ITEM # 21
DATE: 11-01-11

COUNCIL ACTION FORM

SUBJECT: NON-DOMENTIC WASTE PRETREATMENT PROGRAM – LOCAL LIMIT REVISIONS

BACKGROUND:

The City's Water Pollution Control (WPC) facility is designated as a Publicly Owned Treatment Works (POTW). Federal law requires the City to implement and maintain a Non-Domestic Waste Pretreatment Program. The City implemented its pretreatment program in 1983, with revisions in 1992, 2005 and most recently in 2011. **The program goals are to prevent the discharge of pollutants to the POTW that would pass through the treatment works and pollute the receiving stream, interfere with or inhibit the POTW treatment processes, create unsafe work environments for sanitary sewer workers, and prevent the re-use of wastewater and biosolids.**

As a requirement of the WPC facility's most recent National Pollutant Discharge Elimination System (NPDES) permit, staff has evaluated the existing pretreatment program local limits. The development of the revised local limits was based on the identification of pollutants of concern (POC) through WPC facility influent and effluent priority pollutant scans. For each of these POCs, the maximum allowable headworks loading was determined using parameters including water quality standards, NPDES permit limitations, process inhibition limits, limits to protect the safety of sanitary sewer workers, and biosolid land application standards. After this, the maximum allowable industry loading for each POC was calculated based on a formula using the controlling parameter for each POC, the number of industries with the potential to discharge the POC, the percentage attributed to industrial vs. domestic sources, and other factors.

As an illustration of this last point, consider the silver limitation. The Iowa Department of Natural Resources recently enacted a substantial reduction in the water quality standard for silver. This is the "controlling parameter" for silver, and results in a reduction in the amount of silver that can be taken in by the treatment plant. Staff has no flexibility in that calculation. However, staff does have flexibility when determining how much silver to allocate to industrial dischargers versus how much to reserve for residential and commercial users. In order to be as accommodating as possible for industrial users who discharge silver, staff has allocated 81% of the total silver the plant can receive to industrial dischargers, leaving only 19% of the available plant capacity for all other users.

Silver is being increasingly used in residential applications for its anti-microbial properties in washing machines, deodorants, and pools and spas. There is also an increasing prevalence of impregnated silver in athletic clothing for its anti-odor properties, which over time washes out of the clothing and into the wastewater. This is

on top of the long-standing use of silver amalgams in dental applications and a myriad other smaller uses for silver in our everyday lives. Because of this, staff believes it would be unwise to allocate any additional silver capacity to industrial users. Instead, staff is committed to working with those industries whose discharge contains silver to identify the source of the silver and providing time for them to research alternative products or investigate methods to remove silver from their waste.

On September 2, 2011 staff sent a letter to all of the industries on the Non-domestic Waste Pretreatment Program outlining the proposed changes to the local limits. The letter also included information about the recent submittal of these local limits revisions to the Iowa DNR and staff's intention to bring them before the City Council for approval. Additionally, staff personally met with each industry contact at their facility to discuss the proposed local limits revisions. Staff also summarized how the proposed revisions could affect each industry based on the most recent sampling data, and solicited comments from every industry on how they saw the proposed local limits affecting their facility. A copy of this Council Action Form is also being provided to each industry.

The approval of these revisions to the Non-domestic Waste Pretreatment Program will not require any modifications to the *Ames Municipal Code* as the local limits are simply a part of the pretreatment program and are not written into the *Code*. A copy of the proposed revisions is attached, as is a summary of the specific impacts and comments for all industrial customers impacted by the revisions. In general, eight facilities had no concerns, four facilities had some concerns, and one facility was concerned there was not enough sampling data to draw conclusions about the effects.

On July 26, 2011, Council approved revisions to the *Ames Municipal Code*, adopting measures that provide staff additional flexibility in implementing the pretreatment program. Staff commented at that time that the revisions would, in some instances, reduce the regulatory burden on local industries without adversely impacting environmental protection. **While not applicable in every instance, some of those measures (such as allowing Best Management Practices in lieu of numeric limits and allowing mass limits instead of concentration limits) can be implemented by staff on a case-by-case basis to help mitigate the impact of the more stringent limits. Staff will be exploring those options with our industrial customers where practical. These options are not intended to allow any discharger to "get around the rules." Instead, they will offer industrial customers additional methods to comply with the code requirements while still maintaining appropriate safeguards on the environment. This is in keeping with the Council's goal to "streamline and improve government processes."**

Staff anticipates providing all industrial customers regulated by the Non-domestic Waste Pretreatment Program with an updated permit, including the revised limits, by December 1, 2011. The new permits would become effective January 1, 2012. After the new limits become effective, staff will work with any customer who is experiencing difficulty meeting the limits to develop a plan and timeline to bring them into compliance.

ALTERNATIVES:

1. Approve the revisions to Non-domestic Waste Pretreatment Program local limits as described in the attached document.

2. Do not approve the revisions to Non-domestic Waste Pretreatment Program local limits at this time. This would place the city in non-compliance with its NPDES permit.

MANAGER'S RECOMMENDED ACTION:

Adoption of the local limits revisions to the Non-domestic Waste Pretreatment Program is required by the City's new NPDES permit for the WPC facility. This will ensure that industrial (non-domestic) discharge permits include limits that are based on the most recent flow measurements and sampling data. The local limits revisions will help protect the integrity of the WPC facility. Benefits of doing this include reducing the risk of a future NPDES permit violation, reducing pollutants that would pass through the treatment works and degrade stream water quality, protecting the health and safety of sanitary sewer workers, and ensuring that the City can continue to land-apply its biosolids.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, thereby approving the revisions to the Non-domestic Waste Pretreatment Program local limits as described in the attached document.

Current and Proposed Local Discharge Limits

Pollutant	Current Local Limit mg/L	Proposed Local Limit mg/L	Relative Change in Limit
Arsenic	0.06	0.02	More Stringent
Acetone	13.30	14.9	Less Stringent
Benzene	0.05	0.05	No Change
BTEX	0.75	0.75	No Change
Cadmium	0.3	0.04	More Stringent
Chloride	900	500	More Stringent
Chromium (Total)	7.0	0.93	More Stringent
Copper	3.0	0.57	More Stringent
Cyanide	0.55	0.88	Less Stringent
Lead	1.3	0.89	More Stringent
Mercury	0.02	0.01	More Stringent
Molybdenum	0.19	0.29	Less Stringent
Nickel	7.8	11.0	Less Stringent
Phenol	1.5	2.6	Less Stringent
TPH	10	10	No Change
Selenium	0.50	0.09	More Stringent
Silver	0.45	0.05	More Stringent
Sulfide	2.0	2.0	No Change
Zinc	10.0	4.3	More Stringent
Oil & Grease	300	300	No Change
CBOD5	1,500	1,800	Less Stringent
COD	2,500	2,700	Less Stringent
TSS	1,500	1,600	Less Stringent
Ammonia	200	225	Less Stringent
TKN	250	280	Less Stringent

Acronyms:

- BTEX — Benzene, Toluene, Ethyl benzene, Xylene (typical components of gasoline)
- TPH — Total Petroleum Hydrocarbons (Broad category of compounds found in crude petroleum)
- $CBOD_5$ — Carbonaceous Biochemical Oxygen Demand-Five day (measure of oxygen-consuming strength of a waste
- COD — Chemical Oxygen Demand (measure of oxygen-consuming strength of a waste)
- TSS — Total Suspended Solids (measure of solids concentration in a waste)

City of Ames, Iowa
Non-Domestic Wastewater Pretreatment Program
Effects of Proposed Local Limits on Non-Domestic Users
2011

Ames-Story Environmental Landfill
The new local limits appear to have no effect on the Ames-Story Landfill. Based on sampling data from 2008 to 2011, the proposed local limits do not create violations where they did not exist in the past. Therefore the proposed local limits are expected to have no negative impacts on the Ames-Story Environmental Landfill based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: October 3, 2011

Industry Comments: The Ames-Story Environmental Landfill has reviewed the proposed revisions and stated that they are acceptable. Given their relatively small flow, staff believes this may be an appropriate application of Best Management Practices instead of numeric limits and will explore this further with the Ames-Story Environmental Landfill.

Barilla America, Inc.
The new local limits appear to have no effect on Barilla America, Inc. Between 2008 and 2011, they had no violations with the existing limits so the new limits would not reduce the number violations they had. Therefore the proposed local limits are expected to have no negative impacts on Barilla America, Inc. based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: October 7, 2011

Industry Comments: Barilla has reviewed the proposed revisions and agrees that they will have no negative impact on their facility.

City of Ames Landfill
Between 2008 and 2011, the City of Ames Landfill had no violations with the existing local limits. With the new local limits, they would have had one arsenic violation. The new arsenic limit is 0.02 mg/L which would have caused one sample with 0.026 mg/L arsenic to be in violation.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 30, 2011

Industry Comments: The City of Ames Landfill has reviewed the proposed revisions and has concerns about the arsenic limit decreasing from 0.06 mg/L to 0.02 mg/L. The Landfill recorded an arsenic value of 0.026 mg/L from a sample collected on 5/10/2010. They are concerned that the new lower limit for arsenic could result in an increased number of violations and the possibility of a compliance schedule for reducing arsenic in their discharge. Given their relatively small flow, staff believes this may be an appropriate application of Best Management Practices instead of numeric limits and will explore this further with the City of Ames Landfill.

Hach Company – North Outfall
With the current local limits, between 2008 and 2011, Hach Company – North had 21 acetone violations. No other parameters were in violation during that period. With the proposed local limits, Hach Company – North would have reduced the number of acetone violations to 13 for that same time period. However, the proposed limits would have caused Hach Company – North to have one Chloride violation (600mg/L, proposed limit = 500 mg/L), one copper violation (0.58 mg/L, proposed limit = 0.57 mg/L) and one silver violation (0.068 mg/L, proposed limit = 0.05 mg/L). The proposed local limit will likely reduce the number of violations Hach Company – North has for acetone, but will likely increase the number of violations for other parameters, particularly chloride, copper and silver.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 20, 2011

Industry Comments: Hach has reviewed the proposed revisions and is comfortable with the proposed limits. While the reductions in metals concentrations has the potential for increased violations, the increase in the acetone limit would likely reduce the number of acetone violations and the number of violations overall.

Hach Company – South Outfall
Between 2008 and 2011, Hach Company – South had two violations for COD, one violation for CBOD5 and two violations for Total Suspended Solids under the existing local limits. With the proposed local limits, Hach Company – South would have had the same violations but no new violations would have occurred. The proposed local limits will likely have negligible impacts to Hach Company – South based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 20, 2011

Industry Comments: Hach has reviewed the proposed revisions and agrees that they will have a negligible impact on the South Outfall at their facility.

Industrial Plating Company
Between 2008 and 2011, Industrial Plating had two pH violations (pH 11.1 and 11.2) and one total chromium violation (36 mg/L, limit = 7.00 mg/L). With the proposed local limits, Industrial Plating would have had the same violations, but would have also had an additional violation for chromium (1.6 mg/L, proposed limit = 0.93 mg/L). The 36 mg/L chromium violation was a result of equipment failure and has been corrected. Therefore, the new local limits would likely have a minimal impact on Industrial Plating Company based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 27, 2011

Industry Comments: Industrial Plating has reviewed the proposed revisions and has some concerns about the decrease in the chromium limit. They expressed concern that the revised chromium limit has the potential to result in a greater number of violations. Because they are considered a “categorical industry” by the U.S. EPA, best management practices are not appropriate, even with Industrial Plating’s small flow. However, staff believes this may be an appropriate application of a mass limit instead of a concentration limit and will explore this further with Industrial Plating.

Iowa State University – Central Campus
Between 2008 and 2011, ISU – Central Campus has had no violations based on current local limits. With the proposed local limits, no violations would have occurred during that same time period. Therefore, the new local limits are expected to have no negative impact on ISU - Central Campus based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 15, 2011

Industry Comments: Iowa State University has reviewed the proposed revisions and agrees that they will have no negative impact on Central Campus.

Iowa State University – Environmental Health and Safety Services Building
Between 2008 and 2011, ISU – EHSSB had one violation for TSS (2,760 mg/L, limit = 1,500 mg/L) and one violation for pH (5.9, limit = 6 -10 pH). With the proposed local limits, ISU – EHSSB would have had the same violations. However, the proposed limits would not have caused an increase in violations. Therefore the proposed limits are expected to have no negative impact on ISU – EHSSB based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 13, 2011

Industry Comments: Iowa State University has reviewed the proposed revisions and agrees that they will have no negative impact on the Environmental Health and Safety Services Building. Given their relatively small flow, staff believes this may be an appropriate application of Best Management Practices instead of numeric limits and will explore this further with Iowa State University.

Iowa State University – College of Veterinary Medicine/Lloyd Vet. Med. Center
Between 2008 and 2011, ISU – College of Vet Med had two TSS violations (2,040 mg/L and 1,590 mg/L, limit = 1,500 mg/L) and one CBOD5 violation (2,460 mg/L, limit = 1,500 mg/L). With the proposed local limits, ISU – College of Vet Med would not have had the 1,590 mg/L TSS violation but would still have had the other two violations. In addition, the proposed local limits would have caused the facility to have four silver violations (0.098 mg/L, 0.058 mg/L, 0.085 mg/L and 0.133 mg/L, proposed limit = 0.05 mg/L). The proposed local limit for silver could significantly impact the ISU – College of Vet Med's ability to meet permit compliance.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 13, 2011

Industry Comments: Iowa State University has reviewed the proposed revisions and agrees that the decrease in the local limit for silver could significantly impact the ISU – College of Vet Med. However, they stated that they understand how the local limit was calculated and they understand why it is in place. They have commented that they will be finding the source of silver in their waste stream and taking a proactive approach to reducing it. Given their flow volumes, staff does not see this as an appropriate application of Best Management Practices. However staff has the discretion to allow ISU time to investigate the source of the silver in the discharge and research possible measures to reduce the discharge before any form of enforcement action would be considered.

Iowa State University –Veterinary Medical Research Institute / Livestock Infectious Disease Isolation Facility (VMRI/LIDIF)
Between 2008 and 2011, ISU – VMRI/LIDIF had six violations for TSS (3,820 mg/L, 2,830 mg/L, 2,290 mg/L, 2,500 mg/L, 2,300 mg/L, 2300 mg/L; limit = 1,500 mg/L), three violations for CBOD5 (2,420 mg/L, 3,710 mg/L, 1594 mg/L; limit = 1,500 mg/L) and four violations for COD (2,940 mg/L, 2,600 mg/L 3,600 mg/L and 2,600 mg/L; limit = 2,500 mg/L). With the proposed local limits, the facility would still have had the six TSS violations, but would have only had two CBOD5 and two COD violations. Therefore the proposed local limits are expected to have no negative impact on the ISU – College of Vet Med based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 13, 2011

Industry Comments: Iowa State University has reviewed the proposed revisions and agrees that they will have no negative impact on VMRI/LIDIF.

Mary Greeley Medical Center
Between 2008 and 2011, Mary Greeley Medical Center has had no effluent limit violations under the current local limits. With the proposed local limits, Mary Greeley Medical Center would also have not had any violations during that same time period. Therefore, the proposed local limits are expected to have no impact on Mary Greeley Medical Center based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: October 5, 2011

Industry Comments: Mary Greeley Medical Center has reviewed the proposed revisions and agrees that they will have no impact on their facility.

National Centers for Animal Health (NCAH) – North Outfall (NADC)
Between 2008 and 2011, the NCAH – North has had no effluent limit violations under the current local limits. Under the proposed local limits, the facility would also have had no violations for the same time period. Therefore, the proposed local limits are expected to have no impact on the NCAH – North Outfall based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 19, 2011

(See Industry Comments below.)

National Centers for Animal Health – South Outfall (NVLS/CVB)
Between 2008 and 2011, The NCAH – South has had one pH violation (10.9 pH; limit = 6 – 10 pH) and one TSS violation (1,560 mg/L; limit = 1,500 mg/L). Under the proposed local limits, the NCAH – South would not have had the TSS violation and no new violations would have occurred. Therefore the proposed local limits are expected to have no negative impacts to the NCAH – South based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 19, 2011

Industry Comments: NCAH – North and NCAH – South have reviewed the proposed revisions and have concerns about the decrease in the local limit for chlorides and for some of the metals.

They regularly uses bleach as a disinfectant and have had two results in the last year that would have exceeded the new 500 mg/L limit. Also, the wastewater from facility cleaning and decommissioning projects can be high in metals including mercury, cadmium, chromium and lead. Lower limits for these and other metals could increase their costs as they may have to remove and haul off-site more of the metals that they recover. Chloride is of concern in an indirect way. Only if the Ames WPC facility fails its Whole Effluent Toxicity (WET) test would a chloride limit be imposed on the WPC facility. Staff has the discretion to implement the chloride local limit as a "recommended" limit. This would allow the concentration to be monitored and corrective action taken before a WET test violation at the treatment plant were to occur.

Sauer Danfoss Company
Between 2008 and 2011, Sauer Danfoss Company had two violations for TSS (1,700 mg/L each; limit = 1,500 mg/L), four violations for CBOD5 (1,740 mg/L, 1,580 mg/L, 1,980 mg/L, and 1,587 mg/L; limit = 1,500 mg/L) and three violations for COD (3,190 mg/L, 3,810 mg/L and 3,400 mg/L; limit = 2,500 mg/L). Under the proposed local limits, Sauer Danfoss Company would still have had the two TSS violations and three COD violations, but would have only had one CBOD5 violation. Therefore the proposed local limits are expected to have no negative impact on Sauer Danfoss Company based on previous data.

Date of Letter: September 2, 2011
Date of On-Site Meeting: September 21, 2011

Industry Comments: Sauer-Danfoss has reviewed the proposed revisions and agrees that they will have little impact on their facility. However, they stated that they are concerned that some of the parameters are only required to be sampled every two years. They were concerned that the dataset used to evaluate the potential for future violations was not very extensive with some parameters only tested once every two years. They would have preferred to have more sampling information.