will also assist NPDES permit writers in establishing corresponding public notification permit conditions.” (January 8, 2018 Federal Register p.723).*

Clearly, EPA intends that a public notification plan be submitted and reviewed by the permitting authority prior to implementation. Implementation could then be accomplished under a future NPDES permit renewal or permit revision.

SWSC understands it is a cumbersome and lengthy process for EPA to require submittal of the plan, review the plan, then once again issue a draft major modification to the SWSC NPDES permit to incorporate the requirements of the plan. In order to provide EPA with a less resource intensive process, SWSC suggests submission and implementation of the Public Notification Plan within this permit cycle, and without the need for an additional permit modification, provided that SWSC's submission and implementation schedule proposed below is accepted:

Request: SWSC suggests the following timeline in this Revised Draft Permit:

- EDP + 12 months: SWSC shall submit to EPA a public notification plan;
- Twenty-four (24) months following EPA and MassDEP approval of the submitted plan, SWSC shall implement the approved notification plan.

b) Public Parties Notification: The Revised Draft Permit clearly identifies that public notification may be made through electronic means, "including posting to the Permittee's website." The ability to post public notifications on a website will provide for a much timelier, and ultimately more accurate, public based notification system for CSO overflows. However, SWSC raises the following concerns/comments which require clarification or modification, as appropriate;

- i. Part 1.B.3.g.1 of the Revised Draft Permit requires CSO activation and cessation notification be provided to "the public...public health departments...any other potentially affected entities, including downstream communities, whose waters may be affected by discharges from the Permittee's CSO."
- ii. Part 1.B.3.g.2 and 1.B.3.g.3 of the Revised Draft Permit requires CSO notification to "any other potentially affected party..."

SWSC asserts that public notification on the website is sufficient to provide a 24/7 real-time notification to the public, inclusive of all "categories" of the public. It is unclear why EPA has specifically identified "public health departments ...downstream communities... and other potentially affected entities" as a separate category from "the public." A requirement to separately notify unidentified third parties, or unnamed downstream communities is vague and not implementable.

Request: Clarify that notification of CSO events on the website meets the requirements of this section through the following revision (deletions in ~~strike through~~; additions in underline):

~~1.B.3.g.1: Within 180 days of the effective date of the permit, 24 (twenty-four) months of the permittee shall submit to EPA and MassDEP's approval of a Public Notification Plan describing the measures that will be taken to meet NMC #8 in Part I.B.2. of this permit (NMC#8), the permittee shall implement said plan. The public notification plan shall include the means for disseminating information to the public, including communicating the initial and supplemental notifications required in Part I.B.3.g.2. and 3 of this permit, as well as procedures for communicating with public health departments and any other potentially affected entities, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.~~

~~1.B.3.g.2: Initial notification of a probable CSO activation shall be provided to the public and other potentially affected party as soon as practicable, ...~~

~~1.B.3.g.3: Supplemental notification shall be provided to the public and any other potentially affected party as soon as practicable,~~

- c) Initial CSO Notification Timing: Part 1.B.3.g.2 of the Revised Draft Permit requires initial notification of a probable CSO activation be provided to the public as soon as practicable, but no later than two (2) hours after becoming aware of the discharge.

In consideration of the significant number of CSOs (23) within the SWSC system, the varied locations of these CSOs, and staffing and resource constraints, SWSC requests that a four (4) hour initial notification be provided. This notification would be consistent with the timeframe EPA approved at 40 CFR 122.38(a)(2)(i) for CSO dischargers to the Great Lakes Basin. EPA has previously found that a four (4) hour notification *"balance(d)s the burden on CSO permittees with the public health benefit to the public receiving timely notification"* (EPA Response to Comments Essay #3.5-1).

To further support protection of the public and appropriate notification, in coordination with a 4 (four) hour notification, SWSC is willing to post a general notice on its website advising the public that large storms can trigger CSO events, and public health officials recommend avoiding contact with waterways during storm events and up to 48 hours afterward.

SWSC also requests that when reporting the CSO location, SWSC should be able to do so in the manner EPA has previously approved under the Great Lakes rule 40 CFR 122.38(a)(2)(B): *"Where CSO discharges from the same system occur at multiple locations during the same precipitation-related event, ...the CSO permittee may provide a description of the area in the waterbody where discharges are occurring...and the permittee is not required to identify the specific location of each discharge."*

**Request:** SWSC requests Part 1.B.3.g.2 of the Revised Draft Permit be modified as follows (deletions in ~~strike through~~; additions in underline);

Initial notification of a probable CSO activation shall be provided to the public ~~and any other potentially affected party~~ as soon as practicable, but no later than ~~two (2)~~ four (4) hours after becoming aware by ....”

Where CSO discharges from the same system occur at multiple locations during the same precipitation-related event, SWSC may provide a description of the area in the waterbody where discharges are occurring, and SWSC is not required to identify the specific location of each discharge.

d) **Supplemental CSO Notification Timing and Content:**

Part 1.B.3.g.3 of the Revised Draft Permit requires supplemental notification to the public be provided as soon as practicable, but no later than 24 (twenty-four) hours after becoming aware of the termination of any CSO discharge(s). The notification shall include:

1. CSO number and location
2. Confirmation of CSO discharge
3. Total Volume discharged from the CSO
4. Date, start time and stop time of the CSO Discharge

SWSC provided extensive comments in our February 9, 2018 comment letter on the Draft Permit. See our previous comments item 4a, (pages 12-14), as well as comment 9 (pages 17-19) of our February 9, 2018 comment letter, which is hereby incorporated into this comment letter by reference.

Following is a brief summary of our objections to the supplemental notification, both the 24 (twenty-four) infeasible timeframe, as well as the extensive and excessive content:

- The notification requirements are excessive and go far beyond EPA’s guidance “EPA’s Combined Sewer Overflows Guidance for Nine Minimum Controls. Specifically:

*Section 1-7: “The NMC are controls that...do not require significant engineering studies or major construction, and can be implemented in a relatively short period...”*

*Section 9-1: “The intent of the eighth minimum control, public notification, is to inform the public of the location of the CSO outfalls, the actual occurrences at CSO, the possible health and environmental effects of CSOs, and the recreations and commercial activities...curtailed as a result of CSOs...”*

Further, this EPA guidance gives specific examples of what is expected for notification at a CSO outfall:

- *Posting at affected use area*
  - *Posting at selected public places*
  - *Notices in newspaper, radio, TV news... (etc.).*
- CSO cessation notification will give the public a false sense of security that the water is “safe” to use, when water impairments that impact human health may still exist due to stormwater runoff, illicit connections, etc.
  - SWSC has not been able to consistently measure flow volume at its CSOs in spite of having flow meters with multiple sensors at every regulator, due to complex hydraulic structural configurations, tailwater conditions, surcharging, and other measurement interference.
  - The current placement of flow meters within the SWSC system was intended to measure each overflow event at each of the individual 23 CSO locations as accurately as possible, with an understanding that under certain conditions the information is more qualitative than quantitative. The metering program is also designed to support and inform the modeling and analysis required under the Integrated Wastewater Plan and annual reporting programs. The contract covering the use of the flow meters will expire October 2020 along with the contract operations of the treatment plant. At that time it is anticipated that the metering system design and intent will significantly change with a focus on modeling and expanded rain gauges rather than extensive metering.
  - The notification requirements are costly in relationship to benefit. SWSC estimates that we have already spent in excess of \$500,000 per year for our public notification plan (approximately \$21,700 per CSO). Additional requirements, of questionable public benefit, will serve only to further reduce available funds that could otherwise be directed toward reducing CSO discharges.
  - The requirement for flow duration, stopping and starting times and volume are more appropriately considered part of a CSO Annual Report.
  - EPA has failed to establish what additional benefit is provided in terms of public notification and health, by estimating and publishing CSO volumes within 24 hours, versus the significant cost, and the inherent unreliability, of such numbers.

- CSO discharges are often discontinuous, and as a result, more than 24 hours is necessary to determine whether an event has ended.

**Request:** SWSC requests the Revised Draft Permit be modified to provide supplemental notification to the public in two stages. The framework for each stage is provided below; details will be provided in SWSC's CSO Notification Plan.

The first stage of the supplemental notification would be provided within 7 (seven) days following cessation of all CSOs (as opposed to 24 hours). By providing a longer time frame, SWSC will have the ability to better validate the information to be posted. Further, CSO discharges are often discontinuous, and more than 24-hours is necessary to determine whether the CSO event has actually ended.

Additionally, a 7 (seven) day notification would be consistent with the timeframe EPA approved at 40 CFR 122.38(a)(2)ii, for CSO dischargers to the Great Lakes Basin. As with the SWSC draft permit, EPA also initially proposed a 24-hour supplemental time-frame, however EPA revised the timeframe to 7 (seven) days upon adoption.

*"EPA decided to extend the deadline from the proposed 24 hour-deadline to "within seven (7) days of the end of the CSO discharge....EPA also concluded that following the initial notification there is less urgency from a public health protection standpoint to supply the information in the supplemental notification, which in EPA's view supports a timeframe that is longer than 24 hours." (EPA Response to Comments Essay #3.6-1).*

This first stage supplemental notification shall contain the CSO number and location, and confirmation of discharge.

The second stage of supplemental notification will be provided in the SWSC annual report. This second stage notification contents will be detailed in our public notification plan, however SWSC will consider a listing of CSO events by date, estimated volumes, and correlated rainfall.

Specific request SWSC requests Part 1.B.3.g.3 of the Revised Draft Permit be modified as follows (deletions in ~~strike through~~; additions in underline):

Supplement notification shall be provided to the public. ~~and any other potentially affected party a~~

(1) As soon as practicable, but no later than, ~~twenty-four (24) hours~~ seven (7) days after becoming aware of the termination of any all CSO discharge(s). Notification may be made through electronic means, including posting to the Permittee's website. The supplemental notification shall include the following information:

CSO number and location  
Confirmation of CSO discharge

(2) The permittee shall provide additional information in its annual report including:

Total estimated volume discharged from the CSO  
Estimated Date, start time and stop time of the CSO discharge

e) Annual Notification:

Part 1.B.3.g.4 of the Revised Draft Permit requires SWSC to post annually, on a website, certain information relative to its CSO and to water quality. While SWSC has no objection to posting CSO location, status of CSO abatement work, and contacts for additional information on CSO and water quality, SWSC takes great exception to posting “additional information on...water quality on a website.” Such “information on water quality” is vague and should be deleted.

In addition, to support our request under item 1.d., above, secondary notification, SWSC is willing to post annually on its website, the annual report containing individual estimated CSO discharge event date, start time and stop time, in addition to a summary of CSO activations and volumes.

Request: SWSC requests Part 1.B.3.g.4 of the Revised Draft Permit be modified as follows (deletions in ~~strike through~~; additions in underline):

4. Annual notification – Annually, by April 30<sup>th</sup>, the permittee shall post information on the locations of CSOs, a summary of CSO activations and volumes, a listing of CSO events that include estimated date, start time and stop time, status and progress of CSO abatement work, and contacts for additional information on CSOs and water quality on a website. This information shall be disseminated through the means identified in the Public Notification Plan that is submitted in accordance with Part 1.B.3.g.1. of this permit.

2. **Page 13 of 25, Part 1.B.4. Nine Minimum Controls Reporting Requirements:** Part 1.B.4 (sections 1-3) contains three CSO Annual Reporting Requirements. Requirement 1.B.4.1 and 1.B.4.3 have been retained from the previous Draft Permit. Requirement 1.B.4.2 is a new requirement. SWSC comments are below:

Part 1 and Part 3 (retained from the previous Draft Permit, but also re-proposed in this revision) require the submission of a description of activities related to the Nine Minimum Controls, and a summary of the number of CSO activations and volume of each discharge, respectively. SWSC provided extensive comments on these requirements in our February 9<sup>th</sup>, 2018 comment letter, and these comments are herein incorporated by reference.

Of significant concern is **Part 1.B.4.3** which states: “*A summary of the required information on the number of activations each year for each CSO as well as the volume of each discharge from each CSO.*”

In the Revised Draft Permit Fact Sheet, page 5 of 5, Section 4.0 CSO Notification Requirements, paragraph 2, states: “*...EPA is proposing a requirement in the Revised Draft Permit for the permittee to provide initial notification to the public of a probable CSO discharge...based on modeling estimates of discharges(s) based*

*on rainfall (or other predictive modeling methodologies) rather than on actual CSO discharge measurement.”*

In this section of the Revised Draft Permit referencing initial CSO notification, **it is clear that EPA will accept the use of a model to determine CSO discharge events, rather than actual CSO discharge measurement.** SWSC acknowledges this clarity. Furthermore, the SWSC believes that accurately reporting and quantifying CSOs continues to be challenging in spite of advances in technology. It is for this reason that permittees should be able to utilize a variety of technologies to report CSO activity, including but not limited to, rain and flow metering, rainfall and flow modeling platforms, and other developing technologies such as artificial intelligence (AI) techniques.

Having to provide specific information as to each activation and each discharge is not consistent with other parts of the permit and fact sheet. Part 1.B.3.d, (which has not been modified as part of this draft revised permit), states: “The permittee shall quantify and record all discharges from combined sewer outfalls (NMC #9). Quantification shall be **through direct measurement**” (emphasis added).

SWSC recognizes the draft revised permit comment period is specific to those portions of the Draft Permit being modified, however inasmuch as the Revised Draft Permit Part 1.B.4, creates a conflict with Part 1.B.3.d, SWSC believes it is appropriate to raise that concern.

As previously submitted, SWSC objects to the reporting of measured volume and duration in hours for each event at every CSO. Extensive comments were provided in our February 9, 2018 Comment Letter, and SWSC reiterates our objections to flow measuring and monitoring that is far beyond the regulatory scope of the Nine Minimum Controls and represent a significant expense with limited benefit. See Comment 4, (pages 12-14) and comment 9 (pages 17-19) of our previous comment letter, which is hereby incorporated by reference.

Request: Revise Part 1.B.3.d to agree with Part 1.B.4, as follows (deletions in ~~strike through~~; additions in underline):

“The permittee shall quantify and record all discharges from combined sewer outfalls (NMC#9) utilizing EPA or other industry accepted methodologies. ~~Quantification shall be through direct measurement....”~~

### **3. Page 4 of 25, Part 1.A.1 Total Nitrogen (TN) Reporting Units:**

Comments 5-11, below, relate to the imposition of a TN loading limit. In addition to those comments, SWSC also objects to the manner in which the limitation is expressed in the effluent parameters table (Part 1.A.1) of the Revised Draft Permit.

The Revised Draft Permit appears to intend that SWSC meet a rolling 12-month annual average limit of 2,534 lbs/day of TN. However, Part 1.A.1 (Discharge Requirements Table) shows the 2,534 lbs/day numeric value listed, incorrectly, under the column for

monthly average. EPA then uses a footnote to attempt to explain that this is not what is really required.

SWSC requests the table be revised to show the more accurate “report” under the monthly average column for TN loading. More appropriately, EPA could then either provide a column for annual average load on the table, or discuss the annual average load in the footnote. In this manner, there will be no inaccuracy in the effluent table.

Request: Revise the effluent limits table as discussed above, by removing 2,534 lbs/day from the Monthly Average column, and replacing it with “Report.”

**4. Page 4 of 25, Part 1.A.1, Total Nitrogen Monitoring Frequency Calculation:**

Comments 5-11, below, relate to the imposition of a TN loading limit. In addition to those comments, SWSC also objects to the 24-hour composite sample monitoring requirement, as shown in the revised effluent Table 1.A.1.

As was previously detailed in our February 9, 2018 comment letter, EPA should clarify that total nitrogen reporting is a calculation, not an additional analyte for SWSC to analyze. Total Nitrogen is simply the sum of Nitrate + Nitrite and total Kjeldahl nitrogen, both of which are already required to be analyzed weekly in the Revised Draft Permit.

As per EPA's guidance on Total Nitrogen:

(<https://www.epa.gov/sites/production/files/2015-09/documents/totalnitrogen.pdf>)

“There are three forms of nitrogen that are commonly measured in water bodies: ammonia, nitrates and nitrites. Total nitrogen is the sum of the total kjeldahl (ammonia, organic and reduced nitrogen) and nitrate-nitrite. It can be derived by monitoring for organic nitrogen compounds, free-ammonia, and nitrate-nitrite individually and adding the components together.”

In addition to our comment on sample type for total nitrogen, we also request clarity with respect to the calculation of average monthly load for total nitrogen. See requested language below.

Request: Revise footnote 9 as shown below (deletions in ~~strike-through~~; additions in underline):

Report monthly average and maximum daily total nitrogen concentration in mg/L. A total nitrogen concentration value shall be calculated on each day a total kjeldahl nitrogen (TKN) and a nitrate-nitrite value is sampled. The monthly average and maximum daily total nitrogen concentration values to be reported shall be determined using this data set.

Report the annual average and monthly average total nitrogen mass loading in lbs./day. A daily mass loading value for total nitrogen shall be calculated for each day a total nitrogen concentration value was calculated, and shall utilize the average daily flow recorded for that day. Report average monthly mass loading for total nitrogen as the summation of the daily mass loading values divided by the number of samples.

The limit is an annual average mass loading limit (lbs/day), which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average total nitrogen mass loading value for the reporting month and the monthly average total nitrogen mass loading value of the previous eleven months.”

5. **Page 4 of 25, Part I.A.1. Total Nitrogen Discharge Limitation v Benchmark:** EPA, in the 2017 Draft Permit, proposed a requirement to monitor and report total nitrogen concentrations and mass loadings, while optimizing system operation to meet an annual average mass-based TN “benchmark.” Two additional alternatives were also proposed, both of which also proposed a mass-based TN “benchmarks.”

In this draft revised permit, EPA is no longer proposing a TN Benchmark, but is now proposing to impose an annual average loading **effluent limitation**. In the Fact sheet, EPA has justified this decision based upon comments from CTDEEP and others, in which an effluent limitation was requested instead of a benchmark (see Revised Draft Permit Fact Sheet page 3 of 5).

As contained in our February 9, 2018 comments on the Draft permit, the LIS TMDL defines out-of-basin to mean outside of states that border the LIS. With regard to the Connecticut River, out of basin means the States of Massachusetts, Vermont and New Hampshire. The LIS TMDL proposes a “target” for out-of-basin point sources of a 25% reduction from a baseline nitrogen loading. This target was met and exceeded in 2004-2005. Nonetheless, EPA would like to ensure the target continues to be met, which can be achieved through any number of cooperative efforts outside of a NPDES permit and without an effluent limitation.

The above notwithstanding, EPA has chosen to implement this TMDL POTW aggregate target as an individual effluent limitation for SWSC WWTP. The revised permit fact sheet is presented as support for this decision based upon the LIS TMDL and comments from CTDEEP “and others”. SWSC objects to the proposed imposition of an effluent limitation for the following reasons: (a) the LIS TMDL does not include an individual wasteload allocation (WLA) for SWSC WWTP; (b) EPA has failed to provide an adequate statement of basis for imposing a TN effluent limitation within the Fact Sheet; (c) LIS TMDL Out-of-Basin Target has been Met (d) CT DEEP “and others” fail to provide a basis for an effluent limitation in accordance with federal regulations, and (e) EPA’s failure to provide an adequate opportunity for public comment.

Our comments are detailed below:

- a) Failure to establish a WLA: The 2000 LIS TMDL does not establish a WLA for the SWSC WWTP. Further, the TMDL does not establish a WLA for ANY individual out-of-basin discharger, although detailed, discharger-by-discharger WLAs are contained in the TMDL for New York and Connecticut (both in-basin) individual dischargers.

Federal NPDES regulations require that effluent limitations be consistent with the applicable wasteload allocation in an approved TMDL (40 CFR 122.44 (d)(1)(vii)(B)):

*Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7*

The only significant reference to a reduction required from out of basin dischargers in the adopted TMDL, is not, in fact, a WLA, but a vague statement contained in Section VI.B.1: Allocation of the Out-of-Basin TMDL, which states:

*“Tributary nitrogen enrichment can be reduced by about 1,173 tons per year (delivered to Long Island Sound) through the application of through (sic) low-cost BNR retrofits of existing sewage treatment plant (resulting in a 25 percent reduction in point sources).”*

Absent any WLAs for out-of-basin dischargers, EPA has created an effluent limitation by examining the effluent data from SWSC WWTP during the period 2012-2016. In so doing, EPA has failed to provide the technical and regulatory basis to support imposition of an effluent limitation eighteen years following adoption of the TMDL, thirteen years following attainment of the TMDL goal for out-of-basin dischargers, and in the absence of a WLA.

Implementation of a TMDL is predicated upon an allocation of wasteloads and loads throughout the study area, in accordance with a model that predicts attainment of water quality standards. As stated earlier, individual WLAs are determined in a TMDL to allow for a distribution of such wasteloads, taking into account treatment plant design flow, actual flow, attenuation and other factors used to determine WLAs. The SWSC permit revision, however, proposes an effluent limitation in isolation of a model that includes the entire study area, in isolation of the reductions required of other out-of-basin WWTPs, and in isolation of the TMDL itself. This approach fails to insure that the TMDL will not be exceeded or that there will not be a net increase of TN from other out of basin permittees or sources. It essentially targets the SWSC, whereas if the TMDL was updated, a universal approach could be applied with a broader opportunity for reduction solutions.

- b) Failure to provide adequate statement of basis for an effluent limitation in Fact Sheet: EPA has failed to provide an adequate statement of basis in the Fact Sheet for the imposition of an effluent limitation for TN. The Fact sheet is significantly limited, providing only a statement on page 3 of 5, as a basis for an effluent limitation:

*“as was pointed out in comments received from CTDEEP and other commenters, an optimization benchmark cannot provide assurance that the cumulative nitrogen load to the LIS will not exceed the out-of-basin (Massachusetts, New Hampshire and Vermont) point source wasteload allocation established by the LIS Total Maximum Daily Load (“TMDL”).”*

EPA's own regulations require that an adequate basis be established in a fact sheet. Specifically a fact sheet shall include:

*“a brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record by 40 CFR 124.9” See 40 CFR 124.8(b)(4)*

*“...the permitting authority must ensure that “effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.” See 40 CFR 122.44(d)(1)(vii)(B)*

EPA's Technical Support Document for Water Quality-based Toxics Control refers to the fact sheet regulations at 40 CFR 124.56 and states that *“the wasteload allocations along with the required long-term average and coefficient of variation used and the calculations deriving them must be included or referenced in the fact sheet. The permit limit derivation method used must also be explained in the permit documentation.”* See EPA/505/2-90-001, March 1991, p.110.

When EPA proposed a total nitrogen “benchmark” goal in the Draft Permit, EPA provided an extensive basis and background in the Fact Sheet to link the imposition of a benchmark to goals contained in the LIS TMDL. Included in this benchmark basis are four pages of rationale, and additional data included in Appendix 3, Attachment G, and Attachment H – which is in excess of 19 pages of data and information (excluding Appendix A which could not be located). Yet the only additional information provided in the Fact Sheet for this permit revision, in which EPA proposes to impose an actual limitation, is a reference to a request to impose an effluent limitation from CT DEEP “and others,”

SWSC finds no evidence of the above cited regulatory requirements in the Revised Draft Permit Fact Sheet. Clearly, EPA has failed to establish a bridge from the Draft Permit Fact Sheet to the Revised Permit Fact sheet.

- c) LIS TMDL Out-of-Basin Targets Met: As stated earlier, the TMDL requirements for out-of-basin dischargers are described in Section VI.B.1: Allocation of the Out-of-Basin TMDL, which states:

*“Tributary nitrogen enrichment can be reduced by about 1,173 tons per year (delivered to Long Island Sound) through the application of through (sic) low-cost BNR retrofits of existing sewage treatment plant (resulting in a 25 percent reduction in point sources)...”*

The TMDL continues:

*“Given the scope and magnitude of this effort, the TMDL stresses implementation of the Phase III (in-basin) nitrogen reduction target and establishes preliminary targets and recommended actions for out-of-basin nitrogen source reductions and alternatives to nutrient control for improving water quality.”*

Clearly the LIS TMDL does not impose WLAs on individual dischargers from out-of-basin, and does not require out-of-basin WWTPs to have effluent limitations.

SWSC objects to EPA imposing an effluent limitation for TN on out-of-basin discharger, with no WLA, in a watershed area that has already achieved the TMDL “target” of 25% reduction, and asserts this far exceeds the intent and scope of the LIS TMDL.

SWSC can find no substantiated data to demonstrate the 25% reduction in aggregate out-of-basin- nitrogen loads is not currently being achieved, and therefore no basis for EPA to assume it will not continue to be achieved utilizing the methods that are already in place. SWSC requests EPA to provide data and related studies that demonstrate failure of the out-of-basin states to maintain the 25% aggregate reduction in baseline loads. Absent such information, the assertion that a benchmark is not a suitable tool to maintain compliance with the TMDL is baseless.

- d) EPA reliance on CTDEEP comments as basis for effluent limitation: In the Fact Sheet EPA states:

*“...as it was pointed out in comments received from CTDEEP and other commenters, an optimization benchmark cannot provide assurance that the cumulative nitrogen load to the LIS will not exceed the out-of-basin (Massachusetts, New Hampshire and Vermont) point source wasteload allocation established by the LIS Total Maximum Daily Load (TMDL).”*

SWSC critically examined the February 7, 2018 comment letter submitted by CTDEEP to EPA, and can find no technical or regulatory basis that supports the imposition of a total nitrogen limit in the SWSC permit. SWSC objects to EPA imposing an effluent limitation based upon the request of a third party, without a technical or regulatory basis.

However, since EPA has referred to the CTDEEP comments as a basis in the Fact Sheet for this revised permit and the imposition of an effluent limitation, we are providing the following comments on this basis:

- I. Contrary to EPA’s language in the Fact Sheet, where EPA refers to the CTDEEP claim that there is a wasteload allocation in the TMDL, there is, in fact, no individual wasteload allocation for SWSC WWTP in the LIS TMDL. See our comment under 5,a) above, where this is discussed in detail.

- II. CT DEEP's February 7, 2018 letter states: "We would also like to bring to your attention, the Enhanced Implementation Plan (EIP), which allowing the Springfield WWTP to exceed the baseline cap directly violates."

The EIP which CTDEEP references, is simply a document that lays out the goals and the intent of the contributing parties as to what actions they will take going forward. The EIP itself, is not a legally binding document and therefore, cannot provide a legal basis for EPA to impose a water quality based effluent limitation for total nitrogen.

The above notwithstanding, when the EIP is critically examined, it becomes apparent that the SWSC is, in fact, through our acceptance of an annual average loading benchmark, proposing a course of action that is consistent with the EIP. EPA's draft revision imposing a TN effluent limitation, is not consistent with the goals and intent of the EIP and, in fact, goes far beyond the intent or requirements of the EIP with no legal basis or technical support.

Part 1.b.i-iii, of the EIP is shown below:

- b) *Consistent with the 2000 TMDL, EPA and the tributary states will 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.*
  - I. *Cap upstream state WWTPs at or near existing total existing nitrogen loads.*
  - II. *Require optimization studies for upstream state WWTPs.*
  - III. *Establish nitrogen monitoring requirements.*

Clearly, an annual average load benchmark of 5,429 lbs/day meets the requirement of capping upstream states' loads at or near existing nitrogen loads. Clearly, optimization studies are intended. Clearly nitrogen monitoring, not effluent limitations, are intended.

There is no meaningful interpretation of this language that would support or provide a legal basis for EPA's arbitrary creation of a water quality based effluent limitation for TN.

Further, the EIP goes beyond even simply providing a framework for NPDES permitting in out-of-basin treatment facilities as shown in Part 1.b.i-iii, above. The EIP offers examples of language that has been used in other out-of-basin permits. That language is nothing like what EPA has proposed here for SWSC. It does not include specific numeric limits, and the only reference to a loading goal is phrased in terms of an annual average. The full text of the sample guidance permit language can be seen in footnote 1

of the EIP document. This detailed permit language has three main regulatory components:

- (1) optimization studies;
- (2) nitrogen monitoring requirements; and
- (3) the calculation of an annual average load based on a calendar year (Jan-Dec), not a 12-month rolling average.

Request: SWSC objects to the reliance on DEEP and “other” third party comments, which provide no adequate legal, regulatory or technical basis to include nitrogen effluent limitations in the SWSC Permit.

e) EPA's failure to provide adequate opportunity for public comment

During development of a TMDL, the public is provided an opportunity to comment on the development of individual WLAs, the distribution of the WLAs, the allocation of the WLA versus load allocation (LA), and the environmental and economic impacts of the overall TMDL plan to attain water quality in the impaired waterbody segment.

During development and public notice of the LIS TMDL, the public was presented with a TMDL that provided for the overall attainment (and associated economic impacts) of the water quality criteria through: (1) assigned WLAs to in-basin dischargers and (2) an aggregate load target reduction from out-of-basin dischargers.

In the SWSC Permit Revision, EPA has effectively assigned an out-of-basin WLA to an individual discharger, and provided public comment in isolation of the overall TMDL attainment plan, in isolation of all other out-of-basin dischargers, and in isolation of all other in-basin WLAs and LAs. By carving out public comment to an isolated WLA developed outside the TMDL process that should more appropriately be applied to a basin-wide strategy EPA has prevented the public from effectively evaluating the overall environmental and economic impacts of this action on the TMDL's overarching strategy to attain water quality goals, and the associated economic impacts.

f) Compliance Schedule: While SWSC strongly opposes the inclusion of an effluent limitation for total nitrogen, in the event EPA adopts a Final Permit that does, in fact, contain an effluent limitation for total nitrogen, SWSC requests that a compliance schedule be included in the permit.

The SRWTF facility is unable to meet the annual average TN loading effluent limitation of 2,534 lbs/day, proposed in this revised permit, without a significant upgrade of its facilities. Please see our detailed comments under 6.d, below, which provides an analysis demonstrating that potentially 80% of the time, the plant effluent exceeds the concentrations necessary during wet periods (produced at 49 mgd, 12-month rolling average flow) to achieve the annual average loading

limitation. In order for the SRWTF to achieve consistent compliance with this proposed water quality based effluent limitation, SWSC must undertake a significant upgrade of the SRWTF to an advanced biologic nutrient removal (BNR) process. Such an upgrade would be at considerable expense and significant length of time (without proven environmental benefit).

In accordance with 314 CMR 4.03(b), a NPDES permit may specify a compliance schedule when a permittee: *"...cannot comply with such permit requirements or limitations, or there is insufficient information available to determine whether the permittee can comply with such permit requirements or limitations."*

SWSC requests the following compliance schedule:

EDP+3 years: Permittee shall undertake an engineering analysis and alternatives study of the SRWTF to determine the most cost effective treatment methods available to consistently achieve compliance with the water quality based effluent limitation for total nitrogen contained in this permit. This alternatives analysis shall utilize a statistically defensible data set of current plant performance for TN over a number of months and seasons, and shall recommend treatment methodologies that will provide for compliance over a range of conditions including wet weather events, projected future flows to the facility (up to the permitted flow), and a range of temperature conditions.

EDP+ 6 years: Permittee shall secure all necessary approvals and future funding commitments for the required upgrade project. Permittee shall also complete the design and prepare the Request for Proposal.

EDP+ 7 years: Permittee shall advertise for bids for improvements necessary at the SRWTF to achieve consistent compliance for the total nitrogen effluent limitation.

EDP + 8 years: Permittee shall select the contractor and award the project.

EDP+ 10 years: Permittee shall complete construction and place into operation improvements at the SRWTF, noted above.

EDP+ 11 Years: Permittee shall evaluate performance of the SRWTF improvements and request an extension to the compliance schedule if necessary.

EDP+ 12 years: Based upon the performance evaluation, the Permittee shall achieve compliance with the total nitrogen water quality based effluent limitation.

Request:

For the reasons cited above and elsewhere in these comments, and our previous comments, SWSC requests that EPA remove the nitrogen discharge effluent limitation.

6. **Page 4 of 25, Part I.A.1. Nitrogen Discharge Limitation:** The draft revised permit included an average annual TN mass loading of 2,534 lbs/day as a discharge limitation.

SWSC can find no reasonable basis in EPA's factsheet to support the selection of 2,534 lbs/day as an effluent mass loading limitation. The period of data used to select this value does not reflect typical influent flow conditions that occurred at SRWTF in the past. SWSC strongly objects to EPA's proposed use of faulty estimates of the existing load as a source for developing the new target that is completely without technical or regulatory justification. Such a flawed approach would unfairly regulate those facilities, like SRWTF, that have already upgraded and exceeded required load reductions; it would not be justified to expect the same percent reduction from an upgraded plant as from a plant that had not upgraded. It is arbitrary and capricious to force an effluent limitation, or somehow interpret or extrapolate requirements set forth for SRWTF, in a manner creating significant, binding, regulatory consequences that would unfairly burden SWSC's ratepayers.

Request: SWSC requests that EPA incorporate an optimization benchmark load into the final NPDES permit at Part I.H.1.a as follows. "*The Permittee shall continue to operate the treatment facility such that compliance with ammonia, BOD and TSS limits is maintained, while at the same time optimize nitrogen removal process to achieve a 12-month rolling average benchmark concentration of 8 mg/l total nitrogen.*" The technical and regulatory bases for this request is provided below.

#### **Basis for Comment**

The TMDL target for out-of-basin wasteloads for the Connecticut River is 16,254 lbs/day of TN, which is 25% lower than the TMDL baseline load of 21,672 lbs/day TN. Note that the TMDL baseline was based on loading conditions in 1990, when SRWTF was a conventional activated sludge plant (extended aeration process) with no biological nutrient removal capability and discharged an effluent with total nitrogen around 19.6 mg/L<sup>1</sup>. There is no technical or regulatory basis to require that SWSC maintain its existing mass loading level, or its mass loading level during some arbitrary period. The TMDL target for out-of-basin wasteloads for the Connecticut River is 25% lower than the TMDL baseline load in 1990.

In anticipation of the TMDL, SWSC upgraded its treatment plant in 1995 to incorporate nitrogen removal. As a result, SWSC consistently discharges TN concentrations less than 10 mg/L, which represents a decrease of approximately 50% compared to the TMDL baseline conditions (1990). Prior to 1995, SRWTF was a conventional activated sludge plant with very limited biological nitrogen removal capacity. SRWTF currently discharges approximately 37 to 50 MGD; flow is highly dependent on precipitation conditions. However, SRWTF *is authorized to discharge up to its design flow of 67 MGD*. As its discharge flow increases, nitrogen load can be expected to increase proportionately. However, even at its maximum design flow, SRWTF will be discharging considerably less TN load than its share of allowable load.

a) *5,429 lbs/day is the TMDL-based TN Allocation for SRWTF*

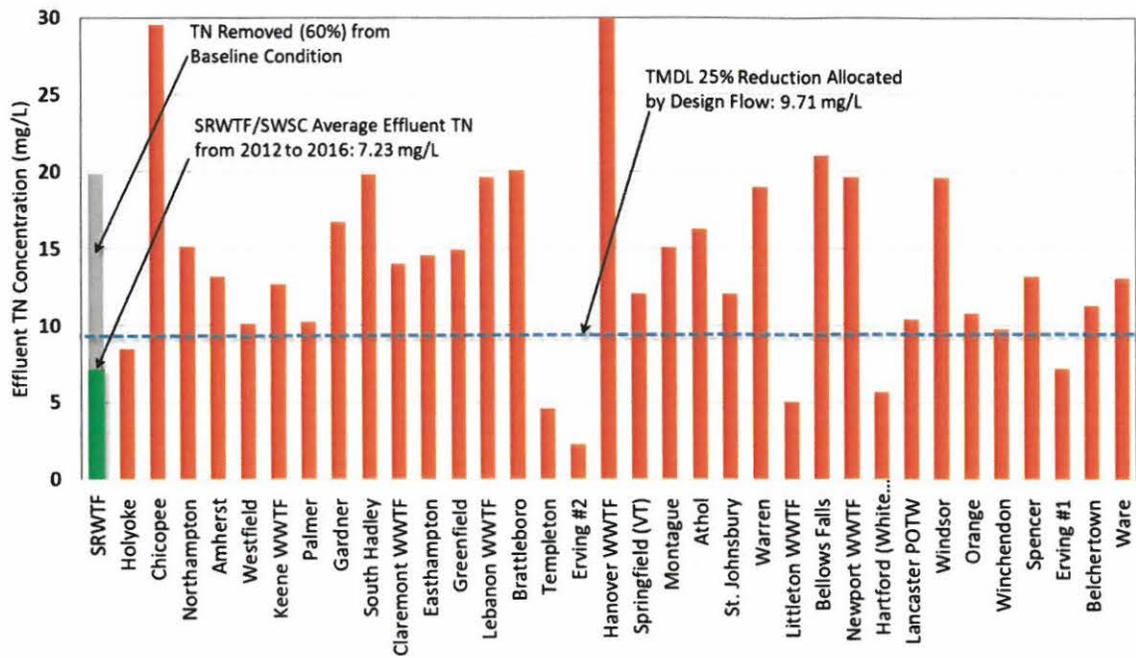
As we commented in our February 15, 2018 letter on the previous draft permit dated November 15, 2017, SWSC has been unfairly targeted with TN requirements without any legal or scientific basis. SWSC has exceeded the TN mass loading reduction requirement interpreted from the 2000 LIS TMDL. Based on the design flows of the out-of-basin dischargers in the Connecticut

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<sup>1</sup> EPA's estimate of non-BNR plant based on an average of discharge concentrations from conventional activated sludge plants in Massachusetts.

River basin, the calculated TMDL allocation for SRWTF would be 5,429 lbs/day, which is SRWTF's share of the allowable wasteload of 16,254 lbs/day, based on its share of the total design flow (67 MGD out of 201 MGD).

The figure below shows the effluent TN concentrations of major out-of-basin dischargers to the Connecticut River basin, in order of design flow, in comparison to the allowable annual average TN concentration of 9.71 mg/L at design flow capacity. SRWTF is one of only a few dischargers with effluent TN concentration that will satisfy the allowable TMDL load at its design capacity.



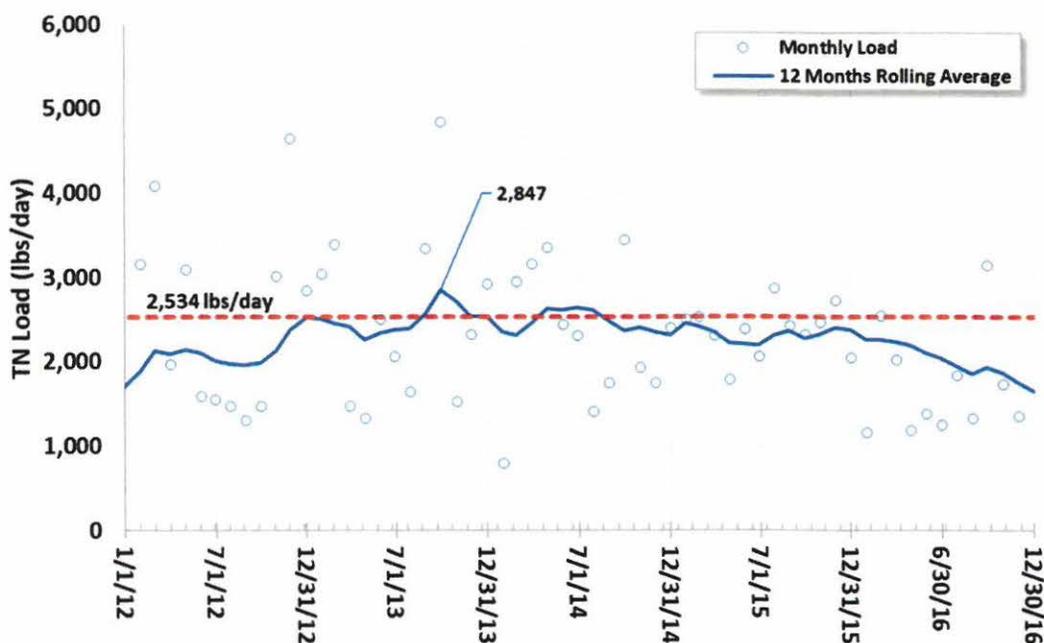
Average Annual Effluent TN Concentrations from Out-of-Basin POTWs Tributary to the Connecticut River with Design Flows Greater than 1.0 MGD.<sup>2</sup>

**b) 2,534 lbs/day Does Not Reflect Current Loading Condition**

The total nitrogen mass loading rate of 2,534 lbs/year is the maximum of the calendar year averages (Jan. - Dec.), between 2012 and 2016. However, the permit requires SWSC to report a 12-month rolling average (“the arithmetic mean of the monthly average total nitrogen for the reporting month and the monthly average total nitrogen of the previous eleven months.”). EPA’s inconsistency in calculating permit effluent limitations and reporting requirements on TN loads results in the permit becoming more stringent than intended, as the maximum of a 12-month rolling average is typically greater than the average of calendar year.

<sup>2</sup> Factsheet, Attachment G, Out of Basin Point Source Loadings, Draft NPDES Permit No. MA0101613, February, 2018.

Using the DMR data EPA included in Appendix A of the Modification Fact Sheet Supplement, the figure below plots the reported monthly TN loads from 2012 to 2016. The 12-month rolling average is shown as the blue line and 2,534 lbs/d limit is shown as red dashed line. During the 2012-2016 period, there are 8 months when the 12-month rolling averages are greater than 2,534 lbs/d. If a permit effluent limitation of 2,534 lbs/d had been given in 2012, then SWSC would have been in non-compliance with the permit limit 13% of the time during the 5-year permit period.



c) Analysis of TN Optimization Benchmark

As stated in our previous comments to the 2017 draft permit, SWSC considers a benchmark concentration of 8 mg/L TN reasonable as an annual average optimization benchmark for the following reasons:

- It is a widely acceptable practice in the wastewater treatment field that performance of process technologies is typically evaluated by effluent concentration (as opposed to effluent load) of the targeted compounds, e.g. BOD, TSS, NH<sub>3</sub>-N. Effluent TN concentration must therefore be the basis of any benchmark for performance evaluation/optimization.
- Based on the performance data available in the literature, it is not reasonable to expect a Ludzack-Ettinger (LE) process (currently SRWTF operates under such biological process mode) to consistently achieve an effluent concentration of lower than 8 mg/L TN because of the physical limitations imposed by its configuration. Therefore, if an optimization target of 8 mg/L TN effluent concentration is established, plants utilizing the LE process will likely require optimization to adjust

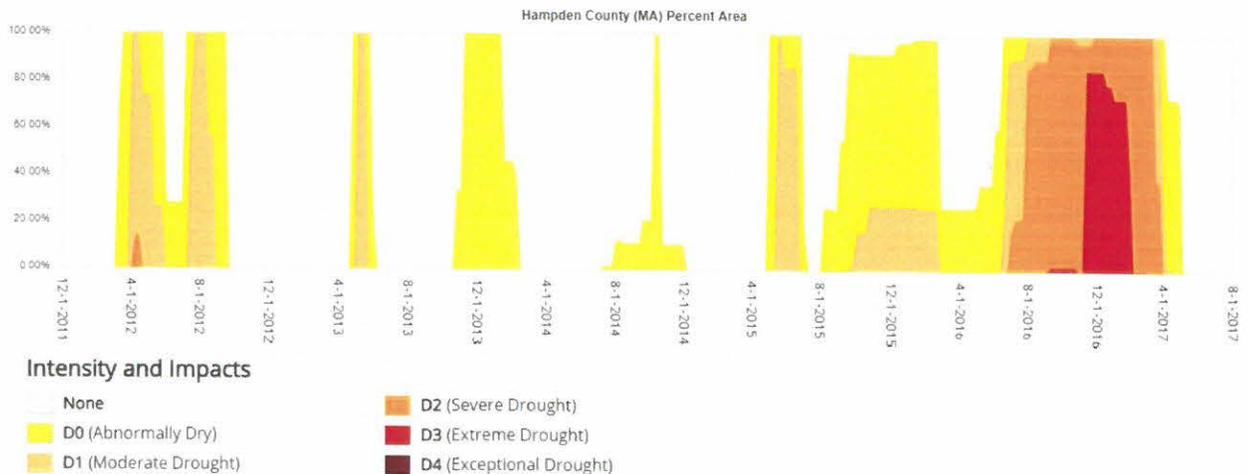
operation parameters or potential modifications to operate in different process configurations.

- Meeting the 8 mg/L TN benchmark would ensure that SRWTF will not have any potential to exceed the TMDL threshold concentration of 9.71 mg/L associated with its allowable TMDL load.

However, if EPA believes that it needs to include a loading-based optimization benchmark, then that benchmark structure should include the following aspects:

- Allow additive loads from anticipated future growth, as described in comment #8 below.
- Allow SWSC to add the existing loads allocated to other POTWs that would be conveyed to SRWTF for treatment upon completion of regionalization of wastewater treatment services, as described in comment #9 below.
- The optimization benchmark of 2,954 lbs/day is computed using the 12 month rolling average effluent TN concentration from 2012-2016 and 95-percentile of 12 month rolling average of influent flow from 2000-2016.

SWSC has been proactively optimizing operations at SRWTF to improve treatment performance to reduce TN loads to the Connecticut River. The 2012-2016 period was a very dry period (see draught map below), as a result, the 96 percentile of 12-month rolling average flow is 40 MGD (as shown in the figure on page 16) during this period. However, considering influent flow data over a longer period (2000-2016), the 95-percentile flow is approximately 49 MGD.

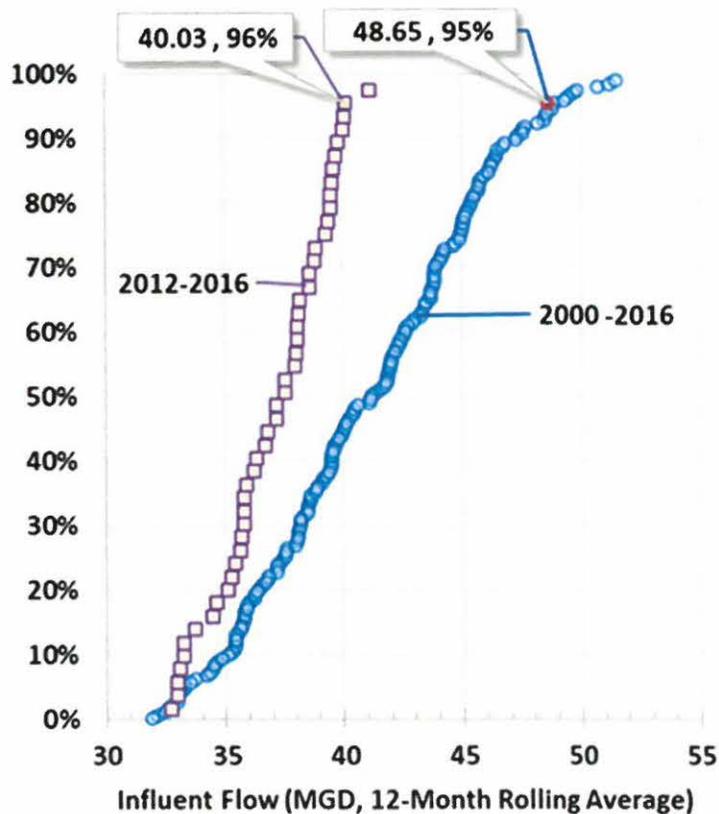


*Draught Intensity during 2012-2016 Period for Hampden County, MA.*  
 Reference: National Integrated Drought Information System:  
<https://www.drought.gov/drought/search/data>

In the context of maintaining the current TN load condition from SRWTF, and a 25% TMDL out-of-basin reduction requirement, it is reasonable to use the 95 percentile of the recorded influent flow (49 MGD), since the last permit (2000 to 2016) and the median TN 12-month rolling average concentration (7.23 mg/L) of the most recent years (2012-2016) to calculate the optimization benchmark.

**Therefore, the optimization target should be  $49 \text{ MGD} \times 7.23 \text{ mg/L} \times 8.34 = 2,954 \text{ lbs/d}$ .**

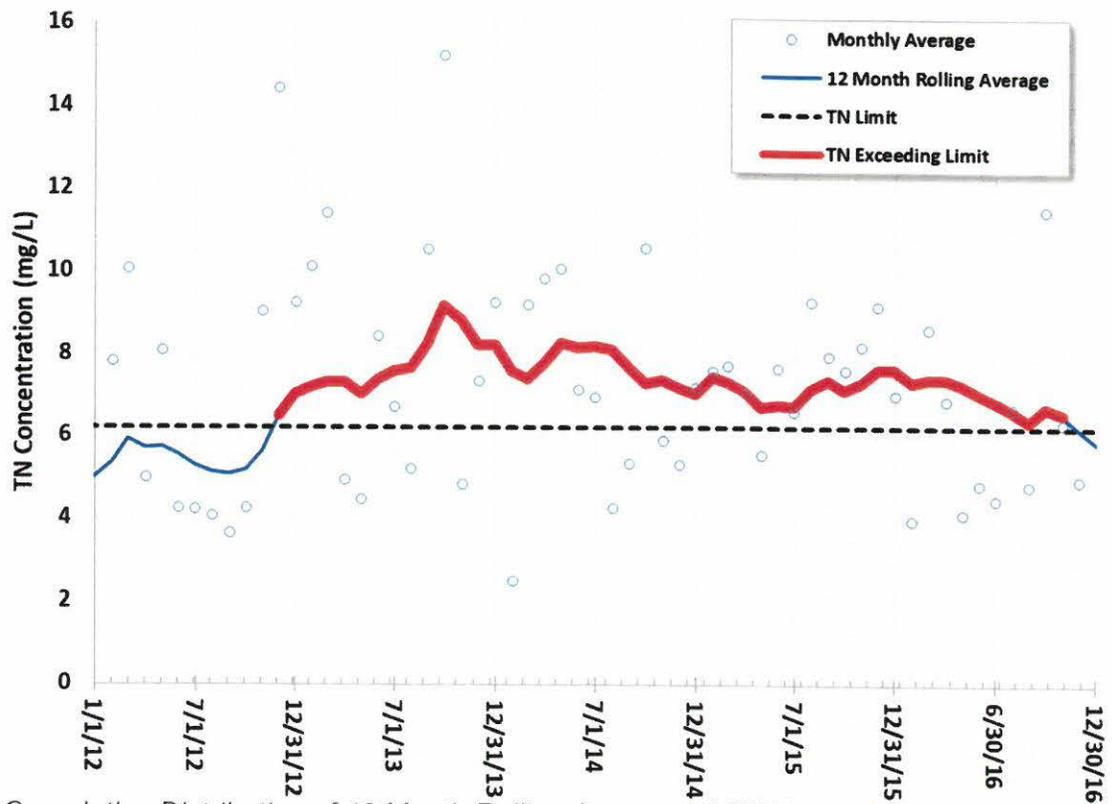
This goal would meet the TMDL target of a 25% reduction in TN loadings from baseline loadings, since the estimated load to the Connecticut River from out-of-basin point sources would be 15,192 lbs/day based on EPA's 2006 analysis of out-of-basin point sources to the CT River Watershed (see 2017 Fact Sheet Table 3 and Attachments G and H). This is less than the TMDL target of 16,254 lbs/day, allowing for additional non-POTW point source loadings as well as any possible new point source discharges.



*Cumulative Distribution of 12 Month Rolling Average of SRWTF Influent Flows.*

d) Why 2,534 lbs/day as a Discharge Limit will Require SRWTF to Upgrade

Since 2,534 lbs/d is an annual average load based on a 12-month rolling average of both effluent flow and TN concentration, the TN concentration limit is actually 6.2 mg/L for wet weather periods when the 12 month rolling average flow is around 49 MGD. Plotting the 12-month rolling average TN concentration data (Figure below) indicates that **there are 48 months (80% of the time during 2012-2016) when the TN concentrations (12-month rolling average) are greater than 6.2 mg/L**. This means there is an 80% chance that SRWTF will violate its permit if any of these months was in a wet period when 12 month rolling average influent flows were 49 MGD or higher. To comply with this perceived permit limit, the only option for SWSC is to upgrade the SRWTF to an advanced biologic nutrient removal (BNR) process which could potentially require a large sum of capital budget, with undue financial burden to the rate payers while achieving minimal or no environmental benefit. This type of financial impact would also affect other Commission initiatives, such as the CSO LTCP program and infrastructure renewal program.



Cumulative Distribution of 12 Month Rolling Average of SRWTF Influent Flows.

e) Failure of EPA to provide an allowance for TN attenuation in the Connecticut River:

In proposing optimization requirements for SWSC (in the Revised Draft Permit, through an effluent limitation), EPA has made no allowance for attenuation.

However, the Agency has done so with regard to other permits. In particular, the Northfield Mount Hermon School wastewater treatment facility. This facility discharges to the Connecticut River, and is regulated under NPDES Permit No. MA0032573. In the Draft Permit Fact Sheet, pages 16-17 of 41, EPA states:

*“The Northfield Mount Hermon WWTF discharges to the Connecticut River, which drains to the Long Island Sound...Due to the relatively small contribution of the discharge and its relatively distant location from Long Island Sound, EPA estimates that the nitrogen discharged from the facility is attenuated within the Connecticut River and its tributaries and is not contributing to the dissolved oxygen impairment in the Long Island Sound...In order to ensure that the out-of-basin total nitrogen wasteload allocation prescribed in the Long Island Sound TMDL continues to be met, the draft permit includes average monthly reporting requirements for total nitrogen...”*

Attenuation is one of the many factors evaluated during TMDL development and is critical to the establishment of appropriate WLAs. Inasmuch as SWSC asserts that individual WLAs for out-of-basin dischargers, such as the Northfield Mount Hermon WWTF, have not been established in the TMDL, and that attenuation for out-of-basin dischargers was not evaluated as part of the TMDL document, yet EPA provides that attenuation may be accounted for in the determination of a need for a water quality based effluent limit, SWSC requests that EPA provide an allowance for attenuation to the SRWTF.

Absent EPA's ability to provide a study demonstrating that no attenuation of total nitrogen occurs between the discharge from SRWTF and the Long Island Sound, SWSC requests that an allowance for attenuation be provided. SWSC would be willing to provide a technical evaluation determining the attenuation of TN, if requested by EPA, and included as part of an evaluation of TN impacts on the LIS from SRWTF, and the subsequent basis for regulatory control (if any) of TN from SWSC.

Request: SWSC strongly objects to the imposition of a total nitrogen effluent limitation. Were EPA to insist on a nitrogen effluent limit, the only substantiated approach would be to base it directly on the LIS TMDL, which would be 5,429 lbs/day, or 9.71 mg/l. The SWSC's preference is to have this load or concentration expressed as an optimization goal. For the reasons included above, included elsewhere in this comment letter, and included in previous comment letters, SWSC asserts that EPA has not provided a regulatory, environmental, scientific or economic basis to establish such a limitation. SWSC requests EPA modify the Revised Draft to reflect an optimization goal for nitrogen:

If EPA prefers a daily concentration optimization goal then a TN optimization goal of 8 mg/L would be most appropriate.

If EPA instead prefers a loading goal on a 12-month rolling average basis, then that goal should be 2,954 lbs/day.

7. **Page 6 of 25, Part I.A.1. Footnote \*9, Incremental Increase in Total Nitrogen Mass Loading Limit:** SWSC agrees with EPA to allow an incremental increase of total nitrogen mass loading allocation due to combined sewer overflow (CSO) reduction, as a result of the Commission's Long-Term Control Plan (LTCP) implementation effort.

Request: SWSC supports retaining the provision on increases due to CSO reductions, but suggest that its location in the permit be moved. SWSC requests to move the following from Part I.A.1. Footnote \*9 to Part I.H.1.a.Special Condition section: *"Upon the completion and documentation of each currently planned combined sewer overflow project, the permittee may request an incremental increase in the total nitrogen mass loading limit. The maximum allowable net increase for each project is listed in Attachment E. The request must be made in writing to EPA and MassDEP and shall include certification by a licensed civil engineer that the project has been completed as described in the Springfield Water and Sewer Commission's ("SWSC") 2014 Integrated Wastewater Plan (which incorporates the Long Term Control Plan) and is fully operational. Any variations in the project from that described in the SWSC's 2014 Integrated Wastewater Plan shall be identified and described in sufficient detail for EPA to determine the effect on the total nitrogen mass loading limit."*

8. **Page 12 of 25, Part I.H.1. Nitrogen Special Condition – Incremental Increase for Future Growth:** The loading optimization target is based on existing populations of the member communities, and does not account for ongoing future population and economic growth in the area. The SRWTF's design flow is 67 million gallons per day, which includes additional capacity for future population and economic growth. Currently, the permitted average annual flow capacity is 67 MGD, and EPA has calculated the discharge mass loading limit for BOD and TSS based on a concentration limit and design flow of 67 MGD (i.e. average monthly BOD discharge mass limit: 67 MGD x 30 mg/L x 8.34 = 16,763 lbs/day). However, EPA has proposed total nitrogen mass loading values that are all calculated based on existing average daily flow conditions without factoring in future population and economic growth.

Request: SWSC requests an allowance for incremental increases of total nitrogen loads from additional sanitary sewer flow increases due to population and economic growth within the service area of SRWTF. The Commission requests EPA to consider adding the followings to Part I.H.1.a.:

*"The permittee may request an incremental increase of Total Nitrogen load resulting from additional flows due to population and economic growth within the SRWTF service area. The request must be made in writing to EPA and MassDEP and shall include a report demonstrating the increase is due to population and economic growth."*

9. **Page 12 of 25, Part I.H.1. Nitrogen Special Condition – Additive Loads from Consolidation of Other POTW:** EPA acknowledges that SWSC is currently exploring the possibility of consolidating wastewater flows from other facilities throughout the Springfield area, and diverting them for treatment at the SRWTF. Affording the SWSC the opportunity

to explore this possibility could achieve significantly greater reductions in nitrogen loadings to the Connecticut River. Notably, other facilities in the Springfield area do not have the capacity or technology to achieve advanced nitrogen removal that the SRWTF is designed for and currently achieves. In that regard, any diverted flows will receive a much higher level of nitrogen removal at the SRWTF than they currently receive at surrounding facilities. The overall reduction in nitrogen loadings from the closure of less technologically-advanced facilities in the Springfield area, would far outweigh any incremental increase of TN loads to the larger and more technologically-advanced SRWTF. Allowing additional TN loads allocated to the consolidated facilities to be transferred to SRWTF will better incentivize SRWTF to explore these possibilities, which would result in considerable overall load reductions within the watershed. This approach is consistent with the objectives of the TMDL, as there would not be a net increase in the TN load being discharged to the Connecticut River.

Request: SWSC requests the addition of TN loads resulting from consolidation of other POTWs in Springfield area. The Commission requests EPA to consider adding the followings to Part I.H.1.a.:

*“Should a facility divert some or all of it’s flow to the SRWTF the TN mass loading optimization benchmark that was allocated to that facility shall be added to Springfield’s TN optimization benchmark of 2,954 lbs/day.”*

10. **ATTACHMENT E Allowable TN Load Increase:** EPA included a table summarizing Allowable Incremental TN Load Increase Per Project. However, the incremental increase was based on CSO reductions described in the 2014 Integrated Wastewater Plan, which was based on a typical year precipitation condition and a median TN concentration based on a nationwide survey. These values are not representative of the actual CSO loading conditions for SWSC’s sewer system, especially when annual rainfall volume, event intensity, and duration are far greater than the selected “typical” year of 1976.

Request: SWSC requests EPA to revise the table based on 2011 precipitation conditions and an average TN concentration of 9.5 mg/L. The table should be revised as shown below:

<b>Project</b>	<b>Allowable Incremental TN Load Increase Per Project (lbs/day)</b>
Phase I - Washburn CSO Control	17.4
Phase I.5 - CSO 012/013/018 Modifications	0.0
Phase 2 - York Street Pump Station and River Crossing	72.3
Phase 3 - Locust Transfer Structure/Conduit and Flow Optimization in Mill System	1.9

Future CSO Abatement Projects	TBD*
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\* To be determined based on CSO volume reductions as a result of the future CSO Abatement projects under 2011 model year condition and average TN concentration of 9.5 mg/L.

The technical and regulatory basis for this request is provided below in comments on Table 1 of Fact Sheet Supplement, 3. Total Nitrogen.

11. **Page 4 of 5, 2018 Fact Sheet Supplement, 3. Total Nitrogen, Table 1 Projected Connecticut River Interceptor (CRI) Annual CSO Volume Reductions and Allowable Incremental TN Load Increases Following Completion of Planned CSO Mitigation Projects:** Table 1 listed all the data sources used to calculate the Allowable Incremental TN Load Increase Per Project table, in permit Attachment E. However, these values are not representative of the actual CSO loading conditions for SWSC's sewer system when annual rainfall volume, event intensity and duration are far greater than the selected model year of 1976. In addition, the table is incorrect for calculating Phase 2 and Phase 3 projects.  
**Request:** SWSC requests EPA to revise the table based on 2011 precipitation conditions and an average TN concentration of 9.5 mg/L. Table 1 should be revised as shown below:

Project	Baseline Condition (CRI Total) (MG/Year) <sup>1</sup>	Estimated Annual CSO Volume Following Project Completion (MG/year) <sup>2</sup>	Estimated CSO Volume Reduction From Baseline Conditions Following Project Completion (MG/Year) <sup>3</sup>	Allowable Incremental TN Load Increase (Lbs/Year) <sup>4,5</sup>	Allowable Incremental TN Load Increase (average Lbs/day) <sup>5,6</sup>
Phase I - Washburn CSO Control	861	781	80	6,333	17.4
Phase I.5 - CSO 012/013/018 Modifications	861	781	0	0	0.0
Phase 2 - York Street Pump Station and River Crossing	861	448	333	26,396	72.3
Phase 3 - Locust Transfer Structure/Conduit and Flow Optimization in Mill System	861	439	9	682	1.9
<b>Total Load Increase</b>				<b>33,411</b>	<b>91.5</b>

<sup>1</sup>Baseline Condition (model year 2011 – Connecticut River Interceptor (CRI) Totals)

<sup>2</sup>Estimated Annual CSO Volume Following Project Completion based on model scenario runs under 2011 precipitation conditions.

<sup>3</sup>Estimated CSO Volume Reductions From Baseline Conditions Following Project Completion = (Baseline Condition CSO Volume Following Project Completion (MG/Year)

<sup>4</sup>Allowable Incremental TN Load Increase (lbs/day) = [Estimated CSO Reduction From Baseline Conditions Following Project Completion (MG/Year) \* Assumed TN Concentration in combined sewage (5 mg/l) \* 8.34]

<sup>5</sup>Estimated TN Concentration in Combined Sewage – based on review of typical TN concentration in CSO of

similar system.

<sup>6</sup>Allowable Incremental TN Load Increase (lbs/day) = [(Allowable Incremental TN Load Increase (lbs/year)) \* (1 year/365 days)]

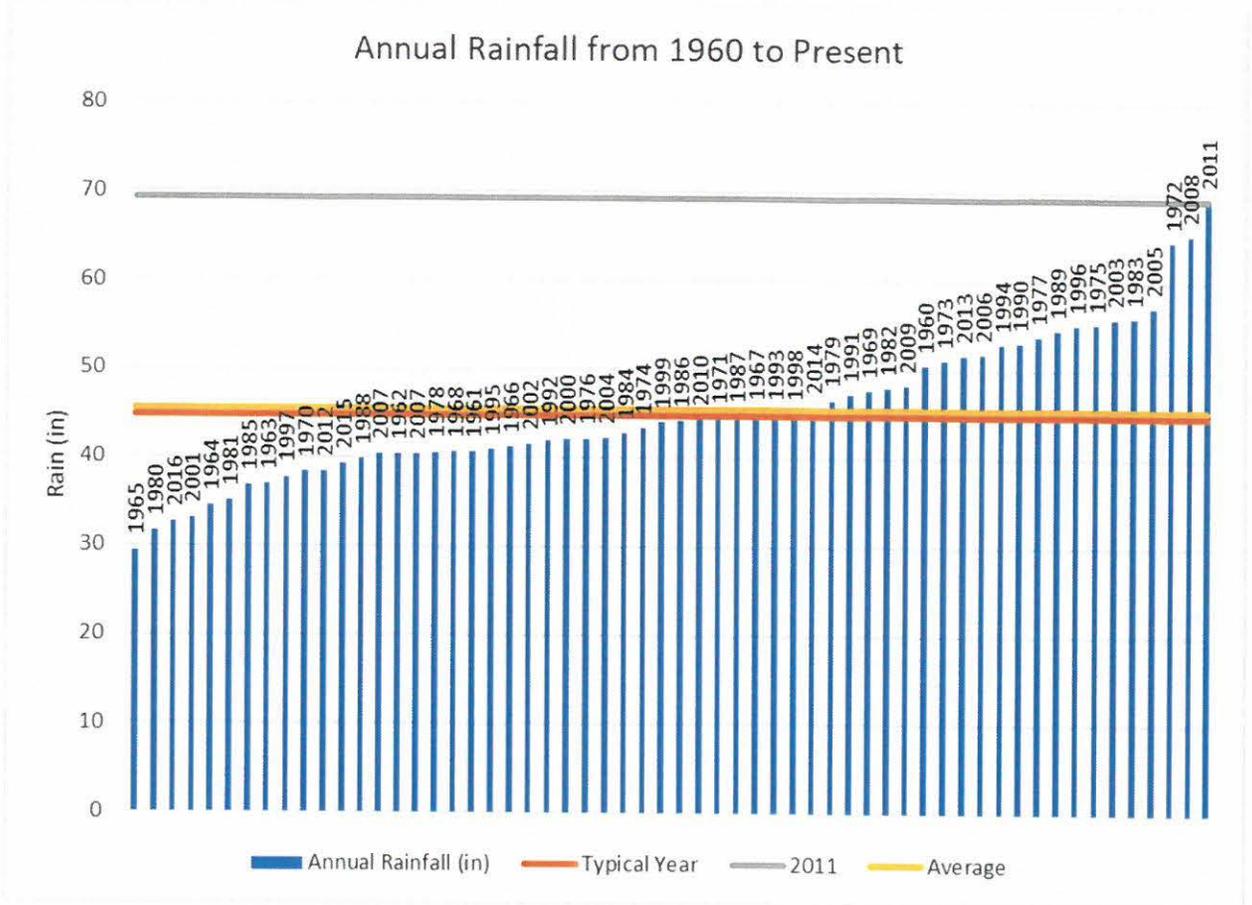
The technical and regulatory bases for this request is described below:

a) Total Nitrogen Concentration in CSO is Typically 9 -10 mg/L

Total nitrogen concentrations in CSO discharges are specific to the sewer system and characteristics of the sewer service area. Concentrations are also highly dependent on climate conditions and storm event conditions with respect to when the samples were taken. It is for this reason the 2004 report to congress EPA cited in the permit has a wide range of TKN with the highest concentration up to 87 mg/L. SWSC conducted a literature review of TKN/TN concentration in CSO discharges from communities in the northeast region and found typical concentrations in the 9-10 mg/L range. Therefore an average of 9.5 mg/L is used for calculations of incremental increases in mass loading. A review memorandum is attached to this comment letter to support this analysis.

b) Combined Sewer Overflow Volume Reduction Shall be Calculated using a More Recent Model Year Precipitation Conditions

Historical rainfall totals between 1960 and 2017 are presented in the Figure below. The typical year and average total rainfalls are identified in orange and yellow, respectively. The year 2011 was identified as the wettest on record with almost 70 inches of rainfall, as compared to a total rainfall of approximately 46 inches in an average year.



Permit conditions need to take into consideration the range of conditions that may be present, and should be based on the maximum conditions a permittee can meet. Therefore, the 2011 annual precipitation, representing maximum conditions, should be used as model year basis for CSO reductions. That is, in any given year, the possibility of exceeding the selected conditions are within a low expectation of probability.

The SWSC InfoWorks CS model was simulated with 2011 precipitation conditions. Under baseline conditions, the annual CSO volume is 861 million gallons.

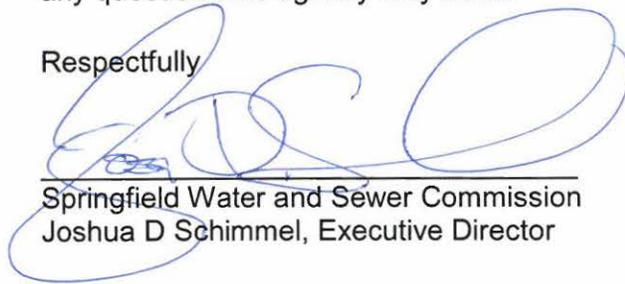
The Commission has recently completed Phase I of the LTCP and Phase 2, the York Street Pump Station and River Crossing, are in the 90% design phase. The Commission's IWP outlined the annual CSO reduction by phase, as presented in the Table below. This table outlines the cumulative percentage of CSO reduction by volume (MG) between Phase 1 (9%) through the 3rd phase of the plan at 49%.

Using these phased CSO reduction percentage estimates, along with the total annual CSO volumes simulated by the SWSC InfoWorks CS model, the cumulative CSO volume reductions during the 2011 model year are summarized in table below.

Project	Date	Phase	LTCO CSO Reduction	
			CSO Volume Reduction By Project (%)	Cumulative CSO Volume Reduction (%)
Phases 1-1.5	2012-2016	1	8%	9%
Phase 2: York Street Pump Station and River Crossing	2015-2020	2	41%	48%
Phase 3: Locust Transfer Structure/Conduit and Flow Optimization in Mill System	2020-2022	3	1%	49%

The SWSC appreciates the opportunity to offer these supplemental comments on the Revised Draft Permit and looks forward to continuing to collaborate with EPA in meeting our Clean Water Act obligations. We request an in person meeting as soon as possible, so we can work towards the best possible solution for sustainable operations and regulatory compliance. Please contact [josh.schimmel@waterandsewer.org](mailto:josh.schimmel@waterandsewer.org) or call 413-452-1333 to arrange the meeting and to discuss any questions the agency may have.

Respectfully



Springfield Water and Sewer Commission  
 Joshua D Schimmel, Executive Director