

Common Council File 080012 – Amending the Agreement between the City of Milwaukee and the City of New Berlin for the purchase of water at wholesale

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City of Milwaukee – Legislative Reference Bureau
June 27, 2008
Amended 7/22/08 and 7/23/08

With special thanks for contributions from New Berlin Mayor Jack Chiovatero, New Berlin City Assessor Paul Koller, New Berlin Department of Community Development, and New Berlin Community Development Director Greg Kessler.

INTRODUCTION – LEGISLATIVE HISTORY

Common Council File Number 080012 amends the current water service agreement between the City of Milwaukee and the City of New Berlin for the sale of Milwaukee water at wholesale to the “middle third” of New Berlin. As a wholesale customer, New Berlin will continue to operate its own water utility, billing customers and maintaining distribution systems. The City of Milwaukee currently supplies water to the “eastern third” of New Berlin, executed by adoption of Council File 021758 in June, 2003. Water service to the eastern third began in July, 2005.

The “middle third” refers to the portion of New Berlin that is west of the sub-continental divide, thereby outside of the Great Lakes basin, and within the Metropolitan Milwaukee Sewerage District (MMSD) 2020 Facilities Plan service area¹. In New Berlin, the MMSD 2020 Plan includes the current MMSD service area and the “ultimate,” or eventual, service area. Water used within the MMSD service area, both east and west of the sub-continental divide, may be treated and returned to Lake Michigan through the MMSD sewer system. The area west of the sub-continental divide is part of the Mississippi River basin, and the portion that is not serviced by MMSD returns water to the Mississippi River. As New Berlin is intersected by the sub-continental divide, partially within the Great Lakes basin and partially within the Mississippi River basin, it is considered a “straddling community.”²

Common Council File Number 071076, adopted December 11, 2007, directed the proper City officials to begin negotiations with the City of New Berlin and the City of Milwaukee for the proposed sale of water to the middle third of New Berlin, and directed the Legislative Reference Bureau, in accordance with the policy set forth in File 980871 (adopted April, 1999) and 020459 (adopted March, 2003) to prepare the required studies related to the proposed sale of water. This report has been prepared in accord with that resolution, and is an addendum to the LRB analysis prepared for the original water service agreement (File 021758), which is also attached to this file.

Common Council File Number 070649, adopted by the Council November 21, 2007, set forth City policy such that no signing of final agreements relating to sale of water to neighboring communities outside the Great Lakes basin (west of the sub-continental divide) shall occur before the state of Wisconsin passes the Great Lakes Compact. The compact establishes return flow requirements for diversions of water from areas outside the Great Lakes basin, and establishes a process for New Berlin, as a straddling community, to access water from the Great Lakes basin.

The Wisconsin legislature ratified the compact through passage of 2007 Wisconsin Act 227 (April 2008 Special Session Senate Bill 1), which was signed by Governor Doyle May 27, 2008 and became effective June 11, 2008. Act 227 implements the compact for Wisconsin in 2 stages: 1) It establishes statutory provisions that are effective prior to Congressional consent of the compact. These ‘pre-compact provisions’, which largely mirror compact provisions, became effective June 11, 2008. 2) It establishes statutory provisions that will be implemented after Congressional consent of the compact, most of which will replace the pre-compact provisions.

¹ The MMSD 2020 Facilities Plan is a long-range planning effort that identifies the facilities, programs, operational improvements and policies required by the year 2020 to meet water resource goals within the framework of MMSD’s regulatory requirements.

² “Straddling Community” is defined in the Great Lakes – St. Lawrence River Basin Sustainable Water Resources Agreement and the Great Lakes – St. Lawrence River Basin Water Resources Compact (compact) as “any incorporated city, town, or the equivalent thereof, wholly within any county that lies partly or completely within the basin, whose corporate boundary existing as of the effective date of this compact is partly within the basin or partly within 2 Great Lakes watersheds.”

GEOGRAPHIC AREA

Attachment 1 is a map prepared by the City of New Berlin which illustrates the 3 water service areas in New Berlin, summarized below:

- **Approved Lake Water Service Area, the “Eastern third” (blue):** east of the sub-continental divide, and entirely within the Great Lakes basin and the current MMSD service area. The City of Milwaukee Water Works currently services this area.
- **Expanded Lake Water Service Area, the “Middle third” (green):** west of sub-continental divide and within the MMSD 2020 Facilities Plan service area (current service area plus the ultimate service area). This area is the subject of the current proposed water service agreement.
- **Groundwater Service Area, the “Western third” (yellow):** west of the sub-continental divide, within the Mississippi River basin, and not part of the MMSD service area. This area is not a subject of the current proposed water service agreement.

Together, the eastern third and middle third comprise the New Berlin portion of the MMSD 2020 Facilities Plan service area. Attachment 2 illustrates the boundaries of both MMSD’s current service area (blue) and the additional area included in the 2020 Plan (green) in New Berlin.

NEW BERLIN DEMAND FOR CITY OF MILWAUKEE WATER

Most of Wisconsin’s groundwater is contained in 4 aquifers – underground formations of soil, gravel or porous stone that store water – from which water is drawn from wells. The City of New Berlin relies on the deep sandstone aquifer for the majority of its water, yielding over 1,000 gallons per minute³. There are water quality concerns for the sandstone aquifer wells, however, including excessive levels of radium⁴, salinity and iron. Additionally, water supply issues affect the ability to consider the aquifer a long-term viable resource, and water quality concerns increase as water levels drop. Radium levels within the deep sandstone aquifer exceed U.S. Environmental Protection Agency and WI Department of Natural Resources (DNR) standards, and the WI DNR had ordered the City to comply with these standards by December, 2006.⁵

The City of New Berlin contracted with the engineering firm Ruekert/Mielke to evaluate potential sources for radium-free water to serve portions of New Berlin not currently served by City of Milwaukee water. Ruekert/Mielke evaluated 9 options for complying with the WI DNR order and recommended that the City of New Berlin pursue Lake Michigan water for the portion of New Berlin that coincides with the MMSD 2020 Facilities Plan service area. Ruekert/Mielke recommended this as the most cost-effective and environmentally-friendly option, and submitted an application on behalf of the City of New Berlin to the WI DNR in March, 2007, for a diversion of water from the Great Lakes

³ City of New Berlin Utility Committee minutes August 21, 2001.

⁴ Radium is a natural-occurring mineral in many of Wisconsin’s aquifers.

⁵ According to the U.S. Geological Survey (USGS), aquifers below Southeastern Wisconsin provide potable water to approximately 37%, or 700,000, of the resident population in the 7-county SEWRPC area.
http://wi.water.usgs.gov/glpf/cs_set_hydro.html accessed 6/5/08.

basin into the middle third of New Berlin. The environmental impacts of approval of the application are discussed on pages 23 – 28; refer to Attachment 3, an excerpt of the application. The entire application is attached to File 080012.⁶

COMMUNITY AND ECONOMIC CHARACTERISTICS

The following data relating to community and economic characteristics was compiled in accordance with procedure adopted by the Common Council pursuant to Files 980871 and 020459.⁷ This analysis focuses on the entire City of New Berlin- not solely on the geographic area in the middle third of New Berlin. City of Milwaukee data were included for comparison purposes.

Community Characteristics

Population Demographics

	New Berlin	Milwaukee
Total Population	38,362	596,956
Percent White	94.9%	45.7%
Percent African-American	0.5%	36.7%
Percent Hispanic or Latino	1.1%	11.9%
Percent Other	3.5%	5.7%
2006 Total Population Estimate*	39,234	573,358

U.S. Census Bureau. Census 2000. SF3, P7.

*U.S. Census Bureau. 2006 Census population estimate

As of July 1, 2006, New Berlin was ranked Wisconsin's 17th largest population, totaling a 2006 US Census estimate of 39,234, an 872 or 2.3% growth over the 38,362 recorded in the 2000 Census. By comparison, Milwaukee was ranked Wisconsin's largest population, totaling an estimate of 573,358, a 23,598 or 4.0% decrease from the 596,956 recorded in 2000.⁸

Sectors of Employment

	New Berlin	Milwaukee
Total Employed Civilian Population 16+ Years	21,039	256,244
Education, Health and Social Services	19.5%	23.4%
Manufacturing	19%	18.5%
Retail Trade	11.9%	9.9%

U.S. Census Bureau. Census 2000. SF3

⁶ Amended Sample Application for Straddling Community Water Diversion Volume 1; March, 2007. Ruekert & Mielke, Inc. p. 23-28.

⁷ File 980871 directs the LRB to submit a feasibility analysis of the proposed sale of water, including information on increased revenue, cost of production, effect on the City's water rates and impact on capacity utilization. This analysis is included in the Milwaukee Water Works feasibility report attached to File 080012.

⁸ The City of Milwaukee's Census Working Group challenged this population estimate, and demonstrated the City's population was actually 602,782 people. As of July 1, 2006, the U.S. Census Bureau has accepted that new number as the official population of the City of Milwaukee. The official Census numbers won't be updated until the 2007 estimates are released, however. The amended population figure represents a 1% growth, rather than a 4% decrease, in population for that period.

Commute to Work

	New Berlin	Milwaukee
Total Workforce 16+ Years	20,792	249,889
Alone via Car	88.8%	68.8%
Public Transportation	0.5%	10.3%

U.S. Census Bureau. Census 2000. SF3

The Milwaukee County Transit Service (MCTS) does not provide any direct routes to New Berlin. Waukesha Metro Transit (WMT) operates 2 routes that offer transit connections between Milwaukee and New Berlin: Route 218 and Route 906. Route 218, operated by Wisconsin Coach Lines, provides service from Brookfield Square shopping center to the New Berlin Industrial Park and makes connections with MCTS Route 10. Persons transferring from MCTS Route 10 to WMT Route 218 must pay \$0.25 for transfers at Brookfield Square or the Industrial Park; regular fares apply for boarding at other stops.

Waukesha Metro Route 906, the Mukwonago Milwaukee Express, operates from Mukwonago to downtown Milwaukee on Interstate-43 with stops in Big Bend and park-and-ride lots in New Berlin. There are 3 morning and 3 evening trips: Mukwonago to Milwaukee in the morning, and Milwaukee to Mukwonago in the evening. There are 4 stops in Milwaukee, arriving in Milwaukee between 6:30 and 8:00 a.m.: Wells St. and 3rd St., Wells and Jackson, Wisconsin and Cass, Michigan and Plankinton and Michigan and 4th St. Persons transferring from an MCTS route receive a \$0.50 reduction in fare.¹

In New Berlin's Transportation Plan, prepared by Ruekert/Mielke in 2004 as an update to its comprehensive plan, it states that the city has determined that there is a need to continue the fixed route transit service, both MCTS and WMT, in the northeast section of the city because of the high employment and residential densities. However, no specific plan has been identified for accomplishing this.²

Poverty Status

	New Berlin		Milwaukee	
	#	%	#	%
Families below poverty level	139	1.3% of total families	23,687	17.4% of total families
Individuals below poverty level	748	2.0% of total individuals	123,664	21.3% of total individuals

U.S. Census Bureau. Census 2000. SF3

Economic profile of the community

Municipal Tax Rates, per \$1,000 of assessed property value

	New Berlin	Milwaukee
2003	\$5.78	\$10.16
2004	\$5.87	\$9.72
2005	\$4.93	\$9.19
2006	\$5.05	\$8.75
2007	\$5.25	\$7.99
2008	*	\$8.01

*2007 tax rates are payable in 2008. 2008 rates will be established in 2008, and payable in 2009.

¹ WaukeshaMetro.org, weblink http://www.waukeshametro.org/bus_routes_main.html, accessed June 20, 2008. One-way adult cash fare listed as \$1.75.

² City of New Berlin Transportation Plan, April, 2004. p. 22.

Net Tax Rates, per \$1,000 of assessed property value*

	New Berlin	Milwaukee
2003	\$20.95	\$27.26
2004	\$21.77	\$26.16
2005	\$17.94	\$25.86
2006	\$17.44	\$24.50
2007	\$17.70	\$22.41
2008	**	\$23.14

*Municipal tax rates plus state, county and other applicable taxes

**2007 tax rates are payable in 2008. 2008 rates will be established in 2008, and payable in 2009.

Total Equalized Value of Property

	New Berlin	% Change	Milwaukee	% Change
1999	\$2,701,084,000	-	\$16,683,708,500	-
2000	\$2,983,628,300	10.46%	\$17,322,120,200	3.83%
2001	\$3,196,579,200	7.14%	\$19,430,117,600	12.17%
2002	\$3,466,267,700	8.44%	\$20,275,936,700	4.35%
2003	\$3,650,080,800	5.30%	\$21,708,858,000	7.07%
2004	\$3,965,856,900	8.65%	\$23,470,205,000	8.11%
2005	\$4,256,992,300	7.34%	\$26,236,832,000	11.79%
2006	\$4,558,246,600	7.08%	\$30,206,877,900	15.13%
2007	\$4,739,931,600	3.99%	\$31,867,144,000	5.50%

State of Wisconsin, Department of Revenue

Assessed Valuation Per Capita

	New Berlin	Milwaukee
2007 Value	\$120,812	\$55,579

Calculated using 2007 Total Equalized Value, Wisconsin Department of Revenue, and 2006 U.S. Census Population Estimate. With 602,782 adjusted City of Milwaukee population (refer to footnote 8), assessed valuation per capita for Milwaukee is \$52,867.

Median Household Income

	New Berlin	Milwaukee	Wisconsin
Median household income	\$67,576	\$32,216	\$43,791

U.S. Census Bureau. Census 2000. SF3

Median Value of Owner-occupied Housing Units

	New Berlin	Milwaukee	Wisconsin
Median Value	\$162,100	\$80,400	\$112,200

U.S. Census Bureau. Census 2000. SF3

Median Assessed Value by Residential Class

	New Berlin- Number of Parcels	New Berlin-% of all City Parcels	New Berlin - Median Assessed Value	Milwaukee- Number of Parcels	Milwaukee- Percent of All City Parcels	Milwaukee- Median Assessed Value
Single-Private Households	11,490	73.3%	\$226,000	88,903	55.4%	\$128,000
Condominiums	1,753	11.2%	\$149,800	10,459	6.5%	\$122,100
Two Family Residential	99	0.6%	\$249,300	35,345	22.0%	\$125,600
Multi-Family, Residential	73	0.5%	\$1,150,100	6,518	4.1%	\$240,650
Mixed-Residential/Commercial	4	0.0%	\$225,500	2,830	1.8%	\$140,000
Total: All Residential	13,419	85.6%	\$220,600	144,055	89.8%	\$129,400
Total: Residential Excluding Multi-Family and Mixed Res/Commercial	13,342	85.1%	\$220,300	134,707	83.9%	\$127,200

Data compiled by City of Milwaukee Department of City Development and City of New Berlin Assessor's Office, 5/2008.

LAND USE AND DEVELOPMENT POTENTIAL

New Berlin adopted its long-term comprehensive land use plan in March, 1987, entitled "Land Use and Urban Plan for the City of New Berlin: 2010," prepared by the Southeastern Wisconsin Regional Planning Commission (SEWRPC). In 2001, the plan was updated with the "Growth and Development Master Plan Update." The 2001 plan updated the city's master land use map, and addressed the issues of "community character" and land use compatibility, and developed open space, rural preservation and environmental preservation principles.¹² The plan states that it serves to "*provide more general and flexible recommendations and categories to provide long-range guidance to decision-makers...and serve as a link between the Growth Policies [which are contained in the plan] and the development recommendations.*" The master plan has also been updated with specific topic plans, including an economic development and revitalization plan, a city center development plan and a transportation plan.

Pursuant to the state of Wisconsin's Comprehensive Planning Law, or, the "Smart Growth" law (s. 66.1001, Wis. Stats.), New Berlin is in the process of updating its comprehensive land use plan. The city has been divided up into 10 planning areas, and thus far there have been neighborhood input sessions for 3 areas. No area plans have been completed. Smart Growth directs compliance by January, 2010, and final adoption of New Berlin's comprehensive plan is scheduled for late 2009.

¹² Memorandum from Telesfore P. Wysocki, Mayor of New Berlin, to Utility Committee of the City of Milwaukee. March 24, 2003.

Long range planning and housing

In Ruekert/Mielke's application to the WI DNR, it stated that existing homes that are not currently served by Lake Michigan water would receive water service, estimated to include 1,878 homes, if the Lake Michigan water service is extended. Ruekert/Mielke estimated that current zoning allows for a total of 1,119 new homes in the potential service area: 718 new homes in the potential service area by the year 2020, and an additional 401 homes in the service area after 2020. Ruekert/Mielke based these estimates on the city's land use plans.¹³

New Berlin's **2010 Plan**¹⁴ it states that "*Housing units within the New Berlin area should be geographically well distributed and include a full range of housing by type, size and cost, included manufactured housing, detached single-family dwellings, attached two-family dwellings, attached multi-family rowhouses or townhouses, and attached multi-family garden apartments or condominiums.*"

It also states as an objective, "*Provision of adequate location and choice of housing and a variety of housing types for varying age and income groups and different size households.*" It established the following as standards for residential density:

- a. *Existing vacant rural estate, suburban, and low-density platted residential lots larger than 20,000 square feet in area should be developed and infilled with single-family residential development.*
- b. *Approximately 25 percent of the total gross residential development area should consist of medium-density urban single-family dwelling units on 10,000 – 20,000-square-foot lots.*
- c. *Approximately 2.5 percent of the total gross residential development area should consist of high medium-density urban multifamily dwelling units at densities ranging from 4.4 to 6.9 dwelling units per net residential acre.*
- d. *Approximately 4 percent of the total gross residential development area should consist of high-density urban multifamily dwelling units at densities ranging from 7.0 to 12.0 dwelling units per net residential acre.*

The **2001 Master Plan Update** outlines main categories of land use options, defined as *Urban Residential Neighborhood, Residential Estate, Business Parks, Suburban Commercial, Commercial Center, Institutional, Parks and Open Space, Mixed Use Residential Transitional, Rural Commercial, Country Residential* and *Quarry*. These categories are illustrated in Attachment 4, New Berlin's Future Land Use Plan, which "exists as a mechanism for more property-specific recommendations." Selected land use categories relating to housing are summarized below (with excerpts from the 2001 Master Plan Update), and full descriptions are available in Attachment 4.

The *Urban Residential Neighborhood* category contains residential subdivision lots ranging from one to 4 dwelling units per acre, with the primary land use being single-family detached homes. The plan

¹³ Amended Sample Application for Straddling Community Water Diversion Volume I; March, 2007. Ruekert & Mielke, Inc. p. 21.

¹⁴ "Land Use and Urban Plan for the City of New Berlin: 2010," p. 124-125.

states that attached single-family housing may be considered as a transitional use between lower density residential uses and non-residential development and highway corridors. The plan states the urban residential neighborhood offers an opportunity for more affordable housing to serve workers in the business parks.

The *Residential Estate* category has a density not to exceed one dwelling per 2 acres. The plan states that this designation will provide an opportunity for the City to allow this area to develop while maintaining a sense of rural character.

The *Suburban Residential* category reflects the rural setting of the existing residential areas on the western half of the city, with lots averaging 35,000 square feet. New development in this area may occur, according to the plan, as infill development, defined as the development of vacant lots within existing subdivisions, and not as expansions to existing subdivisions.

The *Country Residential* category covers most of the western portion of the city, the primary land use being single-family detached homes. The average density, according to the plan, is envisioned as one dwelling per 5 acres.

Affordable Housing¹

The City of New Berlin established a Housing Authority more than 20 years ago, and since the early 1990’s the Waukesha Housing Authority has been operating and administering New Berlin’s affordable housing programs on New Berlin’s behalf.

New Berlin provides approximately 75 to 100 units of affordable housing annually, and as of April 1, 2008, ranked ~~first~~ **second (corrected 7/23/08)** in affordable housing units offered in Waukesha County at 80 units. The Waukesha Housing Authority/City of New Berlin participates in the HUD Section 8 Voucher Program.

According to the Waukesha Housing Authority, as of April 1, 2008, housing counts for affordable housing were as follows:

Brookfield: 45	Elm Grove: 1	Oconomowoc: 36
Butler: 3	Hartland: 72	Okauchee: 1
Delafield: 24	Menomonee Falls: 78	Pewaukee: 46
Dousman: 4	Mukwonago: 40	Sussex: 50
Dodge County: 1	Muskego: 33	Wales: 2
Eagle: 2	Nashota: 5	Waukesha: 811

New Berlin lists the following among its past accomplishments in providing affordable housing:

- Supported Housing Revenue Bonds for 2 multi-family housing development projects:
 1. Appleglen – 128th and National Ave.; 80-unit apartment project.
 2. Pinewood Creek – 3300 S. Moorland Rd.; 199-unit apartment project.
- Participates in the “HOME” Consortium whereby families and elderly households receive rental and first-time homebuyer assistance. The HOME Consortium’s primary purpose is to

¹ Excerpted from 5/8/08 memo from Gregory W. Kessler; full memo included as Attachment 6.

advance homeownership opportunities and programs for households that earn 80% or less of the median income. In addition, the Waukesha County CDBG program provides low-interest loans for low-income homeowners for repairs and provides assistance with down payment assistance, funded with HOME funds.

- Reviewed and supported private development projects that have accepted rental assistance vouchers for the elderly populations of the City, such as the National Regency Apartments, the National Manor Apartments and the Steepleview Apartments.

A strategy for continued efforts in affordable housing will be included in the New Berlin's Comprehensive Plan is schedule to be completed in late 2009.

Long range planning and developable property

Included as Attachment 5 is a map provided by the City of New Berlin Department of Community Development (DCD) which illustrates potential development lands according to zoning type within the proposed service area. The map is not an official map that shows land that will be developed, only land that could be developed based on certain criteria. All development plans are subject to the review process by the city, and further study may indicate that land is not suitable for development.

According to the New Berlin DCD, potential development lands were determined using 2 principal factors: 1) The land must contain a valid zoning type that has the potential for development, as listed in the map legend. 2) The land is considered to have the potential for development if it has a building contained on the land that has an assessed value of \$1,000 or less. Exceptions to this rule include properties that are coded as agricultural, commercial, vacant, or other open lands, which are considered to be undeveloped regardless of the assessed value of the building that is currently present.

As the following table indicates, there is a total of more than 48 million square feet/1,113 acres of developable land in the potential service area in the middle third of New Berlin. The New Berlin DCD notes that the future land use plan for the portion of New Berlin west of Calhoun Rd. identifies the majority of the lands as Country Residential, with single-family 5 acre lots/5 acre densities. The SW corner of the MMSD 2020 Plan area (refer to Attachment 1), the Mill Valley Redevelopment Area, is not part of this potential water service agreement. The City of Muskego will provide sanitary sewer and water to this area.

Potential Development Lands in the New Berlin Proposed Service Area*

Zoning Code	Area (sq. ft.)	Acres
Agricultural	1,436,354.06	32.97
Agricultural and Rural Holding	21,595,453.16	495.76
Shopping Center	262,961.05	6.04
General Retail Sales & Service	1290142.04	29.61
Automobile Oriented Business	63,971.79	1.47
Institutional	891,155.67	20.46
Light Manufacturing	3,583,977.95	82.28
General Industrial	257,172.94	5.90
Office and Business Service	66,104.57	1.52
Business Park Development	1,890,706.70	43.40
Rural Estate Single-Family Residential	10,610,687.06	243.59
Low-Density Single-Family Residential	3,701,321.52	84.97
Low-Density Single-Family Residential	1,943,414.01	44.61
Medium-Density Single-Family Residential	408,403.35	9.38
Medium-Density Single-Family Residential	460,626.33	10.57
Multi-Family Residential	30,905.35	0.71

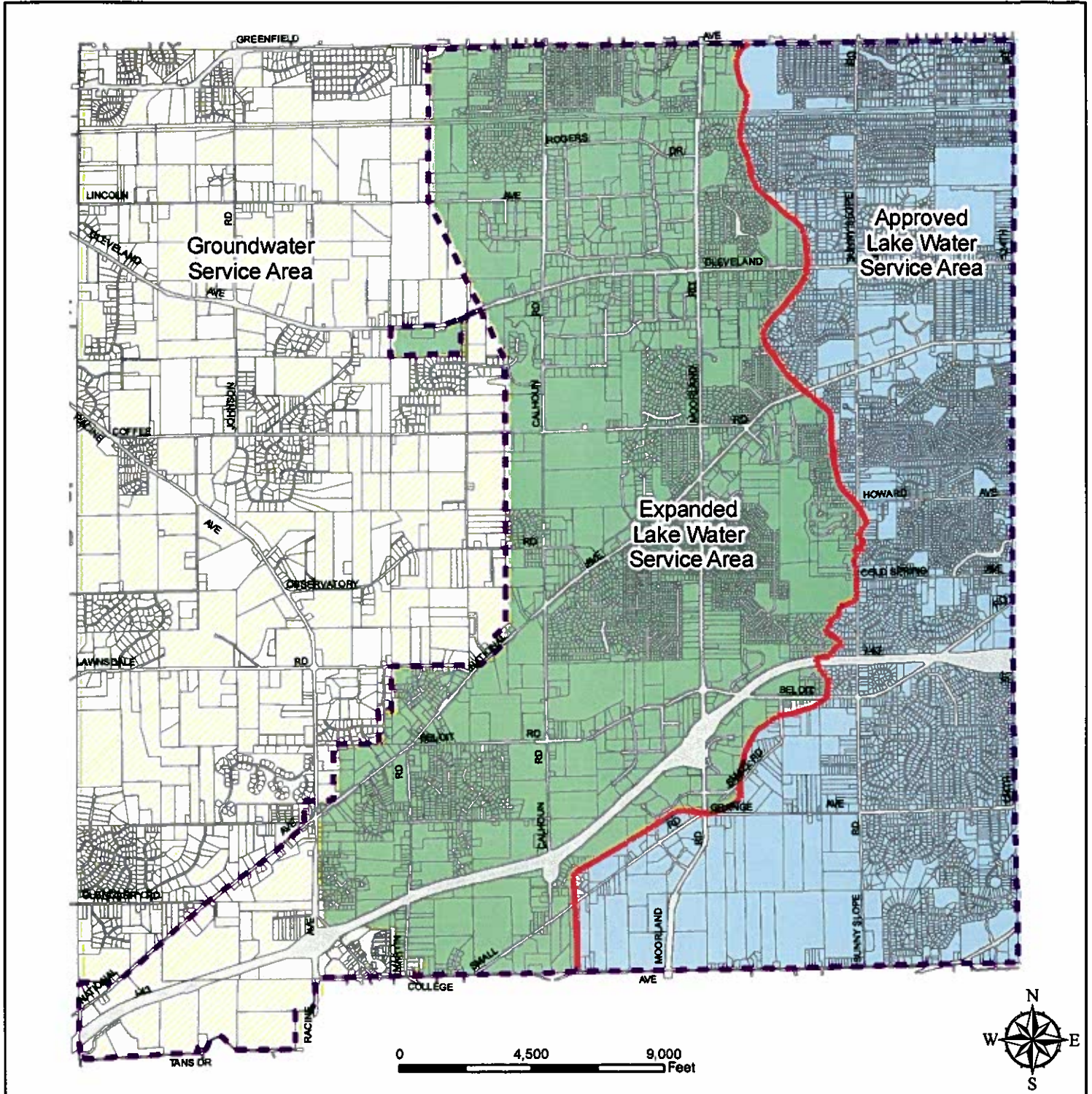
Totals	Area (sq. ft.)	Acres
Total Potential Development Land	48,493,357.56	1,113.25

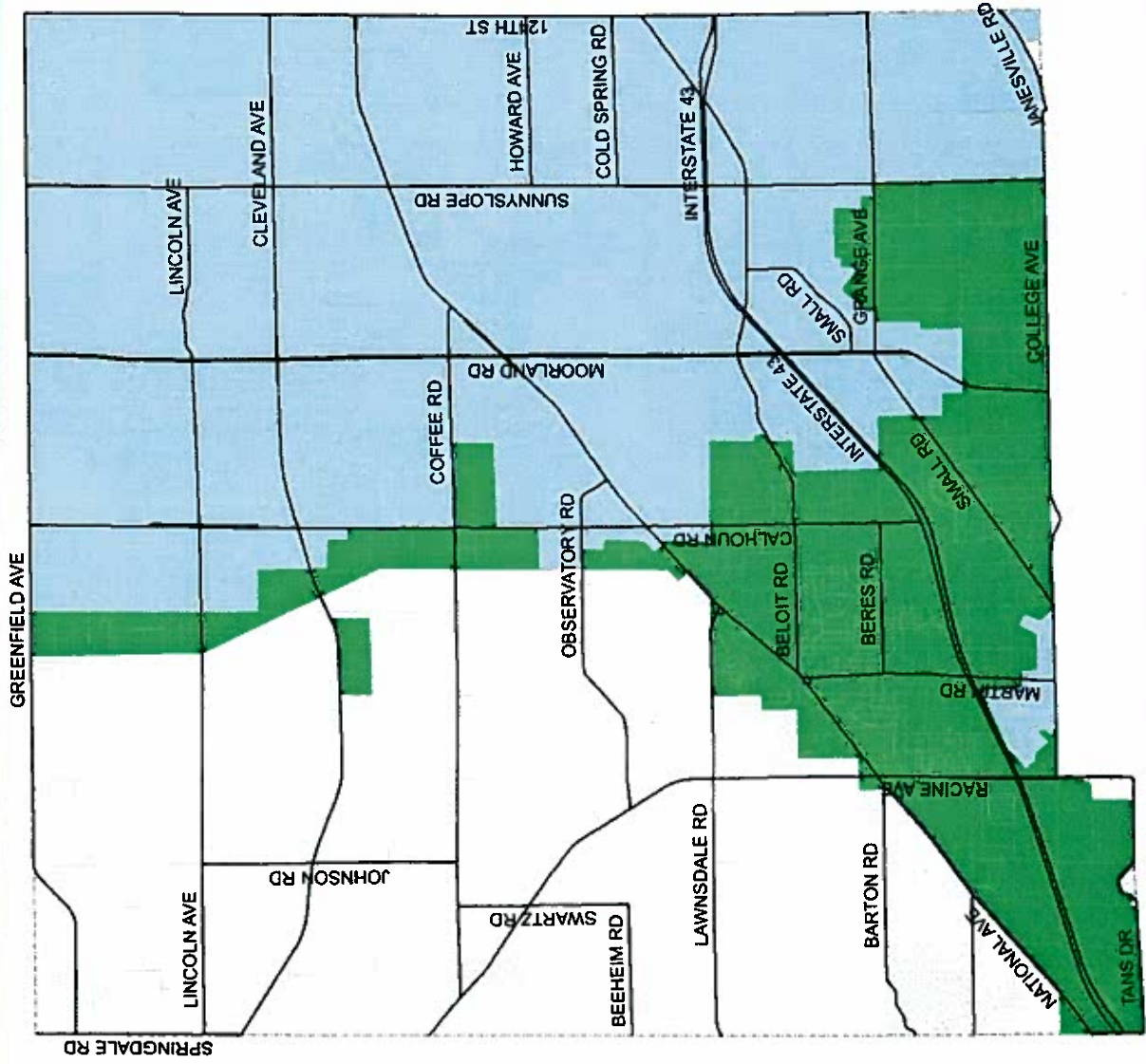
Refer to Attachment 5, City of New Berlin Department of Community Development.

*Note: Attachment 5 edited 6/30/08, paper copies may indicate different totals. This version is the most accurate.

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SERVICE AREAS





New Berlin Sewer
Service Area



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Water Supply Alternatives

A compilation of the work performed to identify options for water service is contained in the Appendix materials in Volume II. A summary of the information was provided in previous sections that showed the path leading to the Lake Michigan option recommendation.

Environmental Impacts

Of primary importance to New Berlin are the positive environmental impacts that will result from the proposal. Specific environmental improvements that will result from approval of this application include:

- Transfer of water between basins will be minimized
- Water will be removed and returned to the Lake Michigan basin in nearly the same location
- The diversion of the wastewater generated with out-of-basin water will be minimized
- Iron and radium releases to Lake Michigan will be avoided
- Tens of thousands of tons of salt released to the lake will be significantly reduced
- Water use by regeneration of water softeners will be significantly reduced
- Groundwater levels in the deep sandstone aquifer that is hydraulically connected to Lake Michigan will begin to rebound
- Shallow groundwater sources outside the divide will no longer be tapped and not returned to their basin
- The area of New Berlin outside the MMSD service area will remain on private wells and septic
- Significant amounts of energy will be saved along with associated reductions in green house gas generation
- Groundwater chemistry changes in the deep sandstone aquifer will be reduced



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These environmental improvements will be discussed in detail in the following section.

Transfer of Water Between Basins Will be Minimized

The Compact and Agreement both cite the fact that not only is it desirable to minimize or eliminate the withdrawal of water from the Great Lakes Basin, but also that it is desirable to minimize the amount of water entering the Great Lakes Basin from outside the Basin. This is further supported by Wisconsin administrative code chapter NR 142 which has substantial review requirements for transfer of water either way across basin boundaries. It should be noted that the requirements of NR 142 provide DNR with authority to approve the types of transfers that currently occur and that are proposed if the transfers are consistent with the requirements of that chapter and certain state statutes.

Presumably, the application, registration and review process established by NR 142 was set up to protect the two basins, Great Lakes and Mississippi, from any environmental issues that would arise out of a transfer of water. It can be inferred that if no transfer occurs, the concerns of this chapter would not apply. It can further be inferred that minimizing any such transfer would in turn minimize concerns with such transfer.

Approval of this application will result in a more normal balance of water withdrawal and return to both basins. Water taken out of Lake Michigan will be returned to lake Michigan in quantities that much more closely match. Currently there is a net increase of out-of-basin water entering the Basin of about 1.056 billion gallons per year. This would be decreased at least to about 412 million gallons per year or, with continued I/I reform, even more. This is over a 60 percent reduction in out-of-basin water entering the basin.

On the Mississippi basin side, the use of shallow and deep groundwater would cease. Concerns with over drafting aquifers in the City would be minimized and water tables would stabilize at levels where nearby private wells would not have issues resulting from City high capacity well influence.

Water Will be Removed and Returned in Close Proximity

The City of New Berlin has two water treatment plants, Linwood and Howard. Either plant can serve as the source of supply for the locations that pump water to New Berlin. All of the sanitary return flow goes to the South Shore Wastewater Treatment Facility under normal conditions. This means that the point of withdrawal and the point of return to the lake is normally about 10 miles apart and a maximum of 15 miles apart,



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depending on which supply plant is being used. This close proximity replaces the water near where it is withdrawn following treatment.

Wastewater Generated Using Out-of-Basin Water will be Minimized

The generation of wastewater will happen no matter where the source of supply is. The roughly 644 million gallons of water currently pumped from wells that flows into the MMSD system will be mostly eliminated under this proposal. That water has significant natural chemical difference from that of the Lake water. Hardness is more than double, iron, radium and many other metals are much higher, pH differs, water temperature differs and the total dissolved solids is much higher. These chemical differences would be minimized under this proposal.

Iron and Radium Releases to Lake Michigan will Cease

If this proposal is not approved, the City has designed and is currently bidding the construction of three radium removal plants which will be constructed to gain compliance with the radium regulations. These treatment plants not only have a high cost economically but have a high environmental impact. The technology which was determined in aforementioned studies is Hydrous Manganese Oxide filtration. This process uses a normal iron filter retrofitted to add a chemical solution known as Hydrous Manganese Oxide (HMO). HMO is added to the water prior to filtration and the radium in the water adsorbs to the manganese component of the HMO solution. Once the adsorption occurs, the resultant particle size is large enough to be removed by the filter. The process also removes the majority of the iron and some other total dissolved solids in small quantities. It is estimated that the process, which has already received DNR construction approval, will result in a significant increase in iron and radium sent to the Milwaukee Wastewater treatment system. Some of this will end up in Lake Michigan and some in the sludge generated by the process and applied as fertilizer. Exact breakdowns would take a detailed study but conservative calculations show that the increased loadings to the treatment facilities will be about 2,200 pounds per year of iron and 822 million picocuries of radiation from radium. Much of this is currently being sent to MMSD via the sanitary sewers now, but if the treatment plants are constructed, the iron and radium would be concentrated in the removal process and more efficiently sent to the system. If Lake water is provided to these areas, the out of basin iron, radium and other constituents would not be transferred to the basin.



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Salt Released to the Lake

The area of major concern is the amount of salts that are currently sent to the Lake. If the HMO facilities are installed, hardness will not be addressed. If lake water is provided, water hardness will drop from about 26 grains per gallon to about 8 grains per gallon according to DNR records. Experience with other communities such as Menomonee Falls shows that when the softer lake water is provided, households discontinue the use of the water softeners. This is evidenced by the fact that essentially no homes in Milwaukee or Milwaukee service areas have home water softeners. In order to estimate the aggregate water and salt savings from discontinuation of softening in New Berlin, the following assumptions were used:

- Currently there are 2650 residential customers in the area to be provided Lake Michigan water
- By 2020, there will be an additional 718 residential homes in the area
- Average residential water consumption is 220 gallons per day per customer. For homes having softeners, 180 gallons per day pass through the softener.
- Groundwater hardness averages 26 grains per gallon
- Average Lake water hardness is 8 grains per gallon
- If current and future customers are served with groundwater, 80 percent will use softeners
- If Future water supply is lake water, 10 percent will use softeners
- Softener capacity is 19,800 grains
- One pound of salt restores 3,350 grains of softener capacity
- Approximately 40 gallons of wastewater is produced during a softener regeneration



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Based upon the above assumptions and projected water demands, the existing and future homes will generate an additional 1.8 million pounds of salts annually which will be sent to the lake. This would be reduced by an estimated 90 percent under the lake water proposal.

Water use by softeners will be reduced by about 9.4 million gallons per year based upon our calculations.

Groundwater Levels in the deep Sandstone will be Positively Affected

Pre-development levels in the sandstone aquifer under New Berlin were over 500 feet higher than current levels. During that time, the normal flow of water in the sandstone was from about 30 miles west of the lake in the Mississippi basin to the east and into the Great Lakes basin. Decades of over pumping the aquifer have reversed the direction of the gradient and now water flows from the Great lakes basin towards the large pumping centers in and around New Berlin. Any proposal that stops the withdrawal of water from the sandstone is a step towards returning the flow to it's predevelopment condition.

Shallow Groundwater Sources Outside the Basin will no Longer be Affected

Currently, New Berlin uses three shallow aquifer dolomite wells for about 25-30 percent of their supply. Even at the rates they are currently pumping these shallow wells, a cone of depression is occurring that affects local private wells. Any continued or expanded reliance on these shallow sources will have even greater, longer lasting affects on the groundwater and hydraulically connected surface waters in the area. If the deep wells are to be pumped because Lake water is not available, the decline in the level of the sandstone aquifer will continue and the well documented problems that exist with radium, saline water intrusion and prohibitive pump setting depths will continue to get worse. At some point it may become financially advantageous to find shallow resources further and further away from the City and the water service area. The City has already experienced vehement opposition to use of the available shallow aquifers and currently these options are cost prohibitive. Any increase in the use of the shallow aquifer will affect local wetlands and surface waters. As a region, any affect to surface waters or wetlands is negative. Flora and fauna in the region do not know that there is a basin divide and do not follow strict rules in staying on one side or the other of the divide. The provision of water and protection of regional resources is a regional issue. The proposal fits in well with the region.



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Areas will Remain on Private Wells and Septic

It is a common mistake to think that this proposal is designed to encourage "urban sprawl". Currently, the agreement New Berlin has with Milwaukee water for water service to in-basin areas limits the use of water to areas within the basin. The proposed amended service area would limit water service to the MMSD area as shown on Maps 1 and 2.

This means the area shown in white on Maps 1 and 2 would not be served by Lake Michigan or MMSD under this proposal. These homes and lots would continue to be served by private wells and septic or holding tanks. With most homes on septic, about 85 percent of the water used is returned to the ground and this would continue – assisting in the preservation of groundwater levels and wetlands and surface waters for the region.

In addition, The current agreement that New Berlin has with Milwaukee for water service clearly indicates that under no circumstances will New Berlin be allowed to transfer or sell water to any other community in the area. We are not proposing any change to this language. Any agreement that may be reached with a lake water provider different from Milwaukee would also include similar language.

Finally, as previously noted, there simply does not exist enough undeveloped area in the proposed new service area to support "urban sprawl". Only slightly over 1 percent of the total land area in the City and in the proposed service area is identified as unimproved as shown on Figure 3 attached to this document.

Significant Amounts of Energy will be Saved and Green House Gas Generation Reduced

New Berlin currently uses a tremendous amount of energy to pump water from the deep wells to the system. This will be greatly reduced if the Utility obtains all its water from Lake Michigan. Current estimates of energy use and the decrease in energy use under the proposed plan can be calculated by comparing the current total lift required to deliver water from the deep aquifers (average) to the total lift required for lake water. If we assume 70 percent efficient pumping systems under both scenarios and normal friction and other losses, there will be a savings of about 700,000 Kilowatt Hours of energy used annually by New Berlin to pump water. The Carbon Trust reports energy purchased off the grid uses an average of 0.43 KgCO₂/KWh for a total reduction in carbon emissions of about 300,000 Kilograms annually.

Developers will be encouraged to develop creative Commercial Centers that do not place local emphasis on the parking areas but on the commercial uses themselves. This can be accomplished by placing some parking to the side or behind buildings and utilizing internal landscaping throughout the parking areas. Signage and lighting should be placed and designed to ensure visibility without being excessive.



The above-mentioned Transitional distribution applies to some areas where the land is not yet developed, but is not yet in a rural or agricultural use. The purpose of this transitional distribution is to provide a flexible mechanism for the development of certain areas by the criteria of form and impacts of the use rather than by the general nature. There are several special land uses that can occur in mixed-use areas. These include low-density multi-family, service, religious, educational, or institutional uses. Development approval for these uses is subject to the same standards as for residential uses, with the exception of the standards for surrounding land uses, particularly the residential neighborhood.

ATTACHMENT 5

The future land use plan identifies the majority of the lands west of Calhoun Road as Country Residential with the corresponding zoning being R-1/R-2 (Rural Conservation Single-Family Residential – 5 acre lots / 5 acre densities).

Sanitary sewer and water serving the Mill Valley Redevelopment Area and surrounding lands will be provided by the City of Muskego.

Potential Development Lands portrayed on this map have been determined using a combination of factors, which are listed here:

– The land must contain a valid zoning type that has the potential for development, as listed in the map legend. Zoning data has last been updated in February of 2008.

– The property is considered to have potential for development if it has a building contained on the property that has an assessed value of \$1,000 or less, according to the New Berlin Assessor Database, dated February 2008. Exceptions to this rule include properties that are coded as agricultural, commercial vacant, or other open lands, as listed in the Assessor Database. These exceptions are considered to be undeveloped regardless of the assessed value of the building that is currently present.

– Various properties that are currently in development, but have not yet been reflected in the Assessor Database, have been removed from this map, based on City of New Berlin Planner Input.

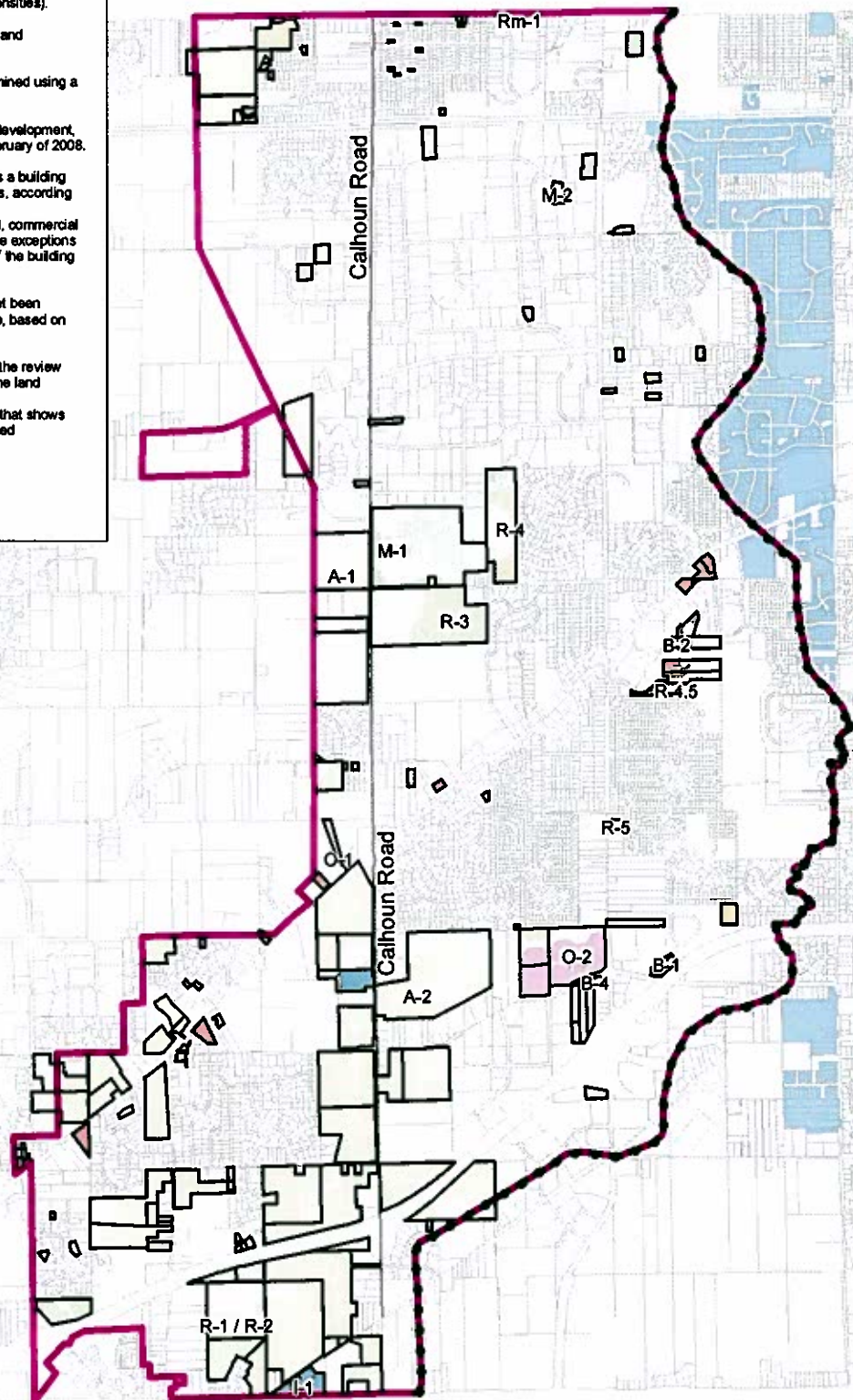
All Potential Development Lands portrayed on this map are subject to the review process of the City of New Berlin. This review process may find that the land does not have development potential based on zoning, environmental, engineering, and/or future land use studies. This is not an official map that shows land to be developed; It only shows lands that could be developed based on the development criteria listed.

This map is intended for informational purposes only.

Revised 6/27/2008

Potential Development Lands by Current Zoning Type

- A-1 Agricultural
- A-2 Agricultural and Rural Holding
- R-1 / R-2 Rural Estate Single-Family Residential
- R-2E Residential Estate Single-Family
- R-3 Low-Density S-F Residential
- R-4 Low-Density S-F Residential
- R-4.5 Medium-Density S-F Residential
- R-5 Medium-Density S-F Residential
- Rd-1 Two-Family Residential
- Rm-1 Multi-Family Residential
- B-1 Shopping Center
- B-2 General Retail Sales & Service
- B-3 General Commercial Sales & Bulk Storage
- B-4 Automobile Oriented Business (Repealed)
- B-5 Rural Commercial District
- O-1 Office and Business Service
- O-2 Business Park Development
- O-3 Transitional Office District
- I-1 Institutional
- M-1 Light Manufacturing
- M-2 General Industrial
- Q-1 Quarrying and Extractive
- U-1 Landfill
- P-1 Park
- C-1 Upland Conservancy
- C-2 Shoreland-Wetland Conservancy
- C-3 Permanent Open Space / Conservation Lands



Potential Development Lands in New Berlin

- Potential Development Parcels
- Potential Milwaukee Water Contract Area
- Parcels with Milwaukee Water (Currently)
- Sub-continental Divide
- Other Parcel

Potential Development Lands in New Berlin
Muskego Service Areas Removed

Zoning Code	Area (sq. ft.)	Acres
A-1	1,436,354.06	32.97
A-2	21,595,453.16	495.76
B-1	262,961.05	6.04
B-2	1,290,142.04	29.62
B-4	63,971.79	1.47
I-1	891,155.67	20.46
M-1	3,583,977.95	82.28
M-2	257,172.94	5.90
O-1	66,104.57	1.52
O-2	1,890,706.70	43.40
R-1 / R-2	10,610,687.06	243.59
R-3	3,701,321.52	84.97
R-4	1,943,414.01	44.61
R-4.5	408,403.35	9.38
R-5	460,626.33	10.57
Rm-1	30,905.35	0.71
TOTAL	48,493,357.56	1,113.25

The future land use plan identifies the majority of the lands west of Calhoun Road as Country Residential with the corresponding zoning being R-1/R-2 (Rural Conservation Single-Family Residential – 5 acre lots / 5 acre densities).

Sanitary sewer and water serving the Mill Valley Redevelopment Area will be provided by the City of Muskego.

Potential Development Lands portrayed in the above totals have been determined using a combination of factors, which are listed here:

1) The land must contain a valid zoning type that has the potential for development, as listed in the map legend. Zoning data has last been updated in February of 2008.

2) The property is considered to have potential for development if it has a building contained on the property that has an assessed value of \$1,000 or less, according to the New Berlin Assessor Database, dated February 2008. Exceptions to this rule include properties that are coded as agricultural, commercial vacant, or other open lands, as listed in the Assessor Database. These exceptions are considered to be undeveloped regardless of the assessed value of the building that is currently present.

3) Various properties that are currently in development, but have not yet been reflected in the Assessor Database, have been removed from the totals, based on City of New Berlin Planner input.

All Potential Development Lands portrayed on the above figures are subject to the review process of the City of New Berlin. This review process may find that the land does not have development potential based on zoning, environmental, engineering, and/or future land use studies.

ATTACHMENT 6



Department of Community Development

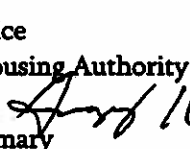
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**Building Maintenance
Engineering Services
Inspection Services
Planning Services**

Phone Number: 262-797-2445
Department Fax: 262-780-4812
Website: www.newberlin.org/dcd

MEMORANDUM

TO: Mayor Jack Chiovatero
City of Milwaukee – City Clerk's Office
David Cappon; Waukesha County Housing Authority

FROM: Gregory W. Kessler, AICP – Director 

RE: New Berlin Affordable Housing Summary

DATE: May 8, 2008

Per your request, I am providing the following summary of the City of New Berlin's ("City") activities related to affordable housing. The "City" has maintained a Housing Authority for over twenty years. The New Berlin Housing Authority was established to address the housing needs of low-income families and the elderly whom reside within the City. It was also established to issue tax-exempt bonds. During the early 1990's, the City entered into a cooperative agreement with the Waukesha Housing Authority (WHA) allowing WHA to operate and administer the "City's" affordable housing programs on its behalf. To meet the aforementioned objective, the WHA participates in the HUD Section 8 Voucher Program which provides rent assistance payments to low-income households. This program allows participants to rent decent and affordable housing within the private market.

To date, the past accomplishments of the "City" / WHA have involved:

- ⇒ Supported Housing Revenue Bonds for two multi-family housing development projects:
 - Appleglen – 128th and National Avenue; 80-unit apartment project;
 - Pinewood Creek – 3300 S. Moorland Road; 199 unit apartment project.
- ⇒ Participates in the "HOME" Consortium whereby families and elderly households receive rental and first time homebuyer assistance. The "HOME" Consortium's primary purpose is to advance homeownership opportunities and programs for households that earn 80% or less of the area median income. In addition, the Waukesha County CDBG program provides low interest loans for low income home owners for repairs (roofs, furnace, etc.) and provides assistance with down payment assistance, funded with "HOME" funds.
- ⇒ Reviewed and supported private development projects that have accepted rental assistance vouchers for the elderly population of the City such as:
 - National Regency Apartments

- o National Manor Apartments (The WHA actually held a 5% ownership interest in National Manor until it was refinanced conventionally approximately five years ago.
- o Steeplview Apartments

Historically, New Berlin has served approximately 75 to 100 units annually, depending upon need & funding availability and has always ranked high in terms of numbers of units served within Waukesha County. Based on data provided by Mr. David Cappon, Director of the WHA, as of April 1, 2008, the following unit counts for Waukesha County are as follows:

Brookfield: 45	Menomonee Falls: 78	Wales: 2
Butler: 3	Mukwonago: 40	Waukesha: 811
Delafield: 24	Muskego: 33	
Dousman: 4	Nashota: 5	New Berlin: 80 (which
Dodge County: 1	Oconomowoc: 36	is 6% of all program
Eagle: 2	Okauchee: 1	participants)
Elm Grove: 1	Pewaukee: 46	
Hartland: 72	Sussex: 50	

New Berlin has also furthered its commitment to support low-income individuals, families and the elderly by approving and financially supporting a new food pantry located in the former New Berlin Public Library. The food pantry serves the New Berlin, Muskego and Elm Grove communities.

Finally, the City is also in the process of updating its Comprehensive Plan. The scheduled timeframe for completion of the plan is November 2009. Per the State's Smart Growth requirements, the City will provide for an affordable housing strategy to continue our efforts in providing a mixture of housing choices for all income levels.

I hope that this summary memo satisfactorily meets your request? Please feel free to contact me should you have any questions at 262.797.2445; x2501 or via email at gkessler@newberlin.org.