City of Afton

CITY COUNCIL WORK SESSION MEETING AGENDA

Tuesday, January 30, 2018
At 5:00 p.m.

1. **CALL TO ORDER**

2. **ROLL CALL**

3. **APPROVAL OF AGENDA** – January 30, 2018 Council Work Session

4. **CITY COUNCIL BUSINESS**

   A. 30th Street Reclamation Project and Culvert Replacement
   B. Expansion of the City's well testing program beyond testing for nitrates to include testing for PFC's and other chemicals
   C. Request for Proposals (RFP) processes for consultant services in 2018

5. **ADJOURN**

A quorum of the City Council or Other Commissions may be present to receive information at this meeting

City of Afton
3033 St. Croix Trl, P.O. Box 219
Afton, MN 55001

Meeting Date Jan. 30, 2018

Council Memo

To: Mayor Bend and Members of the City Council

From: Ron Moorse, City Administrator

Date: January 24, 2018

Re: 30th Street Improvement Project and Culvert Replacement

The Public Works Committee has recommended that 30th Street be improved in 2018. The City Engineer has obtained core samples along 30th Street that indicate the type of improvement needed for the street is a reclamation. This will also include the replacement or partial replacement of a large culvert. At the work session, City Engineer Nick Guilliams will provide information regarding the 30th Street improvement project and the options of a partial or full replacement of the culvert.

City of Afton
3033 St. Croix Trl, P.O. Box 219
Afton, MN 55001

Meeting Date Jan. 30, 2018

Council Memo

To: Mayor Bend and Members of the City Council

From: Ron Moorse, City Administrator

Date: January 23, 2018

Re: Expansion of the City's Well Testing program

The City currently provides a well testing program for city residents to test for nitrates. There has been discussion regarding whether the City should expand the well testing program to include testing for PFC's and other chemicals. Attached is an email from Stephanie Souter of Washington County Public Health and Environment regarding expanding the City's testing program to include PFC's. The email indicates there are a number of obstacles to testing for PFC's and the Minnesota Department of Health is doing testing for PFC's in the northwest portion of Afton. Also attached are emails from Ginny Yingling of the Minnesota Department of Health regarding PFC testing.

From: Julie Yoho (City Clerk)
Sent: Monday, January 22, 2018 4:26 PM
To: Ron Moorse <rmoorse@ci.afton.mn.us>
Subject: FW: Afton well testing

Ron,
Information on PFC testing

Julie

From: Stephanie Souter [mailto:Stephanie.Souter@co.washington.mn.us]
Sent: Friday, January 19, 2018 3:03 PM
To: Julie Yoho (City Clerk) <jyoho@ci.afton.mn.us>

Subject: RE: Afton well testing

Good afternoon Julie,

Thanks for reaching out. Regarding your question about PFC testing, I'm sorry but this is not something that the county would be able to assist with for a number of reasons.

1. The nitrate testing that you already do through us is through a private lab that we contract with, and they do not offer PFC testing.
2. While in the past we've offered PFC testing to residents by utilizing the Minnesota Department of Health (MDH) lab, we currently have a moratorium on that testing. The MDH lab is prioritizing PFC samples based on existing data, as well as taking into account geology, and their knowledge of where the plume is. The MDH lab is also one of the few labs in the country that can do that kind of testing.
3. In addition, a PFC test is a completely separate sample, and would need to be collected by trained staff through a chain of custody process, as required by the MDH lab, and even if we offered that testing currently, I don't know that we would have the staff capacity to accommodate a high volume. In the past there were very very few of these tests that our staff would collect.
4. MDH is already testing some wells in Afton, free of charge, as part of the sample protocol they are following http://mpca.maps.arcgis.com/apps/View/index.html?appid=ff4e56d9b6184ddaa297d1161784a884
5. PFC tests are very expensive ($319 a sample).

I would suggest talking to Ginny Yingling, hydrogeologist with the MDH, about PFC testing. Phone is 651-201-4930 and she is copied on this email. I spoke with her already so she is aware of your initial inquiry. She has extensive knowledge of testing that's already occurred within the city, as well as any planned testing and how they decide where to do that.

Thanks,

Stephanie Grayzeck Souter, MS, AICP | Senior Planner

Washington County Public Health & Environment | 14949 62nd St North, P.O. Box 6. | Stillwater, MN 55082
From: Julie Yoho (City Clerk) [mailto:jyoho@ci.afton.mn.us]
Sent: Thursday, January 18, 2018 10:58 AM
To: Stephanie Souter <Stephanie.Souter@co.washington.mn.us>
Subject: Afton well testing

Stephanie,
The City of Afton may want to expand their next well testing to include chemicals such as PFC's. Would it be possible to do this in addition to the regular Nitrate testing? Would it require a separate sample? Could you provide me with a price sheet for testing for PFC's and other chemicals?

Thanks,

Julie Yoho
City Clerk

Ron Moorse

From: Mark Have <markhave@q.com>
Sent: Tuesday, January 09, 2018 9:10 AM
To: Ron Moorse; Julie Yoho (City Clerk)
Cc: Mark Have
Subject: Fwd: PFC'S in North Part of Afton
Attachments: WLT-Afton area_Jan2018.pdf; PFOA map_north_11-29-2017.pdf; PFOS map_north_11-10-2017.pdf

Ron, please fwd to NR&GW members for our 5:00 meeting tonight. PFC's are on the agenda, and a map shows occurances of PFC's in the north part of Afton.
mark

Begin forwarded message:

From: "Yingling, Virginia (MDH)" <virginia.yingling@state.mn.us>
Subject: RE: PFC'S in North Part of Afton
Date: January 8, 2018 at 5:45:03 PM CST
To: Mark Have <markhave@q.com>

Hi Mr. Have:

Thanks for contacting our office about the groundwater issues in Washington County. I have been sending occasional updates regarding our work to a list of city and county staff that includes the Afton City Administrator, Ronald Moorse. I'll be glad to add you to our email list so you can receive the updates, too. They come out about quarterly (but the timing is based mainly on when enough activities have occurred to warrant another update). I hope to get a 2017 summary together in the next week or so (I got a bit behind due to the holidays and being out sick recently).

You can also find more information on our website and the Minnesota Pollution Control Agency (MPCA) website. Some helpful links include:
http://www.health.state.mn.us/divs/eh/hazardous/topics/pfcs/index.html
http://www.health.state.mn.us/divs/eh/hazardous/topics/pfcs/current.html
http://www.health.state.mn.us/divs/eh/hazardous/topics/pfcshealth.html

https://www.pca.state.mn.us/waste/perfluorochemicals-pfcs
https://www.pca.state.mn.us/featured/drinking-water-advisory-southern-washington-county
http://mpca.maps.arcgis.com/apps/View/index.html?appid=ff4e56d9b6184ddaa297d1161784a884 (interactive map showing PFC sampling areas)

Regarding your specific questions:

1. PFBA, PFOA, and PFOS are all individual chemicals that are part of a very large class (3,000+) of chemicals often referred to as perfluorinated chemicals or PFCs (although they are increasingly being called per- and polyfluoroalkyl substances, or PFAS, which you may also see used in newer publications about these chemicals).

2. There have been many uses for PFBA, PFOA, and PFOS, and that's part of the problem. Their widespread use, in both industrial applications and consumer products, and their extreme persistence in the environment, resulted in their global distribution. The use for PFCs that most people know about is in non-stick coatings that resist stains, oil/grease, and/or water – including Teflon, GoreTex, Scotchguard, and fast-food wrappers. Those uses mostly involved PFOA. However, PFCs are also thermally resistant, so another widespread use has been in some Class B fire-fighting foams (which are used to put out chemical fires; these are also called aqueous film-forming foams or AFFF) – many airports, defense department sites, oil refineries, and chemical plants have large stockpiles of AFFF and have PFC contamination as a result of their use – these tend to be dominated by PFOS, PFHxS, and PFBS, but other PFCs are usually present. PFOS is also used in fume-suppression chemicals used in plating facilities (especially chrome platers). PFBA apparently was used for photographic film coatings. Because of their widespread use in consumer products, we also find that nearly all landfills and effluent from many waste water treatment plants have some level of PFC contamination. All of this is further complicated by the fact that the process to create any particular PFC involves polymer chemistry that is "dirty" – meaning that many other forms of PFCs may be created in addition to the "target" chemical. And, many of the PFCs present in the environment may be the result of degradation of another "precursor" PFC. You can read more about the history and uses of PFCs at: http://pfas-1.itrcweb.org/wp-content/uploads/2017/11/pfas_fact_sheet_history_and_use__11_13_17.pdf

3. PFCs accumulate in the body at varying rates:
    a. PFBA does not appear to accumulate appreciably and has a "half-life" of a few weeks,
    b. PFHxS may be the most accumulative with a "half-life" of ~8-9 years,
    c. PFOA has a "half-life" of ~3-4 years,
    d. PFOS has a "half-life" of ~4-5 years.

    We're still learning about how PFCs affect humans – most of our information comes from animal studies, so there's some uncertainty in extrapolating that to humans. For more information, it would probably be best to look at our health information sheet at:http://www.health.state.mn.us/divs/eh/hazardous/topics/pfcshealth.html. In 2016, the US EPA issued new Health Advisory (HA) values of 0.07 ppb for PFOA and PFOS, based on recent animal studies that suggested that long-term (10+ yr) exposure of women and girls to these levels may result in levels in their bodies high enough to potentially affect their babies' developing immune system. In 2017, after reviewing the EPA's assessment, MDH set even lower values (0.035 ppb for PFOA and 0.027 ppb for PFOS, and also applied the PFOS value to PFHxS). It is these new lower values that have triggered all the additional sampling and issuance of drinking water advisories in West Lakeland Township and Afton (and elsewhere in Washington Co.). Prior to setting the new, lower values MDH had sampled some wells in West Lakeland Township, but none exceeded our previous Health Risk Limits.

    Because many of the PFCs we test for behave similarly in the body, we not only compare well results to each individual guidance value, we also evaluate their cumulative effect using an "additivity" calculation that takes into account the different "potency" of each of the PFCs.

4. The transport pathways for PFCs in Washington County are very complex. Their source areas are a former dumpsite in Oakdale (in the wetlands west of I-694 and north and south of Co. Rd. 14, west-northwest of the Menards) and at the former Washington County Landfill in Lake Elmo. Both sites contaminated the groundwater, which in those areas flows south-southwest toward the Mississippi River, but some of the contaminated water at the Oakdale site enters a stream (Raleigh Creek) that flows east to Lake Elmo and discharges into Eagle Point Lake in the Lake Elmo Park Reserve. For a period of time in the late 1980s – early 1990s, some of the groundwater at the Washington County landfill also was pumped into a stormwater sewer that

eventually discharges into Raleigh Creek, just north of Eagle Point Lake. As a result, Eagle Point Lake has levels of PFCs above our guidance values. In the early 1990s, the watershed district completed "Project 1007" to reduce flooding, protect water quality in Lake Elmo, and convey stormwater to the St. Croix River. Part of this project involved construction of a pipe that isolates and transports water from Eagle Point Lake (and the wetland and water bodies between it and Lake Elmo) across the bottom of Lake Elmo and discharges through a culvert under Lake Elmo Ave. into a creek on the former Tartan Park property that flows into Horseshoe Lake. Lake Elmo itself also discharges, through a separate culvert, into that stream. The surface water in both Eagle Point Lake and Lake Elmo contains PFCs.

From Horseshoe Lake (as shown by the blue line on the first attached map), the water flows into a drainage ditch that angles southeast and then under 10th St. where it discharges into a series of three ponds along the west side of Neal Ave. N. It then enters a pipeline that crosses under I-94 and enters the MnDOT stormwater drainage system that parallels the interstate and eventually discharges to the St. Croix River. We collected surface water samples throughout the drainage system (locations shown by blue squares), including several locations not connected to the impacted stormwater drainage (for comparison). We found PFCs at concentrations above our drinking water values in all of the samples north of I-94; those collected in Afton (a small unnamed creek that crosses under Neal Ave. and the outlet for Lake Edith where it crosses under Indian Trl.) had only very low levels (mainly PFBA), all below our drinking water values.

5. Our private well sampling data suggest the PFCs have infiltrated to the groundwater through Horseshoe Lake and along much of the stormwater drainageway – particularly the ditch between 10th and 12th St. N., the ponds along Neal Ave. N., and the pond at the I-94 rest area. Groundwater in this part of Washington Co. flows east-southeast toward the St. Croix River. As a result, some of the contamination appears to have migrated under the interstate and into northernmost Afton. The red triangles are where we have issued drinking water advisories because the PFCs exceed our guidance values. We just got the results back for the wells near the north shore of Lake Edith and along Indian Trl. S. – the advisory letters will go out shortly to those well owners. The small blue dots indicate wells where a trace of PFOS and/or PFOA was detected, but the water did not exceed our guidance values; the purple dots indicate wells where no PFOS or PFOA was detected. As you'll note, we have not yet found the limits of the area where wells exceed our new guidance values, so we are continuing to expand our sampling efforts to the south and east (wells to be sampled shown as small green dots). Some of these well owners have already been contacted regarding sampling (and we've either not yet been given permission or haven't gotten their results) or we're currently in the process of contacting those well owners to get permission to test their water. As you'll see on the PFOA and PFOS maps, we appear to be nearing the limit of detectable PFOA, but not PFOS.

   Once we have identified all of the wells that exceed our levels of concern, we will continue to sample outward to be sure we have located all wells that contain any detectable levels of PFOS and/or PFOA. Then we will continue sampling until we have established a buffer of wells with no PFOS or PFOA.

I hope this information is helpful. If your committee would like a presentation on our work, we'd be happy to arrange to do that.

Best regards,

Ginny Yingling
Hydrogeologist | Site Assessment and Consultation Unit

Environmental Health Division

Minnesota Department of Health
Office: 651-201-4930

DEPARTMENT OF HEALTH

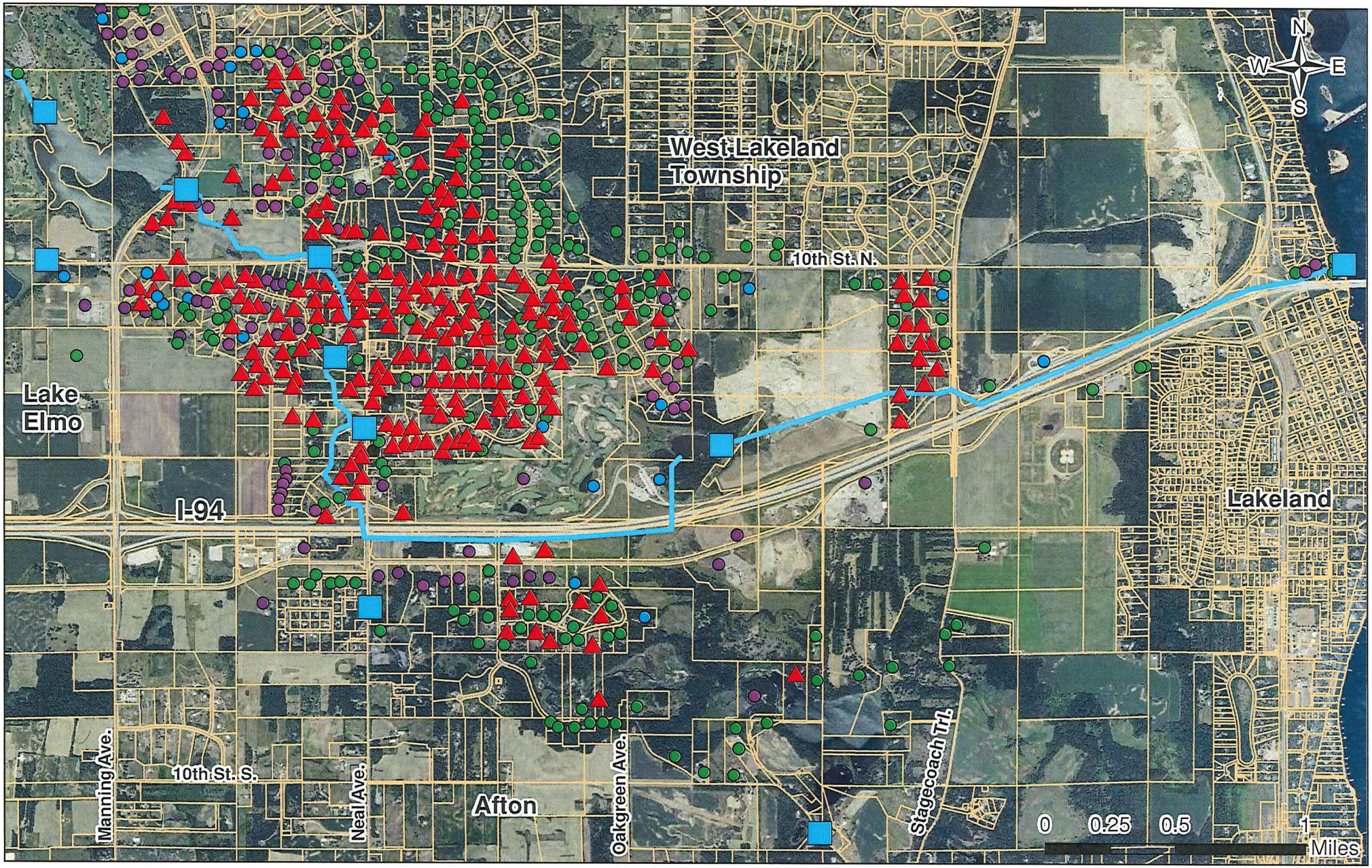
From: Mark Have [mailto:markhave@q.com]
Sent: Friday, January 05, 2018 1:21 PM
To: Yingling, Virginia (MDH) <virginia.yingling@state.mn.us>
Cc: Mark Have <markhave@q.com>
Subject: PFC'S in North Part of Afton

Dear Ms. Yingling:
My name is Mark Have, and I am on the Natural Resources and Ground Water Committee for the city of Afton. We are concerned about PFC's from the 3M Oakdale Disposal Site and the former Washington County Landfill Site in Lake Elmo entering a stormwater drainage system that drains towards Afton. We would like to learn more about your latest findings from your PFC sampling in the West Lakeland and Afton area. Because our knowledge base is limited when it comes to these exotic organic compounds, I would appreciate if you could address the following questions:

1. Are PFBA's, PFOA's, and PFOS's in the PFC family of compounds?
2. What are each used for?
3. How does the body handle these compounds? Do they accumulate?
4. Where does the stormwater drainage that carried the PFC's, terminate?
5. What does your latest sampling results show in our area of concern? - Concentrations? Boundary of contamination?

Thank you for your research; it is very important.
Sincerely,

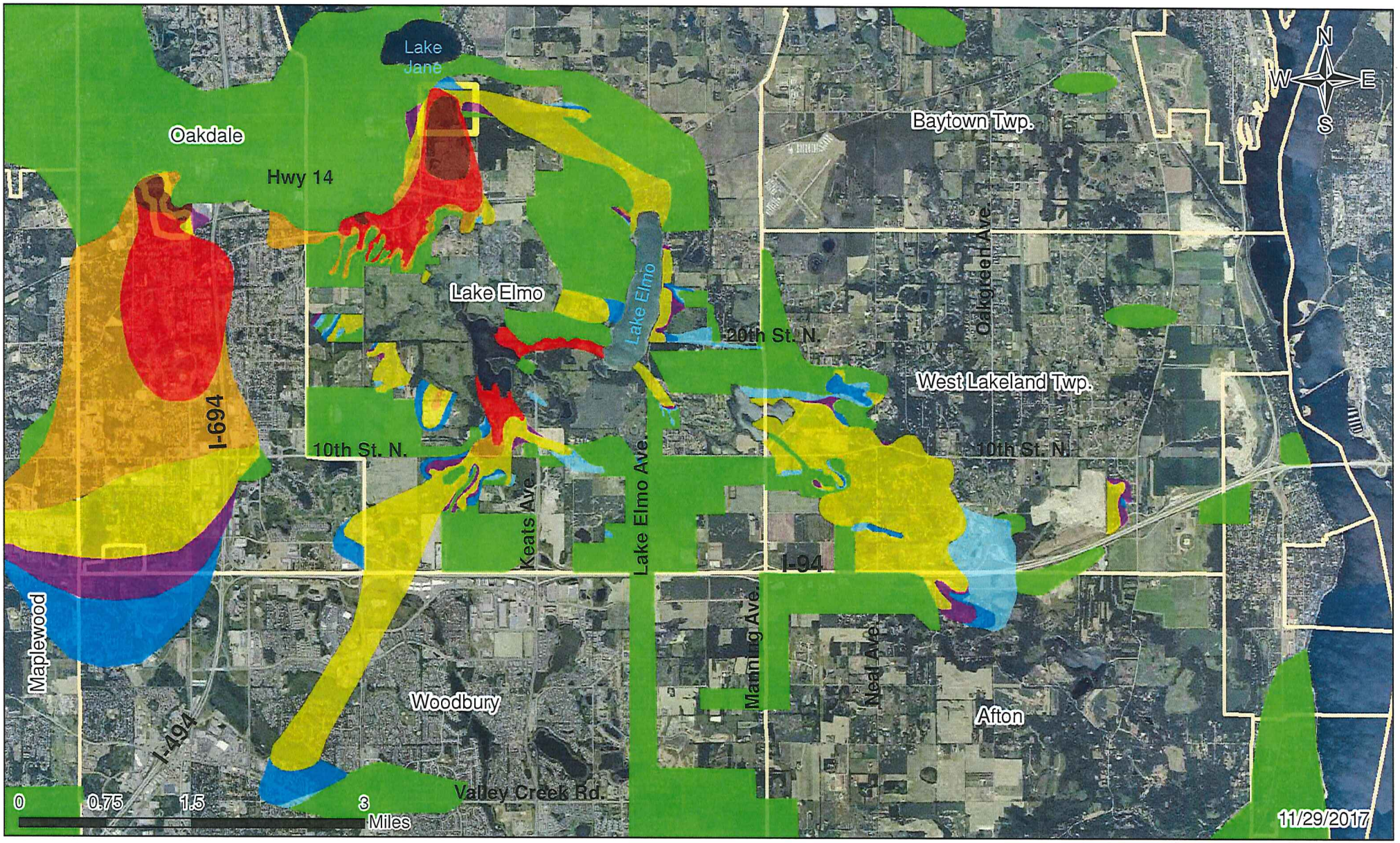
Mark Have, NR&GW Committee
City of Afton
651-528-2370



Private Well Sampling and Advisories - West Lakeland Twp. and Afton

- Well advisory
- Below levels of health concern, PFOS/PFOA detected
- Below levels of health concern, no PFOS/PFOA
- Well on "to be sampled" list
- Well owner refused sampling
- Surface water sample
- Stormwater drainage system

MDH, 1/8/2018



DEPARTMENT OF HEALTH

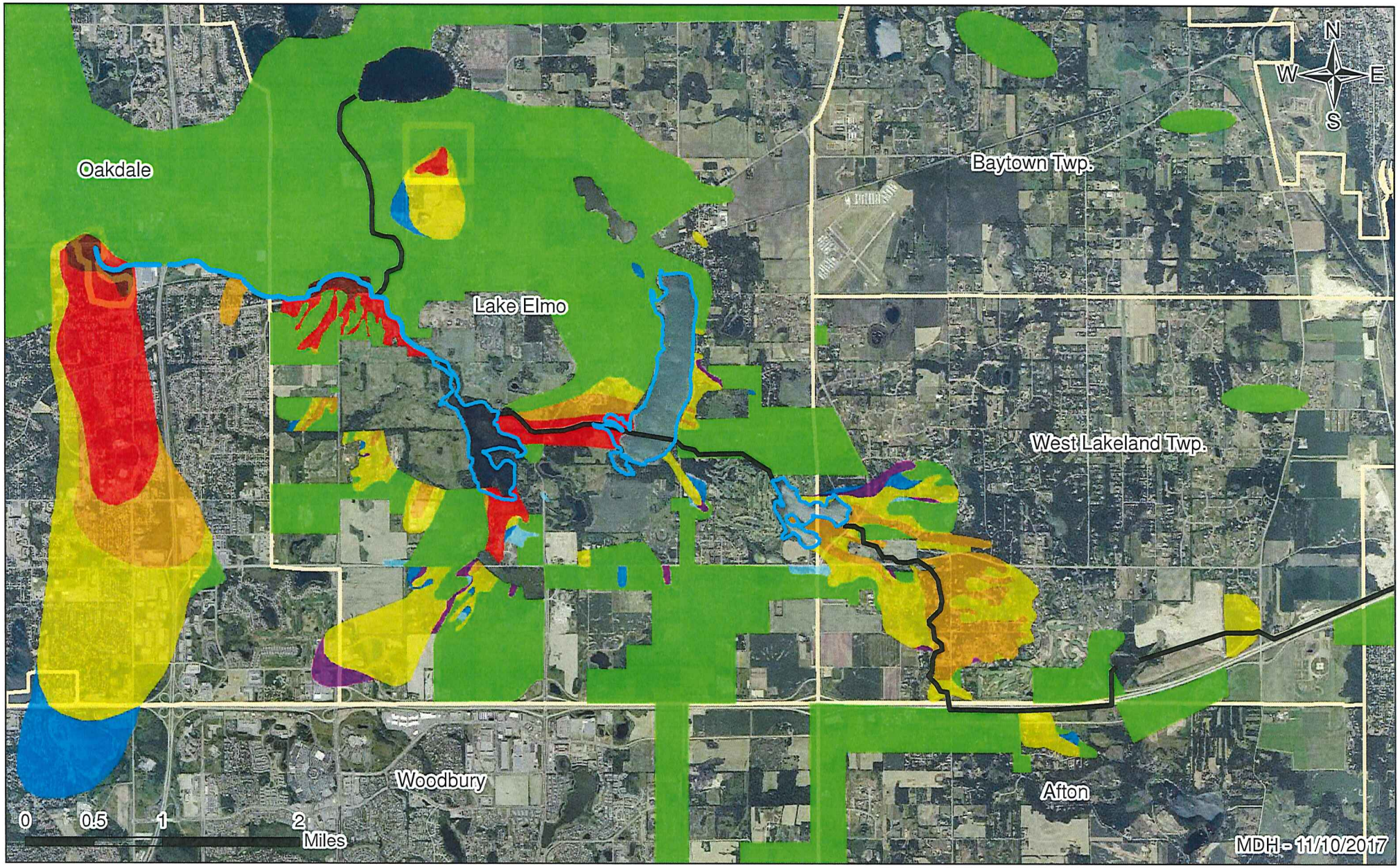
PFOA North of I-94 - All Aquifers

Phone: 651-201-4897
or 1-800-657-3908

- PFOA greater than 1.75ppb (>50x HBV)
- PFOA 0.351-1.75ppb (10-50x HBV)
- PFOA 0.176-0.35ppb (5-10x HBV)
- PFOA 0.035-0.175ppb (1-5x HBV)
- PFOA 0.027-0.035ppb (75-100% HBV)
- PFOA 0.0175-0.026ppb (50-75% HBV)
- PFOA 0.004-0.0174ppb (<50% HBV)
- PFOA not detected

MDH Health Based Value (HBV) for PFOA is 0.035 parts per billion (ppb; or 35 parts per trillion)

Map combines data from all aquifers, actual concentrations in any area may vary; blank spaces indicate no sample data.



PFOS Groundwater and Surface Water Pathways

- PFOS greater than 1.35 ppb (>50x HBV)
- PFOS 0.271-1.35ppb (10-50x HBV)
- PFOS 0.136-0.27ppb (5-10x HBV)
- PFOS 0.028-0.135ppb (1-5x HBV)
- PFOS 0.021-0.027ppb (75-100% HBV)
- PFOS 0.0136-0.02ppb (50-75% HBV)
- PFOS 0.004-0.0135ppb (<50% HBV)
- PFOS not detected
- Raleigh Creek
- Project1007
- PFAS impacted lake

Map combines data from all aquifers, actual concentrations in any area may vary; blank spaces indicate no sample data.

Office: 651-201-4930

DEPARTMENT OF HEALTH

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Subject: Re: PFC'S in North Part of Afton

Ms. Yingling-
Thanks for your thorough and enlightening response. I have three questions; they concern the map showing purple dots and red triangles; is there a correlation between concentration and specific aquifers and types of aquifers? With respect to health concerns, what were concentrations in the two surface-water samples - Neal south of I-94 and the one south of 10th St S.? Are the two surface-water sites in or near groundwater recharge areas?
Regards,
mark

On Jan 8, 2018, at 5:45 PM, Yingling, Virginia (MDH) <virginia.yingling@state.mn.us> wrote:

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https://www.pca.state.mn.us/waste/perfluorochemicals-pfcs
https://www.pca.state.mn.us/featured/drinking-water-advisory-southern-washington-county
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Best regards,

Ginny Yingling
Hydrogeologist | Site Assessment and Consultation Unit
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Minnesota Department of Health
Office: 651-201-4930
<image001.gif>

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2. What are each used for?
3. How does the body handle these compounds? Do they accumulate?
4. Where does the stormwater drainage that carried the PFC's, terminate?
5. What does your latest sampling results show in our area of concern? - Concentrations? Boundary of contamination?

Thank you for your research; it is very important.
Sincerely,

Mark Have, NR&GW Committee
City of Afton
651-528-2370

<WLT-Afton area_Jan2018.pdf><PFOA map_north_11-29-2017.pdf><PFOS map_north_11-10-2017.pdf>

Ron Moorse

From: Mark Have <markhave@q.com>
Sent: Wednesday, January 10, 2018 7:52 AM
To: Ron Moorse
Cc: Julie Yoho (City Clerk); Mark Have
Subject: Fwd: PFC'S in North Part of Afton

Ron-
Ginny Yingling sent some more info about the work that MDH is doing with PFC's. Please electronically fwd to NR&GW members as soon as you conveniently can, and then, include hard copies in the packets for the February meeting. PFC's were on the agenda for last night's meeting; unfortunately, we didn't have a quorum. It will undoubtedly be on the February agenda.
Thanks,
mark

Begin forwarded message:

From: "Yingling, Virginia (MDH)" <virginia.yingling@state.mn.us>
Subject: RE: PFC'S in North Part of Afton
Date: January 9, 2018 at 5:15:19 PM CST
To: Mark Have <markhave@q.com>

Hi Mark:

There is some correlation between concentrations and aquifers, but we're still sorting that out. Part of my plan this month is to update the overall result maps and then generate maps by aquifer to help clarify this very point.

In Afton, so far, it appears that most of the well advisories are being issued to wells that are completed in the Quaternary sediments above the bedrock and in the Prairie du Chien (the top bedrock aquifer) or to wells for which we have no well record (which are older, and most likely are completed in the Quaternary or Prairie du Chien). Lower concentrations generally are being detected in the Jordan Sandstone (directly beneath the Prairie du Chien). However, we have issued well advisories for two Jordan wells (one at Chandler Exhibits, 13526 Hudson Rd S. and the other at 13910 Tomahawk Ln. S.), so I don't think we can declare the Jordan "safe". We have also sampled some even deeper wells in Afton, completed in the Tunnel City Group (which is below the Jordan and below a low-permeability shaley formation called the St. Lawrence) – those wells have had not detections of PFCs.

However, in West Lakeland Township, both the Prairie du Chien and Jordan are contaminated (with only the very deepest Jordan wells showing low or no PFCs). While we have had some conversations with our well management program about possibly advising drillers to go to the Tunnel City Group for new wells, we are concerned that significant additional pumping pressure on that aquifer will simply pull the contamination deeper. So, as yet, no decisions have been made regarding new well construction.

The concentrations detected in the two surface water samples were:

Lake Edith outlet at Indian Trl. S.:
PFBA = 0.23 ppb (HRL = 7 ppb)

Unnamed creek at Neal Ave. S.:
PFOA = 0.021 ppb (HBV = 0.035 ppb)
PFBA = 0.23 ppb (HRL = 7 ppb)
PFPeA = 0.021 ppb (HRL – none established)
PFHxA = 0.013 ppb (HRL – none established)
PFBS = 0.012 ppb (HBV = 2 ppb)

HBV = Health Based Value; HRL = Health Risk Limit – these two types of drinking water guidance values are derived using the same methods, but HRLs have been promulgated through rule-making. No value has been derived for PFPeA or PFHxA as these two compounds have not had sufficient scientific testing, but based on their chemical structure and what we know about how chemicals in the PFC class behave, they are expected to be similar to PFBA, with little bioaccumulation in humans and low toxicity.

Please note that the guidance values shown above are based on long-term exposure to drinking water, so have little relevance for surface water. PFCs are not well adsorbed through the skin, so wading or swimming in water with PFCs is not expected to pose a health risk; even incidental ingestion during swimming would not constitute the kind of regular, long-term exposure needed to accumulate enough of the chemicals to pose a health risk.

There are no statewide surface water criteria for PFCs, but MPCA did establish waterbody-specific criteria for PFOA in Lake Calhoun (0.61 ppb) and the Mississippi River, Pool 2 (0.72 ppb). The concentration detected in the unnamed creek that crosses under Neal Ave. S. is far below those values.

According to the 2005 Washington County "Integrating Groundwater & Surface Water Management" report (https://www.co.washington.mn.us/documentcenter/view/730), Lake Edith is considered a "discharge" lake with respect to shallow groundwater – meaning groundwater from the surficial aquifer flows into the lake, but then flows out through a surface outlet, rather than re-entering the aquifer. Falstrom Ponds (which the unnamed creek flows into) are classified as "flow-through" with respect to groundwater – meaning groundwater enters them on the upstream side and re-enters the surficial aquifer on the downstream side (see Fig. 39). However, such classifications are likely a matter of degrees, as groundwater-surface water interactions are very complex. For example, Lake Elmo is considered a "discharge" lake because it has a surface water outlet near it's southeast shore, but we also know that PFCs from that lake are re-entering the groundwater along the length of its eastern shoreline. The watershed district could probably provide better information regarding recharge and discharge within the watershed.

It is possible that some of the PFCs from the unnamed creek are infiltrating into the shallow aquifer, but the wells along Indian Trl. S. and in the Tomahawk Dr. neighborhood that would be downgradient of that sample location generally have higher PFOA than was detected in the creek and they almost all have PFOS, which was not detected at all in the creek. The water quality in those wells looks much more like the water samples collected in the affected wells north of I-94. However, the surface water sampling done this summer is a "one-time" snapshot and shouldn't be considered conclusive. I collected the samples primarily to determine if there were other possible sources and/or surface water transport pathways that we needed to sample near.

Best regards,

Ginny Yingling
Hydrogeologist | Site Assessment and Consultation Unit
Environmental Health Division

Minnesota Department of Health

City of Afton
3033 St. Croix Trl, P.O. Box 219
Afton, MN 55001

Meeting Date Jan. 30, 2018

Council Memo

To: Mayor Bend and Members of the City Council

From: Ron Moorse, City Administrator

Date: January 23, 2018

Re: RFP Processes for 2018

Most City services are provided by contractual arrangements with service providers. The Council has agreed to conduct two RFP processes per year for contracted services. An RFP process for the Annual Audit that was to be conducted in 2017 will be conducted in 2018. The Council will need to select one more service for an RFP process in 2018.

Contracted Services

- Annual Audit
- Legal Services
- Engineering Services
- Information Technology Services
- Building Inspection Services
- Planning Consultant services
- Animal Control Services
- Snow and Ice Control on City Streets: The contract term is five years. The current five-year contract runs through April 30, 2019.
- Solid Waste and Recycling: The contract term is five years. The current five-year contract runs through 2021.