Delafield-Hartland WTF's chloride is predominantly from water softeners. There is currently no industrial contributors; very insignificant amount of hauled wastes (septage) is accepted; and I/I problem does not seem to be an issue within the collections system, including all contributing communities. Most of the contributing communities use private wells for water supply and individually soften their water. Like most other areas in Wisconsin, winter road salting operation also contribute to plant chloride. But unlike many communities with very significant I/I, this has not resulted in very high variability in chloride levels during cold and warm weather. Some of the contributing communities, e.g. Delafield City and Hartland Village do pre-wetting to reduce winter salt use.

Delafield-Hartland shall implement measures that focus mainly on reducing chloride from water softeners. The following Chloride Source Reduction measures shall be implemented during the permit term. These measures shall apply to all contributing communities. If any of these actions for reducing chloride in any waste stream are deemed infeasible, Delafield-Hartland shall, in its annual and final variance reports, provide clear analyses indicating why those specific actions are infeasible:

1) Amend Delafield-Hartland's wastewater facility's sewer use ordinance to require high efficiency demand initiated regeneration (DIR) type softeners for both newly installed and replacement softeners for residences, commercial and industrial businesses. *Although the Department of Commerce has revised the plumbing code to require DIR softeners for both new and construction replacements [Admin Rule at Comm 82.40(8)(j)], requiring it in a revised SUO will provide additional enforcement mechanism.*

2) Evaluate the imposition of installation restrictions so that outside hose bibs for gardening, etc. are on unsoftened water. If restrictions are imposed, new homes and those that are replacing water softeners should be required to have plumbing restrictions for hard water by-passes, and the requirement should apply to self-installed equipment as well. Request voluntary support from local water softening businesses and licensed installers in this regard. *In order to reduce baseline chloride levels at the plant.*

3) Investigate the possibility of brine leaching or being washed to the plant via run-off from the five municipalities' salt storage facilities and wash bays. Investigate also the structural conditions of all sewer manholes located close to these salt storage facilities. Work with these communities in finding ways to reduce possible salt migration into the sewer system from the salt storage facilities and during road deicing operation. Include in the Progress Reports, the outcome of these investigations and follow-up actions implemented or planned. *The operator indicated all five contributing municipalities have salt storage facilities. The Department has found out that salt storage facilities and truck washing could be significant chloride contributors to WWTFs.*

4) Require the upcoming industry to evaluate its process and operation with regard to chloride discharge. This evaluation should include softened water requirements and optimization of softener operation; chemicals used in its operation; and any other

potential measures to reduce chloride discharge to the minimum possible - not to exceed 400 mg/L. Track chloride and flow as soon as production starts. *Triad Industry, which had consistently discharged very high levels of chloride (sometimes averaging 1100 mg/L) to the Dela-Hart facility, closed in 2011, when the industry was sold. But the buyer plans to start a new industry early in 2015. Every measure must quickly be taken to ensure chloride discharge is limited.*

5) Evaluate chloride discharges from schools, hospitals, commercial institutions and other large water users, including laundromats and car washes. Require high chloride contributors to implement measures to ensure implementation of all feasible strategies to reduce chloride discharge. Strategies should include hiring qualified professionals to inspect, calibrate, and/or replace water softening units. Include discussions on these efforts and proposed follow-up actions in required chloride reports. *In order to reduce baseline chloride levels at the plant*.

6. Identify areas in the collection system, including all contributing communities that may be experiencing high infiltration and inflow. Implement and/or require implementation of measures to address potential I/I problems. *Although no evidence of significant I/I has been found in the Delafield-Hartland collection system including all contributing communities, tracking of potential I/I problems and timely implementation of necessary measures to address faulty sewre pipes, failing manhole covers, and bad lateral connections in all areas of the collection system will serve to keep plant clear water to the minimum and reduce baseline chloride load.*

7) Continue to educate the public about softener efficiency and chloride reductions. *Over the years, plant staff have done a good job of educating the public about chloride and softener efficiency through articles on websites and public discussions (see chloride reports). Continuation of this effort will serve to reduce baseline chloride levels.*