

**VW MITIGATION PROGRAM
TRANSIT CAPITAL ASSISTANCE GRANT PROGRAM APPLICATION
ROUND 2**



SECTION 1. APPLICANT INFORMATION

Applicant Name: City of Racine

Address: 730 Washington Ave.

City: Racine Zip: 53403 County: Racine

Contact Person: Michael J. Maierle Title: Transit and Parking System Manager

Phone: (262) 636-9480 Email: michael.maierle@cityofracine.org

Urban Mass Transit System Website (URL): https://cityofracine.org/Racine-transit

Applicant Type (check one):

- County City Village Town Transit or Transportation Commission
 Transit or Transportation Authority Public Corporation

Applicant Service Area:

Counties: Racine

Municipalities: Racine, Mount Pleasant, Caledonia, Yorkville

Brief description of transportation services provided by the Applicant:

The City of Racine administers and partly funds Racine Transit, doing business as RYDE. All policy matters are overseen by a joint transit commission. In 2018 RYDE provided 1,074,000 unlinked passenger trips and 3,292,000 passenger miles on its nine fixed routes; 36,600 passenger trips and 154,000 passenger miles on its complementary para-transit service for persons with disabilities; and 49,600 passenger trips and 1,231,000 passenger miles on a commuter bus service between Racine and Milwaukee's Intermodal Station, Mitchell International Airport, and Kenosha's METRA station. The system has 35 full-size buses, nine medium buses for para-transit, and contracts for the use of three buses on the commuter bus service. The service area covers all of the City of Racine, and the major employment districts in Mount Pleasant, Caledonia and Yorkville, plus the three aforementioned commuter destinations.

Transit System Type (check all):

- Fixed Route Demand Response ADA Paratransit Deviated Fixed Route

SECTION 2. ELIGIBILITY REQUIREMENTS

Local Public Body. Pursuant to §85.20 (1)(d), Wis. Stats., does the applicant certify that it is a county, municipality or town, or agency thereof; transit or transportation commission or authority and public corporation established by law or by interstate compact to provide mass transportation services and facilities or 2 or more of any such bodies acting jointly under §66.0301 to 66.0303, Wis. Stats.?

Yes No

Operating Deficit. Pursuant to §85.20, Wis. Stats., does the applicant certify that it operates an urban mass transit system incurring an operating deficit?

Yes No

Shared Revenue Reduction. If the applicant is a county, city, village or town, does the applicant acknowledge that the receipt of a grant under this program will result in a reduction of future county and municipal revenue payments pursuant to §79.035(7), Wis. Stats.? If available, provide any resolution or executive action taken by the county, city, village or town acknowledging this reduction in revenue payments and authorizing the application.

Yes No N/A

List all counties and municipalities subject to the shared revenue reduction. If multiple, please indicate whether all governmental bodies will share the reduction *equally* (e.g., \$500,000 grant to two cities and the basis of each city's reduction will be 50%, or \$250,000) or *disproportionately* (e.g., \$500,000 grant to two cities and the cities agree that the basis of City A's reduction will be 60%, or \$300,000, and the basis of City B's reduction will be 40%, or \$200,000).

City of Racine. Please see Attachment 1.

Vehicle Eligibility. Does the applicant certify that the vehicle(s) submitted for replacement is a Class 4-8 Transit Bus with a Gross Vehicle Weight Rating (GVWR) greater than 14,001 lbs. used for transporting people and powered with a 1992-2009 diesel engine?

Yes No

Scrapping. Does the applicant certify that it will render the eligible replaced vehicle(s) inoperable and available for recycle? The applicant, at a minimum, will cause a 3-inch hole to be cut in the engine block for all engines. In addition, the chassis of the vehicle shall be disabled by cutting the vehicle's frame rails completely in half. Scrapping of any vehicle(s) shall occur within 90 days of the applicant accepting delivery of the replacement bus(es).

Yes No

SECTION 3. PROJECT PLAN

Current Use of Transit Buses. Explain how current buses are used and why they require replacement. Where possible, provide data on ridership, bus condition and other factors that support replacement. Applicant may attach supporting documentation to its application for each bus requested for replacement.

Racine Transit has 35 buses, 13 of which qualify for replacement under this program. Six were funded in Round 1 of this program. Thank you sincerely for that grant. Two others have received Fed/State Sec. 5339 funding. That leaves five unfunded eligible buses.

Of our 35 buses, ten are 2004 buses that are on light duty such as school-related runs and spares. The remaining 25 buses are general purpose buses assigned fairly randomly to one of 22 blocks throughout our system. A block refers to a vehicle schedule, the daily assignment for an individual bus.

We're seeking to replace only two of the general purpose buses in this grant application. As of this writing we have not sought funding through any other program for the replacement of these two buses.

The buses are called #76 and #77 in our agency. They are 2009 buses and will be 13 years old in 2022 when they are replaced. The cost of replacement parts for these buses in 2019 was \$0.69 and \$0.65 per mile respectively. These costs are similar to our oldest (2004) buses at \$0.66 per mile and 81% higher than all the non-2004 buses in the fleet at \$0.37 per mile. The high cost per mile is attributable in part due to transmission replacements in each bus at a cost of over \$10,000 each. They had over 372,000 and 368,000 lifetime miles as of Sep 31, 2019 and will have well over 400,000 miles by the time they are replaced. They traveled 24,000 and 29,000 miles respectively in 2019; less than average for non-2004 buses, probably because of being laid up for repairs. Our average general purpose buses traveled 35,196 miles each and carried an average of 36,993 riders in 2019.

In the interest of conciseness, we have not included a PowerPoint presentation on maintenance problems presented by old buses. Suffice it to say that one of the biggest issues is that old buses eventually succumb to rust and metal fatigue. It becomes increasingly difficult to attach other components, such as body panels and ADA-required ramps, to the frame. For example, metal fatigue and rust lead to a frame failure on bus #67, a 2004 bus. We repaired the frame and installed a new engine and transmission at a cost of \$51,795. The bus manufacturer covered some cost of the frame repair. The bus was out of service for months. The frame had broken while carrying people's children. Safety of our riders is our number one priority at RYDE. This is the scenario we're trying to avoid. Bus #67 is not covered by this this grant application because it's no longer our worst bus.

Future Use of Transit Buses. Explain how the new bus(es) will be used in the future. Please include information on whether the applicant expects ridership will increase, decrease, or maintain current levels. For BEB projects also requesting battery electric bus supply equipment (e.g. infrastructure), include details on project costs, location, management, and implementation.

Racine hired MJB&A (with local funds) to plan the best use of electric buses in our transit system and to do a preliminary review our current garage and electrical facilities. The report is titled, "City of Racine Electric Bus Analysis" and was transmitted on October 1, 2019. We intend to follow Option 1 of this report. See Attachment #5.

As a Tier B transit agency, we operate 35-foot buses, which limits the amount of batteries the buses can carry and therefore the range of the buses before recharging. The leading manufacturer of electric buses sells a 35-foot bus with a charge of 440 kWh providing 110 miles per charge using electric heat and 150 miles while providing no or moderate cabin heating or while an auxiliary fuel heater is in use. Note that an auxiliary fuel heater would only be employed during the coldest conditions, but it extends the range of the bus on those especially wintery days, when you'd otherwise have to blast the electric heat, decreasing your range.

The range of the electric buses were compared to the actual operating blocks of our system. A block refers to a vehicle schedule, the daily assignment for an individual bus. As shown in Fig 2. in the report, a total of 22 buses are assigned to daily blocks. RYDE has 9 blocks that can be served by an electric bus ON A SINGLE CHARGE without an auxiliary heater; 11 with a heater. This is very good news.

Eight of these blocks are peak-hour service, including Route #20, our commuter bus that serves suburban business parks during shift changes only. (Route #20 was featured in our Round 1 grant application.) These are precisely the best use of electric buses for several reasons.

1. The buses have enough range so we don't have to worry about charging buses and managing which buses are charged up during our operating hours.
2. We will only charge at night, when electricity is cheapest and the electric utility has excess generating and distribution capacity.
3. This practice maximizes air quality benefits because we're not adding to any peak period electricity generation. We're only using existing capacity.
3. The chargers have all night to charge so we can purchase the lowest voltage and least expensive chargers.
4. The peak hour routes are also the most employment-oriented.
5. The peak hour routes operate throughout the city and into the suburbs. Almost anyone going to a full-time job in the Racine area on transit will benefit from riding an electric bus.
6. Operating throughout the city creates the highest profile for RYDE and the electric bus program.

This strategy demonstrates the value of taking the time and effort to plan an alternative fuel vehicle program. Additional buses will benefit from the planning and research we did for the first round. In addition to this report, city staff has been attending conferences on alternative energy and even spoke at one. We have a much better idea of how to optimize employing electric buses than we did a year ago!

Transportation to Employment. Explain how the new bus(es) will connect employees with employers.

This topic was largely covered in the last section, because there is a such a strong synergy between the the optimal use of electric buses from an energy standpoint and transportation to employment. The most economical and environmentally friendly way to implement electric buses is to use them on blocks that serve work-oriented trips during peak periods.

Eight of the run blocks are peak-period service, including Route #20, our commuter bus that serves suburban business parks during shift changes only. These routes are also the most practical application of electric buses.

The peak hour routes are the most employment-oriented. The peak hour routes operate throughout the city and into the suburbs. Almost anyone going to a full-time job in the Racine area on transit will benefit from riding an electric bus.

This year we will also be implementing our new automatic vehicle locator service. A rider will be able to get a text message when his or her bus is minutes away, minimizing wait times, and then ride to work in a quiet, efficient, electric bus. The entire experience of commuting by bus will be transformed. The combination of rider information and superior buses should lead to more value for the rider and therefore more work trips on the bus.

According to the Racine County Public Transit Plan prepared by the Southeastern Wisconsin Planning Commission, 39.4% of all transit trips in Racine are home-based work trips. The plan identified all major employers, updated for 2018 and the addition of Foxconn. (Attachment 4.) One can see at a glance that the 100-plus-employee employers are strung together with existing bus routes, with a few exceptions where distances or a lack of a intergovernmental service agreement make the service wildly impracticable. The City of Racine has longstanding agreements with surrounding villages to serve major commercial areas and business parks. These villages comprise Mount Pleasant, Caledonia, and Yorkville. Attachment 3 shows the westward drift of jobs in the Wis 11/20 corridor.

Disproportionate Burden Impact and NOx Reduction. Please provide accurate and complete fleet data on Appendix A – Project Budget. DOA will calculate the projected NOx reduction as a result of replacing the identified bus(es) using the US Environmental Protection Agency Diesel Emissions Quantifier (DEQ) tool. In the space below, include a description of how bus replacement will mitigate the impacts of NOx emissions on communities that have historically borne a disproportionate share of the adverse impacts of these emissions. Applicant may attach supporting documentation to its application.

Racine is a community that has historically borne a disproportionate share of the adverse impacts of emissions. The State of Wisconsin Volkswagen Environmental Trust Beneficiary Mitigation Plan lists Racine County in the "Top 20 Counties NOx Emissions" graph on p. 8. Because of its location on Lake Michigan, Racine County was also impacted by high levels of ozone and fine particles (PM2.5). On-road, diesel, heavy duty vehicles emit 27.70% of all NOx emissions in the area.

Please note: although Racine has proposed battery electric buses in this application in order to maximize our air quality benefits, we acknowledge that things could look different from the standpoint of maximizing the program's benefits. Because of diesel buses' lower cost, the State could choose to fund more diesel buses than electric buses. Although battery electric buses have greater air quality benefits per bus, as well as green house gas reductions, buying more new diesel buses might factor up the benefits across the entire program. The grant program also has goals of connecting workers and jobs, which either bus technology can accomplish.

While we feel we've prepared the best proposal, we also don't want to presume what the best allocation of resources is across the whole program. Paragraph 3.4 of the grant announcement states that the State reserves the right to negotiate the terms of the grant agreement. We would welcome the opportunity to negotiate with the State for the best mix of technologies and costs per bus from a program-wide perspective.

Project Timeline. Provide a detailed timeline for the replacement of each bus for which funding is requested in Appendix A Project Budget Excel spreadsheet. Include anticipated dates for ordering, delivery, placement in service and scrapping. All work must be completed by June 30, 2025. In the space below, include additional narrative on the project timeline the applicant believes is relevant. Applicant may attach supporting documentation to its application.

The timeline is expedited because Racine has already developed a plan for its electric bus program. The two additional buses would simply be added to the order. We took some time so now we have a much better idea of how to get the most environmental and economic development benefits from new electric buses.

2020 MAY finish specifications for an RFP or work out arrangements for a sole source piggyback, if it looks like issuing an RFP doesn't have any real advantages.

2020 AUG Letter of intent

2020 NOV Design freeze

2020 Dec Purchase order for electric buses and chargers.

2021 Upgrade electrical supply in garage. Install base overnight chargers. Test chargers.

2021 JUL Take delivery of buses.

2021 SEP Scrap old buses.

SECTION 4. PROJECT BUDGET

Using the Appendix A Project Budget Excel spreadsheet, identify each bus proposed to be replaced and each proposed replacement vehicle. For each bus to be replaced, include requested replacement costs for new purchases. For BEB replacement projects also requesting battery electric bus supply equipment (e.g. infrastructure), include requested costs. Include detail for projects requesting infrastructure in Section 3 Future Use of Transit Buses. If more than one replacement request is made, buses must be listed below with the highest priority bus listed first, the second highest priority bus listed second, etc.

SECTION 5. REQUIRED SIGNATURES

Applicant Authorized Representative

The signatory below certifies that, to the best of his/her knowledge and belief, the information contained in the VW Mitigation Program Transit Capital Assistance Grant Program Application, including all attachments, is true, accurate and complete.

Name: Michael J. Maierle Title: Transit and Parking System Manager

Applicant: City of Racine

Signature: Michael Maierle Digitally signed by Michael Maierle
Date: 2020.02.28 15:46:39 -06'00' Date: 2/28/2020

Phone: 262-636-9480

Email: michael.maierle@cityofracine.org

Governmental Unit Authorized Representative

The signatory below certifies that, to the best of the his/her knowledge and belief, the information contained in the VW Mitigation Program Transit Capital Assistance Grant Program Application, including all attachments, is true, accurate and complete.

Name: Cory Mason Title: Mayor

Governmental Unit: City of Racine

Signature: Cory Mason Digitally signed by Cory Mason
DN: cn=Cory Mason, o=City of Racine, ou=Mayor's
Office, email=Mayor@cityofracine.org, c=US
Date: 2020.03.03 15:44:34 -06'00' Date: 03/03/2020

Phone: 262-636-9111

Email: cory.mason@cityofracine.org

Note: If more than one governmental unit will be subject to a shared revenue reduction, copy this page and submit a signed certification of an authorized signatory from each unit.



City of Racine

City Hall
730 Washington Ave.
Racine, WI 53403
www.cityofracine.org

Meeting Agenda - Final Finance and Personnel Committee

Chairman Q.A. Shakoor II
Alder Mary Land
Alder Jason Meekma
Alder Natalia Taft

Monday, March 9, 2020

5:00 PM

City Hall, Room 307

Call To Order

Chairman Comments

Roll Call

Approval of Minutes for the February 24, 2020 Meeting.

1. 0124-20 **Subject:** Communication sponsored by Alder Jung requesting authorization for the Mayor and City Clerk to authorize an application to the Federal Transit Administration Low or No Emission Vehicle Program - 5339(c) and agree to use funds awarded under the Wisconsin Transit Capital Assistance Grant Program (VW Mitigation Program) in 2019 as the local match. (Grant Control 00291)

Staff Recommendation to the Finance and Personnel Committee on 03-09-2020: Approve authorizing application to the Federal Transit Administration Low or No Emission Vehicle Program - 5339(c) and agree to use funds awarded under the Wisconsin Transit Capital Assistance Grant Program (VW Mitigation Program) in 2019 as the local match.

Fiscal Note: No fiscal impact.

2. 0125-20 **Subject:** Communication sponsored by Alder Jung requesting authorization for the Mayor and City Clerk to authorize an application to the Wisconsin Transit Capital Assistance Grant Program (VW Mitigation Program) and agree that the receipt of a grant under this program will result in a reduction of future municipal payments pursuant to § 79.035(7), Wis. Stats. (Grant Control 00292)

Staff Recommendation to the Finance and Personnel Committee on 03-09-2020: Approve authorizing application to the Wisconsin Transit Capital Assistance Grant Program (VW Mitigation Program) for up to two buses and agreeing to a reduction of future State shared revenue

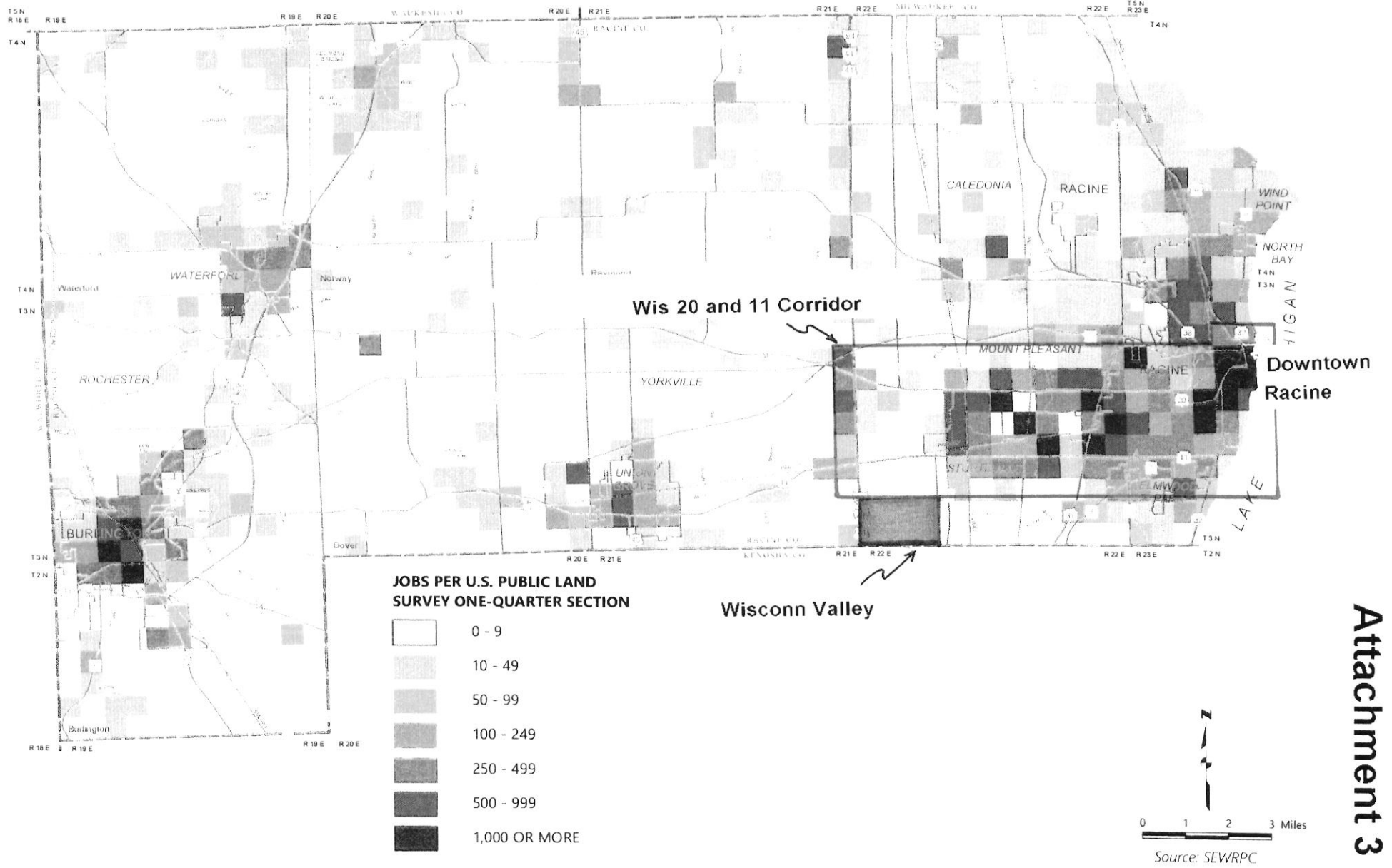
Attachment 2: Bus Miles and Maintenance Costs

Fleet year	Prev State/Fed formula			2020 ¹ State Grant				Cost per Mile Index	Sep-19 Lifetime miles	Comments	INPUT			
	Bus #	Sep-19		Sep-19		Cost per Mile	Routine Maint.				Major component replacement			
		Parts cost	Avg. Parts cost	Miles	Avg. Miles						\$	Item	\$	Item
2004	66	\$ 21,255		18,426		1.15	312	512,421	Rear end included.	9,547	\$ 11,708	Transmission		
2004	67	\$ 56,993		10,028		5.68	1,539	508,625	Rear end included.	5,198	\$ 36,855	Engine and transmission	\$ 14,940	Frame
2004	68	\$ 5,280		20,274		0.26	70	502,760		5,280				
2004	69	\$ 1,845		21,341		0.09	23	481,562		1,845				
2004	70	\$ 6,170		13,962		0.44	120	522,846	Rear end included.	6,170				
2004	71	\$ 7,438		20,128		0.37	100	485,961	Rear end included.	7,438				
2004	72	\$ 5,290		21,188		0.25	68	467,722		5,290				
2004	73	\$ 3,839		17,483		0.22	59	565,012		3,839				
2004	74	\$ 3,459		12,462		0.28	75	530,022		3,459				
2004	75	\$ 3,312		19,110		0.17	47	522,463		3,312				
			\$ 11,488		17,440	\$ 0.66	178							
2009	76	\$ 17,038		24,715		0.69	187	372,252		5,330	\$ 11,708	Transmission		
2009	77	\$ 19,495		29,885		0.65	177	368,435		\$ 8,996	\$ 10,499	2019 Transmission		
2009	78	\$ 1,336		27,503		0.05	13	342,209		\$ 1,336				
2011	79	\$ 13,837		40,038		0.35	94	368,599		\$ 13,837				
2011	80	\$ 12,068		35,834		0.34	91	345,428		\$ 12,068				
2011	81	\$ 9,036		42,543		0.21	57	368,000		\$ 9,036				
2011	82	\$ 17,707		40,711		0.43	118	336,643		\$ 6,884	\$ 10,823	2019 Transmission		
2011	83	\$ 3,034		26,061		0.12	32	319,917		\$ 3,034				
2012	84	\$ 17,875		29,434		0.61	164	257,383		\$ 17,875				
2012	85	\$ 6,780		30,521		0.22	60	236,475		\$ 6,780		Collision \$34,541		
2012	86	\$ 20,075		30,362		0.66	179	261,709		\$ 20,075				
2013	87	\$ 16,836		26,735		0.63	170	270,946		\$ 16,836				
2013	88	\$ 4,597		43,047		0.11	29	275,564		\$ 4,597				
2013	89	\$ 23,123		33,056		0.70	189	278,564		\$ 23,123				
2013	90	\$ 12,532		39,736		0.32	85	243,009		\$ 12,532				
2013	91	\$ 3,242		43,602		0.07	20	278,854		\$ 3,242				
2013	92	\$ 7,914		37,426		0.21	57	258,966		\$ 7,914				
2013	93	\$ 13,054		42,523		0.31	83	284,706		\$ 13,054				
2013	94	\$ 29,967		31,933		0.94	254	236,919		\$ 19,535	\$ 10,433	2019 Transmission and collision \$20,865		
2013	95	\$ 5,752		39,040		0.15	40	272,055		\$ 5,752				
2013	96	\$ 19,330		25,079		0.77	209	274,117		\$ 19,330				
2013	97	\$ 15,545		38,089		0.41	110	262,037		\$ 15,545				
2013	98	\$ 20,420		37,709		0.54	147	263,121		\$ 20,420				
2013	99	\$ 8,405		41,855		0.20	54	256,542		\$ 8,405				
2013	1	\$ 6,024		42,469		0.14	38	288,661		\$ 6,024				
			\$ 13,001		35,196	\$ 0.37	100.00							

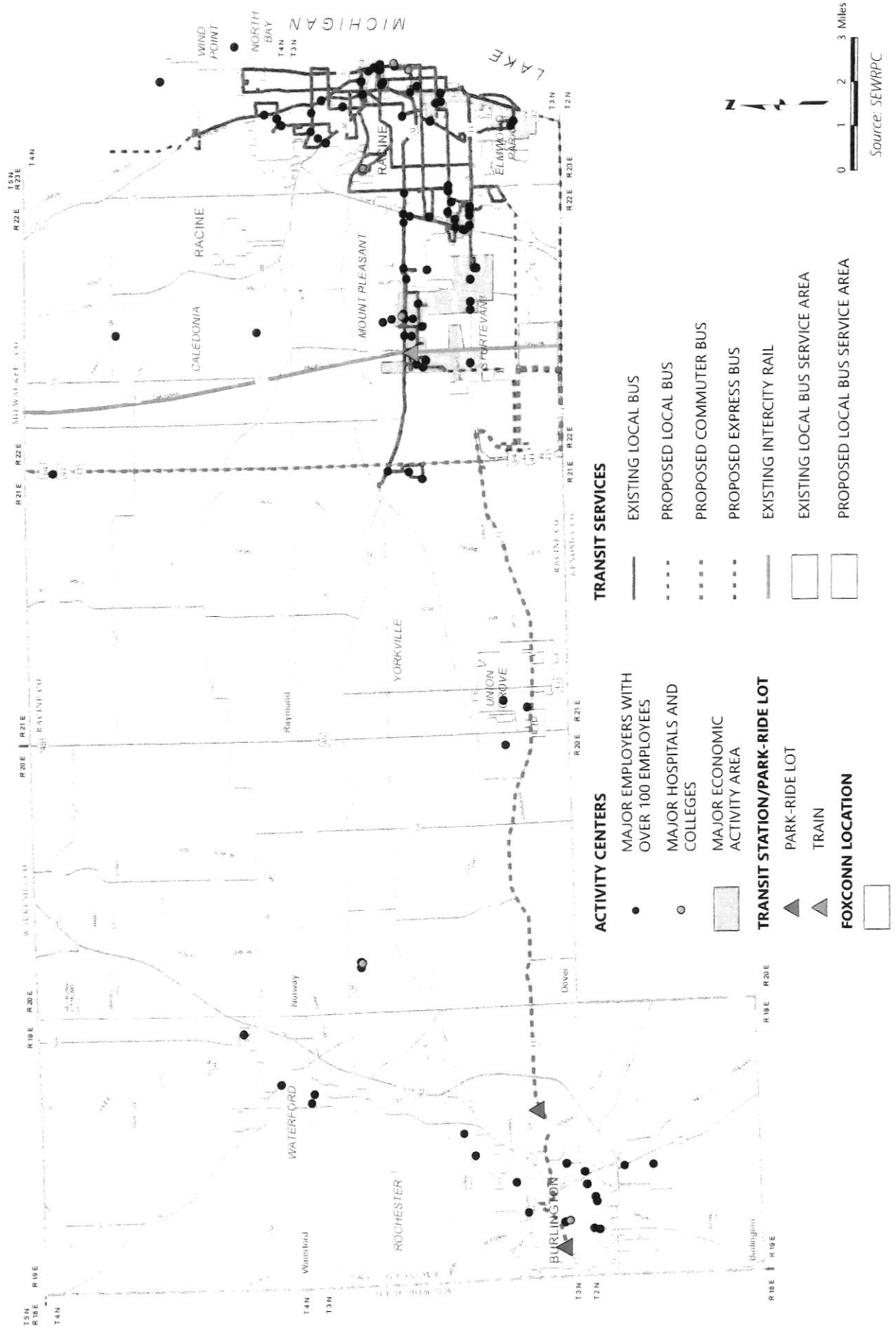
These costs are for parts only, but labor costs and parts costs are correlated. Labor costs for transmissions are more than wiper blades.

Maintenance costs are a growing share of the total budget because of the aging fleet.

Job Density in Racine County: 2010



Major Activity Centers Compared to Public Transit Services in Racine County: 2018

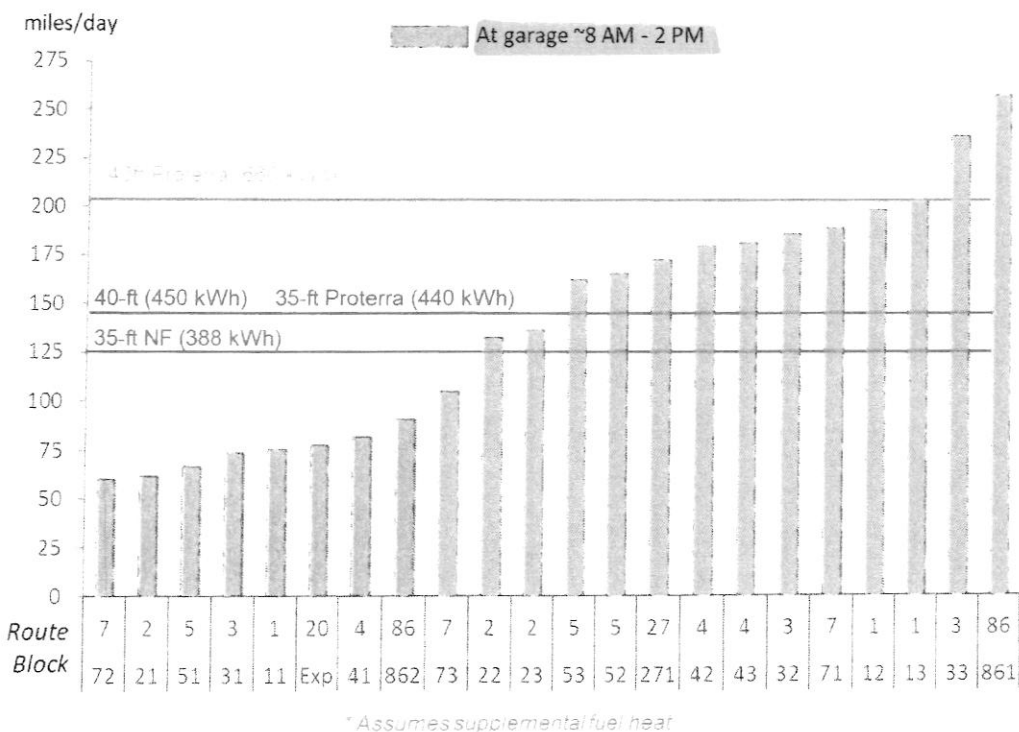


CITY OF RACINE ELECTRIC BUS ANALYSIS

blocks, in which buses are in service for three hours in the morning, sit at the depot for six hours mid-day, and are then in service for another 3 hours in the afternoon.

Also shown in Figure 2 is the projected reliable range per charge for 40-ft electric buses, and the 35-ft Proterra bus, with 450-kWh batteries; the 35-ft New Flyer bus with 388 kWh battery, and a 40-ft Proterra bus with a 660-kWh battery. For all buses the range shown assumes buses are equipped with supplemental fuel heat.

Figure 2 RYDE Weekday Bus Blocks versus Electric Bus Range per Charge



As shown, if RYDE's buses are charged at the depot overnight, only a 40-ft Proterra bus with a 660-kWh battery could be used on virtually every block on every route. The available 35-ft buses, and 40-ft buses from manufacturers other than Proterra, could be used on the split block on each route, and on two of three blocks on Route 7. The Proterra 35-ft bus and all 40-ft buses could also be used on all three blocks on Route 2. However, if only charged at night electric buses with 450-kWh or smaller batteries could not be used on half of RYDE's daily blocks, because they would not have enough range to complete the day's scheduled service. Note, however, that while the Proterra 660-kWh buses could be used on virtually all blocks they would need to charge at 100 kW during overnight charging given available charge time. Buses with 450-kWh or smaller batteries would only need to charge at 50 kW for overnight charging.