

DULUTH PUBLIC UTILITIES COMMISSION

Tuesday, August 20, 2013

City Council Chambers

AGENDA

1. Roll call
2. Public hearing on natural gas rates
3. Approval of previous meeting minutes
4. Old business

4.1 Natural gas rate resolutions:

13PUC-006 - RESOLUTION ESTABLISHING NATURAL GAS RATES EFFECTIVE WITH METER READINGS AFTER SEPTEMBER 30, 2013; AMENDING FIXED MONTHLY CHARGES AND VOLUMETRIC CHARGES; SUPERSEDING ALL PRIOR INCONSISTENT OR CONFLICTING RATES AS OF OCTOBER 1, 2013.

13PUC-008 - RESOLUTION AMENDING THE FIXED MONTHLY CHARGES FOR NATURAL GAS EFFECTIVE WITH METER READINGS AFTER SEPTEMBER 30, 2013, AND AMENDING SUCH RATES AGAIN EFFECTIVE WITH METER READINGS AFTER SEPTEMBER 30, 2014; SUPERSEDING ALL PRIOR INCONSISTENT OR CONFLICTING RATES AS OF OCTOBER 1, 2013. (Stauber)

13PUC-009 - RESOLUTION REQUESTING THAT CITY COUNCIL DEDICATE 2/7TH OF PILOT TO GAS SYSTEM CAPITAL IMPROVEMENTS AND BOND PAYOFF. (Stauber)

4.2 City salt usage practices (Kelly Fleissner, Maintenance Operations Manager)

13PUC-007 - RESOLUTION REQUESTING DULUTH STREET MAINTENANCE OPERATIONS MINIMIZE THROUGH BEST MANAGEMENT PRACTICES, THE APPLICATION OF ROAD SALT FOR DE-ICING PURPOSES TO MINIMIZE IMPACTS ON THE STORMWATER UTILITY. (Sellner) (TABLED 6/18)

4.3 Draft DPUC appeals process

5. Updates from staff
6. Upcoming Council actions
7. Commissioner questions or comments
8. Preview of upcoming business

**DULUTH PUBLIC UTILITIES COMMISSION**  
**Meeting Minutes**  
**June 18, 2013**

**Members Present:** Councilor Jennifer Julsrud, Robert Prusak, Jim Ramnes, Linda Sellner, Councilor Jim Stauber; Jason Thorsell arrived at 5:19 p.m.

**Members Absent:** Councilor Sharla Gardner

**Staff Present:** Bob Asleson, Jim Benning, Alisa DeRider, Leanna Gilbert, Howard Jacobson, Tom Johnson, Chris Kleist, Nick Petrangelo, Eric Shaffer

**Call to Order:** The meeting was called to order at 5:16 p.m. by President Sellner.

**Approval of previous meeting minutes**

The final part of the "Upcoming Council actions" section was amended to read: "and pavement management software population of the database." The minutes were approved as amended.

Commissioner Thorsell arrived at this time.

**New business:**

**MS4 permit update (Chris Kleist)**

Chris Kleist, Program Coordinator, and Tom Johnson, Project Engineer, gave an overview of Duluth's stormwater program and the Municipal Separate Storm Sewer System (MS4). They spoke about additional requirements due to the new MS4 permit and answered questions from commissioners. Copies of the annual report to the MPCA will be provided as requested by Vice President Prusak. Commissioner Julsrud asked if commissioners could see the 5-year reports of the outfalls inspections. Chris Kleist said that the reports are available in PDF form, but spreadsheets used for tracking are available as well.

**Stormwater utility resolution (President Sellner)**

13PUC-007 - RESOLUTION REQUESTING DULUTH STREET MAINTENANCE OPERATIONS MINIMIZE THROUGH BEST MANAGEMENT PRACTICES, THE APPLICATION OF ROAD SALT FOR DE-ICING PURPOSES TO MINIMIZE IMPACTS ON THE STORMWATER UTILITY.

President Sellner motioned to move 13PUC-007. After some discussion, the majority of commissioners thought they should have more information before voting on this resolution. Kelly Fleissner, Manager of Maintenance Operations for the City, will be invited to the August meeting as requested by Vice President Prusak. President Sellner will provide additional documentation, such as the studies done by the University of Minnesota and St. Louis County. Vice President Prusak motioned to table 13PUC-007. The majority voted in favor of the motion.

**Draft DPUC appeals process (Nick Petrangelo)**

Commissioners and staff discussed the appeals process and the authority of the Commission in regards to appeals as ordained by Section 48 of the Duluth City Code. Staff provided a draft appeals process and form. Commissioner Julsrud requested that the definition of "applicant" be added to the policy. Commissioner Stauber suggested that the term "Bill" be removed from both the policy and the form, as there could be appeals for issues other than bills. Staff will make the requested amendments and bring a revised draft to the next meeting.

### **Natural gas fixed rate increase resolution**

13PUC-005 - RESOLUTION ESTABLISHING NATURAL GAS RATES EFFECTIVE WITH METER READINGS AFTER SEPTEMBER 30, 2013; AMENDING FIXED MONTHLY CHARGES; SUPERSEDING ALL PRIOR INCONSISTENT OR CONFLICTING RATES AS OF OCTOBER 1, 2013.

Commissioner Julsrud requested the Commission be allowed to discuss both the fixed rate only and the fixed and variable rate resolutions at the same time. Commissioner Julsrud then asked staff to talk about the fixed and variable rate increase resolution first.

13PUC-006 - RESOLUTION ESTABLISHING NATURAL GAS RATES EFFECTIVE WITH METER READINGS AFTER SEPTEMBER 30, 2013; AMENDING FIXED MONTHLY CHARGES AND VOLUMETRIC CHARGES; SUPERSEDING ALL PRIOR INCONSISTENT OR CONFLICTING RATES AS OF OCTOBER 1, 2013.

Jim Benning explained that the rate increases for the residential small customer per resolution 13PUC-006 would be \$0.014 per CCF for the variable rate and \$1.13 for the fixed monthly charge, resulting in an increase of \$2.25 per month for the average residential customer. Increases for all customer classes would be in the 3% range overall. The additional revenue provided by this resolution would be approximately \$1.1M annually. The copper riser project (\$750,000) would need to be delayed and the gas fund would not get the \$5M in reserves as originally proposed in the approved capital improvement plan. This also would not provide enough funds for additional connections of new services. After some discussion, Commissioner Ramnes motioned to request that staff set up public meetings to proceed with resolution 13PUC-006. Commissioner Stauber stated that the present capital needs and various options for proceeding should be presented to the public for input instead of presenting only one option. The majority voted in favor of the motion.

### **Public meeting schedule**

Jim Benning recommended the Commission hold two public meetings in July: one in the morning at City Hall and one in the evening at Central Hillside Community Center. Commissioner Julsrud requested that the meeting in City Hall be held in Room 303 instead of Council Chambers, since the presentation would be of an educational nature. Staff will contact commissioners to determine their availability. Staff will also prepare a presentation for the meetings and send it out to commissioners in advance for their review.

### **Updates from staff**

Eric Shaffer stated that the gas main project on 1<sup>st</sup> Street is moving ahead, although they are encountering a lot of rock. The tank project at the West Duluth Reservoir is still on schedule. The contractor for the water main project is setting up traffic control and starting to strip pavement this week. They are starting at Superior Street and 40<sup>th</sup> Avenue West. The cured-in-place pipe project is wrapping up and should be done in the next couple weeks.

### **Upcoming Council actions**

Jim Benning listed the upcoming actions that pertain to the Commission, including stream restoration for Kingsbury Creek by the DNR, an annual contract for replacement of old water meters, and a resolution regarding the requirements for interior plumbing work.

### **Commissioner questions or comments**

Commissioner Stauber commented that the 2012 Public Works & Utilities Annual Report that councilors had just received was great. The rest of the commissioners received the report also. He said that it is the best way to present those numbers.

**Preview of upcoming business**

The next regular meeting is scheduled for Tuesday, August 20, 2013, at 5:15 p.m. in City Council Chambers. Staff will coordinate with commissioners to schedule two public meetings in July. Kelly Fleissner, Manager of Maintenance Operations for the City, will be invited to the August meeting to discuss current salt usage practices. President Sellner will bring information from the State of Minnesota study regarding salt usage. Staff will bring a revised draft of the appeals process for the commission to consider.

**Adjournment:** The meeting was adjourned at 6:51 p.m.

A recording of this meeting is available upon request.

**RESOLUTION NO. 13PUC-006**

**RESOLUTION ESTABLISHING NATURAL GAS RATES  
EFFECTIVE WITH METER READINGS AFTER  
SEPTEMBER 30, 2013; AMENDING FIXED MONTHLY  
CHARGES AND VOLUMETRIC CHARGES;  
SUPERSEDING ALL PRIOR INCONSISTENT OR  
CONFLICTING RATES AS OF OCTOBER 1, 2013.**

RESOLVED by the Duluth Public Utilities Commission (the “Commission”) that the Commission hereby makes the following Findings of Fact:

- 1.) The City’s natural gas system is a key part of the utility infrastructure of the city, providing an economical source of energy for residential, commercial and industrial users for both commercial/industrial and residential purposes.
- 2.) The provision of natural gas is a highly regulated industry, which requires the implementation of stringent safety measures and costly system maintenance in order to insure the safe and reliable provision of product to users.
- 3.) Natural gas is a product which must be purchased on the open market making it susceptible to unpredictable market conditions.
- 4.) In order to protect all of its customers from dramatic fluctuations in market price of natural gas it is critical that the City be able to establish and maintain reserve funds which will allow it to smooth out such fluctuations for the benefit of all of its customers.
- 5.) The City’s costs of operating its natural gas system have increased dramatically in recent years but the City has not increased its natural gas rates to meet these costs since 2006.
- 6.) The Commission finds it to be necessary, reasonable and fair to increase revenues necessary for the proper operation of the natural gas utility by increasing the monthly fixed charges and volumetric charges paid by all utility customers as hereinafter set forth.

FURTHER RESOLVED, that effective with the natural gas meter readings after September 30, 2013, all customers of the natural gas utility of the city of Duluth shall be charged for such natural gas in accordance with the schedule of rates established by this resolution as follows:

<b>CUSTOMER RATE SCHEDULE BASED UPON MONTHLY METERED VOLUME</b>					
		<b>Fixed monthly charge</b>		<b>Per 100 cubic feet ("CCF")</b>	
		<b>Effective October 1, 2013, rate</b>	<b>Effective May 1, 2013, rate</b>	<b>Effective October 1, 2013, rate</b>	<b>Effective May 1, 2013, rate</b>
Firm sales service	Residential small volume	\$8.63	<del>\$7.50</del>	\$0.934	<del>\$0.920</del>
	Residential large volume	\$230.00	<del>\$200.00</del>	\$0.833	<del>\$0.819</del>
	Commercial/industrial small volume	\$46.00	<del>\$40.00</del>	\$0.850	<del>\$0.836</del>
	Commercial/industrial large volume	\$230.00	<del>\$200.00</del>	\$0.817	<del>\$0.803</del>
Interruptible sales service	Commercial/industrial large volume	\$517.50	<del>\$450.00</del>	\$0.698	<del>\$0.684</del>
Interruptible transportation service	Effective October 1, 2013				
				Year 1	Year 2+
	Commercial/industrial per CCF			\$0.1661	\$0.1490
	Fixed Monthly Charge			\$517.50	\$517.50
			Fixed Monthly Charge	\$450.00	\$450.00
Purchased gas adjustment (PGA)	<p>If the wholesale price of gas purchased by the City of Duluth is increased or decreased as compared to the residential small volume customer rate listed in the Customer Rate Schedule, the unit commodity charge (\$ per CCF) for gas sold under the applicable rate schedule shall be increased or decreased on the customer's monthly bill in the same amount as the unit cost of gas has been increased or decreased. The PGA calculation will be made by adding to or subtracting from the rate per CCF set forth in the Customer Rate Schedule above for each class of customers an amount equal to the rate and the wholesale price of such gas plus an adjustment to reflect the amount of the PILOT resulting from the difference between the applicable Customer Rate and the wholesale price.</p>				

RESOLVED FURTHER, any prior rates inconsistent or conflicting with this resolution are superseded as of October 1, 2013.

Approved by the DPUC: \_\_\_\_\_  
(date)

Submitted to City Council: \_\_\_\_\_  
(where appropriate) (date)

ATTEST:

\_\_\_\_\_  
Director  
Public Works and Utilities  
City of Duluth

**STATEMENT OF PURPOSE:**

The purpose of this resolution is to implement a new rate structure for natural gas supplied or transported by the City through its natural gas distribution system. Current interruptible transportation rates were established in 2009. This is the first rate modification since 2006 for all other classes of users that provides for an increase in revenues.

The new structure will be effective as of October 1, 2013. The net result of these changes will be an increase in revenue to the Department of approximately \$1,083,000 per year. This increase is needed to cover the City's increased operating costs which have occurred since 2006 and also to assure that critical infrastructure improvements related to the safety and reliability of the natural gas distribution system can be completed.

This resolution also eliminates the rate category of Interruptible Transportation for Commercial/Industrial Small Volume customers. There are no current or expected future customers in this rate category. This action is considered a housekeeping function to clarify the actual rate categories offered to customers.

## **RESOLUTION NO. 13PUC-008**

### **RESOLUTION AMENDING THE FIXED MONTHLY CHARGES FOR NATURAL GAS EFFECTIVE WITH METER READINGS AFTER SEPTEMBER 30, 2013, AND AMENDING SUCH RATES AGAIN EFFECTIVE WITH METER READINGS AFTER SEPTEMBER 30, 2014; SUPERSEDING ALL PRIOR INCONSISTENT OR CONFLICTING RATES AS OF OCTOBER 1, 2013.**

RESOLVED by the Duluth Public Utilities Commission (the "Commission") that the Commission hereby makes the following Findings of Fact:

- 1.) The City's natural gas system is a key part of the utility infrastructure of the City, providing an economical source of energy for residential, commercial and industrial users for both commercial/industrial and residential purposes.
- 2.) The provision of natural gas is a highly regulated industry, which requires the implementation of stringent safety measures and costly system maintenance in order to insure the safe and reliable provision of product to users.
- 3.) Natural gas is a product which must be purchased on the open market making it susceptible to unpredictable market conditions.
- 4.) In order to protect all of its customers from dramatic fluctuations in market price of natural gas it is critical that the City be able to establish and maintain reserve funds which will allow it to smooth out such fluctuations for the benefit of all of its customers.
- 5.) The City's costs of operating its natural gas system have increased dramatically in recent years but the City has not increased its natural gas rates to meet these costs since 2006.
- 6.) The Commission finds it to be necessary, reasonable and fair to increase revenues necessary for the proper operation of the natural gas utility by increasing the monthly fixed charges paid by all utility customers as hereinafter set forth.

FURTHER RESOLVED, that effective with the natural gas meter readings after September 30, 2013, all customers of the natural gas utility of the city of Duluth shall be charged for such natural gas in accordance with the schedule of rates established by this resolution as follows:



**CUSTOMER RATE SCHEDULE BASED UPON MONTHLY METERED VOLUME**

		Fixed monthly charge			Per 100 cubic feet ("CCF")	
		Effective October 1, 2014, rate	Effective October 1, 2013, rate	Effective May 1, 2013, rate	Effective October 1, 2013 & 2014, rate	Effective May 1, 2013, rate
Firm sales service	Residential small volume	\$7.96	\$7.73	\$7.50	No Change	\$0.920
	Residential large volume	\$212.18	\$206.00	\$200.00	No Change	\$0.819
	Commercial/industrial small volume	\$42.44	\$41.20	\$40.00	No Change	\$0.836
	Commercial/industrial large volume	\$212.18	\$206.00	\$200.00	No Change	\$0.803
Interruptible sales service	Commercial/industrial large volume	\$477.41	\$463.50	\$450.00	No Change	\$0.684
Interruptible transportation service	Commercial/industrial	Fixed monthly charge			Per 100 cubic feet ("CCF")	
		Effective October 1, 2014, rate	Effective October 1, 2013, rate	Effective October 1, 2009, rate	Effective October 1, 2013 & 2014, rate	Effective October 1, 2009, rate
	Year 1	\$477.41	\$463.50	\$450.00	No Change	\$0.1661
	Year 2+	\$477.41	\$463.50	\$450.00	No Change	\$0.1121
Purchased gas adjustment (PGA)	If the wholesale price of gas purchased by the City of Duluth is increased or decreased as compared to the residential small volume customer rate listed in the Customer Rate Schedule, the unit commodity charge (\$ per CCF) for gas sold under the applicable rate schedule shall be increased or decreased on the customer's monthly bill in the same amount as the unit cost of gas has been increased or decreased. The PGA calculation will be made by adding to or subtracting from the rate per CCF set forth in the Customer Rate Schedule above for each class of customers an amount equal to the rate and the wholesale price of such gas plus an adjustment to reflect the amount of the PILOT resulting from the difference between the applicable Customer Rate and the wholesale price.					

RESOLVED FURTHER, any prior rates inconsistent or conflicting with this resolution are superseded as of October 1, 2013.

Approved by the DPUC: \_\_\_\_\_  
(date)

Submitted to City Council: \_\_\_\_\_  
(where appropriate) (date)

ATTEST:

\_\_\_\_\_  
Director  
Public Works and Utilities  
City of Duluth

**STATEMENT OF PURPOSE:**

The purpose of this resolution is to implement a new rate structure for fixed monthly charges related to natural gas supplied or transported by the City through its natural gas distribution system in a two-step process. Current interruptible transportation rates were established in 2009. This is the first rate modification since 2006 for all other classes of users that provides for an increase in revenues.

The first step of the new structure will be effective as of October 1, 2013. The net result of this first step change will be an increase in revenue to the Department of approximately \$25,000 in 2013. The second step will be effective as of October 1, 2014. The cumulative result of these changes will be an increase in revenue to the Department of approximately \$126,000 in 2014. This increase is needed to assist the City in defraying the increased operating costs which it has been incurring since 2006 and also to assure that critical infrastructure improvements related to the safety and reliability of the natural gas distribution system can be completed.

This resolution also eliminates the rate category of Interruptible Transportation for Commercial/Industrial Small Volume customers. There are no current or expected future customers in this rate category. This action is considered a housekeeping function to clarify the actual rate categories offered to customers.

**RESOLUTION NO. 13PUC-009**

**RESOLUTION REQUESTING THAT CITY COUNCIL DEDICATE  
2/7<sup>TH</sup> OF PILOT TO GAS SYSTEM CAPITAL IMPROVEMENTS AND  
BOND PAYOFF.**

RESOLVED by the Duluth Public Utilities Commission (the “Commission”) that the Commission hereby requests that the City of Duluth dedicate 2/7<sup>th</sup> of the proceeds it receives from the Payment in Lieu of Taxes (“PILOT”) authorized pursuant to Laws of Minnesota, 1993, Chapter 148 to defray the capital cost of improvements to the natural gas utility system or to pay principal and interest on outstanding bonds issued to pay capital costs of improvements to the natural gas utility system or both, effective from and after January 1, 2014.

Approved by the DPUC: \_\_\_\_\_  
(date)

Submitted to City Council: \_\_\_\_\_  
(where appropriate) (date)

ATTEST:

\_\_\_\_\_  
Director  
Public Works and Utilities  
City of Duluth

**STATEMENT OF PURPOSE:**

The purpose of this resolution is to request that the City Council dedicate 2/7ths of the proceeds of the PILOT it receives to pay for the capital costs of the gas utility or to pay off bonds issued to cover those costs. The legislation authorizing the PILOT authorizes the City to transfer to the City’s general fund an amount equal to 7% of the funds received by the gas fund if those funds are not needed for capital or bond repayment purposes. It is the Commission’s determination that at least 2/7ths of the amount received into the gas fund is needed for those purposes and so the Commission requests that City dedicate at least that amount to those purposes.

**RESOLUTION NO. 13PUC-007**

**RESOLUTION REQUESTING DULUTH STREET  
MAINTENANCE OPERATIONS MINIMIZE THROUGH BEST  
MANAGEMENT PRACTICES, THE APPLICATION OF ROAD  
SALT FOR DE-ICING PURPOSES TO MINIMIZE IMPACTS ON  
THE STORMWATER UTILITY.**

RESOLVED by the Duluth Public Utilities Commission (the “Commission”) that the Commission hereby makes the following Findings of Fact:

- 1.) The stormwater utility infrastructure utilizes existing Duluth rivers and streams to convey stormwater flow originating in the City to the St. Louis River and Lake Superior.
- 2.) Lake Superior is the source of water for the City’s water utility and also is the source of drinking water to a number of communities in the region.
- 3.) The quality of this resource must be maintained with management that respects source-water pollution prevention.
- 4.) The MS4 permit, issued by the Minnesota Pollution Control Agency which otherwise places restrictions and controls on the character and quantity of discharge of stormwater into waters of the State, does not address the toxicity of road salt which ionizes in solution to produce electrical conductivity spikes in excess of biological tolerance of receiving rivers and streams.
- 5.) The DNR has designated 16 of 44 Duluth streams to be managed as suitable habitat for brown and brook trout. Trout require water quality containing less than 230mg/l sodium chloride and electrical conductivity of less than 470 mS/cm for survival. The permitting process requires remediation plans for municipalities to meet compliance for pollution abatement.

FURTHER RESOLVED, that the Commission hereby requests that the City modify its street maintenance practices as set forth below in order to reduce the impact of road salt on the City’s stormwater utility and water utility:

- 1.) Plowing of roads after significant snowfall should precede all road salt application.
- 2.) To reduce salt displacement and scatter, pre-wetting of road salt as it leaves the truck or application of liquid salt brine as anti-icing agents should precede any dry salt application.
- 3.) Salt should not be used when temperatures are below 15 degrees F.

- 4.) Reduce the quantity of road salt application to achieve as close to 1-3 c. of salt per 1,000 sq. feet (per U of M study).
- 5.) Road salt application should be restricted to “Snow Emergency Routes”, roads with inclines greater than 2% and street intersections. Level streets between intersections should NOT be treated with any anti-icing or de-icing agents.
- 6.) A reasonable percentage of full fleet vehicles for emergency police, firefighter and ambulance service should be allowed to use studded tires to allow travel at faster speeds than the general public in winter.

RESOLVED FURTHER, that the Commission requests that the City, with assistance of the Commission, educate the public to assume responsibility for safe driving practices consonant with the reduction of the use of road salt for street maintenance purposes.

Approved by the DPUC: \_\_\_\_\_  
(date)

Submitted to City Council: \_\_\_\_\_  
(where appropriate) (date)

ATTEST:

\_\_\_\_\_  
Director  
Public Works and Utilities  
City of Duluth

**STATEMENT OF PURPOSE:**

The purpose of this resolution is to request that the City modify its policies with regard to the use of road salt as part of the City’s winter road maintenance programs. The Duluth Public Utilities Commission has the mission of providing safe, reliable and efficient utilities at reasonable rates. Stormwater utility fees are charged to all public entities to partly support BMPs for pollution prevention. Road salt, used to provide normal driving conditions in winter weather, has been scrutinized for the environmental degradation that accompanies its use. Public entities such as the University of Minnesota and St. Louis County have successfully reduced their dependence on high quantities of road salt with no compromise in safety.

# Duluth News Tribune

## A low-salt diet for our icy roads?

More effective techniques can reduce salt and sand use, and help the environment

JOHN MYERS  
jmyers@duluthnews.com

When the University of Minnesota's sprawling Minneapolis campus cut back on snow and ice-melting chemicals three years ago, some folks worried that accidents would skyrocket.

But despite a 41 percent reduction in salt use and a 99 percent reduction in sand, accidents and injuries on university streets, sidewalks and parking lots didn't go up.

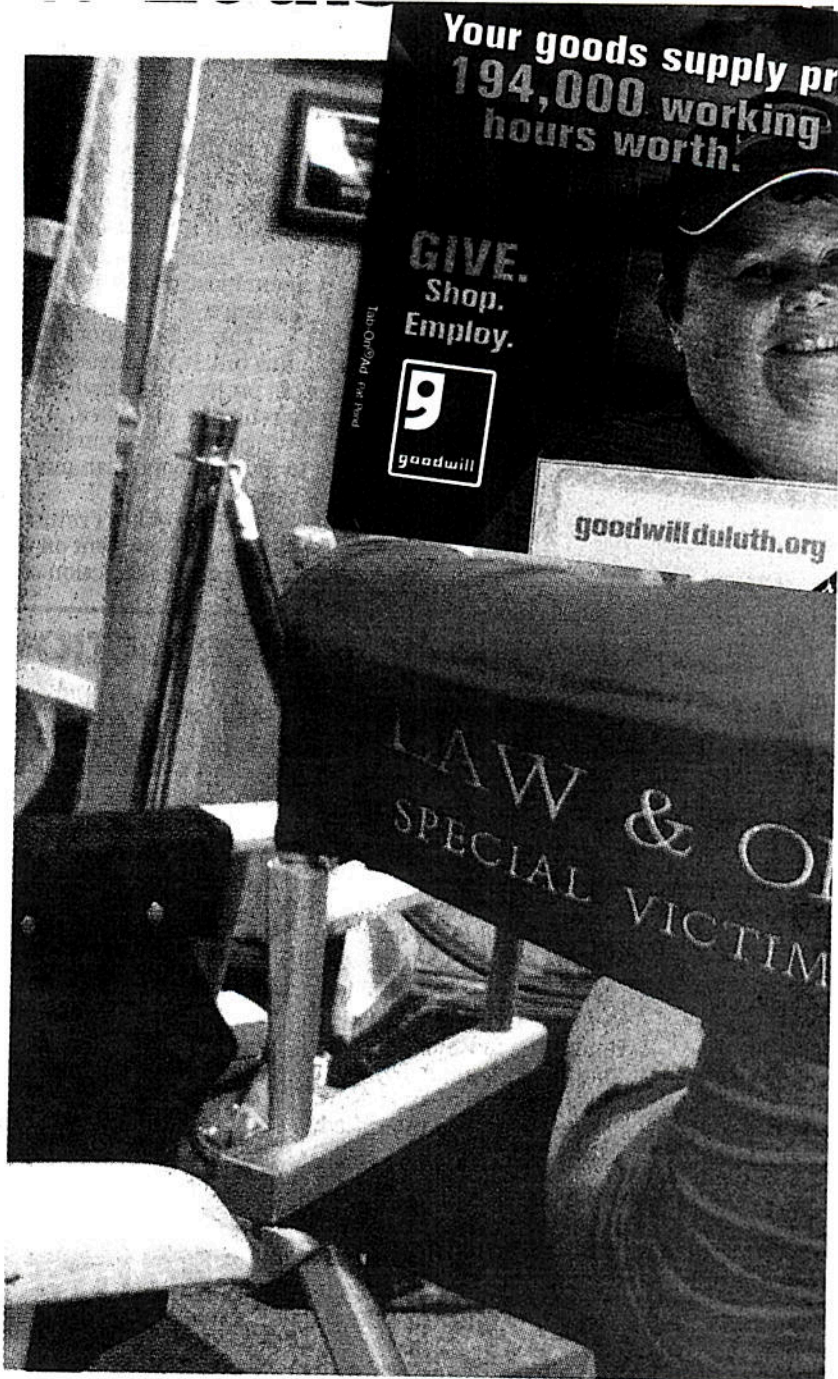
And the Mississippi river is healthier for it. "We've actually seen an

increase in public safety. We've saved money. And it was the right thing to do," said Jim Weber, supervisor of the university's Land Care Department.

"Our whole campus is within about 1,000 yards of the river. And everything that goes into the storm sewer goes right down there," he said.

State and local regulators and scientists hope the university's model catches on across the state, including in the Northland, where local trout streams could be threatened.

See Salt, Page A3



## NORTH WOODS TO HOLLYWOOD

Poplar native snags big role on 'L

JANNA GOERDT  
jgoerdt@duluthnews.com

Bridger Zadina made the leap to Hollywood from his rural home in Poplar in September 2006 as an unknown actor.



WHEN TO

The episode of 'Order: Special' featuring Bridger scheduled to air

# SALT

Continued from Page A1

At the main university, salt use was reduced from an average of 775 tons per year to 462 tons annually in recent years. Rather than salting roads and sidewalks only after snow has fallen, U of M crews concentrate on pre-treating surfaces with liquid salt brine before the snow falls. Called anti-icing, the practice prevents snow from bonding to the concrete or asphalt.

More traditionally, dry salt is applied after the snow starts falling. Not only is that technique less efficient at melting ice, it's also less likely for the salt to stay on the road to do the job. Salt experts say it only takes a few cars to pass over at highway speed before more than half the salt chunks are pushed off the roadway to where they won't do any good.

Also, most salt products don't melt ice very well when temperatures fall below about 15 degrees Fahrenheit, which is when road crews start using sand. But sand has its own problems, clogging storm sewers and stream beds and carrying pollution into local waterways.

Weber said efforts to melt snow and ice by pouring salt on top rarely succeed.

"It's much easier to mechanically remove it after anti-icing with a [shovel or plow] even if it's been packed down," he said. "We've saved a lot of hours by going out ahead of an event... and not sending people back out to go over the same stretch again and again trying to melt snow and ice after it forms."

At the U, once it snows, salt is pre-wetted as it leaves the trucks to help keep it on the road.

Locally, the University of

Minnesota Duluth, the Minnesota Department of Transportation and the city of Duluth are scaling back salt use. The agencies use trucks equipped with computerized sensors that show the exact temperature of the pavement, not just the air temperature, so they know what kinds of and how much chemical to use on icy roads.

Those are methods that Carolynn Dindorf, a consultant for the Minnesota Pollution Control Agency, wants to see more of. She and other road salt experts were in Duluth recently to help train private and municipal plow drivers on how to cut back on chemicals and still keep their routes safe.

"We're seeing very good cooperation," Dindorf said. "These plow operators take pride in their routes. They want to keep it safe, but they also don't want to pollute the streams they drive by."

In addition to using less salt, plow operators were told not to push salted snow into wetlands or pile it up near streams. And they were asked to clean up salt spills before warmer conditions arrive.

But Tom Broadbent, a former Minnesota Department of Transportation plow truck driver who is now an ice control consultant, said attitudes must change, not just among road salt crews, but also the driving public.

"We've created a false expectation that we can have bare pavement right after a snowstorm, or even during a snowstorm. People want to drive as fast in January as they do in July," Broadbent told plow drivers at a recent seminar in Duluth.

"Maybe when people know there's an environmental cost, they'll slow down. We can't melt our way to safe roads."

## IMPORTANT NOTICE OF CLASS ACTION

Braun v. Wal-Mart • Court File No. 19-C

**TO: All current and former hourly associates en  
including its Sam's Clubs and Distribution C**

# When snow starts to melt, Northland waterways get a heavy dosage of salt

News Tribune

Salt running off roads isn't just inefficient — it can be deadly to the environment. Computer monitors in streams show salt levels can skyrocket to levels toxic to trout after just a day of melting snow and ice.

"When the first snow starts melting, or after the first snowstorm in the fall, we see the salt in the stream within an hour or two," said Rich Axler, aquatic ecologist at the Natural Resource Research Institute in Duluth. "It's rolling right in off the parking lot piles and the banks along the streets."

**ONLINE**

For a graphic showing the dramatic spike in salt levels in Chester Creek on a warm winter day, go to [www.duluthnewstribune.com](http://www.duluthnewstribune.com).

Salt at high levels is toxic to most organisms, especially stream trout. In the Twin Cities, several streams are so polluted from road salt that fish can't thrive, and the streams have been ranked as impaired.

In the Northland, salt level spikes seem to be short enough that they haven't killed fish outright.

But there may be more subtle impacts on trout health or reproduction.

"We don't really know what impact these big spikes [in salt] have on the fish," Axler said. "We don't know which one of the stressors they face might be too many."

Axler said the good news is that the salt is totally diluted and has no impact by the time it gets to Lake Superior. But less is known about salt levels in local ponds and smaller lakes.

Minnesota Pollution

Control Agency consultant Carolynn Dindorf said there are acidic and organic de-icing substitutes for salt. But they also cause problems, including spurring phosphates that cause algae growth. Organic compounds also can deplete oxygen in water.

"Someday, we may finally find a chemical to melt ice that doesn't harm the environment," she said. "Until then, our answer is to use less salt."



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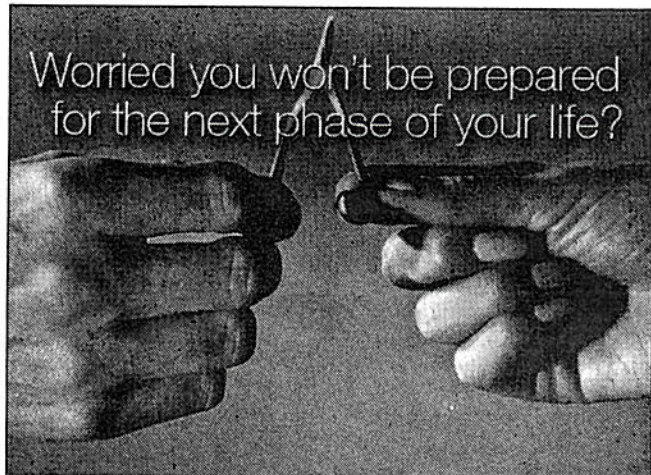
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## Duluth News Tribune

Published November 29, 2010, 12:00 AM

### Spray before snow cuts use of salt on roads

St. Louis County Duluth move to join MnDOT in high-tech winter road campaign

By John Myers Duluth News Tribune

Hours before the next big winter snow hits, state highway crews will be out in force, spraying a brine of salt and water onto roadways.

The mixture, which melts snow as it lands on the roads, has been used by the Minnesota Department of Transportation and University of Minnesota for several years. This winter, St. Louis County is similarly investing in new technology to cut salt use, and the city of Duluth likewise is conducting experiments, using salt brine mixed with beet juice.

The point, on the freeway or the sidewalk in front of your house, is to keep snow and ice from ever freezing to the pavement.

"We can go out hours before the storm and pre-treat and keep the snow from sticking in the first place," said Bob Wryk, regional supervisor for the Minnesota Department of Transportation. "We know it works to reduce crashes and we think it's going to cut the amount of chemical out there."

The benefits are safer roads, a major savings on salt use and less salt running off into the environment. The U of M's Minneapolis campus has cut salt use by 41 percent since 2006 and sand by 99 percent. Accidents and injuries went down, and experts say brining works on sidewalks and parking lots, making it easier to shovel or snow-blow when the storm is over.

That makes it an option for homeowners dealing with snow that gets trampled into an encrusted mess. A mixture of half salt and half water can be sprayed sparingly on sidewalks or driveways before a storm begins, or formulated consumer brands can be used, sold under names like Icenator and Bare Ground Liquid Ice Melt.

"I'm actually trying it out myself," said Gary Amdahl, the manager at Duluth's Northern Tool and Equipment, adding he hasn't had much call for it yet.

Price may be one reason. The consumer brands aren't cheap — averaging about \$25 per gallon. Buyers will have to weigh the price against the work saved.

#### **Cost-effective solutions**

For highway crews who use less expensive salt brines or wetted salt, the effort more than pays for itself.

With traditional salting efforts, each time the 94 regional MnDOT plow trucks leave their garages, they're deployed with nearly \$100,000 of salt and magnesium chloride combined, usually taking several loads each storm to cover about 1,600 miles of highway across Northeastern Minnesota. That totals about \$5 million annually just for one region of the state.

St. Louis County spends more than \$1.4 million each year on nearly 20,000 tons of salt and 67,000 cubic yards of sand. Officials hope to cut salt and sand use 45 percent — enough to save taxpayers about \$634,000 — with new trucks, spreaders and other technology.

If it's too rainy to use liquids, crews can drop pre-wetted salt ahead of a storm to kick-start the melting effort. Magnesium chloride, while more expensive than salt, will keep working even below zero.

St. Louis County commissioners in September approved \$535,000 for four new trucks and 40 pre-wetting machines to add to the county's snow removing fleet. The pre-wetting keeps the otherwise rock hard and dry salt mixture in place and on the highway driving lanes, not pushed off into the ditch.

The county also invested in outfitting 46 of its 151 plow trucks with computerized calibration technology that adjusts salt and sand spreading with truck speed and road temperatures. GPS allows crews to check how much salt and sand is being used on each mile of roadway, and remote sensors can tell drivers how cold the pavement is.

"With everything we are doing now, we hope to see a 45 percent savings in salt and sand," Martimo said.

While the city of Duluth doesn't have the budget to upgrade plow trucks and technology this year, Kelly Fleissner, the city's public works supervisor, said a mechanic last week retrofitted an old truck with a home-made part so that some of the worst hills and intersections can be pre-treated for the first time this winter.

"We have about \$20 invested so far (in anti-icing) so we can do some testing and see if it works," he said. "If it doesn't, we'll keep looking at other options. ... But anti-icing before the snow is the wave of the future."

#### **Beet juice experiment**

In addition to salt and magnesium chloride, Duluth has tested some designer anti-icing agents on City Hall sidewalks, using a concoction made from salt brine mixed with sugar beet juice. The stickiness of the juice helps the salt adhere to the concrete or blacktop and may keep it from melting at colder temperatures. When added to salt brine, one beet juice product, called GeoMelt, has allowed crews in some cities to cut salt use by 30 percent because it sticks longer and works well below zero.

But state officials note that plant-based additives may spur weed or algae growth. And though MnDOT has more than 40 chemicals on its approved list for melting snow and ice, most are far more expensive than salt alone.

"There are lots of options, but it has to be something we can afford," Fleissner said. "But if the stuff lasts longer and we can use a lot less salt, it may pay for itself."

Until then, cost considerations put the city in the same boat as consumers. For them, if all else fails, Northern Tool and Equipment's Amdahl has two words of advice:

"Move south."

*News Tribune Editor Robin Washington contributed to this report.*

**Tags:** city of duluth, st louis county, news, environment, money, auto, transportation, minnesota, mndot

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## Duluth News Tribune

Published November 26, 2010 12:00 AM

Tim Peterson

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Tim Peterson, heavy equipment operator for the city of Duluth, describes the function of the 150-gallon brine tank. The brine is dripped onto snow-free streets to melt the snow as it hits the ground. (Bob King / rking@duluthnews.com)

Read the article: [Spray before snow cuts use of salt on roads](#)

## Sand and salt stats

- Nationwide, the Environmental Protection Agency says about 15 million tons of salt are used to de-ice highways each winter.
- According to a study by the Federal Highway Administration, corrosion to bridges alone costs \$8.3 billion per year in direct costs, much of it caused by de-icing salt. The study found \$23.4 billion is spent annually to avoid or repair corrosion to vehicles.
- Of the 10 tons of sand Duluth dumps on its streets each winter, about one-third is collected by mechanical street sweepers each spring. The rest flows down gutters, interfering with storm drains and polluting the city's more than 40 streams.

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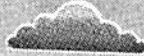
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## Weather



**Today:**  
Rain likely  
High: 35 Low: 24



**Tomorrow:**  
Chance of snow  
High: 24 Low: 9

## Skiers enjoy season's early start

**PETER PASSI**

ppassi@duluthnews.com

This Thanksgiving season had local skiers expressing their gratitude for at least one thing: snow.

Snowflake Nordic and many of Duluth's city-run cross-country ski trails were in operation last week, and Sunday brought forth another promising development. Korkki Nordic Ski Center opened its trails for the first time this winter.

Mark Helmer has been helping to care for Korkki's trails just north of Duluth since 1982 and took over primary responsibility for the nonprofit operation in 1998, after the death of Charlie Banks, his longtime friend and founder of the Nordic center.

"I remember only one other year that we got going earlier than this. It's an outstanding beginning," Helmer said Sunday.

See Skiing, Page A5





**ERIC HJERSTEDT SHARP**  
Reader Weekly

## county beat

# County Board: Reduced salting of cuts pollution, safer, cheaper

St. Louis County Board members are expecting an almost \$535,000 investment in salt and sanding upgrades and in the way the county highway department handles dicing of local highways will save money and prevent water pollution.

The county board voted unanimously earlier this month to expend the funds later this winter. Upon recommendation of the public works department, the county's snow removal fleet will be adding less salt than in past years. The result? Officials are expecting less damage to roads, vehicles and nearby streams.

It is the kind of county board action that at least one Commissioner, Kevin Nelson of Eveleth, should get more attention.

"It's absolutely the right thing to do for the environment," he said.

County officials say the expenditure will save the county between \$160,000 and \$170,000 a year. Another cost savings to the taxpayers: new equipment will enable the public works department to use less than 40 percent less salt.

Among other advantages, the decrease in salt use will actually make county roads and highways safer.

It's a well-known fact that road salt damages cars and the environment, but until lately, few in-depth studies detailed the obvious. Until now.

County commissioners were shown results of a University of Minnesota study showing chloride concentrations in the Twin Cit-

chloride. Although the study concentrates on the higher populated Twin Cities area, the findings can also be applied to St. Louis County where even more snowfall is recorded annually.

Near the Twin Cities, about 70 percent of almost 350,000 tons of road salt (annually) ends up in nearby lakes, wetlands, aquifers and even soils, according to Heinz Stefan, professor in the Department of Civil Engineering at St. Anthony Falls Laboratory. The rest, he adds, "drains through creeks and storm sewers into the Mississippi River."

Near Duluth, pollutants (including sodium chloride) run off into Lake Superior. Other streams, wetlands and environments are affected as well, just as in the Twin Cities region. With winter coming, St. Louis County Board members wanted to pass the ordinance before snow storms covered the roads once again. There was little controversy once officials learned that continued increasing of salt would seriously impair streams and the Big Lake.

For example, in 39 Twin Cities Metro area lakes studied by the research team, road salt concentrations increased steadily from 1984 to 2005 and in direct proportion to the amount of road salt purchased by state and local agencies. According to an article in the Minnesota Conservation Volunteer, "If continued, this trend would produce a doubling of current salinity in some metro lakes in about 50 years. Compare this with a near zero concentration in the 1950s, when road salt application began.

Water quality experts fear ground water becoming saline. If that happens, according to Stefan: "... when we use that water we may have to treat it, at significant cost, by reverse osmosis, to remove that salt."

St. Louis County officials are

at the level here as they are near the Twin Cities, increased traffic (therefore salting of highways) could increase. Regardless, the rules apply everywhere.

According to geologists, continued use of road salt in levels as low as only one teaspoon of salt in five gallons of water can "be harmful to aquatic life by interfering "with plant growth ... and reducing "the diversity of organisms in rivers" and other bodies of water. As the same salt most responsible for the salinity of oceans, sodium chloride is also a major ingredient in edible salt, and is used as a food preservative. Not too good for the lakes. And although the U.S. produces its fair share of the salt from brine or salt mines, China leads the world in its mass-production.

Since sodium chloride is ineffective below 15 degrees F, magnesium or calcium chloride are preferred at these temperatures.

In addition, the University of Minnesota studied recommended using only one to three cups of rock salt per 1,000 feet. The UM guidelines were first adopted by road departments throughout the Twin Cities Metro area and will now be used in St. Louis County. Although the amount of road salt is important, a lower level sustained for many months can be more harmful to the environment, according to Lake Superior Streams.org in Duluth.

According to the organization, vegetation and soil are highly impacted by the improper use of road



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## County roads

salt.

"The most visible impacts of road salt are usually on roadside vegetation where a fringe of dead or dying trees and shrubs may be apparent on major highways and streets. Also, if there is only a small strip of land between the road side and a stream or wetland, the shoreline vegetation may receive relatively high amounts of road salt.

"The impacts may be simply aesthetic, the trees look terrible. But remember that shoreline vegetation is extremely important to aquatic ecosystems because it helps prevent erosion and provides habitat to aquatic organisms as well as birds and other animals."

The UM's study was so successful the Department of Natural Resources, through its Clean Water Legacy staff, began studying its guidelines in the Duluth area and throughout Minnesota shortly after the study was completed. The topic was also discussed at the Minnesota Water Resources Conference.

Through Clean Water Legacy, three research projects (including the evaluation of new technologies to reduce road salt use) are being funded to reduce road salt use and the impact of salt on aquatic organisms.

For St. Louis County, the time to act came with the vote to approve the funding to use the new guidelines and reduce salt use once and for all on county highways.

# A Boy's Trout Stream

by Harry L. Peterson



Brookies, Mayfly, and a Sense of Wonder. 2009. Full-color woodblock print by Betsy Bowen. From an edition of 250. Image courtesy of Betsy Bowen. <http://woodcut.com/>.

**M**OST FISHERS have a home stream: the stream they go to first, or on certain days, or with special friends. Usually it is close, accessible, and friendly. They have favorite, secret places on those streams, although they may not be so secret and others probably know about them. My boyhood home stream in the late 1940s and early 1950s was Minnesota's Miller Creek.

Actually, it was my only stream because it was close to home. It had brook trout—a beautiful fish whose decisions about what might be good to eat are not always discriminating and whose approach to eating is sometimes described as “eager.” Brook trout are usually not hard to catch, even for a boy fishing with a casting rod and worms. Brook trout and boys are made for each other, although that would probably not be the perspective of the trout.

In the Midwest—although we like to think we are at least as evolved as those who live on the coasts—flies came late for most us. We started out as worm fishers. I have concluded that worm fishermen are fly fishermen in the larval form. Thus, although I have fished with flies for more than thirty years, that is not how my friends and I began what has become, for some of us, an obsession.

Miller Creek begins northeast of the Duluth Airport and flows into St. Louis Bay in Lake Superior about 10 miles downstream. I lived just off the Miller Trunk Highway on Arrowhead Road, about a mile and a half from the stream. When I visited it a few years ago and measured the distance from my home to the stream, I was amazed how close it was.

It was far enough away that my best friend Gordon Engberg and I, from the age of nine, would sometimes hitch a

ride with strangers down Miller Trunk Highway when we did not walk to the stream. That was not advisable then or now, but I never had any problems and met some people I would never have encountered otherwise. A few of them did not drive well, a few drove too fast, a couple had been drinking, and one of them tried to convert me to his religion. I did not tell my mother.

Gordy and I would begin our fishing as the stream went under the Miller Trunk Highway. The water was clear and cold throughout the stream, but it was deeper on either side of the bridge. We didn't have any waders, so we fished from the bank. Worms were our bait. We did not have any flies, and had neither the fishing equipment nor the skill to use them if we had. In truth, we didn't even know anyone who had fly-fishing equipment. That all seemed exotic and far away,



*The author as a young teen with the fishing rod he used on Miller Creek. Photo courtesy of the author.*

certainly far away from Hermantown, our community. Everyone we knew fished for walleye and northern pike in the many lakes in the area, as we did when we did not go to Miller Creek.

We knew about such fancy equipment, though, because we read about it in *Outdoor Life* and *Field & Stream*. The cover story on those magazines seemed to invariably feature a picture of a charging bear and a terrified hunter who had only one shot to bring it down, according to the pages inside. (Or maybe it was just that those were the cover stories that were the most memorable.) The back of the magazine featured a full-page ad for Eveready batteries. The ad was always a story about some guys camping or hunting and getting lost or hurt. They needed the batteries for their flashlight to last through the night or they would not be found and would surely die. Just as the hunter on the cover of the magazine always shot the bear, that flashlight always lasted an amazingly long time. In each issue, both the bear hunter and the lost campers survived.

Gordy and I read the stories inside the magazines about exotic adventures in

Canada and other places we could only dream about. We also read the ads, the most exciting being an ad for a Pflueger Supreme casting reel, the top of the line

from that company. I think it cost about \$35 in the late 1940s, a huge sum of money for young boys—but maybe we could get one when we were adults. The Pflueger Company, I note, still uses the Supreme model designation for several of its reels, no doubt taking advantage of the lure of that label for older customers buying for their grandchildren. Now, however, those reels are spinning reels—just another of the many things about which Gordy and I knew nothing.

We caught some brook trout in Miller Creek. They were always beautiful and invariably small, and we would bring them home for our mothers to cook. Once, and only once, in the spring when the water was high and roily, I caught a 12-inch brook trout, just in front of the bridge. Although it was an enormous fish, in my excitement I almost pulled it over my shoulder as I yanked it from the water. Usually, though, it was Gordy who caught the most fish and the biggest fish. He was a real outdoorsman who had his own trapline for ermine (although we knew them as weasel). I would walk the traplines with him through the woods, harvesting the occasional catch and helping him reset his traps.

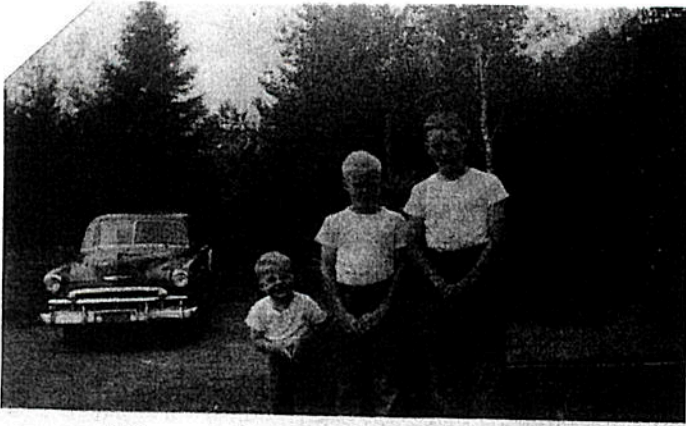
Gordy did not exceed me in persistence, however. When fishing, I did not give up. On one occasion, while fishing alone, I was gone so long that my mother came to the stream to retrieve me. After all, it was dinner time. But the fish were biting and biting hard. These were not trout but chubs, and they loved the worm. The mosquitoes were so thick that I had to breathe through my nose so I would not swallow them. There was a mosquito cloud around not only my

Harry L. Peterson



*Miller Creek, October 2012.*





*Ken, Jerry, Gordy Engberg*

*Above: Gordy Engberg at age eleven with his brothers (Jerry, age nine, and Ken, age three). Photo courtesy of Darlene Engberg Akey.*



*Right: Gordy Engberg in an undated school photo. Photo courtesy of Darlene Engberg Akey.*

head, but also around my mother, who was patiently waiting at the side of the road. Many chubs later, she persuaded me to leave, and we walked home.

Duluth, although only a few miles from our homes on Arrowhead Road, seemed quite far away to us. Gordy's family and mine only went to the city a few times a year. In the sixty years since I lived in Hermantown, that community has become a suburb of Duluth, and Miller Creek has become what the Minnesota Department of Natural Resources describes as a true urban trout stream. Hermantown's population has increased from fewer than 1,000 in 1950 to about 9,500 in 2010. The pressures are great on the stream and its brook trout; they are the fish that require the cleanest and the coldest water of all of the trout and are the only trout native to the Midwest.

Because of those human population changes, the challenges facing Miller Creek are now far greater than any threat that two young boys ever posed to its trout population. A stream that flowed almost entirely through rural fields and woods now winds near and through residential and commercial development. Parts of the stream have been straight-

ened, and another section goes through a pipe on its way to Lake Superior. Its neighbors include Kohl's, Target, and JCPenney, as well as a shopping mall. The commercial and residential growth in the watershed and the importance of that little stream to the area is revealed in the names of the businesses: Miller Garden Center, Miller Lawn and Landscaping, Miller Creek Townhomes, Miller Creek Medical Center, and Miller Hill Mall.

Residential and commercial development means more houses with fertilized lawns, more roads, and more parking lots. The increasing presence of concrete and asphalt, salt from the nearby roads, and the removal of shrubs and trees along the stream have deteriorated the water quality, increased erosion, and raised the stream temperature. There are fewer trout.

There are people who care about Miller Creek today, just as two young boys did more than sixty years ago. To fix something, you first need to understand it. The DNR describes Miller Creek as perhaps the most studied stream in the Duluth area. People have learned from those studies and are acting on what they have learned to try to save the stream.

Will efforts to salvage and restore Miller Creek be successful? Will it be there for future generations to fish? I don't know. The development and commercial pressures are great. It will take continued support to provide restoration and monitoring. It will also require the careful attention of local people who love Miller Creek and consider it their home stream. It will be worth it. Trout streams are not cheap, but they are precious, and no one is making them anymore.

My family moved from northern Minnesota in 1952 when I was twelve. My friend Gordy Engberg drowned in 1960 at the age of twenty, when his boat capsized while he was duck hunting on Rice Lake.

I took up fly fishing more than thirty years ago and have lived near and fished some of the best trout-fishing streams in this country and, occasionally, other countries. The fish are bigger; the equipment is modern and far superior to what I used in my youth.

Still, I miss Miller Creek when I think of that huge 12-inch brook trout and when, on visits, I drive over that bridge on Miller Trunk Highway. And I miss Gordy.

## FIELD NOTES

### Hold the Salt

A UNIVERSITY OF MINNESOTA study shows chloride concentrations in Twin Cities metro waters are significantly higher than natural levels. The culprit: road salt—sodium chloride. Every winter metro government and commercial users apply almost 350,000 tons of road salt for de-icing. About 70 percent of it washes off into nearby lakes, wetlands, soils, and shallow aquifers where it is retained, according to research led by Heinz Stefan, professor in the Department of Civil Engineering at St. Anthony Falls Laboratory. The rest of the salt drains through creeks and storm sewers into the Mississippi River.

“No one has asked the question of where the road salt has gone when winter is over. Our study, funded by the Local Road Research Board, has been concerned with that issue in particular,” said Stefan.

The research team tracked movement of chloride throughout the Twin Cities’ watershed, distinguishing chloride applied by humans from chloride of geological or natural origin. Human-induced chloride concentrations (salinity) in 39 metro-area lakes increased from 1984 to 2005, following a similar upward trend in the amount of road salt purchased by state and local agencies.

If continued, this trend would produce a doubling of current salinity in some metro lakes in about 50 years. Compare this with a near zero concentration in the 1950s, when road salt application began.

“If we keep on doing this for another 50 years, we may have a significant problem [with water quality],” Stefan said. “Certainly if ground water becomes saline, when we use that water we may have to treat it, at significant cost, by reverse osmosis, to remove that salt.”

In its 2010 draft report, the Minnesota Pollution Control Agency listed 11 metro-area streams as impaired by chloride. Minnehaha, Nine Mile, Bevens, Shingle, and Battle creeks are just a few of those with chloride concentration levels above the chronic standard of 230 milligrams per liter.

Continuous levels of chloride concentration as low as 230 mg/L (equivalent to roughly 1 teaspoon of salt in 5 gallons of water) have been shown to be harmful to aquatic life. Salinity exceeding this standard can interfere with plant growth and reduce the diversity of organisms in rivers, according to a recent U.S. Geological Survey study.

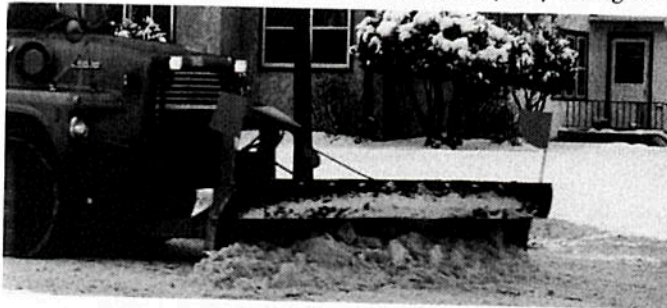
Road salt also mobilizes heavy metals. Soil along major highways contains lead and cadmium, which come from motor vehicles. When road salt spreads onto roadsides, the chloride releases these heavy metals from the soil and they become water soluble and can run into nearby lakes, rivers, and ground water.

Keeping roads free of ice is essential for safe winter travel, but using less salt can reduce the impact on watersheds. Sodium chloride is ineffective at temperatures below 15 degrees

COURTESY OF CENTER FOR TRANSPORTATION STUDIES

F, when other, more expensive melting agents such as magnesium or calcium chloride work better. For temperatures at or above 15 F, road and sidewalk applications need only be 1 to 3 cups of rock salt per 1,000 square feet.

The University of Minnesota began using these guidelines in 2006. Prior to its reduction program, the university used an average of 775 tons of salt per year on its Twin Cities campus. From 2006 to 2009, the university used a yearly average of



462 tons, about a 40 percent reduction. The program saved the university more than \$50,000 in road salt costs in the first year alone. Minnesota Department of Transportation road crews have also improved the efficiency of their road salt applications by putting down a brine mixture in many areas before a storm to prevent ice from bonding to the pavement.

"If road salt application rates are reduced in future winters, it is projected that the lakes will respond with noticeably lower chloride concentrations within five to 10 years," said Stefan.

There is good news ahead, as the DNR is using Clean Water Legacy funding to support three research projects that aim to better assess and reduce pollutants entering lakes, streams, and wetlands. This research includes the evaluation of new technologies to reduce road salt use in winter.

"The Clean Water Legacy staff will use information from the road salt study to better understand how aquatic organisms are impaired where chloride is one of the potential stressors," said Nick Proulx, DNR Clean Water Legacy specialist.

Learn more about Stefan's research at [www.safl.umn.edu/roadsalt\\_research](http://www.safl.umn.edu/roadsalt_research). For road salt application training information, visit [www.pca.state.mn.us/programs/roadsalt.html](http://www.pca.state.mn.us/programs/roadsalt.html).

Maia Homstad, freelance writer



### MINNESOTA STATE PARKS GIFT CARD

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Learn why Minnesota has so many lakes, how the Iron Range formed, and details behind how the state's many other fascinating geologic features came to be with *Roadside Geology of Minnesota*, by Dr. Richard W. Ojakangas. Recently published by Mountain Press Publishing Company, the book is available at bookstores, online, or by calling 800-234-5308.



# DRAFT #2

## DULUTH PUBLIC UTILITIES COMMISSION HEARING OF DISPUTES

### UTILITY **BILL** APPEAL PROCESS

- An applicant who desires to dispute a department finding that is adverse to the applicant and is an appealable finding must do so within six (6) months of the occurrence that gives rise to the appeal.
- The applicant shall give written notice of the appeal on a form provided by the department. The appeal shall state the nature of the dispute and the basis for the appeal.
- The applicant shall also state the expected outcome of the appeal.
- The written notice should be mailed to the department director and the City Clerk's Office.
- The applicant will be notified by regular mail of the date, time, and location of the commission's meeting.
- Any appeal involving a termination of services must be filed prior to the proposed date of termination to avoid action by the department.
- City staff will prepare a facts and findings report and present this report to the commission prior to the meeting.
- Appeals shall be heard at the first meeting of the commission following the filing of an appeal, if there are at least five (5) business days, exclusive, between the written filing and the meeting. Otherwise, the appeal will be heard at the subsequent meeting.
- The commission has no power to cancel a debt to the department.
- All decisions of the commission shall be binding on the department and the applicant, unless contrary to law.
- Decisions shall be in written form and sent to both the department and the applicant.
- **Definition of an applicant: Any person or persons applying for water or gas service from the department and any guarantor of payment for such services as provided for in this chapter. (Section 48-1 Duluth City Code)**

Form Created

**June** ~~May~~ 2013



**City of Duluth Public Works and Utilities  
Utility **Bill** Appeal Form**

Please provide all the information listed below and return form to Director, Duluth Public Works and Utilities Department, 211B City Hall, 411 West First Street, Duluth, MN 55802 with a copy to the Duluth City Clerk's Office, 330 City Hall.

Name of person filing this appeal must match the name on the utility account.

Name \_\_\_\_\_ Account # \_\_\_\_\_  
Service Address \_\_\_\_\_ Mailing Address \_\_\_\_\_  
\_\_\_\_\_  
Daytime Phone \_\_\_\_\_ Alternate Phone \_\_\_\_\_  
E-mail (optional) \_\_\_\_\_

Description of dispute or issue (attach additional sheets and any documentation, if needed):

Description of any action you are requesting or expected outcome of appeal:

I certify that the information I have given is true and accurate to the best of my knowledge.

---

(Signature) \_\_\_\_\_ (Print Name) \_\_\_\_\_ (Date) \_\_\_\_\_

**Office Use Only- Date form received by Director's Office** \_\_\_\_\_  
**Hearing date and time** \_\_\_\_\_  
**Received by** \_\_\_\_\_  
**Appeal results: Accepted** \_\_\_ **Denied** \_\_\_