GRAND RAPIDS PUBLIC UTILITIES COMMISSION
REGULAR WORK SESSION MEETING AGENDA

Wednesday, May 08, 2024
8:00 AM

CALL TO ORDER: Pursuant to due notice and call thereof, a Work Session Meeting of the Grand Rapids Public Utilities Commission will be held on Wednesday, May 8, 2024 at 8:00 AM in the conference room of the Public Works/Public Utilities Service Center at 500 SE 4th Street, Grand Rapids, Minnesota.

CALL OF ROLL:

BUSINESS:

1. Consider a motion to approve $264,668.22 verified claims for April 2024.
2. MN North College – Itasca Student Presentation on Water Treatment Plant Filter Media Project
3. MN North College – Itasca Student Presentation on Microgrids
4. MN North College – Itasca Student Presentation on Electric Vehicle Impact
5. MMUA Interacting on the Issues Event
6. Legionella and Drinking Water Update

ADJOURNMENT:

The next Regular Meeting of the Commission is scheduled for Wednesday, May 22, 2024 at 4:00 PM in the conference room of the Public Works/Public Utilities Service Center at 500 SE 4th Street.

The next Special meeting/Work Session is scheduled for Weekday, June 12, 2024 at 8:00 AM in the conference room of the Public Works/Public Utilities Service Center at 500 SE 4th Street.

The GRPUC has adopted a Meeting Protocol Policy, which informs attendees of the GRPUC's desire to conduct meetings in an orderly manner which welcomes all civil input from interested parties. If you are unaware of the policy, please contact our office at 218-326-7024 and we will provide you with a copy of the policy.

GRAND RAPIDS
PUBLIC UTILITIES COMMISSION
AGENDA ITEM

AGENDA DATE: May 8, 2024

AGENDA ITEM: Consider a motion to approve $264,668.22 verified claims for April 2024.

PREPARED BY: Jean Lane, Business Services Manager

BACKGROUND:

See attached check registers:

Computer check register $264,668.22

Total $264,668.22

RECOMMENDATION:
Consider a motion to approve $264,668.22 of verified claims for April 2024.

Grand Rapids Public Utilities
Accounts Payable
April 2024
(Meeting Date: 5/8/2024)

NAME	AMOUNT
Aramark	296.22
Border States	90,630.35
City of Grand Rapids	2,701.60
CliftonLarsonAllen	20,772.15
Cogsdale	1,050.00
Cole Hardware	240.18
Compass Minerals	4,572.22
Cooperative Response Center	2,323.77
Duncan Co	9,934.64
Electric Pump	2,446.00
Fastenal	1,214.48
Ferguson	1,000.00
Frontier Energy	13,782.53
Gopher State One Call	237.60
Grainger	1,428.49
Grand Rapids Area Soccer Club	250.00
Hach	460.00
Hawkins	8,449.90
Herc-U-Lift	198.81
Innovative	384.83
Itasca County Auditor/Treasurer	2,412.00
Johnson, Killen, Sieler	10,838.76
L & M	109.91
Luminultra	8,025.03
MN Energy	30.45
Minuteman Press	129.62
Mpower	515.63
Nelson Roofing Inc	51,653.00
North Central Laboratories	522.62
Northwest Gas	1,109.15
Procise Solutions	3,150.00
Railroad Management	379.14
RMB	58.40
Sandstroms	902.31
SpryPoint	11,400.00
Stuart Irby	322.52
Tech Sales	8,825.12
Treasure Bay Printing	582.85
Trout Enterprises	25.00
UPS	5.58
Vestis	126.42
Viking Electric	770.94
Energy Efficiency Rebate:	
Christy, Dale	400.00
Total	**264,668.22**

GRAND RAPIDS PUBLIC UTILITIES COMMISSION AGENDA ITEM

AGENDA DATE: May 08, 2024

AGENDA ITEM: MN North College – Itasca Student Presentation on Water Treatment Plant Filter Media Project

PREPARED BY: Steve Mattson, Water Wastewater Manager

BACKGROUND:

In an effort to support our local community, GRPU often partners with Minnesota North College – Itasca by providing opportunities for students to work on actual projects for the utility. This spring, four second-year engineering students selected one of our projects as part of their Engineering Design IV course, a class that helps students gain insight into the personal, interpersonal, ethical and professional topics required for success in their education and their profession.

Scott Waara, Kaydence Weimer, Jeremy Chavez Erroa and Tanner Hills worked this past semester on researching different filter media that could be used within our filter operation at the water treatment plant. GRPU was interested to see if there was new filter media technology available that could be utilized in the upcoming WTP Renovation project. The students researched different media options, worked with vendors and other public water suppliers to help find the best available options.

The students will present their research findings at the Commission work session meeting.

Website link: https://link.edgepilot.com/s/014de8f0/SIOlD-vLY0i2gHerW53z1w?u=https://sites.google.com/view/grpucwaterfiltration

RECOMMENDATION:

Review and discussion only.

GRAND RAPIDS
PUBLIC UTILITIES COMMISSION
AGENDA ITEM

AGENDA DATE: May 08, 2024

AGENDA ITEM: MN North College – Itasca Student Presentation on Microgrids

PREPARED BY: Chad Troumbly, Electric Department Manager

BACKGROUND:

To support our local community, GRPU often partners with Minnesota North College – Itasca by providing opportunities for students to work on actual projects for the utility. This spring, four second-year engineering students selected one of our projects as part of their Engineering Design IV course, a class that helps students gain insight into the personal, interpersonal, ethical, and professional topics required for success in their education and their profession.

Luke Dinger, Anthony Scholler, Cody Dahlke, and Eric Grover were asked to research different technologies related to solar, battery, electric vehicles, and grid power.

The students will present their research findings at the Commission work session meeting.

RECOMMENDATION:

Review and discussion only.

Minnesota North College

5/8/2024

GRPU Microgrid

By Luke Dinger, Cody Dahlke, Calvin Johnson, Anthony Scholler, Eric Grover

Background

- The Pilot Program
- Denmark Exchange Program
- Capstone Project

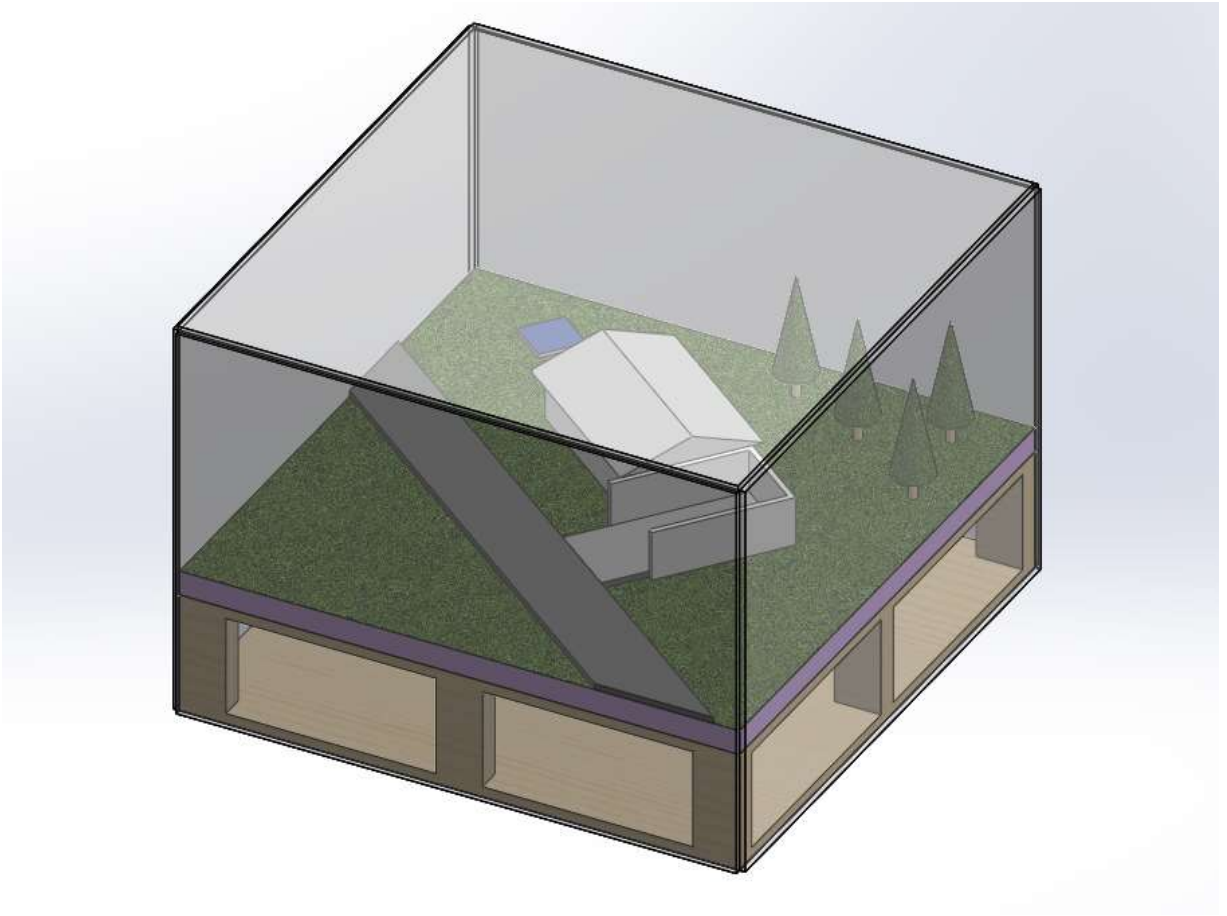
Objectives

- Create a Visual aid for the Pilot Program
- Research Microgrid components and propose a system
- Learn the innerworkings of real-world Engineering Design

Model

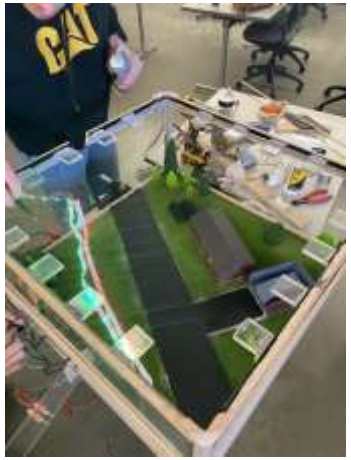
Specifications/Requirements

- Simple design
- Easy to understand
- Must show how a house can be powered by either the main grid, solar panels, or back charging by an EV via the microgrid



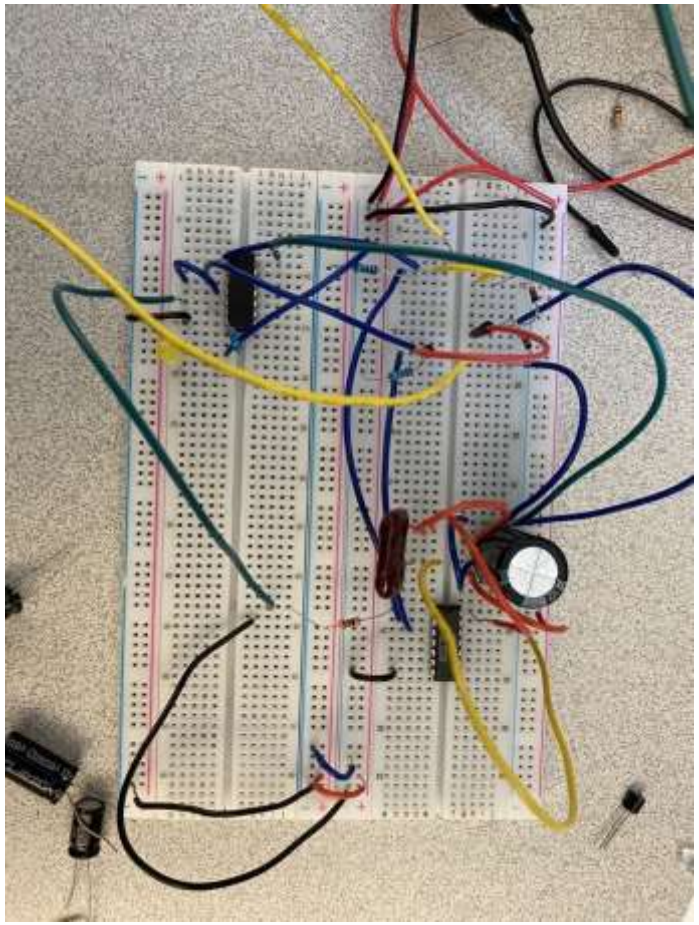
Construction

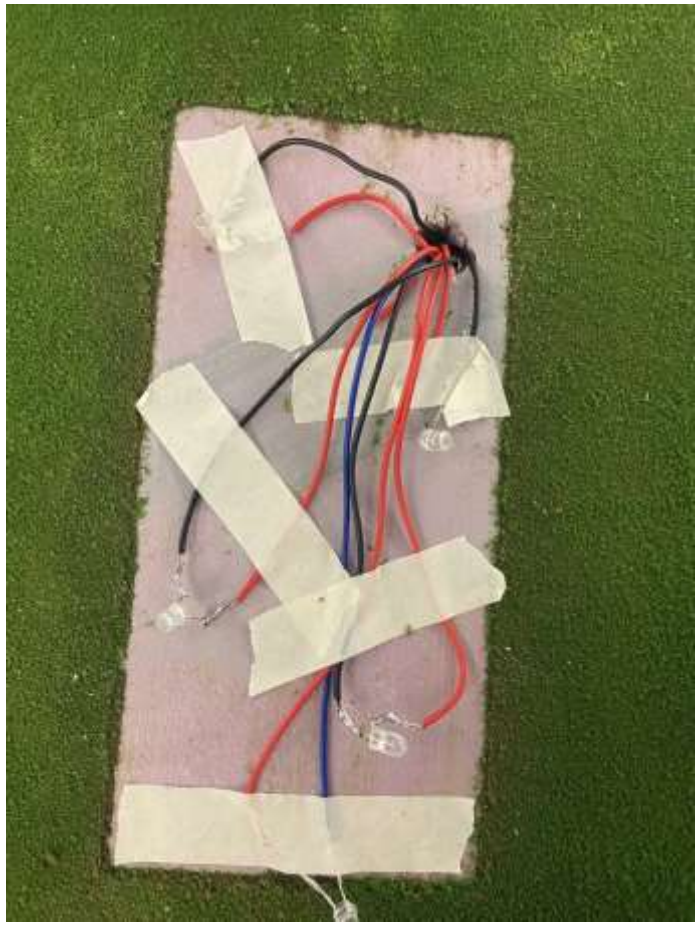
- 2 Week construction period
- Wood trimming
- Electrical components under model
- Door with switches attached



Electrical Components

- 2 Logic gates
  - NOR gate
  - OR gate
- Capacitor represents Microgrid
- Lights representing power sources





Back Charging

- Time of Use Rates, Peak Times, and Outages (Marohn) (*Minnesota Power, an Allete Company*)
- Vehicle to Building (V2B) vs. Vehicle to Grid (V2G)
- Benefits and Options: 8,000$ Over two summers (*Unlock the value in your EV Batteries*)

Bidirectional Charging

- Bidirectional charging is not really available commercially in MN yet.
- Companies like Fermata Energy, Wallbox, Emporia, and Emphase are currently in the process of releasing Bidirectional chargers

(*Fermata Energy*, 2024)

Sources

Marohn, Kirsti. “Xcel Plan Would Charge More for Peak-Time Electricity.” *MPR News*, MPR News, 10 Apr. 2024, www.mprnews.org/story/2024/04/10/xcel-energy-charging-more-electricity-peak-hours-time-of-use-rates-utilities.

Minnesota Power, an Allete Company, www.mnpower.com/CustomerService/TimeOfDay#:~:text=With%20a%20flat%20rate%2C%20you,this%20rate%20is%20%240.09403%2FkWh. Accessed 2 May 2024.

“Unlock the Value in Your EV Batteries.” *Fermata Energy*, fermataenergy.com/. Accessed 2 May 2024.

GRAND RAPIDS
PUBLIC UTILITIES COMMISSION
AGENDA ITEM

AGENDA DATE: May 08, 2024

AGENDA ITEM: MN North College – Itasca Student Presentation on Electric Vehicle Impact

PREPARED BY: Chad Troumbly, Electric Department Manager

BACKGROUND:

To support our local community, GRPU often partners with Minnesota North College – Itasca by providing opportunities for students to work on actual projects for the utility. This spring, four second-year engineering students selected one of our projects as part of their Engineering Design IV course, a class that helps students gain insight into the personal, interpersonal, ethical, and professional topics required for success in their education and their profession.

Isabella Hass, Caleb Bearley, Rodney Kuschel and Dylan Malsed worked this past semester on researching the effect that charging an electric vehicle at home would have on the transformers feeding homes. They utilized real meter data along with power specifications of commercially available charging stations in a typical neighborhood served by GRPU.

The students will present their research findings at the Commission work session meeting.

RECOMMENDATION:

Review and discussion only.

Minnesota North College

EV Impact

Isabella Hass, Caleb Bearley, Rodney Kuschel, Dylan Malsed

Why We're Here

Minnesota North College

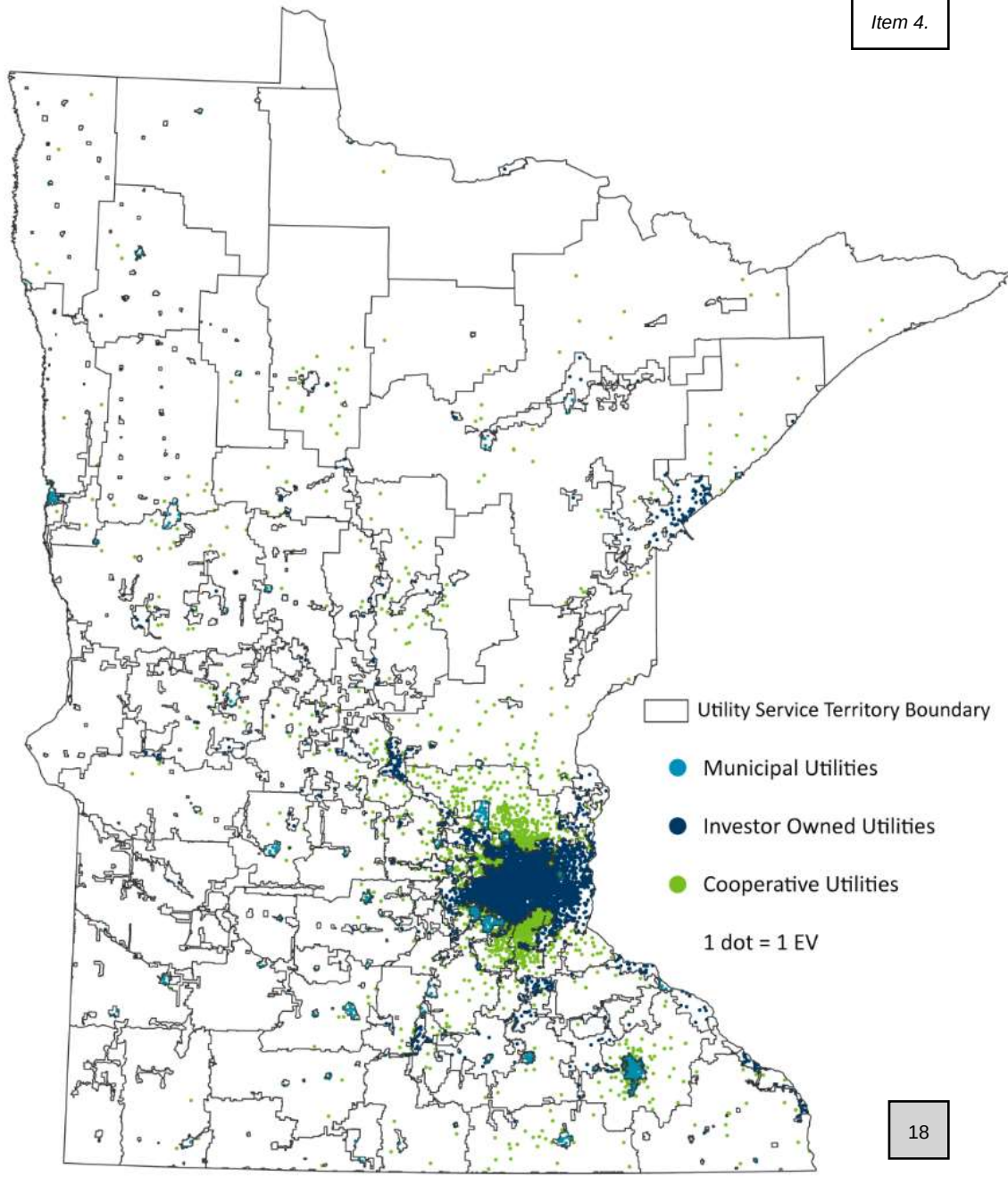
Is the average Grand Rapids neighborhood ready for mass EV adoption?

(GRPU, 2024)

Context

- As of January 2023 – 34k EVs registered in MN
- Minn. Stat 216B.1614 requires each public utility to have a rate specifically designed for EV charging that offers time-of-day or off-peak rates to customers who own EVs

(MN Public Utilities Commission, 2024)



Parameters

GRPU provided data

LVL II Chargers

60 mile commute (based on personal experience and the us census bureau

Worst case scenario

(GRPU, 2024)

Findings - Chargers

Minnesota North College

Brand	Voltage	Max Amperage	Max Power Draw (kVA)	Miles per Hour of Charge
Charge Point	240	50	12	37
Tesla	240	48	11.5	35
Emporia	240	48	11.5	N/A
Lectron	240	48	11.52	48
Grizzle-E Classic	240	40	10	30
Grizzle-E Ultimate	240	80	19.2	60
MaxiCarger	240	50	12	38

Findings - Chargers

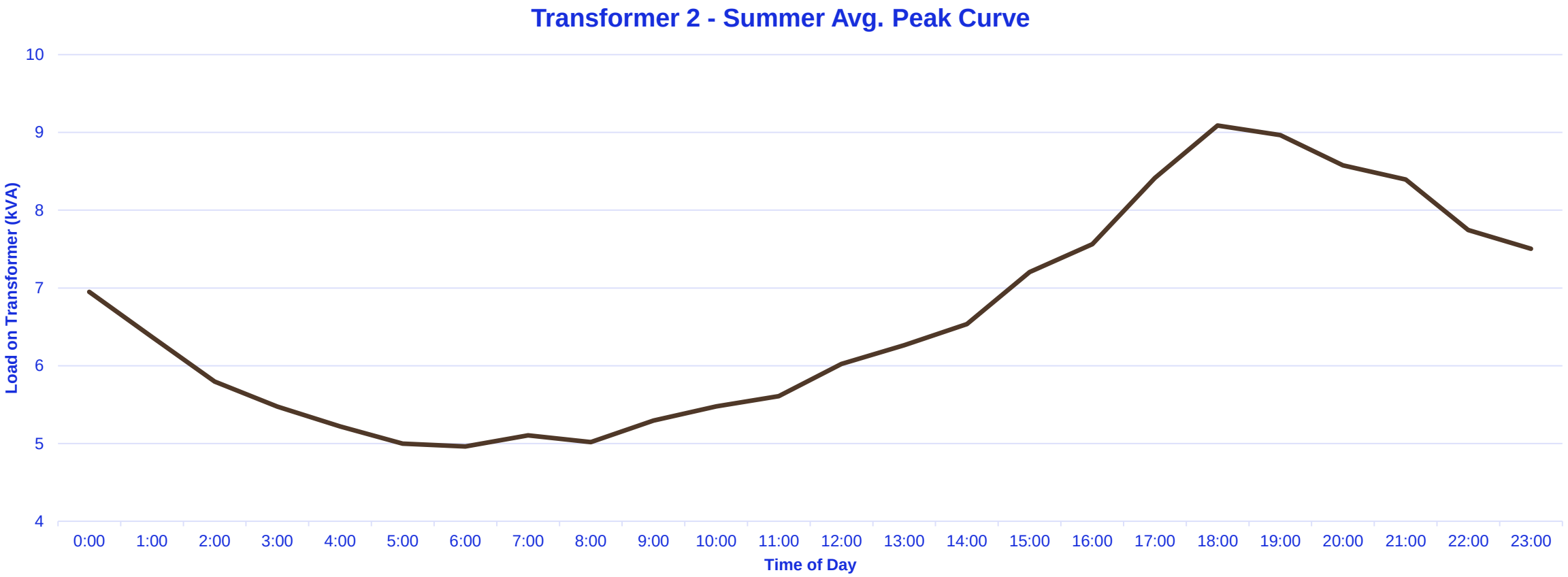
Wall Connector Technical Details			Charge Speed Max Miles of Range per Hour of Charge*			
Circuit breaker (amps)	Maximum output (amps)	Power at 240 volts (kilowatt)	Model S (mph)	Model 3† (mph)	Model X (mph)	Model Y† (mph)
60	48	11.5 kW	41	44	35	44
50	40	9.6 kW	34	37	29	37
40	32	7.7 kW	27	30	23	30
30	24	5.7 kW	21	22	17	22
20	16	3.8 kW	14	15	12	15
15	12	2.8 kW	10	11	9	11

*All charge speeds are approximate.

†Maximum charge rate for Model 3 Rear-Wheel Drive and Model Y Rear-Wheel Drive is 32A (7.7kW) - up to 30 miles of range per hour.

(Tesla, 2024)

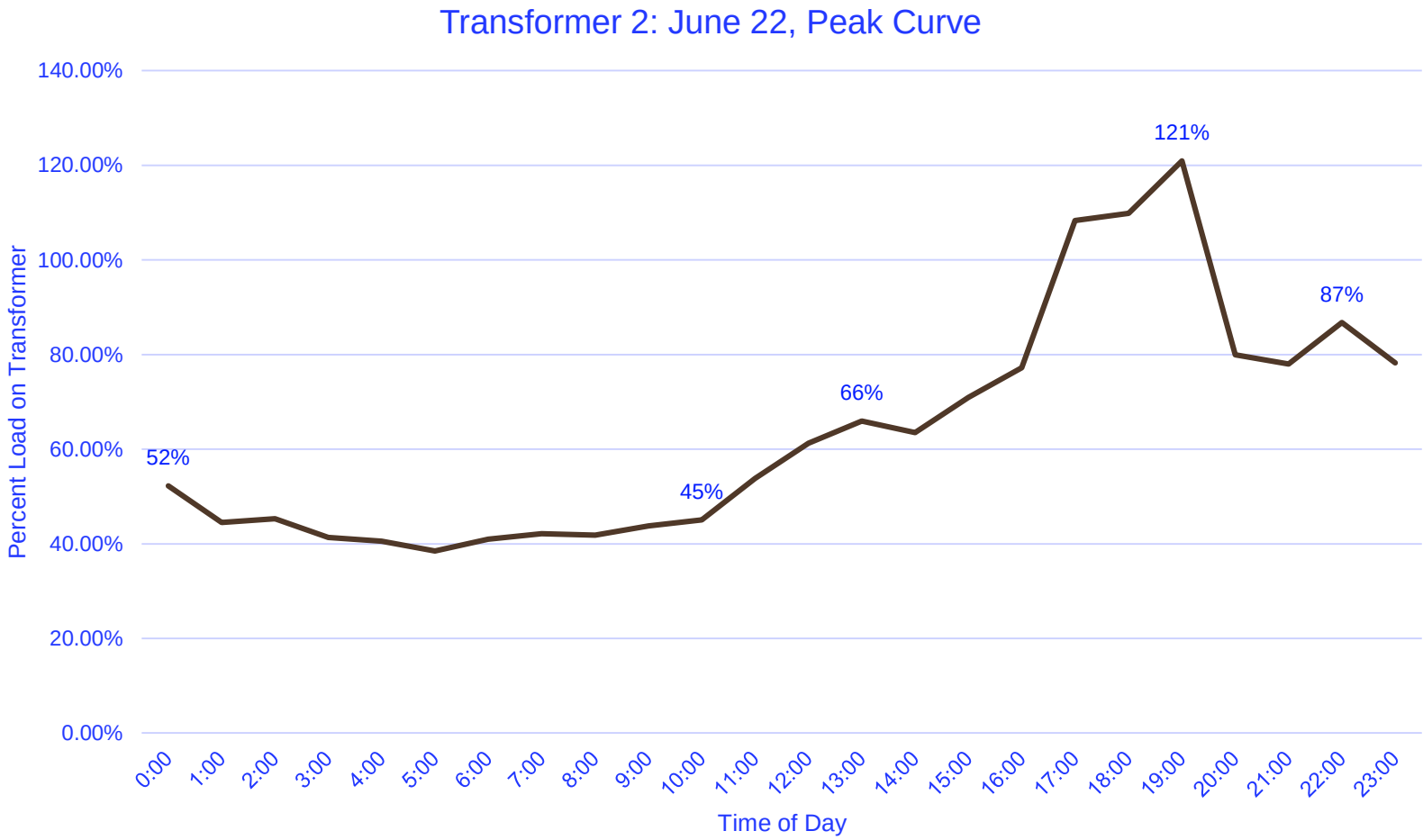
Findings No EVs



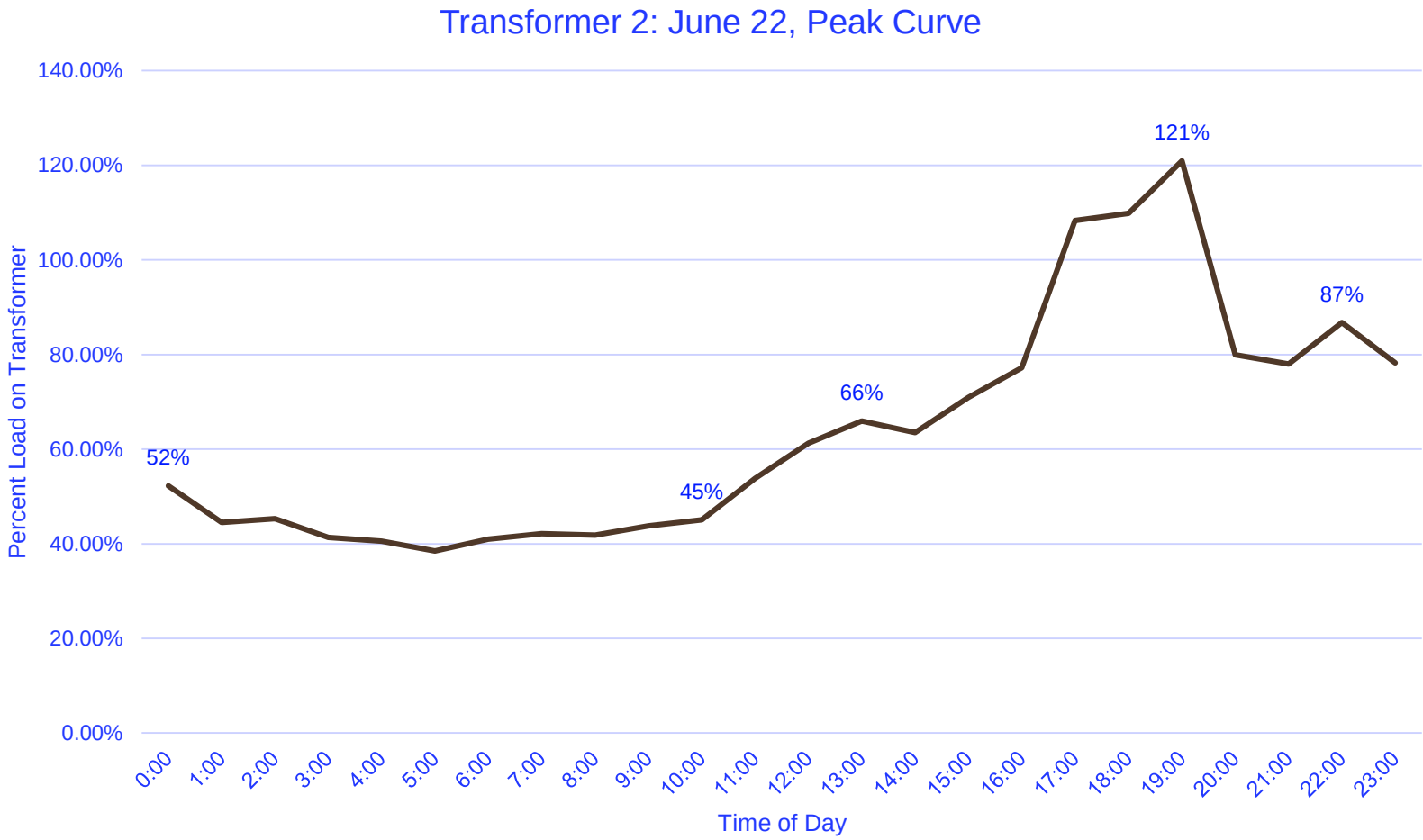
Findings – Extreme No EVs

Date	Transformer	Peak Value	Percent Load
6/1/2023	1	11.5	76.67%
6/2/2023	1	10.5	70.00%
6/4/2023	1	11.09	73.93%
6/5/2023	1	12.27	81.80%
8/2/2023	1	11.72	78.13%
6/4/2023	2	17.48	116.53%
6/22/2023	2	18.14	120.93%
7/2/2023	2	17.32	115.47%
7/20/2023	2	19	126.67%
7/25/2023	2	17.74	118.27%
9/4/2023	2	16.17	107.80%
11/23/2023	2	17.48	116.53%
6/20/2023	3	15.6	104.00%
6/21/2023	3	19.5	130.00%
7/26/2023	3	19.68	131.20%
7/28/2023	3	16.05	107.00%

Findings – Extremes No EVs



Findings – Extremes With EVs



Findings – Known Houses with EVs

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Date	Power Used
2/28/2024	0.048 kWH
2/29/2024	2.584 kWH
3/1/2024	0.044 kWH
3/2/2024	62.267 kWH
3/3/2024	0.044 kWH
3/4/2024	0.047 kWH
3/5/2024	19.357 kWH
3/6/2024	29.786 kWH
3/7/2024	0.047 kWH
3/8/2024	5.902 kWH
3/9/2024	21.398 kWH
3/10/2024	44.631 kWH
3/11/2024	2.956 kWH
3/12/2024	0.042 kWH
3/13/2024	11.232 kWH

Date	Power Used
11/21/2023	13.817 kWH
11/22/2023	59.859 kWH
11/23/2023	55.600 kWH
11/24/2023	0.105 kWH
11/25/2023	0.054 kWH
11/26/2023	14.113 kWH
11/27/2023	0.055 kWH
11/28/2023	25.987 kWH
11/29/2023	20.641 kWH
11/30/2023	43.192 kWH
12/1/2023	0.056 kWH
12/2/2023	6.231 kWH
12/3/2023	12.955 kWH
12/4/2023	14.483 kWH
12/5/2023	0.056 kWH

Proposals

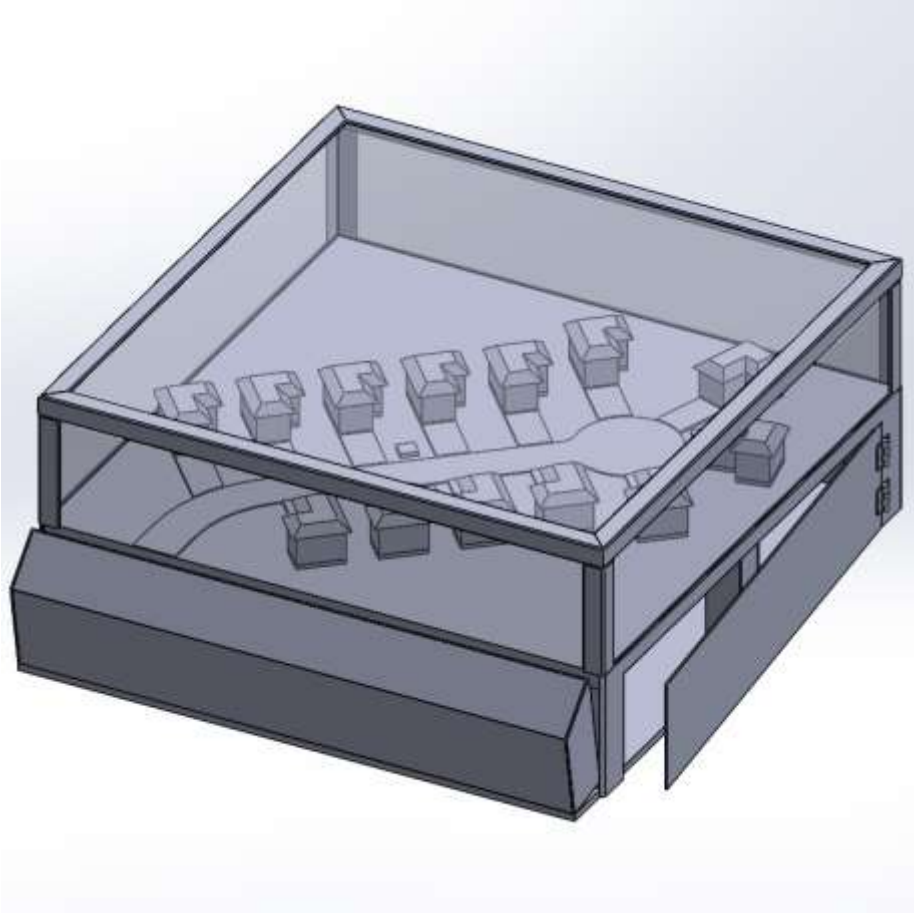
Short Term:

- Upgrade all 15KVA transformer

Long Term:

- Do a cost analysis of between upgrading all components and dedicated EV charging transformer
- Increase of Supercharging Stations

Physical Model – CAD Model



Physical Model - Lighting

Minnesota North College

Place Holder

Citations

- *Grand Rapids Public Utilities. (2024, February 26). Transformer Data. Grand Rapids, MN.*
- *Grand Rapids Public Utilities. (2024, March 28). Ev Power Consumption Data. Grand Rapids, MN.*
- *U.S. Census Bureau quickfacts: Grand Rapids City, Minnesota. (n.d.).* https://www.census.gov/quickfacts/grandrapidscityminnesota
- *Wall connector: Tesla support*. Tesla. (n.d.). https://www.tesla.com/support/charging/wall-connector#vehicle-charging-speeds
- *Electric vehicles. Public Utilities Commission. (2024, January 12).* https://mn.gov/puc/activities/economic-analysis/electric-vehicles/
- *The best home EV Chargers by Grizzl-E in 2024 for the USA. (n.d.-a).* https://grizzl-e.com/products/grizzl-e-ultimate/
- *The best home EV chargers by Grizzl-E in 2024 for the USA. (n.d.-b).* https://grizzl-e.com/products-specs/grizzl-e-classic/
- *Emporia EV Charger: NACS (tesla) or CCS (J1772): Energy star: UL listed: 48 amp: 24' cable*. Emporia Energy. (n.d.). https://shop.emporiaenergy.com/products/emporia-ev-charger
- *Lectron Home Level 2 J1772 V-box EV charging station: 240V: 48 amp: NEMA 14-50 / hardwired*. Lectron EV. (n.d.). https://ev-lectron.com/products/lectron-240v-48a-electric-vehicle-ev-charging-station
- *Maxicharger AC Elite Home 50A - EV charger with in-body holster*. Autel Energy. (n.d.). https://autelenergy.us/products/maxicharger-ac-hardwired-wallbox
- *Meet Home Flex, the level 2 home EV Charger*. ChargePoint. (n.d.). https://www.chargepoint.com/drivers/home?utm_source=google&utm_medium=cpc&utm_campaign=CP-Brand-Search-B2C&utm_term=chargepoint+home+flex&utm_matchtype=p&ad_content=680890508615&gad_source=1&gclid=Cj0KCQjwltKxBhDMARIsAG8KnqXlgdAM8YAqnn03xqBYEa6Vt4E4SluNJa6ygMZpKoOFHdvQvi8EUooaAmVnEALw_wcB

Minnesota North College

A Member of Minnesota State

GRAND RAPIDS PUBLIC UTILITIES COMMISSION AGENDA ITEM

AGENDA DATE: May 8, 2024

AGENDA ITEM: MMUA Interacting on the Issues Event

PREPARED BY: Julie Kennedy, General Manager

BACKGROUND:
Last year, MMUA staff Karleen Kos and Bill Black hosted the Interacting on the Issues event here at our GRPU facility. This year, the nearest event to us is in Brainerd on Thursday, June 13 from 5-7 pm. (https://www.mmua.org/event/interacting-brainerd)

Looking ahead

Interacting on the Issues
Last year, we had excellent meetings with commissioners and utility leaders about the outcome of the 2023 legislative session and its impact on local utilities. We also discussed regulatory issues, MMUA efforts to support municipal efforts, and we sought feedback on priorities for the coming year.

By popular demand, we are going back on the road this June. Join us for a session at one of four locations around the state.

The MMUA government relations team and peers from your region will discuss the implications of new laws, explore opportunities, and network with others committed to protecting, promoting, and strengthening hometown utilities.

There is no cost to attend, however registration is required for planning purposes. Encourage your whole council and commission to join us, learn how MMUA is advocating for your utility, and give us your perspective so we can continue to evolve how MMUA represents and supports you. We are especially eager to discuss ways MMUA can help commissioners champion hometown utilities. Learn more and register by clicking on the links below.

June 6—Hutchinson
June 13—Brainerd
June 26—Blue Earth
June 27—Alexandria

RECOMMENDATION:

Discussion only on Commissioner attendance at the event. No action required.

GRAND RAPIDS
PUBLIC UTILITIES COMMISSION
AGENDA ITEM

AGENDA DATE: May 8, 2024

AGENDA ITEM: Legionella and Drinking Water Update

PREPARED BY: Steve Mattson, Water & Wastewater Manager

BACKGROUND:

Update on the latest efforts.

RECOMMENDATION:

Update on the latest efforts.