

2016 Budget

Full Time City Electrician Justification Report

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Date: 6-02-2016

City Electrician

History

A brief history of the City Electrician position shows how work load and staff time dedicated to certain areas of the city has changed.

Prior to 2012

- Staff
 - One FT city electrician (34 hrs./week average) aided by two seasonal employees every other year for 600 hours each
- Work Load
 - Repair and maintain 36 signalized intersections
 - Repair, maintenance, and training bridge operators for 2 lift bridges
 - DPW building and lift station maintenance at 16+ locations throughout the city
 - Emergency government siren maintenance and repair of 10 sirens
 - DPW fuel system maintenance and repair

2012 to present

- Staff
 - One PT city electrician (average of 18 hrs. per week)
- Work Load (*italics are added responsibilities*)
 - Repair and maintain 36 signalized intersections
 - Repair, maintenance, and training bridge operators for 2 lift bridges
 - DPI building and lift station maintenance at 16+ locations throughout the city
 - Emergency government siren maintenance and repair of *11* sirens
 - *DPI and parks shop* fuel system maintenance and repair
 - *Repair and maintain 20+ parks and DPI buildings electrical*
 - *Repair and maintain 300+ floodlights on sports fields*
 - *Repair, maintain, and assist with footage of surveillance cameras*
 - *Responsible for on call duty once every five weeks for 7 consecutive days, 24 hours per day.*

Work Load

History shows us that the work load for this position for DPI has increased significantly while the hours dedicated to this work have been cut in half. Most of the added work that this position has been tasked with had been performed by a parks electrician prior to 2012. This position was

not refilled at the parks shop after 2012 and most of those responsibilities have been directed to the PT city electrician.

This position is the first, and usually the only call for any DPI electrical issue concerning city infrastructure. This covers department divisions of streets, fleet, buildings, parks and recreation, cemetery, bridges, sirens, signals, and others. There well over 100 employees including full time and seasonal employees in this department that can have issues at any time of the day, 24hrs.

The increased work load and reduced hours for this position has resulted in significant scheduled and emergency overtime. These are required just to keep things operating, not for maintenance. Management has also noticed that the person currently in this part time position has been experiencing burnout due to the amount of tasks and refocusing of assignments on a daily basis. There have been multiple occasions when the current part time electrician has been called in from on vacation for emergencies.

Parks

Parks has been the largest addition of work for this position since 2012. On average parks building issues arise weekly. They can be anything from vandalism to light fixtures in public restrooms, to electrical components failing on the car ferry loading dock. Or the most recent new installation of a camera mount at the marina.

There have been 20+ reported flood lights on sports complexes out of approximately 300 that have needed repair or replacement since 2012. Due to the design of the light fixtures every issue with a light needs the use of a boom truck. This takes significant time to setup the truck and troubleshoot and repair. Currently lights have been replaced, but there have been additional issues with fuses.

Sports field score boards are part of the parks additional work as well.

Parks surveillance cameras located at Lincoln Park, Silver Creek, Washington Park, and Henry Schuette Park has needed significant time dedication. Some of this time includes repairs and maintenance as well as obtaining footage for the police department to track down criminals.

Signals

There are 36 signalized intersections in Manitowoc. These intersections consist of multiple signals (up to 14 at one intersection including ped poles and control cabinets); some of these intersections include overhead structures, bases and footings. On average there have been about 15 signal knockdowns due to vehicle accidents, each requiring about 8 hours of time to repair for a total of about 120 hours. This amounts to 6.5 weeks of time for the current part time position.

There has been scheduled OT for this area on multiple days this year due to the safety risk at the intersections.

Signals are illuminated by LED lights. The life span of the LED's is recommended to be 6 years. In 2017 a large number of these LED's will need to be replaced. This consists of disassembling hard wired units from the signals and replacing and wiring new units. Estimated time to complete this project is 570 man-hours. This is not possible with the current part time position but would be with the proposed full time position. Additionally, since this work is done with the signal active, a person with proficient electric experience should perform it.

The monitoring systems for the traffic signals need to be tested on an annual basis as recommended by IMSA (International Municipal Signal Association) and ITE (Institute of Transportation Engineers). This is also done to limit the city's risk and liability in the case of traffic accidents. This position is responsible for performing these tests. The city also maintains calibration and testing reports for this testing. This was not done in 2014 but has been made a priority in 2015 and is now completed. It has not yet been started in 2016, but is anticipated to be completed pending any other emergency operation work.

Fleet

On occasion this position is needed for trouble shooting electrical issues on fleet equipment as well as maintenance and repair of the fleet fueling systems at the divisions south and north locations.

The electrician has equipment used to measure this very accurately and pinpoint the electrical problems. He also has the knowledge to accurately prescribe electrical repairs.

Streets and Sanitation

The streets division relies on service from the city electrician for a variety of tasks. Most notably the city's 13 lift stations and SCADA monitoring system. Each lift station is operated by electronic controls and monitored by a wireless radio system.

The city electrician is called upon anytime that there is a malfunction with this system. He has spent time troubleshooting control issues in the lift station buildings and also troubleshooting and repairing the computer and monitor base system at the DPI office.

DPI buildings

This position has assumed additional responsibilities in this area as well as parks. Any electrical issue that arises from department buildings in general is assigned to the city electrician. This is a weekly occurrence and averages 4-6 hours per month for the City Electrician.

Recent buildings issues consist of:

- Rahr West Motion Detector
- Light re-aiming at Municipal Field
- City Motion Sensors

Bridges

This is a very large part of this position and takes up considerable time. There is a need for the city to have a staff member familiar with these complex electrical systems as well as thorough technical knowledge of how the bridges work and operate. There are only a handful of companies in this state that have thorough knowledge of these systems, so to have a private contractor address these issues timely during operation would be difficult. The city is required by the code of federal regulations to maintain working bridges for our commercial port and channel. These bridges are multi-million dollar infrastructure and an enormous asset to our city economics.

The city electrician is responsible for performing annual maintenance in addition to trouble shooting issues during operation. Some of this maintenance is done in house and some contracted to private companies, but all monitored by the city electrician.

The city electrician also conducts new hire training for the bridge operators as well as annual refresher training and the beginning of each bridge season. **We will be hiring 1 – 3 new bridge tenders over the next 2 years. Considerable time will need to be dedicated here.**

Currently there is a backlog of low priority work at the bridges. The bridges are operational, but need some TLC to continue to operate well. This is listed in the attached work backlog for the city electrician. Some of this work will likely not be completed with the current hours that are dedicated to the bridges. In addition, lack of maintenance and greasing leads to operational issues.

In 2015 DPI has requested funds to perform an assessment on the 8th and 10th street bridge electrical control system which is currently outdated and some parts have been found to be obsolete. This assessment will likely recommend a controller upgrade be performed and recommend what type of new system and equipment should be installed. The electrician will need to dedicate time this year to help write the RFP.

The city will need to have a very technical employee dedicated to becoming familiar with this electrical system in order to be able to maintain it, train current and new employees, and troubleshoot issues during operation. Since the city electrician is the most familiar with this system already, he would be the best person for this. There will need to be significant time dedicated by this individual to this project.

Sirens

The city electrician is responsible for maintenance of the city's 11 emergency government warning sirens. These are operated by the fire department and maintained by the city electrician.

Annually there are multiple occasions when one or more of these siren does not work during the weekly test. The electrician must troubleshoot the problem and repair them.

Current backlog of maintenance

See the attached spreadsheet for the current backlog of work related to DPI electrical issues. This list is above and beyond the normal work load outlined above. This spreadsheet shows outstanding projects, priority, area of DPI, and projected work hours needed to complete each project. With the daily demands for repairs to keep infrastructure operating, this list continues to evolve.

Currently we have been maintaining a priority list of tasks and only touching the surface on the high priority issues. We have also hired outside contractors for a couple different projects when they had to be completed timely. This work performed by contractors has not been directly budgeted for. It has been paid for from general maintenance lines, which in turn means general maintenance was not performed elsewhere to allow emergency work to be done.

Position or Job Description

The job description for the City Electrician position is attached and outlines the essential and non-essential job functions, desired qualifications and abilities, as well as the physical demands to perform this job for the City of Manitowoc. The latest revision to the City Electrician job description was done in 2016. The new position requested for 2016 will continue to require the same functions, but would increase to full time vs. part time in 2015.

Also attached is the JDQ that was submitted to Carlson Dettman for this position. This form details all of the technical responsibilities of this position, as well as administrative and organizational level responsibilities.

The cost to the city to pay wages and benefits for this position will be an added request for 2016. This has been budgeted and approved.

Summary

This proposal provides a snapshot of the electrical work that is required to be performed to keep our DPI operational. There are many more aspects and technical data involved with this position. We are constantly trying to find new and more efficient ways of performing tasks related to this position. With the city's business process improvement initiative moving forward,

this should also help us to find new, innovative, “outside the box” ways to get the needed maintenance completed that we are lacking right now. If you would like more specific information on current work load and work-time tracking feel free to contact me. Please consider accepting my recommendation to reinstate this position to a full time position for the city. I strongly believe that this would benefit the city now and continue to keep our city electrical infrastructure up to minimum standards well into the future.

Thank you for taking the time to consider my proposal.