

CITY OF WAUKESHA WHOLESALE WATER SALES

Report to the Common Council
by the Legislative Reference Bureau

March, 2012

Report of the Legislative Reference Bureau to the Common Council, as required under Common Council Resolution File Numbers 080457 and 110438, relating to an analysis of the City of Waukesha regarding its request to purchase water as a wholesale customer from the City.



MEMORANDUM

LEGISLATIVE REFERENCE BUREAU

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To: The Honorable Common Council

Date: March 1, 2012

Subject: Wholesale Water Sales, Analysis of the City of Waukesha

Provided is the report of the Legislative Reference Bureau to the Common Council, as required under Common Council Resolution File Numbers 080457 and 110438, relating to an analysis of the City of Waukesha regarding its request to purchase water as a wholesale customer from the City.

Resolution File Number 110438 directs the Legislative Reference Bureau to prepare and submit a written analysis and report as provided in the policies and procedures adopted by the Common Council in Resolution File Number 080457, relating to an anticipated proposal to provide drinking water to the City of Waukesha.

Resolution File Number 110438 provides that the Legislative Reference Bureau shall prepare and submit a written report that analyzes and evaluates the following:

- a. The reason for the request for water (e.g., whether the request for water is the result of a water shortage, water contamination, public health concerns, drought or some other condition).
- b. The economic profile of the community, including tax rate, assessed valuation per capita, median household income, per capita income and median home value.
- c. Poverty rates, minority representation and other demographic and community characteristic data it finds to be pertinent.
- d. The current status and an analysis of past and future trends relating to the availability of public transportation and affordable housing.
- e. The environmental impact of the proposed sale.
- f. Other information that the bureau finds pertinent to the Common Council's consideration of the proposed water service request.

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I. Executive Summary

Community Highlights	Waukesha	Milwaukee
Median Household Income	\$53,149	\$32,911
2011 Assessed Valuation	\$5,721,272,900	\$27,091,119,720
Median Home Value	\$208,400	\$132,200
Property Tax Rate	\$9.55 per \$1,000	\$9.12 per \$1,000
Population	70,741	595,587
White	81.9%	37.2%
Other	18.1%	62.8%
Poverty Rates—Families	9.0%	25.2%
Unemployment	7.9%	15.4%

1. Waukesha projects an ultimate average daily water supply need of 10.9 million gallons with a peak demand need of 18.5 million gallons/day. Waukesha's 2010 average daily water consumption was 6.8 million gallons with a peak demand of 11.4 million gallons.

2. Waukesha's projected water needs are based on an expanded Water Service Area and development of all developable land within this larger service area. The population of the expanded service area was 75,500 in 2000, and is projected to increase 22.5% to 97,400 by 2050.

3. Waukesha maintains that its current water supply from deep and shallow aquifers is not sustainable to meet current needs, even given the City's recent conservation policies, and is not protective of public health and natural water resources.

4. Before Waukesha can buy water from Milwaukee, its request to divert Lake Michigan water outside the Great Lakes drainage basin must be approved unanimously by the eight states of the Great Lakes Basin Compact.

5. The Great Lakes Basin Compact

stipulates waters diverted from Lake Michigan outside the Great Lakes watershed must be treated and returned to Lake Michigan. The environmental impact of Waukesha's return flow via Underwood Creek is deemed to be negligible.

6. No Low-Income Housing Tax Credit (LIHTC) housing units were developed in Waukesha from 2006 to 2010. In Milwaukee, 1,565 LIHTC units were developed during the same period.

7. Although Thrive Waukesha (formerly the Affordable Housing Task Force in Waukesha County) maintains there are too few affordable homes available in the county, it has abandoned its campaign for a Housing Trust Fund as a failed effort.

8. Waukesha cites the Dunbar Oaks Neighborhood Project as an example of recent affordable housing development. When completed, this 14-unit housing project will represent 0.05% of Waukesha's total 28,591 housing units.

9. Regularly commuting by public transportation between Waukesha and Milwaukee is problematic, especially if work schedules include evenings and weekend shifts.

II. Proposed Water Diversion

A. Lake Michigan Water Diversion.

Technically, the City of Waukesha is petitioning the Great Lakes Commission – the statutory representative for the 8-state Great Lakes Basin Compact – to divert an average of 10.9 million gallons of water per day, or approximately 4 billion gallons a year, from Lake Michigan with a peak demand of 18.5 million gallons a day to meet Waukesha's ultimate future water needs. Waukesha is eligible to make this request because, while the City of Waukesha lies entirely outside the Great Lakes watershed, Waukesha County straddles the Great Lakes drainage basin boundary.

The Compact stipulates that water diverted outside the drainage basin be treated and returned to the Great Lakes. The Compact further stipulates that all 8 state members must unanimously approve any diversion of Great Lakes water outside the system's natural watershed.

If its petition is approved by the Great Lakes Commission, Waukesha proposes to buy its Lake Michigan water from Milwaukee, Oak Creek or Racine, with Milwaukee the preferred supplier. All three potential water suppliers have provided Waukesha with letters the City is including with its petition indicating the willingness of each potential supplier to sell Waukesha water, assuming the parties can come to mutually-agreeable terms for the sale.

Capacity is not an issue in a potential agreement for Milwaukee to sell water to Waukesha. The Milwaukee Water Works processed and sold 34 billion gallons of water in 2008, roughly 25% of the utility's 138.7 billion gallon capacity, and sales have been declining.

Milwaukee has more than 100 billion gallons of unused water-processing capacity, so an annual sale of 4 billion gallons of water to Waukesha represents only a 4% drawdown of Milwaukee's unused capacity.

B. Water Supply Alternatives.

The Compact stipulates Waukesha must demonstrate that it has no reasonable alternative water supply source within the Mississippi River drainage basin, including water conservation, to qualify for a Great Lakes water diversion, even to meet the City's current needs.

Waukesha makes the case in its application that the City's sole water supply alternative—continuing to pump drinking from the deep and shallow aquifers beneath it—is not sustainable even to meet the City's current water consumption needs, nor is it protective of public health or natural water resources. On the other hand, drawing water from Lake Michigan is sustainable, and does protect public health and natural water resources.

Waukesha's current water supply is deemed unsustainable despite recent declines in consumption attributed to the City's recent water conservation policies.

Although the City offers rebates for installing high-efficiency toilets (launched in 2008) and instituted an innovative "conservation" pricing structure in 2007 that charges consumers more per gallon as water consumption increases, the centerpiece of Waukesha's water conservation is the City's restrictions, adopted in 2006, on outdoor sprinkling during the summer.

Water consumption declined 11.5% from an average 7.8 million gallons per day in 2005 to 6.9 million gallons per day in 2010.

Waukesha currently pumps more than 87% of the water it needs from the deep St. Peter Sandstone Aquifer. An area geological feature limits the natural recharge of this aquifer, and pumping by Waukesha and other communities has lowered the water table 500-600 feet over the years, and water levels continue to drop 5-9 feet annually. Falling water levels tend to deplete surface water levels and degrade aquifer water quality by increasing the concentration of radium and salts which must be removed to make the water potable.

Less than 13% of Waukesha's current water needs come from shallow aquifers. Continued shallow aquifer drawdown threatens to drastically reduce groundwater flow and the natural recharge of local streams and area wetlands. Shallow aquifer drawdown also diverts water from private wells, and threatens to draw contaminants from private septic systems into the public water supply.

Virtually none of the current 2.5 billion gallons Waukesha pumps from its deep and shallow aquifers is returned to recharge these aquifers. Waukesha's wastewater is currently treated and discharged into the Fox River which empties into the Mississippi and ultimately flows into the Gulf of Mexico.

To minimize Lake Michigan water diversions, Waukesha also studied the possibility of combining water pumped from the region's shallow aquifers combined with Lake Michigan water diversions to meet the City's needs. Though the rate of shallow aquifer drawdown would slow the depletion of groundwater flow, such depletions would still retard the natural recharge of area streams and wetlands.

However, this alternative was ultimately rejected because water drawn from shallow aquifers in the Mississippi Basin would be returned after treatment to the Great Lakes Basin, thus violating the Compact stipulation that Waukesha maximize the amount of Lake Michigan water returned to Lake Michigan, while minimizing the amount of water from other sources returned to Lake Michigan.

C. Requested Water Diversion and Service Area.

Waukesha's request to divert an average of 10.9 million gallons of water per day from Lake Michigan—approximately 4 billion gallons per year—with a peak demand request of 18.5 million gallons per day are based on an expanded Water Service Area to serve an ultimate projected population of 97,400 by 2050.

Much of the ultimate population growth is expected to come from the regions added to Waukesha's 2011 Water Service Area. Waukesha's population is projected to grow 16% from 65,700 in 2000 to 76,330 in 2050, while the population in the newly-annexed service (9,800 in 2000) is projected to more than double to 21,070 by 2050.

The actual growth in the newly-added water service area is expected to eclipse the growth within the current service over the 50 years from 2000 to 2050, with the newly-served area growing by 11,270 while the population of Waukesha's current Water Service Area grows 10,630.

Figure 1 summarizes the projected population growth of Waukesha's proposed expanded Water Service Area.

Waukesha's projected planned Water Service Area was delineated by the Southeastern Wisconsin Regional Planning Commission ("SEWRPC") in accordance with Chapter NR 121, Wisconsin Administrative Code.

Figure 1. Projected Population Growth by Region, 2000 to 2050.

	2000	2050	Growth
City of Waukesha	65,700	76,330	16%
Portions of:*			
City of Pewaukee	900	1,370	52%
Town of Genesee	1,250	1,850	48%
Town of Waukesha	7,410	13,590	83%
Town of Delafield	240	4,260	1,675%
Total	75,500	97,400	29%

*provided by Waukesha Water Utility

The Service Area includes the following in addition to the City of Waukesha:

- Portions of the Town of Pewaukee: Currently served by Waukesha under an existing border agreement.
- Portions of the Town of Waukesha: Expected addition to the City of Waukesha's Sanitary Sewer System in the future.
- Portions of the Town of Delafield: Expected addition to the City of Waukesha's Sanitary Sewer System in the future.
- Portions of the Town Genesee: Requested for inclusion by the Wisconsin Department of Natural Resources to remediate septic and well water problems in the area.

Portions of the Towns of Waukesha and Delafield appear to be added to the Water Service Area to comply with the Compact stipulation that Waukesha maximize the

amount of Lake Michigan water returned to Lake Michigan, while minimizing the amount of water from outside the Great Lakes watershed ultimately returned to Lake Michigan.

If these areas continued to draw their water from underground aquifers in the Mississippi Basin after being connected to Waukesha's sewer system in the future, wastewater that originated outside the Great Lakes drainage basin would be routinely discharged into Lake Michigan after treatment in Waukesha's sewerage treatment system.

When making its population and water demand projections, SEWPRC determined 85% of Waukesha's Water Service Area was either already developed, or had been set aside as natural or environmental preserves never to be developed. The remaining 15% of the Water Service Area was assumed to be available for development consistent with the regional land use plan. Waukesha assumed the entire Water Service Area was fully developed when projecting ultimate water demand.

In 2008, SEWPRC predicted Waukesha's 2035 population served by the expanded Water Service Area would be 88,500. Waukesha, using what the City asserts is a similar methodology, extrapolated SEWPRC's 2035 population estimate to an ultimate population of 97,400 by 2050, and based the City's request for water diversion on the projected needs of this ultimate 2050 population.

Projecting population growth is a profoundly complex undertaking, and this report neither investigated nor certifies the reasonableness of these projections.

Though it is assumed neither SEWPRC nor Waukesha used such a simplistic method, an expanded water service area population of 97,400 in 2050 is roughly a 29% increase over the expanded service area's 2000

census of 75,500, representing an annual growth rate of approximately 0.5% per year over the 50-year period.

SEWPRC projected that Waukesha's expanded Water Service Area would need an average 9.8 million gallons of water per day by 2035 and a peak demand of 13.4 million gallons per day.

To project ultimate water demand in 2050, Waukesha, making certain assumptions and reviewing past daily average and peak demand consumption levels, calculated an average daily demand baseline of 7.9 million gallons and a peak demand baseline of 13.4 million gallons per day.

Starting with these demand baselines, and using what the City asserts is a methodology similar to that used by SEWPRC in making its 2035 water demand predictions, Waukesha then projected an ultimate 2050 average daily demand of 10.9 million gallons and a peak demand of 18.5 million gallons per day.

Waukesha's daily average water consumption in 2010 was 6.8 million gallons, and peak demand was 11.4 million gallons.

Apparently, coincidentally, Waukesha's water demand projections, both average daily and peak demand, exactly match projected population growth over the 40-year period from 2010 to 2050 as shown in Figure 2.

Projecting water demand 40 years into the future, like projecting population growth, is a profoundly complex undertaking, and this report neither investigated nor certifies the reasonableness of these water demand projections. However, it does appear Waukesha's water demand projections are intentionally somewhat overstated.

The City apparently prefers to slightly overstate its future water diversion needs,

and run the risk of not fully utilizing an approved diversion, rather than risk being just short of future resident needs.

Figure 2. Water Demand Projections vs. Population Growth, 2010 to 2050.

	Baseline	2050	Growth
Daily Average *	7.9	10.9	38%
Peak Demand *	13.4	18.5	38%
Population	75,500	97,400	29%

* million gallons per day

Underestimating future water demand could potentially force Waukesha to file a second petition with the Great Lakes Commission to increase its approved water diversion, which in turn would again have to be evaluated by the Wisconsin Department of Resources and unanimously approved by the 8 states of the Great Lakes Basin Compact.

D. Return Flow.

The Compact stipulates that any proposed water diversion of Lake Michigan water outside the Great Lakes drainage basin must maximize the amount of diverted water returned to Lake Michigan, while minimizing the return to Lake Michigan of water not originally in Lake Michigan.

Waukesha's return flow management plan sets procedures to minimize the return of water not originally in Lake Michigan by continuing to discharge excessive rainfall runoff and inflow and infiltration flows entering its sewer system directly into the Fox River to drain into the Mississippi Basin.

Waukesha considered the following four return flow options:

- Underwood Creek
- Root River
- Pipeline to Lake Michigan

- Milwaukee Metropolitan Sewerage District (“MMSD”)

While two versions of the MMSD return flow option were considered, both versions were judged too impractical and untenable early on, and no cost protections were made.

Waukesha could not merely abandon its existing sewage treatment facility, funded in large part by federal monies, and it certainly did not make sense for Waukesha to treat its wastewater and then pump the treated water into the MMSD system where Waukesha would be charged by MMSD to treat the treated water again. In addition, while MMSD had capacity for routine return flows from Waukesha (untreated or treated) the utility could not guarantee capacity during heavy rain events.

Underwood Creek is the option proposed in Waukesha’s petition to the Great Lakes Commission. The City prefers the Underwood Creek return flow option because it has the least environmental impact, it maximizes use of existing utility facilities, and the discharge can be an environmental benefit by improving the habitat and fisheries in Underwood Creek and the Menomonee River. Underwood Creek is also the least expensive return flow option as Figure 3 indicates.

Figure 3. Comparison of Costs of Return Flow Options.

Return Flow	Capital Cost	Annual Costs
Underwood Creek	\$56,174,000	\$119,000
Root River	\$75,963,000	\$145,000
Pipeline	\$109,848,000	\$159,000

1. Underwood Creek: Preferred Return Flow Option.

This option discharges Waukesha’s treated wastewater into Underwood Creek, which flows into the Menomonee River which in turn empties into Lake Michigan. Waukesha would build an 11.5-mile pipeline from its treatment plant to the point where the Underwood Creek passes beneath Bluemound Road near 124th Street. From there, the Underwood Creek flows about 2.6 river miles to its confluence with the Menomonee River in Wauwatosa before flowing another 10 river miles to Lake Michigan in the City of Milwaukee.

2. Root River: Less Attractive Return Flow Option.

Treated wastewater for this return flow option would be discharged into the Root River which flows into Lake Michigan. The 15.6-mile pipeline would follow the same route as the Underwood Creek pipeline for the first 9.6 miles and then veer southeast for 6 miles to the Root River.

3. Pipeline: Most Expensive Return Flow Option.

This most expensive return flow option would pump the treated return flow the entire distance from Waukesha’s wastewater treatment facility to discharge into Lake Michigan.

The 21.5-mile pipeline would follow the same course as the Underwood Creek/Root River pipelines for the first 9.6 miles, travel 12.4 miles to the lake’s edge and then extend half a mile into Lake Michigan before discharge.

E. Return Flow Environmental Impact.

Waukesha engaged the engineering firm of Short Elliot Hendrickson Inc. (“SEH”) to evaluate the environmental impact of using Underwood Creek for its return flow, and SEH reported its findings in a technical memorandum on July 23, 2009, which is attached as Appendix G in Waukesha’s application to the Wisconsin Department of Natural Resources.

SEH finds in its memo no significant environmental impact from Waukesha’s proposed effluent discharge.

Waukesha proposes to discharge its effluent into a 6,600-foot segment of Underwood Creek from approximately Mayfair Road downstream to the Menomonee River in a channel the MMSD is rehabilitating as part of its Rehabilitation and Flood Management Project. This channel is designed to accommodate a flow rate of 200 cfs (“cubic feet per second”) in the main channel and 3 cfs in the low-flow channel. Phase I of the rehabilitation project, the upstream 2,400 feet, is completed.

While design is not yet completed for the 4,400-foot Phase II of this project, SEH assumed flow characteristics will be similar to Phase I, including the assumption that final Phase II design will adjust channel width and depth to accommodate the significantly steeper creek bed slope in the 180-foot upstream portion of Phase II.

Waukesha projects its discharge flow rate will be 17-20 cfs. SEH modeled for a 20 cfs flow rate when making its evaluation.

SEH concluded Waukesha’s proposed return to Underwood Creek would have negligible impact on the hydraulic and geomorphic conditions of the creek channel during average and peak discharges. Channel water depth was predicted to rise slightly from 1.8 to 9.6 inches depending on the flow without negative impact, and flow velocity was estimated to increase a negligible maximum of one foot per second, not enough to raise sheer stress significantly.

SEH also expects the indicator fish species – the Northern pike – will not be adversely affected by Waukesha’s discharge. The Northern pike is a relatively weak swimmer and functions best in water velocities of 1.5 – 1.7 feet per second.

Average channel velocities resulting from discharges of 23 cfs or less should be well within the Northern pike’s swimming capacity and therefore have minimal impact on fish passage except in the steep bed section.

SEH reports three possible benefits for Underwood Creek and the environment from Waukesha’s return flow discharges:

1. Enhanced fish passage with greater water depth outside low-flow channel.
2. Floodplain hydration – slightly increase groundwater elevations near the channel.
3. Potential increased aquatic life – resulting from a more water-rich habitat.

III. Economic & Community Profile**Figure 4. Economic Profile.**

	Waukesha	Milwaukee
Median Household Income	\$53,149	\$32,911
Per Capita Income	\$26,501	\$17,912
2011 Assessed Valuation	\$5.72 billion	\$27.09 billion
Assessed Valuation Per Capita	\$80,876	\$45,486
Median Home Value	\$208,400	\$132,200
2011 Property Tax Rate	\$9.55 per \$1,000	\$9.12 per \$1,000

Figure 5. Housing Costs, Rent.

Rent	Waukesha	Milwaukee
\$500 to \$749	32.6%	36.7%
\$750 to \$999	32.2%	29.0%
\$1,000 to \$1,499	14.8%	16.5%
Median Rent	\$766	\$738
Rent as % of Household Income	34.6%	45.4%

Figure 6. Housing Costs, Mortgage.

Mortgage	Waukesha	Milwaukee
\$700 to \$999	5.5%	18.0%
\$1,000 to \$1,499	37.0%	43.0%
\$1,500 to \$1,999	32.9%	24.9%
\$2,000 +	23.4%	9.7%
Median Monthly Costs	\$1,583	\$1,314

Figure 7. Community Profile, Poverty, Race.

	Waukesha	Milwaukee
Poverty Rates		
Families	9.0%	25.2%
Individuals	15.0%	29.5%
Unemployment	7.9%	15.4%
Minority Representation		
White	81.9%	37.2%
Hispanic	10.5%	17.6%
Black	1.6%	38.7%
Am. Indian	0.0%	0.3%
Asian	3.5%	3.8%
Other	0.1%	0.1%
Mixed Race	2.3%	2.3%
Population	70,741	595,587

Figure 8. Community Profile, Education, Housing Ownership.

	Waukesha	Milwaukee
Education (attainment or higher)		
High School	92.8%	80.6%
Bachelor's Degree	32.8%	21.4%
Owner Tenure		
Owner-Occupied Units	17,037 (59.8%)	102,660 (45.4%)
Renter-Occupied Units	11,457 (40.2%)	123,553 (54.6%)
Total Units	28,494	226,213

Data Source: 2010 Census Bureau American Community Survey, one-year estimates.

Note: The Census Bureau's "long form", which in previous censuses was used to collect detailed socioeconomic information, was replaced beginning in 2010 with the American Community Survey.

Processed survey information provides annual estimates for all states, cities, counties and population groups of 65,000 people or more, including the cities of Waukesha and Milwaukee.

IV. Public Transit

Milwaukee residents have 2 public transit options for commuting from Milwaukee to Waukesha combining buses provided by Milwaukee County Transit System (“MCTS”), Waukesha County Metro (“Waukesha Metro”) and Couch USA:

A. Route 901 Option (minimum of two buses).

1. Couch USA Route 901 – Downtown Milwaukee to Downtown Waukesha.
2. Waukesha Metro Bus – Downtown Waukesha to Final Destination.

Waukesha County Transit’s Route 901, operated by Couch USA, connects downtown Milwaukee to downtown Waukesha. The earliest westbound bus departs downtown Milwaukee at 5:25 a.m. and arrives in downtown Waukesha at 6:17 a.m., Monday-Friday. The latest return bus departs Waukesha at 5:45 p.m. and arrives at 6:38 p.m. in downtown Milwaukee. There is no service on Saturday or Sunday.

The Route 901 fare is \$3.25 each way. The full unsubsidized fare should be \$12.50, but federal and state subsidies of \$7 plus Waukesha County’s \$2.25 contribution brings the rider fare down to \$3.25. A passenger arriving in Waukesha can transfer to a Waukesha Metro bus at no additional charge to complete the last mile of the commute.

Commuters traveling to Waukesha who must take a MCTS bus to connect to Route 901 will pay the full MCTS fare of \$2.25 plus the \$3.25 Route 901 fare, but upon return, they may be eligible (regulations are not clear) for a \$0.50 discount coupon to reduce the MCTS fare for the last mile of the commute to \$1.75, again plus the \$3.25 Route 901 fare.

Outbound fares for commuters taking a MCTS bus to connect to Route 901 should be approximately \$5.50, while returning fares will likely be either \$5 or \$5.50. This includes a MCTS bus connection in Milwaukee and a free transfer to a Waukesha Metro bus for the last mile to the commuter’s destination.

B. The #10 Bus Option (minimum of three buses).

1. MCTS #10 bus – Milwaukee to Brookfield Square.
2. Waukesha Metro Route 1 – Brookfield Square to Downtown Waukesha.
3. Waukesha Metro Bus – Downtown Waukesha to Final Destination.

Waukesha County pays the Milwaukee County Transit System an annual subsidy - \$624,688 for 2012 – to extend service on MCTS’s #10 bus from 124th and Bluemound to Brookfield Square Shopping Mall – roughly 46 blocks. From Brookfield Square, commuters can transfer to Waukesha County Metro Route 1 to travel to downtown Waukesha.

Bus #10 connects to all Route 1 departures and arrivals so commuters depending on Route 1 buses to travel to downtown Waukesha will arrive at Brookfield Square in time to catch the earliest departing Route 1 bus, and commuters returning on the last Route 1 bus headed for Brookfield Square from downtown Waukesha will arrive in time to catch a #10 bus home to Milwaukee.

Fares for this option are almost certainly less than using Route 901, but because using this #10 bus option may require three transfers or more, and because the regulations governing multiple transfers are

unclear, especially when transferring to buses operated by different transit authorities, estimating how much cheaper is difficult. It is likely one-way fares will be between \$2.25 and \$4.25.

A commuter reaching downtown Waukesha either via Route 901 or MCTS's bus #10, will be dependent on Waukesha Metro to go the last mile to the destination. Technically, Waukesha Metro serves Waukesha with twelve intra-city bus routes all originating from Waukesha's Downtown Transit Center hub, but four of these routes combine into two routes for nights and weekends, and one route operates only one roundtrip per weekday, effectively reducing the number of bus routes to eight.

C. Practicality of Public Transit to Waukesha.

To get a feel for how commuting from Milwaukee to a job in Waukesha works in practice, consider the hypothetical case of two commuters living near Humbolt and Capitol, one employed by Generac Power Systems on Genesee Road south of downtown Waukesha, and the second employed at the Target adjacent to the nearby Shoppes of Fox River shopping center.

The Generac-employed commuter working Monday-Friday has a long commute, but has little other problem provided the workday starts no earlier than 7:00 a.m. and ends no later than 5:45 p.m. To arrive by 7:00 a.m., this commuter must take the #10 bus at 5:12 a.m. to downtown Milwaukee, connect with Route 901 (if a bus #10 is taken all the way to Brookfield Square, the workday cannot start before 8:30 a.m.) and then finish the 2-hour commute on Waukesha Metro Route 5.

If the workday ends at 5:45 p.m., the commute home will be 2 hours and 20 minutes on the #10 bus, after first taking the Route 5 bus to downtown Waukesha and

the Route 1 bus to Brookfield Square. The round trip fare for the day could be close to \$9.

A Milwaukee resident employed by GE Healthcare, Waukesha's second largest employer with 2,958 employees, might expect a similar commute, though the last mile to GE is on Waukesha Metro Route 9.

The Waukesha commute for the Target-employed commuter is far more challenging because the typical retail work schedule includes evenings and weekends.

Getting to work would not be a problem Monday-Friday. Though the commute time will be two-plus hours, the Target commuter can take either the #10 bus option or Route 901 option and arrive at work by 7:00 a.m.

Returning home on weekdays, and getting to and from work on weekends, is more challenging. Route 901 does not run late enough to accommodate the typical retail workday, and does not operate on weekends, so the #10 bus is the only option.

On weekdays, the Target-employed commuter will be forced to leave work by 5:45 p.m. to catch the last Waukesha Metro Route 5 bus, or incur an additional commuting expense for a taxi to downtown Waukesha. Either way, it's likely this commuter will be forced to leave work earlier than the typical retail work schedule because the last Waukesha Route 1 bus departs for Brookfield Square at 9:15 p.m.

Weekends are more difficult. The Target-employed commuter taking the #10 bus cannot report for work before 10:15 a.m. on Saturdays and must leave no later than 8:15 p.m. to catch the three buses it takes to get home.

On Sundays, this commuter cannot get to work before 11:15 a.m. and must leave by 5:15 p.m. It is assumed the time restrictions imposed by this commute would make getting or keeping a retail job at Target in Waukesha difficult, if not impossible, for a Milwaukee city resident. It seems even more unlikely a Milwaukee city resident dependent on public transit could get or keep a job as a Certified Nurse Assistant, a medical or dietary technician, or a position in housekeeping with Waukesha's largest employer, Waukesha Memorial Hospital, which employs 3,682.

D. Waukesha County Vanpool – Milwaukee to Waukesha

In theory, a very enterprising Milwaukee resident could use the Waukesha County Vanpool operated by the Waukesha Metro Transit system (City of Waukesha) to commute from Milwaukee to Waukesha, but it would take energy and creativity.

Waukesha County bought 8 (7-passenger) vans for its vanpool program in 2010. The county charges commuter groups \$575 per month for maintenance, roadside service and insurance. Commuters pay for gas.

Rules require that each commuter trip starts or ends in Waukesha County, so in theory an enterprising Milwaukeean working in

Waukesha could arrange to commute to work using this vanpool. If, for instance, a 5-person commuting group could be organized, each commuter would pay \$115/month (approximately \$5.75 per workday) plus 20% of the cost of gasoline. The challenge would be in recruiting the commuter group, and for some Milwaukeeans, finding a qualified primary driver. The primary driver must undergo a criminal, driving record and background investigation before being assigned the vehicle, and must keep the van at his/her home overnight and on weekends.

The first of these 8 vans was recently put into service more than a year after purchase by a 5-person commuter group commuting from Waukesha to downtown Milwaukee, perhaps testifying as to how difficult commuter groups are to arrange. This inaugural commuter group will pay half the normal \$575/month fee for the first year as an introductory offer. None of the 5 commuters is from the City of Waukesha.

A similar vanpool initiated by Milwaukee County launched in 1994 was discontinued in November, 2011, because the county could not afford to replace its aging 14-van fleet. Waukesha County used federal stimulus money to buy its 8 vans.

V. Affordable Housing

A. Low-Income, Below-Market-Rate Housing.

In the interest of brevity, and because the thrust of this report is to analyze how the availability of affordable housing in Waukesha affects the number of low-income Milwaukee residents who might reasonably be expected to relocate to Waukesha for jobs, the focus of this report will be on affordable housing for working families and individuals. Both Waukesha and Milwaukee provide assisted housing for the elderly, disabled and homeless; these resources are not designed to serve working families.

Below-market-rate housing for working families in both Waukesha and Milwaukee fall into 3 broad categories: Public housing managed by public housing authorities; HUD-housing and Urban Development housing supported by the federal government; and Low-Income Housing Tax Credits (LIHTC). LIHTC projects try to incentivize private developers to include low-income, below-market-rate units in their housing developments by allowing them to raise capital by selling federal income tax credits to potential investors, provided the development includes low-income, below-market-rate units.

Figure 9 is a 2011 inventory of low-income, below-market-rate housing for Waukesha and Milwaukee. According to Figure 8, total low-income, below-market-rate housing as a percentage of total households at 4.16% in Milwaukee is over twice the 2% provided by Waukesha. HUD housing as a percent of households in the 2 communities is almost identical, while Milwaukee provides almost 2½ times the number of public housing authority units as a percent of total households provided by Waukesha.

Figure 9. Family Low-Income, Below-market-rate Housing Units, 2011.

Housing Type	Waukesha	Milwaukee
Public Housing	152 (0.53%)	2,930 (1.28%)
HUD - Federal	318 (1.11%)	2,671 (1.17%)
LIHTC - Tax Credits	103 (0.36%)	3,934 (1.72%)
Total	573 (2.00%)	9,535 (4.16%)
2010 Total Households	28,591	228,945

The most dramatic difference between the two communities is in LIHTC tax credit units provided. The 3,934 LIHTC units provided by Milwaukee represents 1.72% of total households in Milwaukee, nearly five times greater than 0.36% of total households in Waukesha represented by the 103 LIHTC units in Waukesha.

Perhaps more telling, not a single unit of LIHTC low-income, below-market-rate housing has been built in Waukesha during the last five years. During the same 5-year period—2006 to 2011—Milwaukee has added 1,565 low-income, assisted housing units in 33 projects—effectively increasing the city’s inventory of LIHTC units by 66%.

The Waukesha Common Council, however, recently (February 7, 2012) voted to rezone land to allow for development of 70 “workforce” apartments in a project using LIHTC financing.

The developer, MSP Real Estate, has applied for, but not yet received the tax credit financing needed for this project. Sixty-four of the 70 units will be set aside for low-income renters. Four 735 sq. ft. one-bedroom units will be set aside for renters earning not more than \$21,245 or 30% the Waukesha County median income, 42 one-, two- and three-bedroom units will be set aside for renters with household incomes less than \$35,408 or 50% of median county income and 17 units will go to renters earning less than 60% of the county median income or \$42,489.

Figure 10 summarizes the set-asides for this proposed project. Note the rent discount lags the low-income threshold. For example, a renter making exactly half the county median income, or \$35,408, will pay 25% of gross income to rent a 2-bedroom apartment in this project while a renter making exactly the county median income of \$70,815 will pay 18% of gross income to rent the same apartment.

In addition to the 70 apartments, this project will also include a 36-unit Alzheimer's/dementia facility. While this is not "affordable housing," the development's "memory care" facility is projected to hire 23-28 employees including caregivers and kitchen workers with wages starting at \$20,000, making many of the new-hires eligible for the low-income housing next door.

B. Apartments.

While apartments as a percent of total households in Waukesha at 40.2% for 2010 is significantly lower than the 54.6% apartment tenure in Milwaukee, median rents in the 2 communities are almost identical at \$766 in Waukesha and \$738 in Milwaukee, indicating housing costs for Milwaukee renters relocating to Waukesha may increase only 4%.

Figure 10. MSP Development Set-Asides.

MSP Development Set-Asides			Rent		
			Set-Aside	Market	Discount
30% of \$70,815 County Median Income					
1-bedroom	735 sq. ft.	4 units	\$338	unknown	n/a
50% of \$70,815 County Median Income					
1-bedroom	776 sq. ft.	14 units	\$612	\$850	28%
2-bedroom	1,151 sq. ft.	22 units	\$730	\$1,050	30%
3-bedroom	1,418 sq. ft.	7 units	\$946	unknown	n/a
60% of \$70,815 County Median Income					
1-bedroom	776 sq. ft.	4 units	\$696	\$850	18%
2-bedroom	1,151 sq. ft.	12 units	\$782	\$1,050	26%
3-bedroom	1,418 sq. ft.	1 units	\$935	unknown	n/a

However, 2010 census data also indicate 45.4% of Milwaukee renters spend more than 35% of household income on rent, while in Waukesha only 34.6% of renters spend more than 35% of their income on rent, a reminder that Waukesha's \$53,149 median household income is 62% higher than the \$32,911 median household income in Milwaukee.

Waukesha used TIF (Tax Incremental Financing) to support the redevelopment of the 311-unit Rivers Edge Apartments near Frame Park. In return, 62 units, or 20%, in this development are set aside for low-income qualified tenants.

C. Home Ownership.

Thrive Waukesha, originally known as the Affordable Housing Task Force in Waukesha County, a coalition of regional nonprofit, for-profit, and governmental groups, gave up its campaign to create a Housing Trust Fund almost two years ago as a failed effort. The idea was to establish a tax-supported fund to offer incentives to area developers to include affordable homes in their developments.

While the group still maintains there are too few affordable homes available, it has switched gears to encourage Waukesha County communities to relax lot-size and setback requirements seen as barriers to moderately-priced housing. The group also encourages communities to offer developers "density bonuses" or fee waivers if affordable homes are part of the development's mix.

While lot size and setback requirements in Waukesha are set by city ordinance, these requirements can be waived on a case-by-case basis as they were for the Dunbar Oaks development. The City also waives certain fees on residential projects which include affordable housing units.

Waukesha cites the Dunbar Oaks Neighborhood Project as an example of recent affordable housing development. Dunbar Oaks is an 11-lot residential redevelopment on the former site of the downtown Waukesha YWCA which was razed in 2010. Plans call for constructing eight single-family homes and three two-family condos, a total of fourteen housing units.

Income restrictions for buying Dunbar Oaks homes are pegged to median household income for Waukesha County rather than for the City of Waukesha. Waukesha County's \$70,815 median household income is 33% higher than the City of Waukesha's \$53,149 income median, effectively allowing higher income home buyers to qualify for Dunbar Oak homes than would have been eligible if the restrictions were based on the City's lower median income.

Four Dunbar Oaks units are set aside for home owners earning 50% or less than Waukesha County's median income (\$35,408), 4 units are set aside for sale to buyers earning 51%-80% of the County median household income (\$36,116-\$56,652) and the remaining 6 units can be sold to buyers who make not more than 120% of Waukesha County's median household income (\$84,978). Ground was broken for the Dunbar Oaks projects in June, 2011, and to date, one two-family condo has been completed and both units are occupied, another two-family condo and three single-family homes are under construction. All units under construction have buyers.

When completed, the 14 housing units of the Dunbar Oaks project will represent 0.05% of Waukesha's total 28,591 housing units.

D. Property Taxes.

Waukesha's 2011 property tax rate of \$9.55 per \$1,000 of assessed valuation is \$12.09, or 133%, greater than Milwaukee's 2011 rate of \$9.12. A low-income homeowner in

Waukesha owning a home with an assessed value of \$150,000 (28% below Waukesha's median home value) will pay \$1,800 more in property taxes in addition to the other costs of home ownership than for a comparable property in Milwaukee.

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