

It is expected that a Quorum of the Personnel Committee, Board of Public Works, Plan Commission and Administration Committee will be attending this meeting: (although it is not expected that any official action of any of those bodies will be taken)

**CITY OF MENASHA  
SUSTAINABILITY BOARD  
100 Main Street, Menasha  
Room 207  
October 30, 2019  
2:00 PM  
AGENDA**

- A. CALL TO ORDER
- B. ROLL CALL/EXCUSED ABSENCES
- C. PUBLIC COMMENTS ON ANY MATTER OF CONCERN TO THE SUSTAINABILITY BOARD  
(five (5) minute time limit for each person)
- D. MINUTES TO APPROVE
  - 1. September 24, 2019
- E. COMMUNICATIONS
  - 1. Menasha Hydro
- F. REPORTS
- G. ACTION ITEMS
- H. DISCUSSION
  - 1. City of Menasha Energy Usage
    - Public Works Facility
    - Energy Management policy
  - 2. Electronics Recycling Events
    - Historical totals
    - September 4, 2019
    - May 16, & October 3, 2020
  - 3. Livable Communities
    - 2020 stormwater educational budget
    - Forestry
  - 4. Menasha Farm Fresh Market
  - 5. Transportation
    - [Wisconsin Office of Energy Innovation zero-emission vehicle incentive](#)
    - Valley Transit Draft Transit Development Plan
  - 6. Website
  - 7. Member Recruitment
- I. ADJOURNMENT

"Menasha is committed to its diverse population. Our Non-English speaking population and those with disabilities are invited to contact the Menasha City Clerk at 967-3603 24-hours in advance of the meeting for the City to arrange special accommodations."

**CITY OF MENASHA  
SUSTAINABILITY BOARD  
100 Main Street, Room 207, Menasha  
September 24, 2019  
Minutes**

**A. CALL TO ORDER**

Meeting called to order by Klinda Stoll at 1:05pm.

**B. ROLL CALL/EXCUSED ABSENCES**

Present: Roger Kanitz, Roni Kasperek, Donald Merkes, Linda Stoll, Kathy Thunes

**C. PUBLIC COMMENTS ON ANY MATTER OF CONCERN TO THE SUSTAINABILITY BOARD**

(five (5) minute time limit for each person) -- No one spoke

**D. MINUTES TO APPROVE**

Motion by Roger Kanitz second by Kathy Thunes to approve the minutes of August 15, 2019.

Motion carries

**E. COMMUNICATIONS**

**F. REPORTS**

**G. DISCUSSION ITEMS**

1. City of Menasha Energy Usage

The City is working with Menasha Utilities to develop a plan to replace the remaining HPS streetlights in the system. The City plans to re-apply for the solar grant for PWF in 2020. No additional information on solar portal project with UW / Heckrodt.

2. Waste Management

Recommendation to continue to promote additional container recycling especially to new residents.

3. Fall Electronics Recycling Event

Event complete, 260 cars, 22,051lbs of electronics recycled, 4 volunteers from Menasha High.

4. Livable Communities

Heckrodt looking to pilot pollinator friendly program. Plans to update raingarden as part of 2020 budget should include education, pollinator friendly. Gapper's networking group presentation in October on asset based development.

5. Menasha Farm Fresh Market Menasha Farm Fresh Market

Request for market manager to come to meeting to discuss plans for 2020.

6. Transportation

Paper Trail signage is up, signage at Oneida / 114 could be modified to make it more visible from traffic island

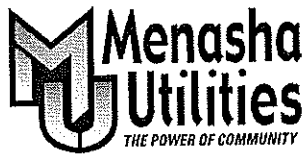
7. Member Recruitment/Volunteer Opportunities

8. Website

**H. ADJOURNMENT**

Motion made by Roger Kanitz and seconded Linda Stoll by to adjourn at 1:57pm.. Motion carried.

*Minutes submitted by DJM*



Date: October 23, 2019

To: Menasha City Council

From: Melanie Krause, General Manager

**RE: Menasha Hydro Dam**

At the Joint Commission and City Council meeting in August a question was raised on the Menasha Hydro Dam. I have attached a copy of the email from Mike Peters, WPPI Energy outlining an application that was filed in 2012 for a Joint venture in Neenah and Menasha that was determined to not be economically feasible. WPPI Energy did further evaluate just the Menasha Dam and provided a estimated calculation of the costs of power.

In looking at the last section of the email the calculation determines the cost of energy to be \$95/MWh. This source of power is a renewable source and in my discussions with WPPI Energy they can currently purchase wind and solar at \$30-\$40/MWh so Hydro would not be the best option to consider. To put this in perspective through September 2019 the year to date cost of power that Menasha Utilities purchases from WPPI Energy is at \$64/MWh.

If there is additional information that the Council would like, please let me know and we can work with WPPI Energy to get this information.

## Melanie Krause

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**Subject:** FW: Menasha Hydro

**From:** Mike Peters <[mpeters@wppienergy.org](mailto:mpeters@wppienergy.org)>  
**Sent:** Tuesday, September 24, 2019 3:03 PM  
**To:** Melanie Krause <[mkrause@wppienergy.org](mailto:mkrause@wppienergy.org)>  
**Subject:** Fwd: Menasha Hydro

As discussed.

Michael W. Peters  
President/CEO

WPPI Energy  
1425 Corporate Center Dr.  
Sun Prairie, WI 53590  
(608) 834-4557 (work)  
(608) 217-1993 (mobile)  
[www.wppienergy.org](http://www.wppienergy.org)

Sent from my iPad

Begin forwarded message:

**From:** Andy Kellen <[akellen@wppienergy.org](mailto:akellen@wppienergy.org)>  
**Date:** September 24, 2019 at 10:42:07 AM CDT  
**To:** Mike Peters <[mpeters@wppienergy.org](mailto:mpeters@wppienergy.org)>  
**Subject:** Menasha Hydro

Mike,

I took a brief look at the potential for hydro at the Menasha dam. In 2012, a company called Coastal Hydropower, LLC filed an application with FERC for a preliminary permit for a hydro project at the Neenah and Menasha dams. Coastal Hydropower's application included the following information on the proposed project:

- The project would have a total capacity of 6 MW:
  - 8 VLH (very low head) turbine generating units of 500 kW each would be installed at the Menasha Dam (owned by the Army Corps of Engineers) – these generators would interconnect with the Menasha Utilities 12 kV system via a 300' tie line
  - 4 VLH turbine generating units of 500 kW each would be installed at the Neenah Dam (owned by Neenah Paper) – these generators would interconnect with the We Energies 12 kV system via a 700' tie line
- The turbines would operate with a head of approximately 10 feet
- The Neenah and Menasha facilities would have an expected average output of approximately 31,500 MWh per year (~60% capacity factor)
- The cost to conduct the necessary feasibility studies for the project was expected to be approximately \$500K to \$1 million

FERC accepted Coastal Power's application for filing, but in 2014, Coastal Power withdrew the application, indicating that it had "determined that the project is not financially feasible due to the lack of the continuation of the federal Investment Tax Credit for hydropower."

I'm assuming that if Menasha did a project, it would only be at the Menasha dam. Based on the equipment selection for the Coastal Power project, I'm assuming this would be a 4 MW project that would generate approximately 21,000 MWh per year.

To estimate the capital and O&M costs for a 4 MW project at the Menasha dam, I looked at the report Hydropower Baseline Cost Modeling, Version 2 (September 2015) by the Oak Ridge National Laboratory (ORNL). The ORNL report has a number of equations for estimating capital and O&M costs for various configurations of hydro projects, including the addition of generating facilities at existing non-powered dams (such as Menasha's). The equation for initial capital cost (ICC) for this configuration (Equation 1, p. 12) is as follows:

$$ICC \text{ (in 2014\$)} = 11,489,245 * P^{0.976} * H^{-0.240}$$

where  $P$  is the capacity in MW and  $H$  is the head in feet

The report indicates this equation should be used for projects with a minimum head of 14 feet (which will give a lower capital cost than a project with a head of 10 feet). At a capacity of 4 MW and a head of 14 feet, the equation gives a capital cost of approximately \$23.6 million, or \$5,899/kW.

The equation for annual O&M cost (Equation 6, p. 22) is as follows:

$$\text{Annual O\&M (in 2014\$)} = 225,417 * P^{0.547}$$

Where  $P$  is the capacity in MW

For a 4 MW project, this gives an annual O&M cost of approximately \$481K, or ~\$120/kW-year.

Using generous financing assumptions of a 25 year loan at 4%, the annual capital recovery is approximately 0.064. At an annual capacity factor of 60% the cost of energy is:

$$(0.064/\text{year} * \$5,899/\text{kW} + \$120/\text{kW-year}) / (0.6 * 8760 \text{ hours/year}) = \$0.095/\text{kWh} \text{ or } \$95/\text{MWh}$$

In addition to the generous financing assumptions, this assumes a 14 foot head (rather than 10 foot), neglects escalation from 2014\$, and represents only the first year cost (i.e. it neglects annual escalation in O&M cost). Based on the results using these assumptions, it doesn't appear that a more sophisticated analysis is warranted.

Please let me know if you have any question or if you need any additional information.

Thanks,  
Andy



## Memorandum

Date: October 17, 2019

To: Menasha Electric and Water Commission

From: Melanie Krause, General Manager  
Lisa Miotke, Energy Service Representative

Re: Resolution for a Continued Commitment of an Energy Management Policy

In 2009, the City of Menasha and Menasha Utilities committed to implementing a community wide energy project and required the municipality (City and Utility) to “lead by example” by reducing the demand for utilities by 10%. The previous resolution did not have a sunset, so we looked at the projects that were completed the last 10 years to determine if this objective was met.

The electric consumption in 2009 for 19 municipal buildings plus street lights amounted to 5,071,229 kwh. There are a lot of factors that can impact the electric consumption at various municipal locations such as weather, how much water we produce based on the demand of our customers, how often our crews are called in and facilities utilized. These factors are out of our control, so we based our measurement on the projects that we completed. If we look at the Focus on Energy report titled Menasha Energy Efficiency Projects 2009-2018, we can see those projects had an estimated annual impact of 1,523,105 kwh in savings which compared to the baseline is 30%.

It is important that we continue our Energy Management Policy and recommend to the Commission and the Council the implementation of a new resolution with the continued commitment of reducing the demand for energy by 5% in 5 years. The commitment to this policy will allow the municipality to be eligible for additional energy efficiency incentives to implement future projects. With the previous resolution the municipality was able to receive over \$87,000 of incentives. Included in the packet is the Focus on Energy report dated May 10, 2019 that looked at the largest municipal buildings and projects that can be completed to accomplish this new goal. In addition, the last page outlines the remaining 493 street lights that are HPS and could be converted to LED. The measurement will be based on the 2018 consumption level of 4,312,347 kwh and over 5 years if half of these projects are completed it would reach the goal of 215,617 kwh of savings.



**A RESOLUTION FOR A CONTINUED COMMITMENT OF A  
MUNICIPAL-WIDE ENERGY MANAGEMENT POLICY**

**Resolution No. [x]  
Municipal-Wide Energy Management Policy**

**WHEREAS**, the City of Menasha and Menasha Utilities are committed to being an environmentally responsible community and municipally owned and operated utility dedicated to improving global and local quality of life through active environmental stewardship; and

**WHEREAS**, it is more cost-effective to use less energy than it is to generate and/or purchase energy for the operation of City of Menasha and Menasha Utilities facilities; and

**WHEREAS**, Menasha Utilities and WPPI Energy have developed and implemented mutually beneficial energy efficiency, conservation and renewable energy programs, projects and educational activities designed to increase community energy efficiency, promote clean air and water and reduce waste; and

**WHEREAS**, Menasha Utilities already promotes these initiatives through its Commitment to Community programs and partnership with WPPI Energy and Focus on Energy; and

**WHEREAS**, implementing a municipal-wide energy management policy will require that the City of Menasha and Menasha Utilities make a commitment of financial and human resources toward initiatives that save energy and money for the long-term.

**NOW, THEREFORE, BE IT RESOLVED**, that the City of Menasha and Menasha Utilities will set a goal to curb use of energy in municipal facilities by 5% from levels measured in 2018 within 5 years.

**BE IT FURTHER RESOLVED**, that the City of Menasha and Menasha Utilities will demonstrate the effectiveness of energy efficiency, conservation and renewable resource development and further seek to instill a strong conservation ethic within the community that will help establish the City of Menasha as a leader in these areas.

Commission recommended this [date]  
Council Passed and adopted this [date].

\_\_\_\_\_  
Donald Merkes, Mayor

ATTEST:

\_\_\_\_\_  
Debbie Galeazzi, City Clerk





# Menasha's Energy Efficiency Projects, 2009-2018

Application Name (Application Name)	Application Measure Name	Payment Approved Date	Annual Peak Annual kWh	Annual Therms	Incentive Amount	MU/WPP	Estimated Useful Life	Lifecycle kWh Savings	Site Address
City of Menasha - not specified	VFDs	11/1/2009	42213		\$ 1,730.00	\$ 1,730.00	15	633,195	not specified
City of Menasha - not specified - City Park Restrooms	CFLs and sensors	12/2/2010	0.8	9840	\$ 800.00	\$ 800.00	8	76,320	not specified
City of Menasha - Public Protection	New Condensers	4/26/2011	24.4	19520	\$ 4,538.00	\$ 4,538.00	15	292,800	430 1st St Menasha, 54952-3199
City of Menasha - Pool & Memorial Bldg	Lighting - 2 Lamp Fluorescent fixtures	12/16/2011	2	273	\$ 273.00	\$ 273.00	8	2,184	not specified
79330 - Menasha Utilities - S - Lighting (LED pole mount) - 07/12	LED Fixture, Exterior Pole Mounted	11/18/2012	6,011		\$ 360.00	\$ 360.00	13	78,144	455 Baldwin St Menasha, 54952-2933
76597 - Menasha Public Library - S - VFD - 09/12	VFD, Chilled Water Distribution Pump	11/20/2012	7,608		\$ 500.00	\$ 500.00	15	114,120	440 1st St Menasha, 54952-3143
76597 - Menasha Public Library - S - VFD - 09/12	VFD, Cooling Tower Fan	11/20/2012	15,351		\$ 637.00	\$ 637.00	15	230,265	440 1st St Menasha, 54952-3143
76597 - Menasha Public Library - S - VFD - 09/12	Bonus, Early Completion 50%, By October 1st 2012	11/20/2012			\$ 313.50	\$ -	0	-	440 1st St Menasha, 54952-3143
76597 - Menasha Public Library - S - VFD - 09/12	Bonus, Early Completion 50%, By October 1st 2012	11/20/2012			\$ 209.00	\$ -	0	-	440 1st St Menasha, 54952-3143
79332 - Menasha Public Library - S - Lighting (LED Wall-Pack) - 10/12	LED Fixture, Exterior Wall-Pack, Dusk to Dawn	11/30/2012	270		\$ 25.00	\$ -	13	3,510	430 1st St Menasha, 54952-3199
79330 - Menasha Senior Center - S - Lighting (LED Wall-Pack Fixture) - 10/12	LED Fixture, Exterior Wall-Pack, Dusk to Dawn	11/30/2012	270		\$ 25.00	\$ -	13	3,510	116 Main St Menasha, 54952-3151
78477 - Menasha Public Protection Facility - S - VFD - 10/12	VFD, HVAC Heating Pump	12/12/2012	6,298		\$ 150.00	\$ -	15	94,470	430 1st St Menasha, 54952-3199
78477 - Menasha Public Protection Facility - S - VFD - 10/12	Bonus, Early Completion 25%, By November 1st, 2012	12/12/2012			\$ 37.50	\$ -	0	-	430 1st St Menasha, 54952-3199
40904 - SECTOR Ind Menasha Electric & Water - PRE APPROVAL - VFD 6/11	VFD, Process Pump	4/8/2013	154,257		\$ 7,500.00	\$ 7,500.00	15	2,313,855	105 Manitowoc St Menasha, 54952-3228
40904 - SECTOR Ind Menasha Electric & Water - PRE APPROVAL - VFD 6/11	VFD, Process Pump	4/8/2013	257,096		\$ 12,500.00	\$ 11,500.00	15	3,856,440	105 Manitowoc St Menasha, 54952-3228
40904 - SECTOR Ind Menasha Electric & Water - PRE APPROVAL - VFD 6/11	VFD, Process Pump	4/8/2013	128,548		\$ 6,250.00	\$ 6,250.00	15	1,928,220	105 Manitowoc St Menasha, 54952-3228
110325 - Menasha Public Protection Facility - S - Specialty (Vending Machine Control) - 03/13	Vending Machine Controls, Occupancy Based, Cold Beverage Machine	4/23/2013	1,633		\$ 60.00	\$ -	5	8,165	430 1st St Menasha, 54952-3199
60600 - Menasha - Water and Utility motor project - 8/12	Motor, Not Otherwise Specified	5/29/2013	147,464		\$ 9,900.00	\$ 9,900.00	15	2,211,960	321 Milwaukee St Menasha, 54952-2704
122700 - Menasha Public Library - S - Specialty (Vending controls) - 05/13	Vending Machine Controls, Occupancy Based, Cold Beverage Machine	5/31/2013	3,266		\$ 120.00	\$ -	5	16,330	440 1st St Menasha, 54952-3143
165713 - Menasha Public Library	T8, Low Watt Relamp, 25 Watts, 4'	11/21/2013	0.372		\$ 60.00	\$ -	15	25,200	440 1st St Menasha, 54952-3143
165461 - Menasha City Hall - Lighting Sensors - 10/13	Occupancy Sensor, Wall Mount, <=200 Watts	11/21/2013	1,393		\$ 52.50	\$ -	8	11,144	140 Main St Menasha, 54952-3190
165461 - Menasha City Hall - Lighting Sensors - 10/13	Occupancy Sensor, Ceiling Mount, <=500 Watts	11/21/2013	465		\$ 15.00	\$ -	8	3,720	140 Main St Menasha, 54952-3190
191923 - Menasha City Hall - HVAC - 1/14	A/C Split or Packaged System, High Efficiency	2/14/2014	3,041		\$ 1,890.00	\$ -	15	45,615	140 Main St Menasha, 54952-3190
263073 - (120349) Menasha Water Plant - Well Motor Replacement - 6/14	Motor, Not Otherwise Specified	4/23/2015	15,210		\$ 7,229.09	\$ 7,228.00	15	1,997,940	57 Manitowoc St Menasha, 54952-3226
345455 - City of Menasha - Ltg - 2/16	LED Fixture, Replacing 250 Watt HID, Exterior	3/2/2016	1,740		\$ 100.00	\$ 80.00	13	22,620	430 1st St Menasha, 54952-3199
345580 - Menasha - Library LED Ltg - 03/16	LED Fixture, Downlights, <=18 Watts, Replacing 1 lamp pin based CFL Downlight	3/14/2016	560		\$ 35.00	\$ -	15	8,400	440 1st St Menasha, 54952-3143

362983 - City of Menasha - Public Prot Pac LED Ltg - 07/16	LED Replacement of 4' T8 Lamps, Direct Wire	7/28/2015	0.818	4,092	\$	528.00	\$	-	15	61,380	430 1st St Menasha, 54952-3199
268988 - Menasha - 3 Yr Street Ltg Upgrade - 01/15	LED Fixture, Replacing 250 Watt HID, Exterior	7/29/2016		84,890	\$	4,850.00	\$	4,850.00	13	1,097,070	140 Main St Menasha, 54952-3190
268988 - Menasha - 3 Yr Street Ltg Upgrade - 01/15	LED Fixture, Replacing 150-175 Watt HID, Exterior	7/29/2016		119,988	\$	8,080.00	\$	8,080.00	13	1,559,844	140 Main St Menasha, 54952-3190
416135 - City of Menasha - Fire Station #36 LED Ltg - 12/16	LED Replacement of 4' T8 Lamps, Direct Wire	12/5/2016	0.806	4,030	\$	519.35	\$	-	15	60,450	1911 Manitowoc Rd Menasha, 54952-8990
504710 - City of Menasha - St Ltg - 08/17	LED Fixture, Replacing 150-175 Watt HID, Exterior, Street Light	8/18/2017		3,564	\$	180.00	\$	180.00	13	46,392	100 Main St Ste 200 Menasha, 54952-3151
504710 - City of Menasha - St Ltg - 08/17	LED Fixture, Replacing 250 Watt HID, Exterior, Street Light	8/18/2017		28,710	\$	1,320.00	\$	1,320.00	13	373,230	100 Main St Ste 200 Menasha, 54952-3151
268988 - Menasha - 3 Yr Street Ltg Upgrade - 01/15	LED Fixture, Replacing 250 Watt HID, Exterior	9/11/2017		45,240	\$	2,600.00	\$	2,400.00	13	588,120	140 Main St Menasha, 54952-3190
268988 - Menasha - 3 Yr Street Ltg Upgrade - 01/15	LED Fixture, Replacing 150-175 Watt HID, Exterior Boiler, Hot Water, Modulating, >=90% AFUE, <300 mbh	9/11/2017		100,886	\$	6,760.00	\$	6,760.00	13	1,305,018	140 Main St Menasha, 54952-3190
545114 - Menasha - Mem Bldg Boilers - 12/17		12/21/2017		2,194	\$	1,560.00	\$	-	20	640	Keyes St Menasha, 54952-3446
268988 - Menasha - 3 Yr Street Ltg Upgrade - 01/15	LED Fixture, Replacing 70-100 Watt HID, Exterior	5/22/2018			\$	-	\$	-	13	-	140 Main St Menasha, 54952-3190
268988 - Menasha - 3 Yr Street Ltg Upgrade - 01/15	LED Fixture, Replacing 250 Watt HID, Exterior	5/22/2018		74,820	\$	4,300.00	\$	4,300.00	13	972,660	140 Main St Menasha, 54952-3190
268988 - Menasha - 3 Yr Street Ltg Upgrade - 01/15	LED Fixture, Replacing 150-175 Watt HID, Exterior	5/22/2018		108,408	\$	7,280.00	\$	7,280.00	13	1,405,404	140 Main St Menasha, 54952-3190
705123 - Menasha - Water Plant Ltg - 09/18	LED Fixture, <=180 Watts, Replacing 4 lamp T5 or 6 lamp T8, High Bay, DLC Listed	10/22/2018	0.075	381	\$	30.00	\$	30.00	15	5,715	57 Manitowoc St Menasha, 54952-3226
705123 - Menasha - Water Plant Ltg - 09/18	Occupancy Sensor, Ceiling Mount, <=500 Watts	10/22/2018		465	\$	10.00	\$	10.00		-	57 Manitowoc St Menasha, 54952-3226
705123 - Menasha - Water Plant Ltg - 09/18	LED Fixture, 2x2, Low Output, DLC Listed	10/22/2018	0.154	774	\$	90.00	\$	90.00	15	11,610	57 Manitowoc St Menasha, 54952-3226
705123 - Menasha - Water Plant Ltg - 09/18	LED Troffer, 2x4, Replacing 4' 3-4 Lamp T8 Troffer	10/22/2018	0.419	2,124	\$	300.00	\$	336.00	15	31,860	57 Manitowoc St Menasha, 54952-3226
705123 - Menasha - Water Plant Ltg - 09/18	LED Fixture, Linear Ambient, Replacing 3 or 4 T8/12 lamps in Cross Section	10/22/2018	0.512	2,600	\$	200.00	\$	200.00	15	39,000	57 Manitowoc St Menasha, 54952-3226
705123 - Menasha - Water Plant Ltg - 09/18	Occupancy Sensor, Wall Mount, <=200 Watts	10/22/2018		597	\$	22.50	\$	22.50	8	4,776	57 Manitowoc St Menasha, 54952-3226
705123 - Menasha - Water Plant Ltg - 09/18	Bonus, Water and Wastewater, 20% Prescriptive	10/22/2018			\$	130.50	\$	130.50	0	-	57 Manitowoc St Menasha, 54952-3226
705009 - Menasha - Water Plant Ltg - 12/18	Bonus, Water and Wastewater, 20% Prescriptive	12/11/2018			\$	18.00	\$	18.00	0	-	57 Manitowoc St Menasha, 54952-3226
705009 - Menasha - Water Plant Ltg - 12/18	LED Fixture, <=180 Watts, Replacing 4 lamp T5 or 6 lamp T8, High Bay, DLC Listed	12/11/2018	0.226	1,143	\$	90.00	\$	90.00	15	17,145	57 Manitowoc St Menasha, 54952-3226
<b>TOTALS</b>										<b>1,523,105</b>	<b>21,557,741</b>
										<b>2,194</b>	<b>\$ 94,167.94</b>
										<b>\$ 87,301.00</b>	

May 10, 2019

Adam Alix, Deputy Director of Municipal Operations  
City of Menasha  
100 Main Street  
Menasha, WI 54952

Dear Mr. Alix,

Thank you for your continued participation in Focus on Energy, Wisconsin utilities' statewide energy efficiency and renewable resource program. The Agriculture, School and Government (AgSG) Program is happy to provide the attached energy savings identification audit. This document is a first step in understanding your building's energy savings potential. It identifies available opportunities and helps determine what steps should be considered to accomplish energy efficiency objectives.

As you integrate these opportunities into your facility, your local Energy Advisor can answer questions and help facilitate the implementation of the energy efficient measures outlined in the following pages.

The following facilities are included in this audit: Menasha Utilities, Library, Police Station, Marina and Water Plant. These are the focus of this audit, since some other facilities are not yet open (pool), some facilities will no longer be in use soon (public works) and are leased (city hall).

Again, thank you for your participation in Focus on Energy. We appreciate the opportunity to help you reduce your electricity and natural gas utility costs.

Sincerely,



**Joe Kottwitz**  
Focus on Energy Advisor  
715-720-2157

## Energy Conservation Opportunities

### 1. MU - LED Lighting

A detailed lighting analysis has been completed for MU. Appendix A attached to this report includes energy savings estimates and estimated payback (based on hypothetical cost).

See Appendix A

EUL 15 years = 629,502 lifecycle kWh savings

### 2. MU - Hot Water Pump VFD's

Currently, the hot water circulation pumps are on/off constant speed. Based on system design (VAV with re-heat coils) and scattered hot water coil units, it's likely by adding VFD's to the hot water pumps, substantial energy savings could be achieved. VFD's would match pump speed to system demand, as valves in the distribution loop open/close. Typically, we see hot water circulation pumps are able to operate in the 45 to 55 Hz range, which is about 75-90% speed. Due to the centrifugal pump affinity laws, energy savings is exponential to speed of the pump, resulting in substantial energy savings.

1.5 HP pump operating at 50 Hz 6,000 hours per year = \$288 savings annually

\$2,000 cost - \$150 Focus on Energy incentive / \$288 savings annually = 6.4 year payback

EUL 15 years = 43,200 lifecycle kWh savings

### 3. Library - Chiller/Economizer Optimization

The chiller is enabled typically in March and disabled in November to satisfy "hot spots" within the building. This is an extended chiller enabled period, compared to normal chiller systems in our climate zone. When the chiller is enabled, it consumes significant energy. Typically chillers shouldn't be enabled until it reaches daytime temperatures of 55 deg F (April/October). The building automation system indicated some AHU's calling for chilled water and at the same time, outside air dampers were not 100% open (economizing) on an economizing day. This is not right. It should call for 100% economizing before it calls for chilled water. I believe there's control sequencing issues or some mechanical issue that may be leading to the disfunction of the system. Ideally, zones should be satisfied by 100% economizing all the way into 60 or even 65 deg F outside air temperatures, eliminating the need for cooling (chiller enable).

Savings are difficult to estimate, but would be significant.

Suggestion is to have third party retro-commissioning agent investigate and provide solutions to fix the controls sequencing or mechanical issues we see present. Payback could be very short (under 1 year).

EUL 5 years

#### 4. Library - Hot Water Pump VFD's

Currently, the hot water circulation pumps are on/off constant speed. Based on system design (VAV with re-heat coils) and scattered hot water coil units, it's likely by adding VFD's to the hot water pumps, substantial energy savings could be achieved. VFD's would match pump speed to system demand, as valves in the distribution loop open and close. Typically, we see hot water circulation pumps are able to operate in the 45 to 55 Hz range, which is about 75-90% speed. Due to the centrifugal pump affinity laws, energy savings is exponential to speed of the pump, resulting in substantial energy savings.

*1.5 HP pump operating at 50 Hz 6,000 hours per year = \$288 savings annually*

*\$2,000 cost - \$150 Focus on Energy incentive / \$288 savings annually = 6.4 year payback*

*EUL 15 years = 43,200 lifecycle kWh savings*

#### 5. Library - Demand Controlled Ventilation

Large open public spaces (i.e. - library) are typically ideal locations to implement CO2 demand controlled ventilation. Focus recommends CO2 sensors be installed in the space or in return air ducts. As occupancy increases/decreases the amount of CO2 in the space changes. A programmed algorithm tells the outside air damper on the air handling units to open and close to allow the appropriate amount of fresh air into the space, based on occupancy. Wisconsin energy code allows and encourages this type of control for outside air.

The less outside air introduced by the air handler, the less conditioning (heating or cooling) is required.

*Paybacks are typically very quick. This is a low-cost measure to implement, with significant energy savings.*

*Typical payback: 1 - 5 years.*

*EUL 10 years*

#### 6. Library - Daylight Harvesting

The majority of the library is currently being converted to LED, which is great!

The opportunity presents itself to control some strategic lighting circuits on daylight harvesting sensors. There are several spaces where tall ceilings and large windows allow for ample daylight to enter the space. Daylight harvesting sensors detect how much light is reaching the space and dims LED fixtures within the space, accordingly. When sun light is shining through the windows, the daylight harvesting sensor automatically detects this and dims the fixtures to an appropriate level (sometimes even shutting them off completely).

*Suggestion is to investigate the opportunity for daylight harvesting controls in opportune spaces.*

*Sometimes, additional wiring needs to be added in order for this to be feasible. If wiring costs are significant, it can sometimes drive the complexity and cost too high. In some cases though, payback is very quick.*

*EUL 8 years*



### 7. PD - LED Lighting

The 2019 budget has \$8,500 budgeted for LED lighting at the Police Department. This is great! Continue to install LED lighting throughout the facility.

*Payback depends on cost, wattage reduction, and hours of operation.*

*Typical payback: 3 - 7 years for interior lighting and 1 - 5 years for exterior lighting.*

EUL 10 to 15 years

### 8. PD - Pneumatic to DDC Controls

The Police Department has a pneumatic HVAC controls system. Pneumatics use compressed air to trigger valves and move actuators. By replacing pneumatic controls with digital controls, much more accurate set points can be achieved and accuracy with valves/dampers is improved. Also, the air compressor can be eliminated by transitioning to 100% digital.

In addition to energy savings, great operational flexibility and maintenance savings can be achieved.

*Payback for pneumatic to DDC controls is typically 10+ years, depending on many factors. The cost can be very significant, but so can the energy and maintenance savings.*

EUL 15 years

### 9. Marina - LED Lighting

The marina currently uses 70 watt high pressure sodium lamps, which are ON from dusk to dawn. Replacing them with LED fixtures will provide improved light and energy savings. It's recommended to put occupancy controls on the proposed LED fixtures as well. When the marina is not occupied, LED fixtures could be dimmed to 30% light output. When a person walks into certain areas of the marina, occupancy sensors would bring the light of relevant area poles up to 100% light output for a period of time (typically 10 or 20 minutes).

*70w HPS (consumes 94 watts) replaced with 35 watt LED (dimmed to 30% most of the time), 4,380 hours annually.*

*\$200 per head cost - \$30 Focus on Energy incentive / \$33 savings annually = 5 year payback*

EUL 13 years = 4,290 lifecycle kWh savings per 70w HPS replacement



#### 10. Water Plant - LED Lighting

There is currently a significant number of HID high bay lights at the water plant. Some are ON the majority of the time (even 24/7 in some cases) and some are only on a few hours per day. Start replacing HID fixtures with the highest operating hours first. One way to convert to LED is utilizing LED "corn cob" bulbs. Another cost effective method is to purchase LED "UFO" fixtures, which are cheap on-line and provide great light.

Once the HID fixtures are replaced with LED, then move onto fluorescent fixtures. Replace fluorescent fixtures with highest operating hours to LED technology first, then move onto changing the remainder of the facility to LED.

*150w HID replaced with 60w LED "UFO" high bay fixture, operating 1,800 hours annually.*

*\$80 per fixture cost - \$30 Focus on Energy incentive / \$22 savings annually = 2.3 year payback*

*EUL 15 years = 3,300 lifecycle kWh savings per 150w HID replacement*

#### 11. Water Plant - Compressed Air Leak Survey/Repair

Compressed air systems tend to develop leaks over time, which can be costly. I recommend a professional third party company complete a compressed air leak survey with an ultrasonic meter. Even a small leak diameter of 1/64" (non-detectable by human senses) in a 100 psi system can cost upwards of \$40 per year in energy waste.

Leaks should be fixed once they've been identified by the survey.

*Payback depends on how many leaks are fixed and the severity of the leaks.*

*Focus on Energy has an incentive of \$4 per connected compressor HP for detection and repair work.*

*EUL 2 years*

#### 12. Water Plant - Peak Demand Management (LOW COST/NO COST OPPORTUNITY)

There's a major opportunity to reduce the water plant peak demand charges. In the past, peak demand management strategies were attempted by the water department, but didn't persevere due to scheduling conflicts and complexity of labor duties. This is a low cost/no cost opportunity. There's no capital cost to achieve this, but labor costs might be slightly higher.

Focus on Energy recommends processes such as filter scouring/backwashing, filter wasting, GAC backwashing, and other intermittent processes be completed off-peak and not simultaneously. Off-peak is 8pm to 8am Monday - Friday, plus weekends. This will reduce the peak demand (KW) and customer demand (KW) charged by the electric utility, resulting in very significant cost savings.

*Payback is immediate. Peak demand management could potentially save thousands of dollars per month.*

*Staffing challenges need to be addressed. Assuming 200 KW could be reduced from peak demand and customer demand, this would equal roughly \$2,300 per month savings = \$27,600 saved annually.*



# Appendix A -- Menasha Utilities Bldg -- LED Lighting Calcs

Area	Existing					Proposed				
	Existing	Qty	Wattage	Hours	Annual Cost	Proposed	Qty	Wattage	Annual Cost	
Offices	3LT8 32W	34	91	2600	\$ 804.44	2L 15W/ TLED	34	30	\$ 265.20	
Offices	3LT8 32W	32	91	2600	\$ 757.12	2L 15W/ TLED	32	30	\$ 249.60	
Offices/Comm	T8 Side Panels	142	61	2600	\$ 2,252.12	2L 15W/ TLED	142	30	\$ 1,107.60	
Commission	3LT8 32W	6	91	250	\$ 13.65	2L 15W/ TLED	6	30	\$ 4.50	
Breakroom	3LT8 32W	6	91	780	\$ 42.59	2L 15W/ TLED	6	30	\$ 14.04	
Hallways	3LT8 32W	32	91	2600	\$ 757.12	2L 15W/ TLED	32	30	\$ 249.60	
Back bathrooms	2LT8 32W	8	61	780	\$ 38.06	2L 15W/ TLED	8	30	\$ 18.72	
Office bathrooms	2LT8 32W	2	61	780	\$ 9.52	2L 15W/ TLED	2	30	\$ 4.68	
Garage	6LT8 32W	22	224	3120	\$ 1,537.54	6L 15W/ TLED	22	90	\$ 617.76	
Storeroom	2LT8 32W	29	61	2600	\$ 459.94	2L 15W/ TLED	29	30	\$ 226.20	
Upstairs storeroom	2LT8 32W	25	61	780	\$ 118.95	2L 15W/ TLED	25	30	\$ 58.50	
Jennifer's Office	3LT8 32W	8	91	2600	\$ 189.28	2L 15W/ TLED	8	30	\$ 62.40	
Copy Room	3LT8 32W	6	91	2600	\$ 141.96	2L 15W/ TLED	6	30	\$ 46.80	
					\$ 7,122.28				\$ 2,925.60	

\*\*\*Cost assumes \$15 per new TLED lamp (includes lamp, labor, wiring cost). 792 total TLED lamps.

\*\*\*Proposed is 15 watt direct wire TLED's. De-lamp 3-lamp fixtures to 2-lamp.

\$ 11,880.00	Cost
\$ 4,196.68	Annual Savings
?	Incentive
2.8	Year Payback

# ENERGY ESTIMATION

## Projected Savings from an Energy Efficient Lighting Retrofit

Project: Menasha Water Plant  
 Description: Lighting Retrofit  
 Date: 2020 estimate

Equations:  
 [a] Reduced kW =  $[(Qty_{existing}) \times (Watts_{existing})] - [(Qty_{proposed}) \times (Watts_{proposed})] / 1000$   
 [b] Annual kWh Saved =  $[(Qty_{existing}) \times (Watts_{existing}) \times (hours)] - [(Qty_{proposed}) \times (Watts_{proposed}) \times (hours)] / 1000$

PROJECT		EXISTING FIXTURE				PROPOSED FIXTURE				SAVINGS		
Room or Area	Qty.	Description	Annual Hours		Input Watts	Annual Hours		Input Watts	Reduced kW <sup>[a]</sup>	Annual kWh <sup>[b]</sup>	On-Pk	Off-Pk
shop/clearwell	32	4' 2L T8	2,080	832	88	2,080	832	20	2.2	4,500	1,800	
Garage	6	400W HPS	3,050	5,710	465	260	104	100	2.2	8,400	15,900	
upstairs GAC	11	100W HPS/Halogen	260	104	130	260	104	40	1.0	300	100	
PAC & settling basins	29	100WHPS	3,050	5,710	130	3,050	5,710	40	2.6	8,000	14,900	
GAC/Filter rm	8	400 watt wallpacks	2,080	832	465	2,080	832	100	2.9	6,100	2,400	
various	3	120W Wallpacks	3,050	5,710	130	3,050	5,710	40	0.3	900	1,800	
various	8	120W Wallpacks	2,080	832	188	2,080	832	40	1.2	2,500	1,000	
filter/clearwell	1	69 watt traffic light	2,080	832	69	2,080	832	20	0.0	100	0	
Hypochlorite rm	4	400 watt MH	3,050	5,710	455	610	208	120	1.3	5,300	10,300	
Pipe Gallery	4	300 W Wallpack	3,050	5,710	340	3,050	5,710	75	1.1	3,200	6,100	
Pipe Gallery	8	250 HPS	3,050	5,710	300	610	208	75	1.8	7,000	13,600	
Elevator/storage	12	4'2L t12 electronic	3,050	5,710	88	610	208	20	0.8	3,100	6,000	
Totals									17.4	49,400	73,900	

Notes:

THIS IS A GENERAL REVIEW ONLY. PROPOSED FIXTURES ARE JUST ONE OPTION.

PROPOSALS FROM LIGHTING CONTRACTORS SHOULD BE REQUESTED AND MAY INCREASE OR DECREASE THE ESTIMATED SAVINGS. COSTS WILL DETERMINE PAYBACK.

- 1) Hours of Operation: per Adam Smith
- 2) Based on Tour with Dennis VanDinter at Water Plant on 5/15/13
- 3) Outbuildings used rarely- did not include in estimation.
- 4) Older portion of the building has magnetic ballasts- others have electronic
- 5) 4 outdoor wallpacks estimated at 150 watts-assume replace with LED with photosensor
- 6) Consider sensors in areas that are not used often and may have lights left on



# ENERGY ESTIMATION

## Projected Savings from an Energy Efficient Lighting Retrofit

Project: City of Menasha  
 Description: LED Ornamental Street Lighting Energy Estimation  
 Date: Counts based on 9/30/2019

Equation [a] Reduced kW =  $\frac{[(Qty_{existing}) \times (Watts_{existing})] - [(Qty_{proposed}) \times (Watts_{proposed})]}{1000}$   
 [b] Annual kWh Saved =  $\frac{[(Qty_{existing}) \times (Watts_{existing}) \times (hours)] - [(Qty_{proposed}) \times (Watts_{proposed}) \times (hours)]}{1000}$

PROJECT	
Room or Area	
ornamentals	
ornamentals	
ornamentals	
Total	493

EXISTING FIXTURE			
Qty.	Description	Annual Hours	
		On-Pk	Off-Pk
93	100 W HPS	372	3,734
396	150 W HPS	372	3,734
4	250 W HPS	372	3,734
1	400W HPS	372	3,734
493			

PROPOSED FIXTURE			
Qty.	Description	Annual Hours	
		On-Pk	Off-Pk
93	LED	372	3,734
396	LED	372	3,734
4	LED	372	3,734
1	no light	372	3,734

SAVINGS			
Reduced kW <sup>[a]</sup>		Annual kWh <sup>[b]</sup> Saved	
		On-Pk	Off-Pk
8.5		3,100	31,600
56.2		20,900	210,000
0.9		300	3,400
0.5		200	1,700
66		24,500	246,700

Total On & Off Peak energy Savings 271,200 kWh/yr

Year	Dedicated HPS Fixtures A and B	Count	Wattage
2000	Midway Place and university	20	150
2001	Grassy Fields Subdivision	25	150
2002	Lake Park Villas South	17	150
2003	Lake Park Villas North	67	150
2004	Deerfield	39	100
2004	Woodland Hills	78	150
2005	Deerfield North	11	150
Unknown	Racine Bridge	3	250
2007	Southfield West Subdivision	29	150
2008	Province Terrace	7	150/250
2011	Woodcrest Heights	5	150
2012	Lake Road and the ponds	19	100
2013	Lotus Trail	13	100
2014	Washington St	10	150
Unknown	Various	13	100/150
2015	Chrystella and Villa Way	13	100
		369	

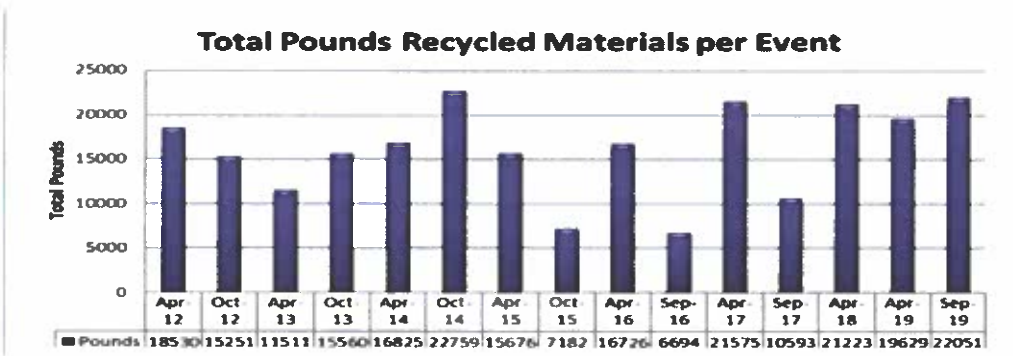
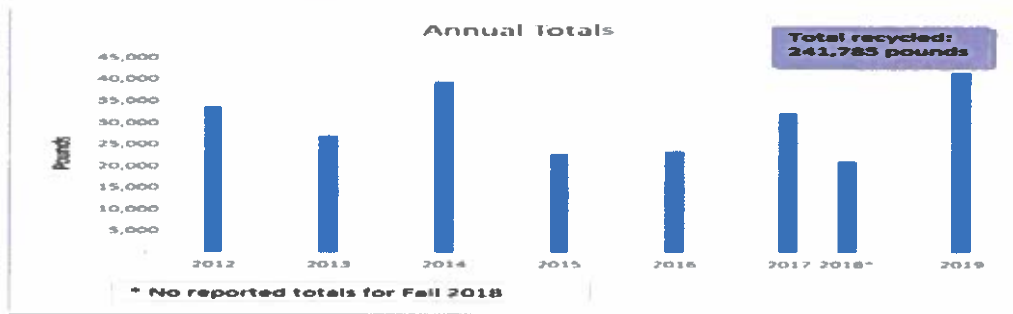
Year	Dedicated HPS Fixtures C	Count	Wattage
Unknown	Racine north of main	12	150
1990	Main West of Mill and Milw North of	56	150
1998	Chute Street	6	150
2001	Chute Street	7	150
2005	Trestle Trail	28	150
Unknown	Reed Square	1	400
2015	Kargas Drive Jefferson Park	16	150
		124	

74% At the end or beyond 15 year useful life

### Customer Service and Customer Satisfaction (cont)

#### Electric & Water Disconnections

Disconnections	Sep-18	Sep-19
Calls Made	339	273
Disconnected	46	41
Reconnected	41	32



- \* Continued updates to website and Facebook.
- \* Completed quarterly review of commercial customer accounts.
- \* Public Power Week and lead informational brochures included with customer bills.
- \* Continued work on category codes.
- \* Completed verification of Access water meter database with NorthStar to prepare for transfer of data.
- \* Monthly NorthStar utilization review call with WPPI to review and implement efficiencies.
- \* Began annual tax roll process.
- \* Updated NSF returns policy and added letters to NorthStar.
- \* Updated payment methods in NorthStar.

### Financial and strategic focus including fair and competitive rates

- \* Financial and Project Status Report for month includes information on this objective.
- \* Work being done on the Strategic Plan and 2020 Budget. Finalize plans with managers for cash flow purposes.
- \* Submitted APPA RP3 grant application.
- \* Exploring Check 21 option with PSN to gain efficiencies of deposit and customer payment processing.
- \* Entered into Intergovernmental Agreement with Appleton and Neenah for Chemical purchases to take advantage of buying in larger quantities and at lower prices.
- \* Work with current bank to extend into an additional 2-year agreement. Discuss additional internal control policies.
- \* Sent RFQ for chemical consortium with Appleton and Neenah water facilities.



# **CERTIFICATE OF RECYCLING**

*All Computers & Electronics Will Be Recycled For Their Metal, Glass, & Plastic*

**Received From**  
**Address**

**City of Menasha**  
**100 Main Street**  
**Menasha, WI 54952**

**Items Received:**

**5934 lbs TVs, 495 lbs Monitors, 5092 lbs Electronics, 2530 lbs CPUs, 1320 lbs Freon, 6680 lbs Appliances, Printers, & Small Electronics**

**Total Collected: 22,051 lbs**

**Date Received: September 14th, 2019**

This is to certify that the above items received by [Recycle That Stuff](#) have been recycled in accordance with all applicable Federal, State, and Local Regulations and **will not** be landfilled, or otherwise improperly disposed of.



14001:2015  
Environmental  
Management  
Systems Certified



**E-CYCLE  
WISCONSIN**  
Registered Collector



**121 N Linwood Ave Appleton, WI 54914**  
**Phone: (920) 955-3760      Email: [RTS@RecycleThatStuff.com](mailto:RTS@RecycleThatStuff.com)**

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	2018 ACTUAL	2019 ADJUSTED BUDGET	2019 YEAR TO DATE ACTUAL	2019 YEAR END PROJECTION	2020 DEPARTMENT REQUEST
EAB TREATMENT						
			4,000			
			12,000			
* Forestry		94,800	56,395	72,151	97,621	90,646
Engineering						
625-1002-541.10-01	Wages	59,516	80,998	68,638	80,775	69,507
625-1002-541.10-02	Salaries	23,719	24,644	18,720	24,458	56,458
625-1002-541.10-03	Overtime/Doubletime	1,353	1,500	1,649	1,800	1,500
625-1002-541.15-01	Health	15,891	22,144	15,168	22,295	31,611
625-1002-541.15-02	Life	235	365	172	365	292
625-1002-541.15-03	Dental	1,408	1,726	1,196	1,725	1,367
625-1002-541.15-04	Retirement	5,660	6,920	5,213	7,000	8,503
625-1002-541.15-05	FICA	6,189	7,704	6,021	7,725	9,179
625-1002-541.15-07	Vision	115	147	118	160	225
625-1002-541.15-08	Workers Comp	2,303	3,605	2,702	3,659	3,659
625-1002-541.15-10	Banked Sick Leave	0	1,052	424	1,052	1,089
625-1002-541.19-03	Uniform/Clothing Allow	40	75	0	75	75
625-1002-541.21-02	Engineering	1,713	4,500	0	4,500	4,500
625-1002-541.22-01	Telephone	533	600	412	600	600
625-1002-541.29-05	Vehicle/Equipment Rental	10,848	9,000	6,430	9,000	9,000
625-1002-541.29-07	Inhouse Technology Svcs	4,668	5,706	2,853	5,706	5,774
625-1002-541.30-10	Office	121	150	62	150	125
625-1002-541.30-15	Tools & Equipment	215	1,150	1,122	1,150	1,150
625-1002-541.30-18	Department	269	750	437	500	5,500
TEXT AMT						
			3,000			
			2,000			
			500			
			5,500			
625-1002-541.34-02	Registrations	74	1,500	546	550	2,000
625-1002-541.51-03	Property	620	682	341	682	750
* Engineering		135,490	174,918	132,224	173,868	212,864
Street Construction						
625-1003-541.10-01	Wages	52,183	61,410	43,204	48,000	57,648
625-1003-541.10-02	Salaries	2,040	2,239	1,794	2,225	7,092
625-1003-541.10-03	Overtime/Doubletime	32	200	20	20	100
625-1003-541.15-01	Health	14,027	24,169	12,780	16,043	21,044
625-1003-541.15-02	Life	99	31	42	54	37
625-1003-541.15-03	Dental	971	1,384	843	1,062	837



## Transit Development Plan

A Transit Development Plan (TDP) is a plan which assists with the short and Long-term planning goals of a transit agency.

Focus:

- If we could wipe the slate clean, what would it look like?
- How can we increase fixed route on-time performance and connectivity?

Vision:

Getting all people where they want to go, when they want to go.



## Service Planning Concepts

Three recommendation categories based on cost, complexity, and timeline:

- **Short Term Recommendations (1-2 years)**
  - Frequency Enhancements (Routes 12, 15, 20, 30)
  - Minor Route Modifications **(No Additional Cost)**
  - Route 4 extension to Meijer **(No Additional Cost)**
- **Intermediate Recommendations (3-5 years)**
  - North Service Area Restructuring
  - New Crosstown Service: Route 50 (Northland)
  - Route 15 Restructuring
- **Long Term Recommendations (5-10 years)**
  - New Crosstown Service: Route 55 (E. College/Kaukauna) and Route 60 (Wisconsin Ave.)

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## Short Term Recommendations

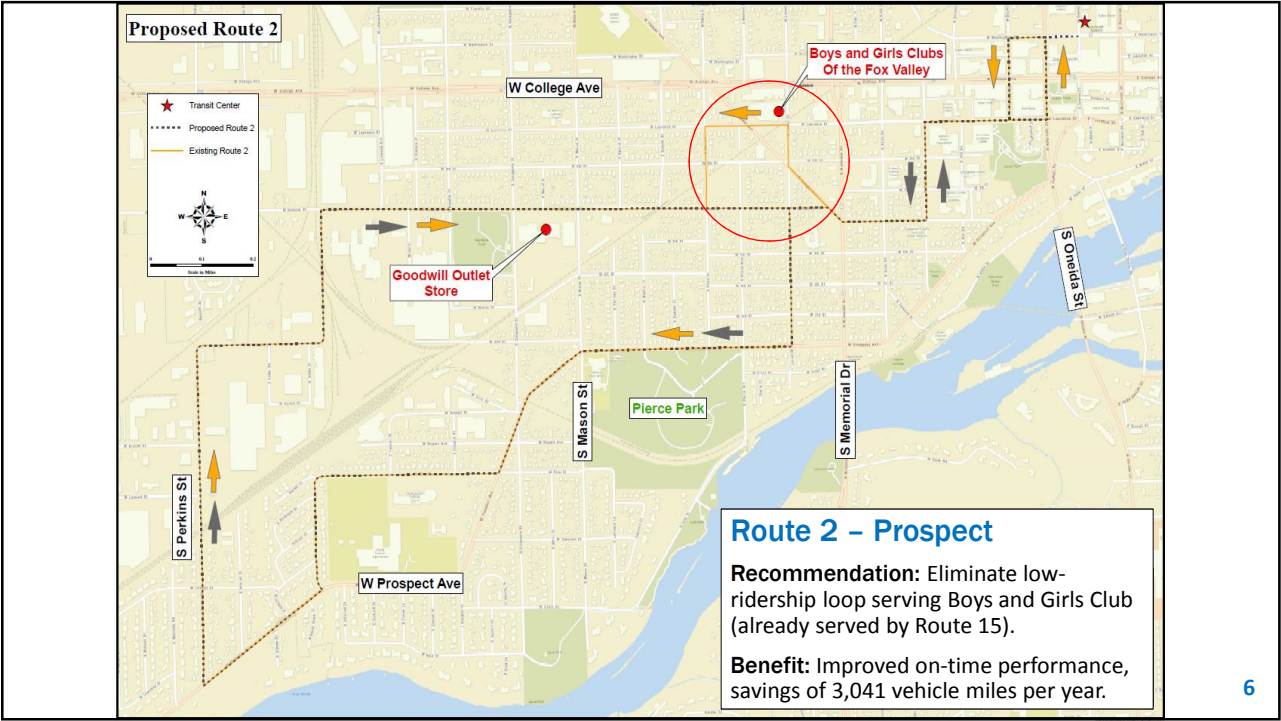
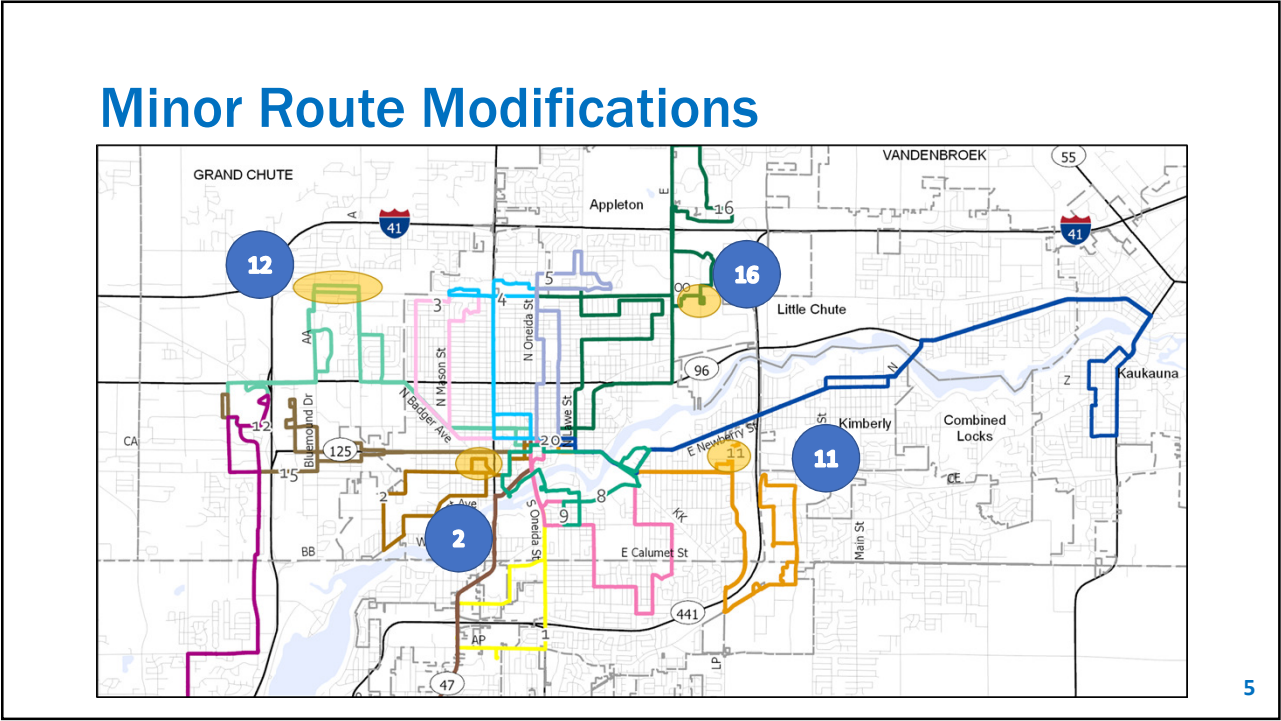
### Frequency Enhancements

- Increase frequency from 60 minutes to 30 minutes on Routes 12, 15, 20 & 30
- Currently function as core routes in the Valley Transit system
- Provide over 45 percent of the agency’s annual ridership in 2017

Improving weekday frequency would help Valley Transit attract new riders, offer more attractive transfers, and make transit a viable alternative for more types of trips.  
Note: Additional funding is needed for these enhancements.

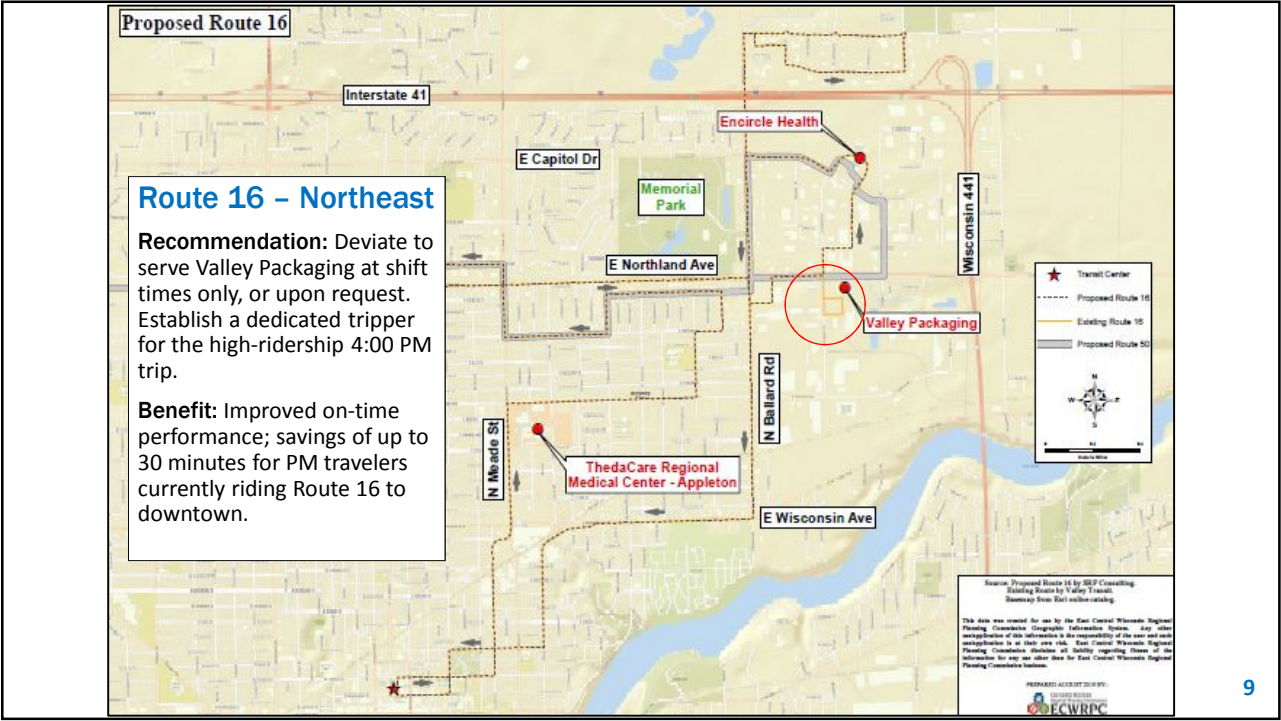
Route	Name	Service Day	Round-Trip Cycle Time	Proposed Frequency
12	Fox Valley Tech	Weekday	60 minutes	30 minutes
15	West College	Weekday	60 minutes	30 minutes
20	Heart of the Valley	Weekday	60 minutes	30 minutes
30	Neenah / Menasha	Weekday	60 minutes	30 minutes

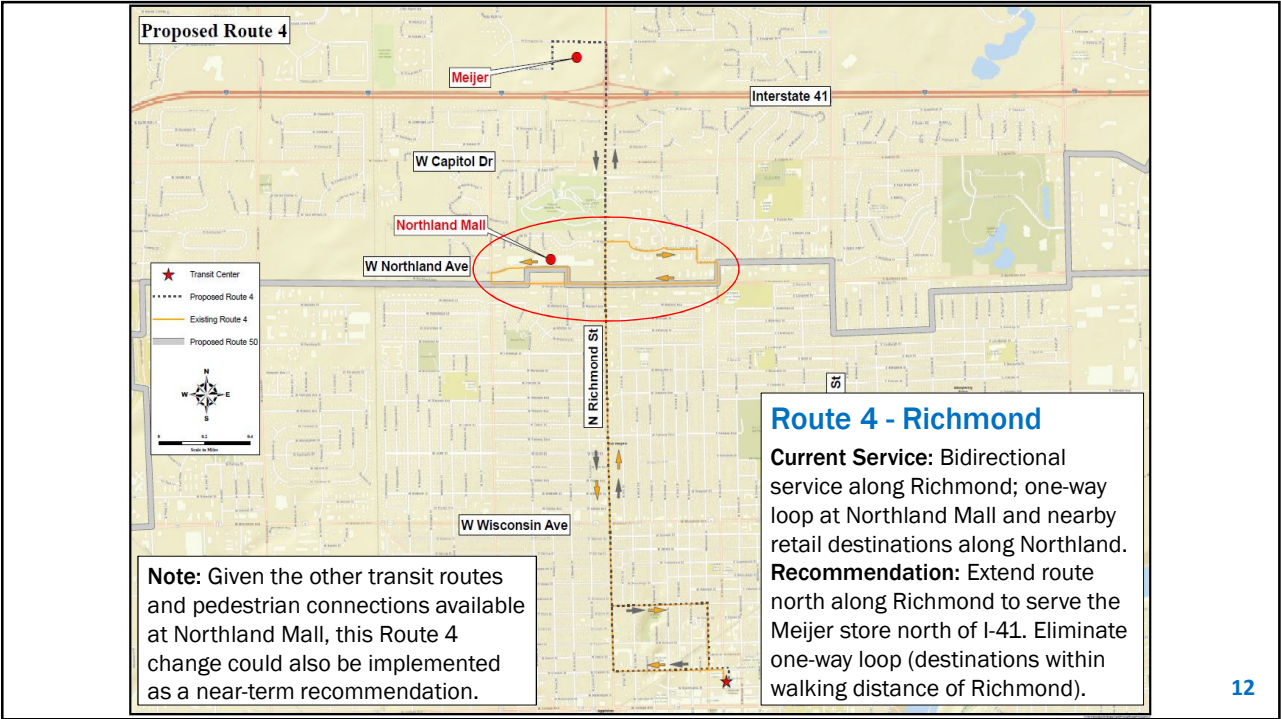
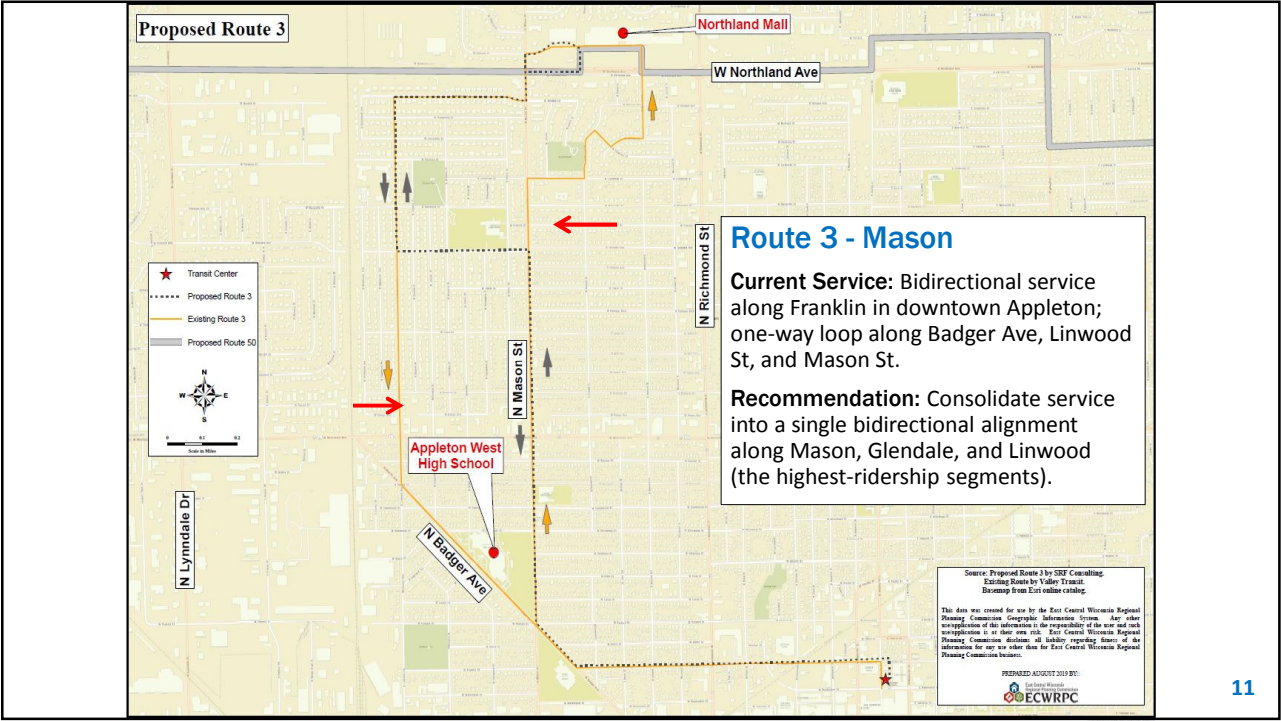
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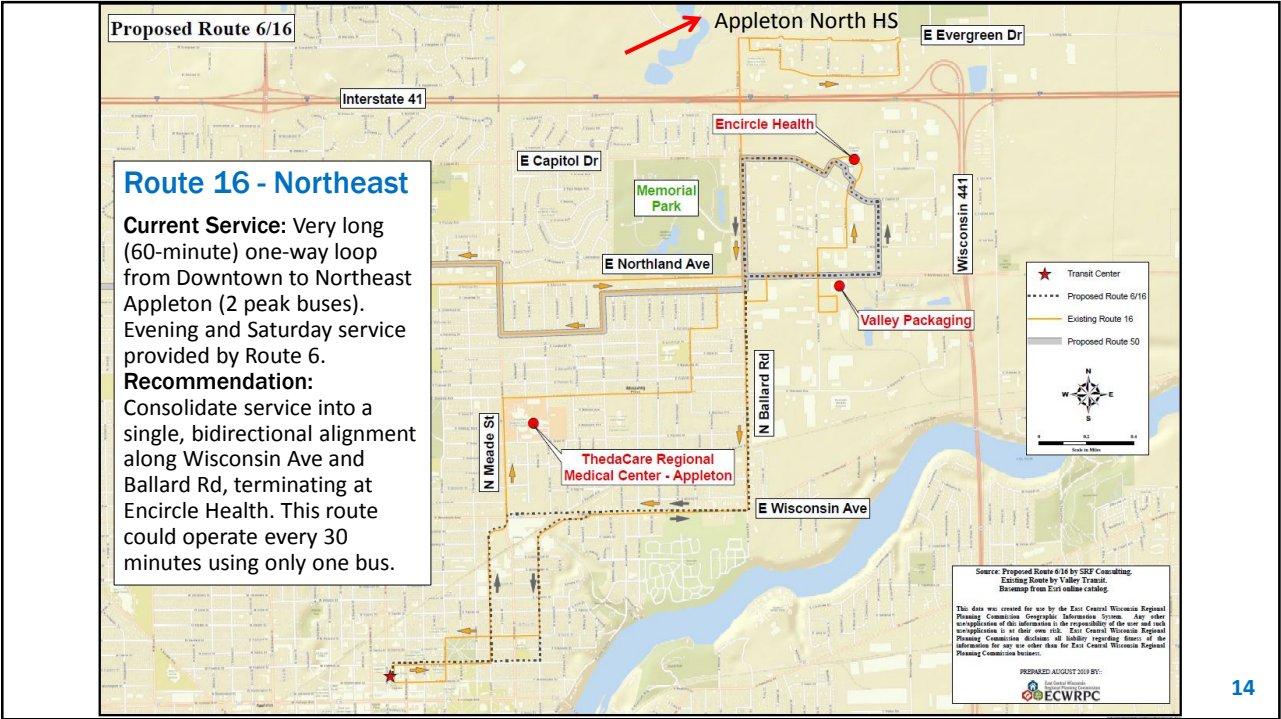
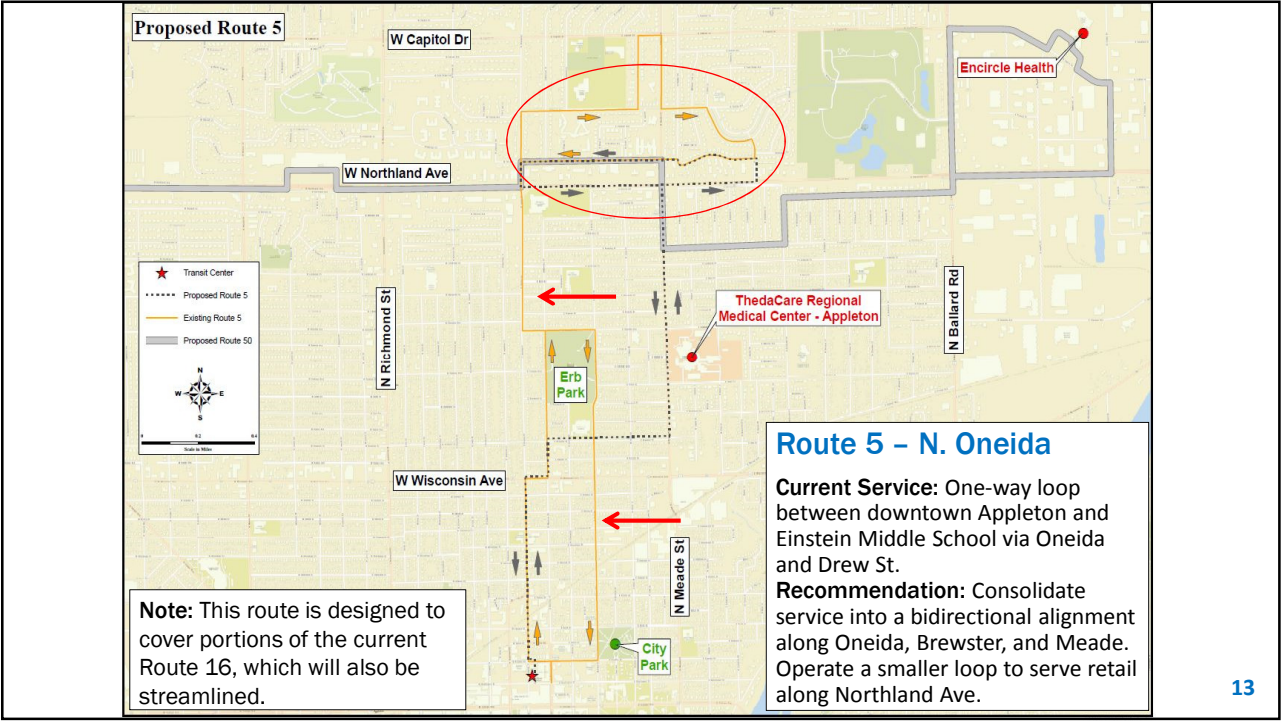


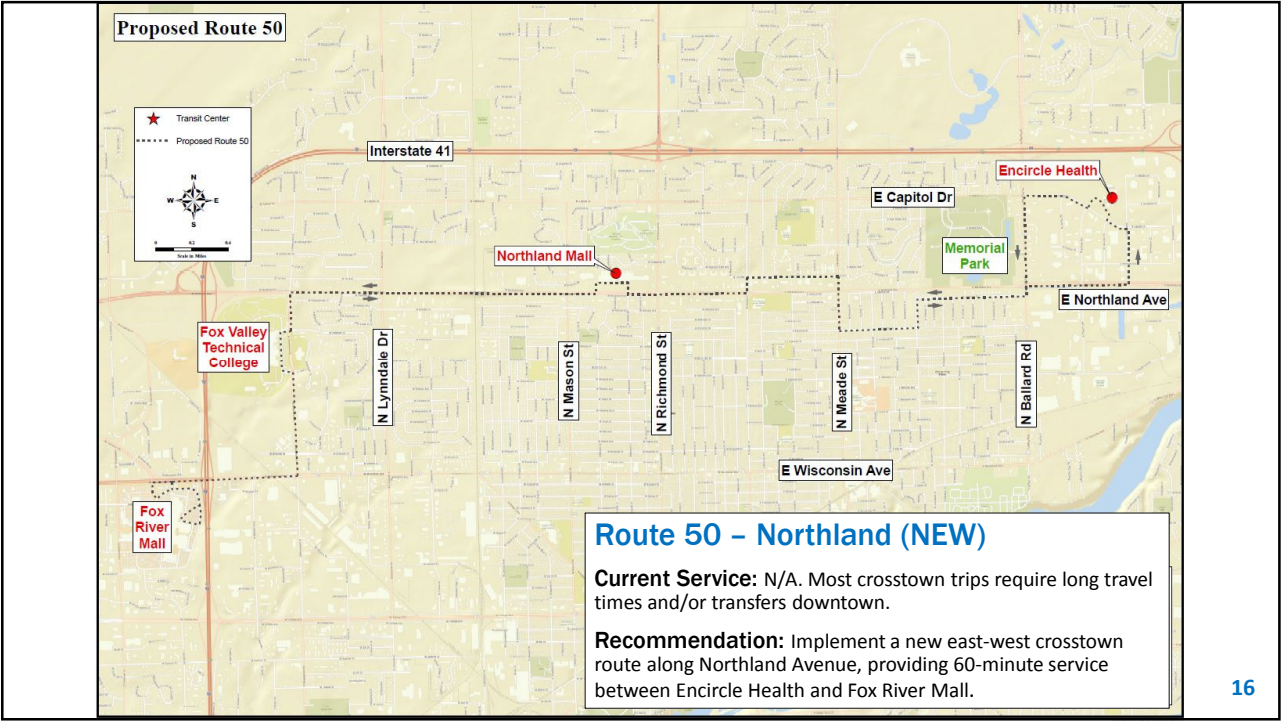
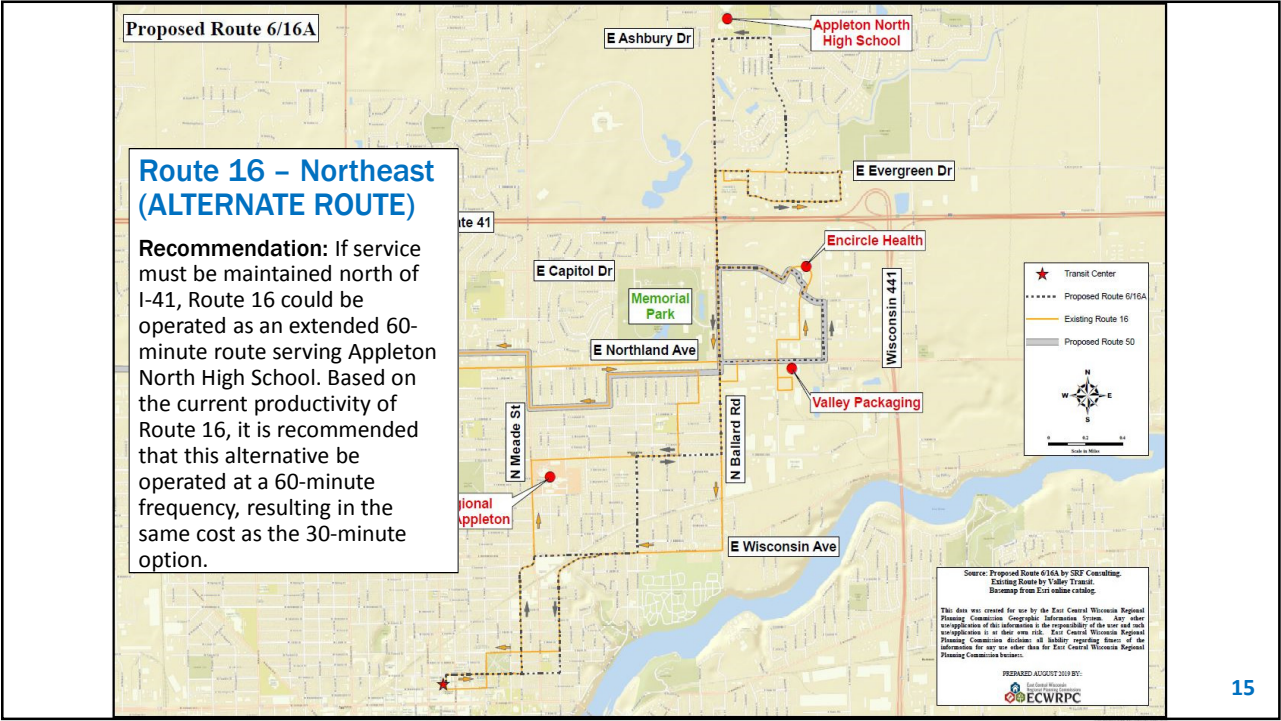




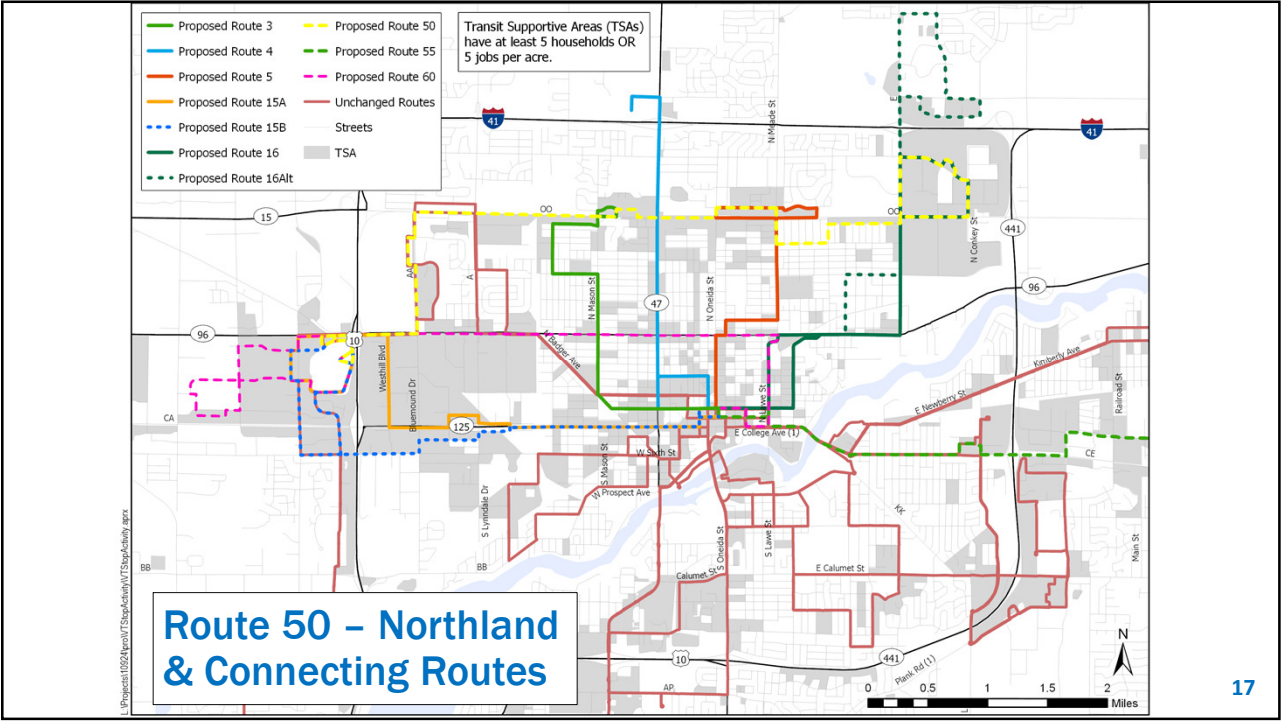












# Intermediate Recommendations

## Route 15 Restructuring

Currently, Route 15 offers hourly service on a long, circuitous route along College Avenue between downtown Appleton and Fox River Mall.

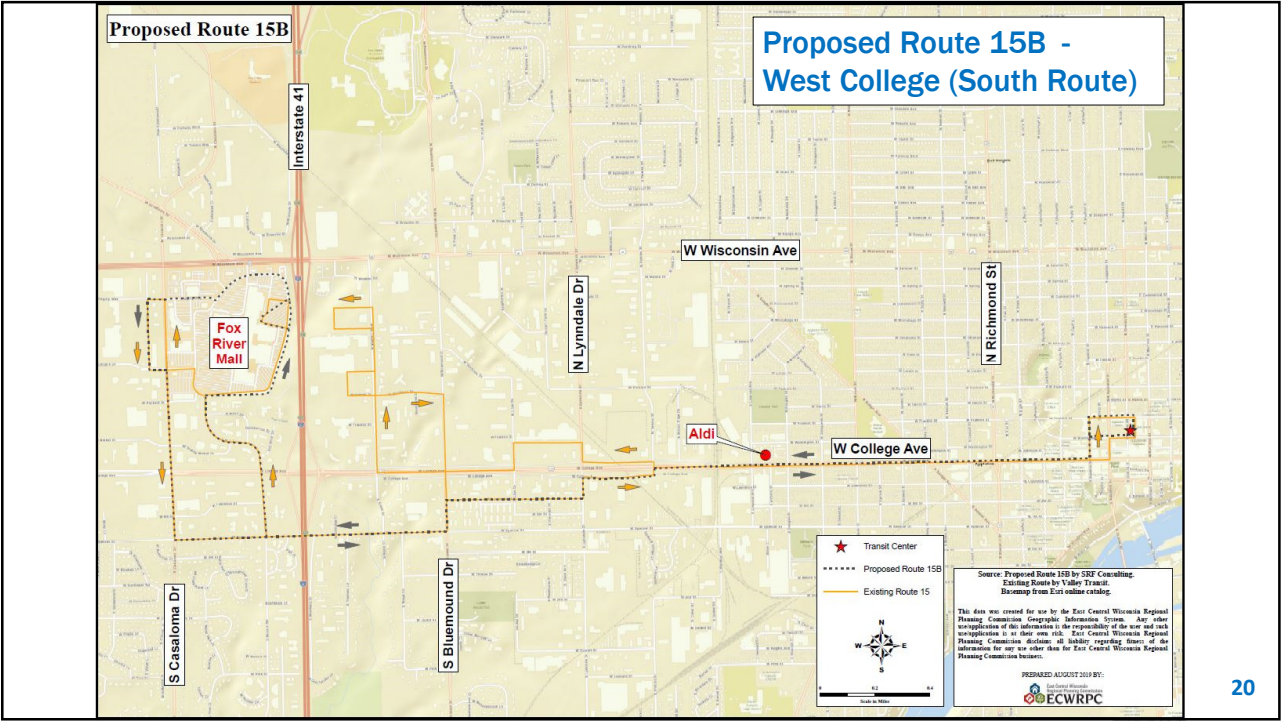
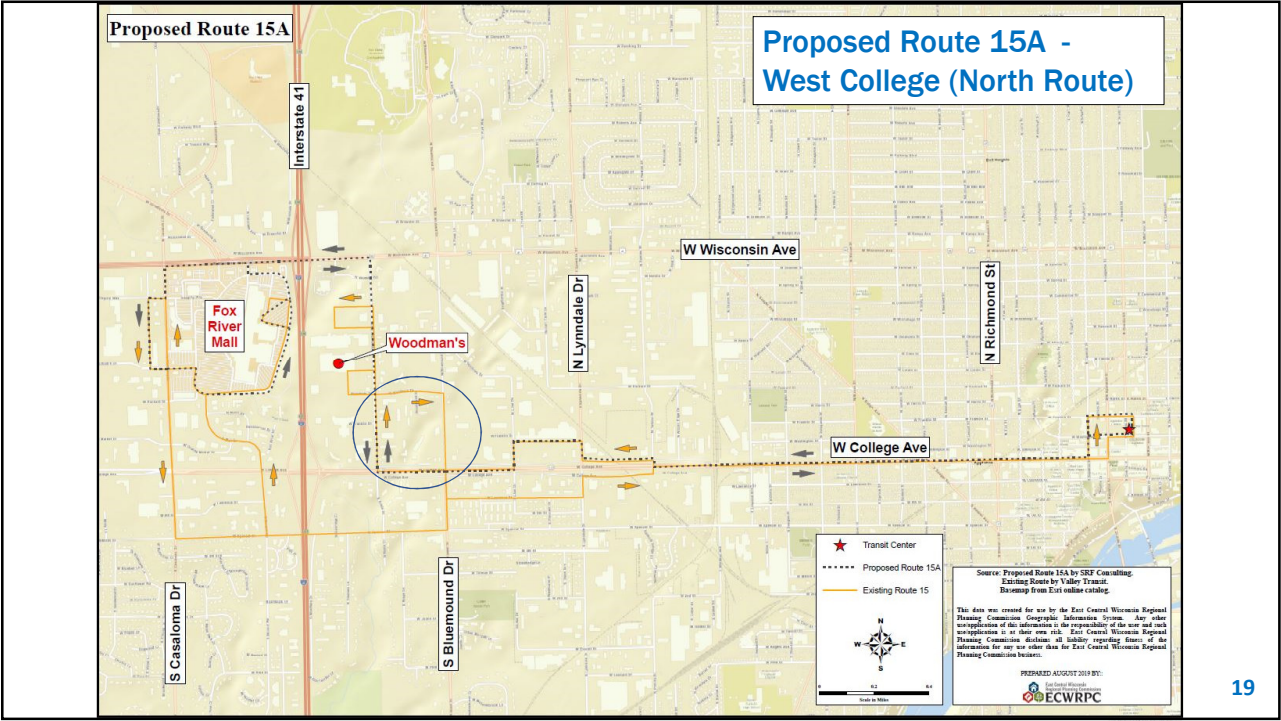
### Recommendations:

- Restructure Route 15 into two new routes (Route 15A and Route 15B). West of Perkins St, Route 15A would serve areas north of College Ave, while Route 15B would serve destinations to the south
- Each route would operate every 60 minutes on an offset schedule, delivering 30-minute frequency along the core College Avenue segment.

Note: This restructuring may not be necessary if Valley Transit completes the frequency improvements outlined in the Near Term Recommendations.

Route	Name	Service Day	Round-Trip Cycle Time	Proposed Frequency
15A	W. College – North Route	Weekday	60 minutes	60 minutes
15B	W. College – South Route	Weekday	60 minutes	60 minutes





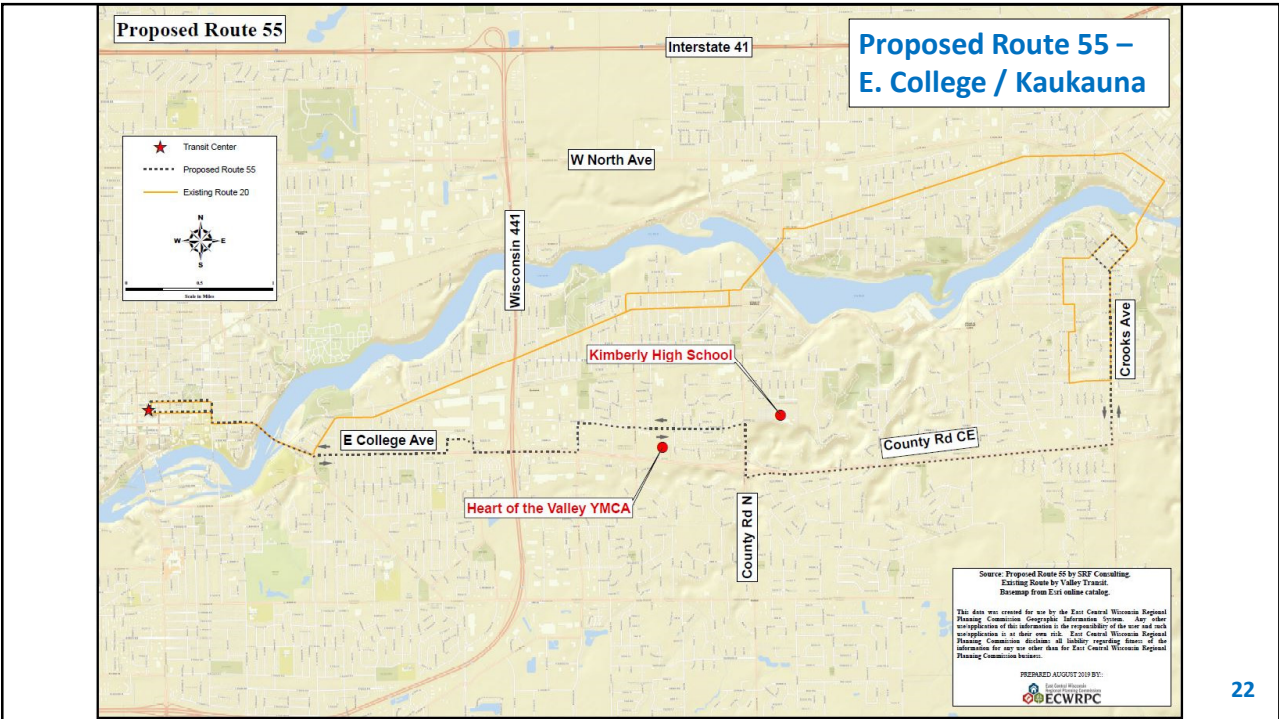
# Long Term Recommendations

## Additional Crosstown Service

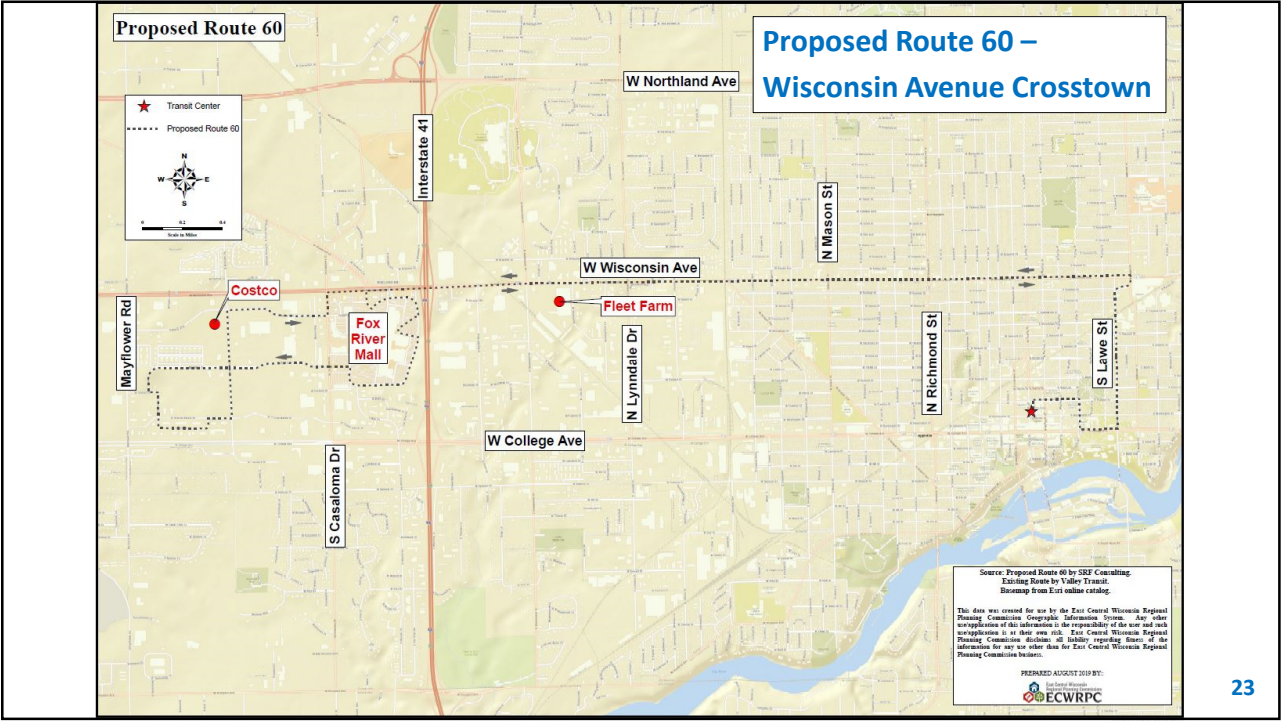
As additional funding becomes available, Valley Transit could consider implementing two more crosstown routes as follows:

- Route 55 (E. College/Kaukauna) would provide fast, direct service between downtown Appleton and Kaukauna via College Avenue, including to Kimberly High School and Heart of the Valley YMCA.
- Route 60 (Wisconsin) would provide supplementary crosstown service between downtown Appleton and Fox River Mall via Wisconsin Avenue, creating additional transfer connections. If desired, select trips could be extended to serve Appleton International Airport.

Route	Name	Service Day	Round-Trip Cycle Time	Proposed Frequency
55	E. College / Kaukauna	Weekday	60 minutes	60 minutes
60	Wisconsin	Weekday	60 minutes	60 minutes







Questions???

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920 751-4770

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