

**City of Great Falls
Street Lighting Districts Ownership
Analysis**

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INTRODUCTION

The purpose of this paper is to provide an analysis of the City of Great Falls' street lighting system and to determine whether or not the City's residents are receiving value from the system commensurate with the amount of money they pay for it. We will consider the composition and structure of the system, the amounts and methods of charging citizens for street lighting, the roles and responsibilities of the City and the energy utility, and alternatives to be considered.

Basically, the City of Great Falls serves as a billing and collection agent for the energy utility (formerly Montana Power, now NorthWestern Energy) which actually provides the system of poles and lights and the electricity to power them. The City bills citizens, or customers, through its assessment system. The customers are grouped into street lighting districts and the charges for each district are assessed according to the types of equipment in the district. The charges are derived from rates proposed by the energy utility and approved by the Montana Public Service Commission (PSC) and a City administrative fee. The approved rates are based on cost and other factors provided to the PSC by the utility. In the past, the City has not made a critical evaluation of these costs because they are all part of an overall statewide analysis and the City relied on the regulatory process to protect its citizens.

Because of the events taking place since deregulation in 1997, the City of Great Falls is reevaluating all of its past practices with respect to electrical energy. Part of that reevaluation process is to critically examine the street lighting system to determine if the value received by Great Falls' citizens is fair and equitable in relation to the amount of money they pay for it.

The energy industry uses abstract and complex concepts of system wide cost allocations and utility rates of return to determine charges and rates. These concepts may make sense for the utility but they probably do not make sense for the citizens of Great Falls. System wide cost allocation may mean that the citizens of Great Falls may be paying for the expansion of lighting systems in Billings, Bozeman, Missoula, and Kalispell.

Our concept is simple. First, the City has a three year contract with NorthWestern Energy to serve each of its lighting districts. These contracts do not have to be renewed. Therefore we can consider alternatives.

Second, the only way it makes sense for the City to measure the effectiveness of the present system is to consider what kind of alternative system or improved system it could have if it spent the same or a lesser amount of money than it spends on the existing system. Major portions of the present system are antiquated, inefficient and unsightly. If the City could have a modern, efficient, aesthetically pleasing system for the same or less money, then it would make sense to improve the existing system and/or rebuild major portions of it.

STREET LIGHTING DISTRICTS

The City of Great Falls currently has eighteen street lighting districts which consist of 9,341 lights. Of the 9,341 lights, 8 percent are non-utility owned. The lighting districts have been in existence in one form or another in the City of Great Falls since 1912. Various consolidations have occurred over the years. The latest consolidation occurred in July of 2002, when thirty-one districts were consolidated into four. Currently, 80 percent of all parcels in the City of Great Falls are assessed for street lights. The average yearly street light assessment for customers in the commercial districts ranges from \$31 to \$227, alley light districts \$8 to \$17, and residential light districts \$48 to \$152. Customers may have to pay both an assessment for alley and residential lights in some cases.

Lighting districts are created to account for the collection of assessments and payment of lighting costs. Each lighting district's assessed cost is based upon existing rates charged by NorthWestern Energy. All lighting districts assessments are received bi-annually on November 30 and May 31 from taxpayers through the county tax assessment system. In each district, the goal is to have a cash balance at June 30 equal to one-half of the district's utility expense for the year. This balance allows for the payment of utility services until the next year's assessment revenue is received. Since 92 percent of all lights in the lighting districts are owned by NorthWestern Energy, light installation costs are included in the electric rates rather than as a start-up capital program.

HOW LIGHTING DISTRICT ARE CREATED

Lighting districts are created and assessed under Montana Code Annotated, Title 7, Chapter 12, Part 43. After a lighting district is created, the City enters into a contract with NorthWestern Energy for poles that will be utility-owned (92 percent of the time). In the contract the City agrees to pay NorthWestern Energy for "furnishing, operating and maintaining street light facilities, and for delivering electric energy." A monthly charge, type and number of poles is specified. The monthly charge changes every time a new rate schedule is approved by the Public Service Commission. The majority of the contracts the City has entered into are for three years from the date of execution and will renew for an additional three years unless either party gives a ninety day written notification. State statute states that a city council shall not let a contract for a period to exceed three years for a lighting district.

In the past, when a street lighting district was created, the City entered into a contract with NorthWestern Energy to use utility-owned poles. The districts operated under the assumption that, the upfront costs of creating the districts have been less because with utility-owned poles, ownership is paid back indefinitely. **As long as a pole exists, the City will pay the Utility an ownership fee for the use of that pole even if the pole has been paid for many times over by the City. But, with the aging light poles and luminaries it is time to reexamine this basic assumption.**

Current city street lights are outdated, are not as energy efficient as they could be, and the majority of these lights cause light pollution. Light pollution is defined as excess light

that is directed or reflected to places it is not desired or into the sky and wasted. Properly designed street lights produce very little light pollution.

CHARGES PAID FOR STREET LIGHTS

The City of Great Falls pays various charges for street lights every month to NorthWestern Energy. The charges are:

Charges on Light Bill if NorthWestern Energy Owned:			Charges on Light Bill if Non-Utility Owned:		
		Monthly Charges			Monthly Charges
Supply - Energy	Usage/Unit	Variable	Supply - Energy	Usage/Unit	Variable
Transmission- Energy	Usage/Unit	0.00294	Transmission - Energy	Usage/Unit	0.00294
USBC	Usage/Unit	0.003404	USBC	Usage/Unit	0.003404
Distribution - Energy	Usage/Unit	0.0263	Distribution - Energy	Usage/Unit	0.0263
Res. CTC-QF	Usage/Unit	0.002484	Rest. CTC-QF	Usage/Unit	0.002484
Ownership Charge	Per Unit	2.60-20.86	Ownership Charge	Per Unit	NA
Operations Charge	Per Unit	0.54	Operations Charges	Per Unit	0.54
Maintenance Charge	Per Unit	0.53	Maintenance Charge		?
Billing Charge	Per Unit	NA	Billing Charges	Per Unit	0.22

HOW CHARGES ARE SET

The Supply – Energy charge was part of the contract between NorthWestern Energy and the League of Cities and Towns. The Montana League of Cities and Towns had been the negotiator for purchase of electricity supply for Montana’s communities and several school districts. In November of 2001 the league entered into electricity negotiations with NorthWestern Energy. The League reached a contract agreement with NorthWestern Energy on June 27, 2002. The contract was for the term of July 1, 2002 to June 30, 2007. The rate of electricity was set at \$33.11 per megawatt hour. The final agreement with the Montana League of Cities and Towns resulted in the City qualifying for an electricity price that was over \$4.00 less per megawatt hour than the current default rate. The rate was a discounted annual fixed rate.

In June of 2003, the Montana League of Cities and Towns (MLCT) was notified that NorthWestern Energy would not honor its current electricity contract. This caused the Supply-Energy charge for lighting districts to revert back to the electric monthly default supply rate for lighting which is adjusted for market conditions on a monthly basis and is at a much higher rate.

The Transmission-Energy, USBC, Distribution – Energy, Res. CTC-QF, Ownership Charge, Operations Charge, and Maintenance Charges are established through the rate setting process between NorthWestern Energy and the Public Service Commission. The rates set for these charges are part of the NorthWestern Energy rate setting process. Here is the rate setting process according the PSC web site at <http://psc.state.mt.us/mstate.htm>.

“How utility rates are set

The process of setting utility rates is somewhat like the process a banker uses in making a business loan. Bankers usually ask applicants for detailed financial statements. A banker and a loan applicant may discuss whether or not the financial statements, which depict a historical period, will accurately represent the future. If the banker thinks that some future event may affect the business by either increasing or decreasing earnings, then that factor may be used to adjust the historical financial statements. This, in turn, may cause the banker to increase or decrease the loan amount. Naturally, bigger businesses are more complicated to analyze. Businesses as big as major public utilities are very complicated.

The PSC's rate-setting process is like the banker's loan process, although the PSC certainly doesn't lend money. Before the PSC sets a utility's rates, it analyzes the company's financial statements for accuracy, examines its operating practices to ensure efficiency, and reviews known future events that may affect the business.

There is a major difference between the PSC and the banker, however. The banker would be pleased if a loan applicant could make very high profits. By law, the PSC must allow only those profits that are just and reasonable. In other words, the PSC must allow utilities an opportunity to earn just enough profit so that utility owners will have the incentive to provide adequate service to customers. No more, no less. It is this public interest protection that makes the PSC unique.

After the PSC examines all the factors affecting a utility's profitability, it approves a total revenue level. One more matter is then considered: how much should each customer group be charged? The charges from all groups must equal the total revenue level and customer groups cannot be discriminated against. For example, if each customer were exactly equal, simple division of the total revenue level by the number of customers would equal a nondiscriminatory rate. In practice, however, customers are not equal. Some use more of the utility's service than others; some use it at peak times; some live in towns where service is readily available, while others live in isolated areas where the cost of service may be quite high; and some have alternatives to utility service. These are only a few of the differences among customers that the PSC must consider to avoid rates which unduly discriminate in favor of any customer or customer group. From these factors, balanced against the total revenue level, the PSC calculates rates, usually by unit of consumption.

Public participation

When a utility applies to the PSC for a rate change, the PSC alerts affected ratepayers through legal notices to local newspapers and press releases. Major rate cases usually receive widespread media coverage. Interested parties actively participate in the ratemaking process by intervening in the case. Investors normally represent large groups of utility customers and, in order to effectively participate, they usually hire legal counsel and expert witnesses to present their points of view. The Montana Consumer Counsel is charged by law to represent consumer interests

in matters before the commission. The consumer counsel is located at 616 Helena Ave., Helena, Montana 59620. The phone number is 444-2771.

Formal hearings held by the PSC in rate cases are mostly technical in nature. Individual consumers are welcome to testify, either at the formal hearing or at hearings scheduled by the PSC specifically to gather public comments on the utility's rate change proposal.

Rate & service information

Regulated utilities operate under rules and tariffs that are available both at utility company offices and at the commission. Consumers who need information on rules, services, rates or fares should first ask the company involved. The commission expects most questions will be answered and most complaints satisfactorily settled by the company. However, if a consumer is not satisfied with a company response, the PSC is available to investigate the matter and attempt to resolve the problem.”

Based on the discussions with Public Service Commission representatives, it is our understanding, the street lighting portion of the NorthWestern Energy proposed rate increases is a miniscule part of the overall rate increases.

It is the City’s perception that the street lighting increases may become lost in the process of the bigger picture of NorthWestern Energy rate increases, especially when considering that much of the lighting district energy use is during non-peak times and NorthWestern Energy uses the lighting districts to balance energy loads.

WHAT THE CHARGES ARE FOR

- ◆ Supply – Energy: A charge for electricity usage by usage/unit rate per pole. Usage/unit rate is an industry standard rate for an unmetered light charge per unit.
- ◆ Transmission – Energy: A charge for the cost of service provided to a customer to deliver electricity from the supplier through the electric transmission system to the local distribution wires near the customer’s point of service.
- ◆ USBC – Electric Universal System Benefits Charge: This charge is to recover the costs associated with public purpose programs for cost-effective conservation, low-income weatherization and low-income bill assistance.
- ◆ Distribution – Energy: This charge is the local delivery service charge for receiving supply from an electric supplier.
- ◆ Res. CTC-QF: The charge is to recover the out-of-market costs associated with the Qualifying Facilities Power Contracts, pursuant to electric restructuring.
- ◆ Ownership Charge: The cost to City customers for the use of utility-owned lighting units, such assignment is based on the average installed cost of the lighting units per project system wide.
- ◆ Operation Charge: The cost to City customers for operation of the utility-owned lighting units. Operations means exclusively the labor and materials associated with

relamping, cleaning luminaries, replacing broken or damaged refractors, and minor testing of circuitry.

- ◆ Maintenance Charge: The cost to City customers for maintenance of the utility-owned lighting units. Maintenance means exclusively, the labor and materials associated with maintaining the poles, conductors, luminaries, controls, and protective system.
- ◆ Billing Charge: The cost to City customers of having NorthWestern Energy handling the billing on non-utility owned lights.

The ownership charges, operation charges, maintenance charges and billing charges are based on NorthWestern's Montana district system wide costs. An example: Ownership charges are calculated based on the total investment in all street lights throughout Montana less depreciation. This is why the City's ownership charges for lights increases even though the lights are aging, in some cases over sixty years old. If the street lighting systems in higher growth cities are expanding, and they are not expanding in lower growth cities, then the ownership charges in the lower growth communities may be paying for expanding street lighting systems in the higher growth areas. The customers of the City may be paying for the expansion of lighting districts in Billings, Bozeman, Missoula, and Kalispell. Currently the City of Great Falls pays \$48,960 in ownership charges a month. This comes to \$587,532 a year. In 1999, the City was paying \$44,580 a month. This is a 10 percent increase in four years.

OPERATION AND MAINTENANCE CHARGES

The operations and maintenance charges that the City pays appear to be very similar. What exact service are we receiving for these charges? Are we paying for the same service twice? City customers pay operation costs for utility and non-utility owned poles. City customers are currently charged an operations charge of 54 cents per pole per month. This amounts to approximately \$4,659 a month, or \$55,915 a year for operation costs of utility owned street lights. Another \$385 a month or \$4,614 is spent on operation costs for non-utility owned poles. Currently City customers are charged 53 cents per pole per month for maintenance charges. This is for utility owned poles. This amounts to approximately \$4,573 a month or \$54,880 a year. In total, the customers of the lighting districts pay \$115,409 a year for operations and maintenance charges. This is a 7.5 percent increase since 1999.

The City is also responsible for utility-owned street lights if the lights are damaged. The contract states "Where utility experiences excessive operation costs as a result of vandalism, malicious acts, non-standard posts, poles or luminaries, or other causes of unusual nature, the utility may require the Customer to pay the actual costs of repairing or replacing the damaged part(s) or unit(s). Such charges are in addition to the monthly charges set forth." This clause of the contract has been exercised very seldom by the utility companies, but is very clear about the responsibility of the City.

The City has the responsibility of reporting any street light outages to NorthWestern Energy. NorthWestern Energy is under no obligation to "patrol" the City to determine if the lights are in operating condition. In November, the City's street department did a

quick survey of street lights to see which were in operation and which were not. 186 street light outages were reported to NorthWestern Engery. This is 2 percent of lights in the street light districts. A letter was sent to NorthWestern Engery regarding these outages. The status of these light outages has not yet been reported back to the City from NorthWestern Energy.

OWNERSHIP CHARGES

The ownership charge is based on the type of light pole. The ownership cost is from \$2.60 to \$20.86 per pole a month. Here is a breakdown of the charges per type of pole:

The lowest cost type of pole we are charged for is the distribution pole. The main purpose of these poles is to act as distribution poles for NorthWestern Energy power lines. The charge currently is \$2.60. The City is charged for 2,012 of these types of poles. This is \$62,775 a year. NorthWestern Energy currently places the replacement cost of these poles at \$200-\$399. This does not take into consideration that many of these poles are very old. The luminas attached are not energy efficient and cause light pollution.

In many cases, when an alley lighting district was created NorthWesternEnergy attached a light to an existing pole. A major lighting district that has these types of poles is District #1061. This district is the consolidated district for alley poles. Some of the lights in this district have been in place since the 20's, but the majority of the lights in this district were put in place in the 50's and 60's. There are 1,051 poles in this district. Over the next five years, the City will pay \$163,956 for these poles. The City could have purchased over 410 poles in this same five year period at the current replacement cost of the poles and replaced all 2,000 poles within twenty five years. Considering the majority of these poles have been in existence for over forty years, the City paid for most of the poles in this district four times.



70-Watt Distribution Poles

The second type of pole that the City is charged for is the dedicated wood single pole. The City customers pay for 5,856 of these poles. The majority of these poles were put in place in the 70's and 80's. The current rate per pole is \$5.59.

In 1999, the City was charged \$5.13 per pole. In the next five years, the City will pay \$1,964,102 for these poles. Each pole costs approximately \$200 to replace excluding labor. It would cost the city \$1,171,200 to replace all of these type of poles excluding labor.

In five years, the City will have paid more than it would cost to replace all new poles. The average age of a wood pole is twenty years. Again, the customer is paying for the pole four times. The majority of these lights are luminaries of 70 watts. The current trend in lighting is to make residential lighting a higher watt, 100 to 150 watt, which helps in reduction of light pollution, and fewer lights may be needed.



70 Watt Single Wood Pole O/H

Various other types of poles exist in the City and there are corresponding charges for each type. Another major category of pole is the steel and fiber glass with under ground wiring. An example of these is the 100 Watt Post Top Steel with under ground wiring in districts #1213, 1212, 1256, and 1274. There are 172 poles in these districts. A current cost of replacing these poles is approximately \$1,500. The City is currently being charged \$15.20 a pole. Over a five year period, the City will pay \$156,864. In this same time period, the City could have purchased 105 new poles.

Again the majority of these poles were put in place in the 60's and 70's. The City, again, has paid for the poles four times over. The City is currently paying for new poles and luminaires while old ones exist in the lighting districts.



100-Watt Post Top Fiberglass U/G

CONCLUSION

As we have seen, the ownership charge is one based on factors that have little or nothing to do with actual costs in Great Falls. It may be justifiable from the standpoint of some overall concept of statewide utility cost but it doesn't mean much when applied to a local system and it would be interesting to know the extent to which it serves as a source of cash for the utility. Our customers may be paying for the expansion of street lighting in Billings, Bozeman, Missoula, and Kalispell. The ownership charge amounts to almost \$600,000 for the Great Falls districts. In addition, it is difficult to distinguish between operations charges and maintenance charges. We do not know the extent to which these charges represent actual costs. One wonders if these charges, amounting to about \$115,000, represent actual value to the Great Falls system.

For the sake of illustration, let's assume that the system could be operated and maintained for \$100,000 per year and that the remaining \$15,000 could be added to the \$587,000 now going for the ownership charge to create an annual sum of (in round numbers) \$600,000 that could be used for another purpose. That other purpose could be to acquire portions of the existing system from NorthWestern Energy and/or to sell bonds and rebuild parts of the system. An improved system could be more energy efficient, modern, and aesthetically pleasing. It could have lower energy usage and lower maintenance cost.

If \$600,000 were available for debt service the City could sell bonds in the amount of \$6 to \$7 million at today's interest rates. By way of simple illustration, if the average cost of rebuilding the system is \$2,500 per light, then 2,600 lights could be replaced immediately if the City borrowed \$6.5 million to pay for it. This is 28 percent of the existing system. A rebuilding program could also be undertaken on a pay-as-you-go basis. Doing it this

way would avoid interest cost but it would have to be done in smaller pieces over a longer period.

Rebuilding portions of the system would have several advantages. First, much of the wiring could be put underground which would improve the appearance of the community and its neighborhoods. Second, underground conduits could be sized for other uses, such as telephone or broadband internet access. Other users could help offset some of the cost. Third, the community could reduce the light polluting characteristics of the existing system. Fourth, better placement of fixtures and more energy efficient lights could use less electricity, resulting in lower cost. Fifth, an improved system would have lower maintenance cost. All of these things would add up to better service at equal or lower cost than would be possible with the existing system.

As a community we need to be cognizant of the economic impact of where our money goes. The annual drain of \$600,000 to the utility and other communities, while not a huge sum in the grand scheme of things, seems to be a dead loss to the local economy. Spending it here, especially if it is leveraged through borrowing would have a not inconsequential impact. A \$6 or \$7 million construction project would be significant for our economy.

The citizens of Great Falls pay a premium for a lighting system that is old, unsightly, inefficient and not maintained as well as it should be. Some \$600,000 of taxpayer money leaves the local economy every year for thinly justified reasons.

RECOMMENDATION

To begin to address this situation the following actions are recommended.

1. Notify NorthWesternEnergy that the City intends not to renew any of its contracts to operate and maintain the lights in the various districts. At the very least we need a single, all encompassing contract per consolidated districts to maintain and operate the entire system. Presently, we have some 100 contracts, many going back for decades.
2. Propose to NWE that the City take over the ownership, operations, maintenance, and energy supply of the entire system. The City would propose taking it over at a nominal cost since it has been paid for many times over. The cash presently being taken out of the system, over and above any used for acquisition, could be used to begin rebuilding the system.
3. Work with neighborhood councils and other citizen groups to inform them of our street lighting situation and enlist their aid and support in changing it to benefit the community rather than just the utility.
4. Determine if there are other strategies available for the community to take control of its street lighting system.

5. Determine the legal and practical effect of the Public Service Commission approved rates. If the rates are dysfunctional for our community despite their approved status are these the only rates that can be charged by the utility? Does it come down to a question of “pay as we always have or go dark?”

At a minimum the City’s position should be that the utility must begin investing the “ownership” fee derived from Great Falls back into the City’s system. The City’s position should also be that the City would not be regulated by the PSC if it owned the system and that it would be free to reduce rates or invest its net revenues back into the system. In other words, if the City took over street lighting, it would completely restructure the rate system for the benefit of lighting in the community rather than somewhere else.