PLANNING REPORT NO. 52

A REGIONAL WATER SUPPLY PLAN FOR SOUTHEASTERN WISCONSIN

Volume Two

Appendices

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PLANNING REPORT NUMBER 52

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Volume Two of Two Volumes
Appendices

Prepared by the

Southeastern Wisconsin Regional Planning Commission
In Cooperation with the
Wisconsin Geological and Natural History Survey,
University of Wisconsin-Milwaukee,
U.S. Geological Survey,
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and
Boardman, Suhr, Curry & Field, LLP

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LIST OF APPENDICES
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Appendix A

SELECTED CHARACTERISTICS OF KNOWN SPRINGS WITHIN THE SOUTHEASTERN WISCONSIN REGION

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (°F)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Kenosha	Town of Brighton	300000	Public	Drainage ditch	Grass, weeds/good	30	Muck	- -	49	4.0	Minnows	This spring is in the ditch along a county road
	Town of Brighton	300001	- -	- -	- -	- -	- -	- -	- -	0.0	- -	Spring on Bordner Survey. Landowners stated there was a spring in this area, but has been dry for years
	Town of Bristol	300002	County	Highway	None	8	Tiled out	- -	49	7.0	None	This spring has been tiled out from under the highway
	Town of Bristol	300003	Private	Pasture	Water	40	Sand, muck	- -	50	30.0	All warmwater species	There are 22 small springs in this area. All are instream springs
	Town of Bristol	300004	Private	Pasture	Marsh grass/fair	12	Muck	- -	53	22.0	None	These are seepage springs in a one-half-acre marsh area
	Town of Bristol	300005	Private	Wildlife	Grass, brush/fair	100	Sand		50	10.0	Minnows	This is an instream spring. The creek is dry above the spring
	Town of Paris	300029	- -	- -	- -	- -	- -	- -	- -	0.0	Bass, panfish, trout	- -
	Town of Randall	300006	Private	Wildlife	Grass, shrub/good	40	Sand, gravel	- -	49	48.0	Minnows	Two springs
	Town of Randall	300008	Private	Pasture	Grass, weeds/good	45	Sand	- -	51	14.0	Minnows	- -
	Town of Randall	300009	Private	Wildlife	Grass, shrub tree/good	200	Sand, muck	- -	- -	110.0	Minnows	The springs are on leased public hunting grounds. The exact location of the springs was not checked. The water flow was checked at the road
	Town of Randall	300028	- -	- -	- -	- -	- -	- -	- -	0.0	Bass, panfish	- -
	Town of Salem	300010	Private	Wildlife	Grass, shrub/good	30	Sand, muck	- -	49	48.0	Minnows	- -
	Town of Salem	300011	Private	Wildlife	Grass/good	65	Sand, muck	- -	49	55.0	None	- -
	Town of Salem	300012	- -	Pasture	Grass/poor	40	Sand	- -	- -	0.0	None	- -
	Town of Salem	300027	- -	- -	- -	- -	- -	- -	- -	0.0	Trout, largemouth bass, panfish	- -
	Town of Salem	SEWRPC1	Private	Recreation	- -	9	- -	- -	- -	0.0	- -	Stolpa Fen, a high-quality fen with bubbling springs and a large number of unusual plant species
	Town of Somers	300013	Private	None	Tree, shrub/good	40	Gravel	- -	51	35.0	Minnows	Spring is next to Petrifying Springs Park
	Town of Somers	300014	- -	- -	- -	- -	See remarks	- -	- -	0.0	- -	Spring is on Bordner Survey. Pond has been built in the area. No flow from the pond
	Town of Wheatland	300015	State	Public hunting and fishing grounds	None	80	Tiled out	- -	56	10.0	Rainbow trout	Spring areas 1 to 6 are feeder springs on Palmer Creek
	Town of Wheatland	300016	State	Public hunting and fishing grounds	Grass, brush/good	20	Muck	- -	50	12.0	Rainbow trout	- -
	Town of Wheatland	300017	State	Public hunting and fishing grounds	Grass, brush/good	20	Muck	- -	50	4.0	Rainbow trout	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (°F)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Kenosha (continued)	Town of Wheatland	300018	State	Public hunting and fishing grounds	Grass, brush/good	15	Sand, gravel	- -	49	15.0	Rainbow trout	- -
	Town of Wheatland	300019	Private	Public hunting and fishing grounds	Grass, brush/fair	20	Muck	- -	50	4.0	Rainbow trout	- -
	Town of Wheatland	300020	Private	Public hunting and fishing grounds	Grass, brush/fair	30	Sand, gravel	- -	49	15.0	Rainbow trout	- -
	Town of Wheatland	300021	Private	Wildlife	Grass, brush/fair	20	Sand, muck	- -	49	150.0	Minnows	- -
	Town of Wheatland	300022	Private	Wildlife	Grass, brush/good	35	Sand, muck	- -	49	80.0	Minnows	- -
	Town of Wheatland	300023	Private	Wildlife	Grass, brush/good	35	Sand, muck	- -	49	95.0	Minnows	There are 11 main springs in this area. Spring areas 7 to 10 are the head waters of Palmer Creek
	Town of Wheatland	300024	Private	Wildlife	Grass, weed/good	80	Sand	- -	49	60.0	Minnows	There are four main springs in this area
	Town of Wheatland	300026	Private	- -	- -	60	Sand, gravel	- -	49	28.0		There are four main springs in this area
	Village of Twin Lakes	300007	Private	Pasture	Grass, shrub/fair	60	Sand, muck	- -	50	35.0	Minnows	- -
	Village of Twin Lakes	300025	Private	- -	- -	85	Gravel, sand	- -	50	12.0	- -	There are five main springs in this area
Milwaukee	City of Cudahy	410003	Public	Park	Brush	10	- -	- -	- -	0.0	None	Spring developed into small one-quarter-acre pond. No flow at outlet
	City of Cudahy	410004	Public	Park	- -	- -	- -	- -	- -	0.0	None	Only evidence of spring is a dry-run gully
	City of Cudahy	410005	Public	Park	- -	- -	- -	- -	- -	0.0	None	Only evidence of spring is a dry-run gully
	City of Cudahy	410006	Public	Park	- -	- -	- -	- -	- -	0.0	None	Only evidence of spring is a dry-run gully
	City of Cudahy	410007	Private	Shopping center	- -	- -	- -	- -	- -	0.0	None	Shopping center obliterated evidence that spring existed
	City of Cudahy	410008	Private	Residential	- -	- -	- -	- -	- -	0.0	None	Residential development removed evidence that spring existed
	City of Franklin	410000	Private	Residential	- -	- -	- -	- -	- -	0.0	None	No evidence of spring in this area
	City of Franklin	410001	Private	Residential	- -	- -	- -	- -	- -	0.0	None	Spring has not flowed in a number of years
	City of Milwaukee	410009	Private	Residential	- -	- -	- -	- -	- -	0.0	None	Residential development removed evidence that spring existed
	City of Milwaukee	410011	Private	Residential	- -	- -	- -	- -	- -	0.0	None	Residential development removed evidence that spring existed
	City of Milwaukee	410015	Private	Residential	- -	20	Tile	- -	50	10.0	None	Spring flow emerges from storm sewer. Tile flows in ditch to south
	City of Wauwatosa	410012	Private	Residential	- -	20	Storm sewer	- -	51	50.0	None	Spring flow emerges from large storm sewer

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Milwaukee (continued)	City of Wauwatosa	410013	Private	Gravel pit	- -	- -	- -	- -	- -	0.0	None	No evidence of spring in this location (abandoned gravel pit)
	City of Wauwatosa	410014	Private	Vacant lot	- -	- -	- -	- -	- -	0.0	None	No evidence of spring in this location (vacant lot)
	City of West Allis	410010	Private	Residential	Grass	20	Tile	- -	50	70.0	None	Spring flow emerges from tile and flow through a Milwaukee park
	Village of Greendale	410002	Private	Vacant lot	Grass/poor	10	Muck	- -	49	5.0	None	Small spring head located within vacant lot
	Village of River Hills	410016	- -	- -	- -	- -	- -	- -	- -	0.0	- -	- -
Ozaukee	City of Mequon	460000	- -	- -	- -	- -	- -	- -	- -	0.0	Largemouth bass, panfish, trout	- -
	City of Mequon	460001	- -	- -	- -	- -	- -	- -	- -	0.0	Largemouth bass, panfish, northern pike, carp	- -
	Town of Belgium	460005	- -	- -	Wooded	- -	Rock	- -	- -	0.0	Largemouth bass, panfish	- -
	Town of Fredonia	460002	- -	- -	- -	- -	Marl, sand	- -	- -	0.0	Largemouth bass, northern pike, panfish	- -
	Town of Fredonia	460004	- -	- -	Marsh, brush	- -	Mud	- -	- -	0.0	None	- -
	Town of Saukville	460003	- -	- -	Floating bog	- -	- -	- -	- -	0.0	Largemouth bass, bluegill	- -
	Town of Saukville	SEWRPC2	- -	Recreation	Wooded	- -	- -	- -	- -	0.0	- -	Riveredge Nature Conservancy Springs
	Town of Saukville	SEWRPC3	- -	Wetland complex	Wetland	- -	- -	- -	- -	0.0	- -	Cedarburg Bog, a NA-1 natural area comprised of both ground-water recharge and discharge areas. The area of the bog is 2,009 acres
Racine	Town of Burlington	520000	Private	Pasture	Shrub, grass/poor	10	Muck	- -	50	40.0	Minnows	- -
	Town of Burlington	520003	Private	Pasture	Grass/poor	100	Sand, muck	- -	50	8.0	Minnows	The stream below the spring has a heavy growth of watercress
	Town of Burlington	520005	Private	Wildlife	Tree, grass/good	40	Muck	- -	49	15.0	Minnows	Springs 6 and 7 are on the same stream. In one-half mile of stream below the springs the flow is increased 30 GPM by seepage springs
	Town of Burlington	520006	Private	Wildlife	Tree, grass/good	30	Muck	- -	50	35.0	Minnows	- -
	Town of Burlington	520007	Private	Wildlife	Tree, shrub, grass/good	100	Muck	- -	50	200.0	Minnows	This pond is made up of a large number of springs. The spring area is along a high gravel ridge
	Town of Burlington	520008	Private	Pasture	Weeds/fair	30	Tiled out	- -	50	8.0	Minnows	This spring is tiled out to the spring pond area
	Town of Burlington	520009	Private	Wildlife	Grass/good	10	Sand, muck	- -	49	45.0	Minnows	- -
	Town of Burlington	520010	Private	Wildlife	Grass/good	35	Muck	- -	49	30.0	Minnows	- -
	Town of Burlington	520011	Private	Pasture	Grass, weeds/good	120	Sand	- -	50	48.0	Minnows	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Racine (continued)	Town of Dover	520014	Private	Wildlife	- -	- -	Muck	- -	- -	0.0	None	Five springs in this area. Three were dry at last survey. The two have gone dry
	Town of Norway	520012	Private	Pasture	Grass, tree/fair	20	Muck	- -	49	8.0	None	- -
	Town of Norway	520013	- -	- -	- -	- -	- -	- -	- -	0.0	- -	On Bordner Survey. Has been dry for a number of years
	Town of Rochester	520015	Public	Wildlife	Shrub, weed/fair	5	Sand, rock	- -	50	200.0	Minnows	This spring is at the Racine County gravel pit
	Town of Rochester	520016	Private	Wildlife	Shrub, weeds, trees/good	15	Sand	- -	50	18.0	Minnows	There are three springs in this area. The springs are in the streambed of the Eagle Lake outlet. The stream is dry above the springs
	Town of Rochester	520018	Private	Lawn	Grass/poor	1	Muck, gravel	- -	59	35.0	Minnows	Developed into a small pond in property owner lawn
	Town of Rochester	520019	Private	Pasture	Grass/poor	10	Muck	- -	51	33.0	Minnows	- -
	Town of Waterford	520020	Private	Pasture	Grass/poor	75	Muck	- -	50	110.0	Minnows	There are three springs in a small area
	Town of Waterford	520021	Private	Pasture	Grass, shrub/fair	60	Sand, gravel	- -	49	300.0	Minnows	There are a number of springs in this area. It is the headwaters of Tichigan Creek
	Town of Waterford	520022	Private	Wildlife	Grass, shrub/good	80	Sand	- -	49	35.0	Minnows	This is a feeder spring on Tichigan Creek
	Town of Waterford	520023	Private	Wildlife	Grass, shrub/good	8	Sand, muck	- -	49	50.0	Minnows	Two springs in this area. Also feeder springs for Tichigan Creek
	Town of Waterford	520024	Private	Pasture	Grass/fair	100	Sand, muck	- -	49	175.0	Minnows	- -
Walworth	City of Delavan	650026	Private	Pasture	Grass/good	- -	Muck	10x30	51	8.0	None	East of bridge on north side of creek, about 200 yards from road
	City of Delavan	650028	Private	Subdivision	Grass/fair	- -	Muck	10x10	51	28.0	None	Springs #8 through #11 are on Mr. DeGraaf's property which drains into the small lake in the Town of Delavan. Spring #11 furnishes the family with their drinking water. These springs are clogged with overgrowth of terrestrial plants
	City of Delavan	650029	Private	Subdivision	Grass/fair	- -	Muck	10x10	51	30.0	None	Springs #8 through #11 are on Mr. DeGraaf's property which drains into the small lake in the Town of Delavan. Spring #11 furnishes the family with their drinking water. These springs are clogged with overgrowth of terrestrial plants

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	City of Delavan	650030	Private	Subdivision	Grass/fair	- -	Muck	12x12	51	80.0	None	Springs #8 through #11 are on Mr. DeGraaf's property which drains into the small lake in the Town of Delavan. Spring #11 furnishes the family with their drinking water. These springs are clogged with overgrowth of terrestrial plants
	City of Delavan	650031	Private	Subdivision	Grass/fair	- -	Muck	5x10	50	38.0	None	Springs #8 through #11 are on Mr. DeGraaf's property which drains into the small lake in the Town of Delavan. Spring #11 furnishes the family with their drinking water. These springs are clogged with overgrowth of terrestrial plants
	Town of Bloomfield	650000	Private	Timbered	Trees/fair	40-80	Muck	20x10	49	40.0	None	The stream has been ditched though cultivated fields in some places
	Town of Bloomfield	650001	Private	Marsh	Grass/fair	20-40	Muck	20x10	48	15.0	None	The spring is in a small marsh area south of Twin Lakes
	Town of Bloomfield	650002	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	The dry spring is about 20 feet from creek
	Town of Bloomfield	650003	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The old spring bed ran in a roadside ditch
	Town of Bloomfield	650004	Private	Marsh	Grass/fair	10-20	Muck	15x20	- -	0.0	None	The owner attempted to build a pond over the springhead and it dried up
	Town of Bloomfield	650005	Private	Pasture	Grass/fair	5-10	Muck	10x20	52	5.0	None	- -
	Town of Darien	650006	Private	Pasture	Grass/good	- -	Gravel	5x10	54	5.0	None	Spring emerges about 30 feet from shoulder of road, north of Turtle Creek. It empties into creek
	Town of Darien	650007	Private	Pasture	Grass/marsh	- -	Muck	75x150	48	38.0	None	150 feet north of CTH M. It empties into Turtle Creek
	Town of Darien	650008	Private	Pasture	Grass/marsh	- -	Muck	50x100	60	10.0	None	Dimensions of outlet size are the dimensions of ditch which drains spring area
	Town of Darien	650009	Private	- -	- -	- -	- -	- -	- -	0.0	- -	Located on west bank of Turtle Creek, south of bridge about 400 yards
	Town of Darien	650010	Private	Pasture	Grass/marsh	- -	Muck	20x40	50	0.5	Minnows	Located on west bank of Turtle Creek, north of bridge about 200 yards
	Town of Darien	650011	Private	- -	- -	- -	- -	- -	- -	0.0	- -	Located on west bank of Turtle Creek, north of bridge about 10 yards north of Spring #6
	Town of Darien	650012	Private	Pasture	Grass/marsh	- -	Muck	20x40	50	0.5	Minnows	Located on west bank of Turtle Creek, north of bridge about 15 yards north of Spring #6

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of Darien	650013	Private	Pasture	Grass/marsh	- -	Gravel	40x50	49	5.0	Minnows	Roadside (north shoulder). Spring between road and dam of private trout club
	Town of Darien	650014	Private	Pasture	Grass/marsh	- -	Gravel	15x20	49	30.0	Minnows	South of road about five yards. Drains into small creek from private trout club
	Town of Darien	650015	Private	Pasture	Grass/marsh	- -	Gravel	20x25	48	18.0	Minnows	South of road about 10 yards. Drains into small creek from private trout club
	Town of Darien	650016	Private	Pasture	Watercress, grass/marsh	- -	Gravel	60x200	49	20.0	Minnows	South of road about 150 yards. Drains into small creek from private trout club
	Town of Darien	650017	Semi-public	Pasture	Grass/poor	- -	Gravel	100x300	49	46.0	None	Spring forms large pond on north bank of Turtle Creek, alongside the east shoulder of road
	Town of Darien	650018	Private	- -	- -	- -	Muck	5x15	- -	0.0	- -	The dry run is overgrown with cattails
	Town of Darien	650019	Private	Pasture	Grass/good	- -	Muck	15x15	49	1.0	None	Spring is about 100 yards west of bridge on south bank of Turtle Creek
	Town of Darien	650020	Private	Pasture	Grass/good	- -	Muck	- -	- -	0.0	Bass, trout	Ray Morrissey Trout Club. Pond was high and, therefore, could not measure spring flows
	Town of Delavan	650021	Private	Pasture	Grass/fair	- -	Stone	8x16	52	6.0	None	Ingersoll's farm. Spring located in old hydraulic ram on west side of road
	Town of Delavan	650022	Private	Pasture	Grass/good	- -	Silt, gravel	75x200	52	5.0	Minnows	Drain pipe empties into pond, east side of road, about 300 feet from roadside
	Town of Delavan	650023	Private	Pasture	Grass/good	- -	Muck	75x300	51	70.0	None	Located west of CTH O, about 100 yards. It forms creek that flows under road
	Town of Delavan	650024	Private	Pasture	Grass/good	- -	Muck	100x300	58	0.0	None	Mr. Deschner's property. Spring is enclosed by cement turret
	Town of Delavan	650025	Private	Pasture	Grass/good	- -	Muck	50x200	56	0.0	None	Located in State wildlife refuge, north of Sweet Road. Spring is enclosed by barrel
	Town of Delavan	650027	Private	Pasture	Grass/good	- -	Muck	50x75	51	20.0	None	West of CTH O, near clump of trees
	Town of Delavan	650032	Private	Pasture	Grass/poor	- -	Muck	6x20	51	2.0	None	This springs seems to be drying up
	Town of Delavan	650033	Private	- -	- -	- -	- -	- -	- -	0.0	- -	Dry run contains old wood and fallen leaves
	Town of Delavan	650034	Private	Pasture	Grass/good	- -	Muck	20x40	52	4.0	None	Spring located south of road about 500 yards
	Town of Delavan	650035	Private	- -	- -	- -	- -	- -	- -	0.0	- -	Rotten timber in dry run

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of Delavan	650036	Private	Timbered	Trees	- -	Muck	50x50	52	10.0	None	Spring located about the mid-point between the road and the river which empties into Delavan Lake
	Town of Delavan	650037	Private	Timbered	Trees	- -	Muck	75x150	52	3.0	None	Spring located in dense clump of trees about 400 yards from the road
	Town of East Troy	650038	Private	Timbered	Trees/fair	20-40	Muck	10x50	53	0.0	None	Dry
	Town of East Troy	650039	Private	Pasture	Grass/poor	5-10	Sand	3x10	48	20.0	None	- -
	Town of East Troy	650040	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	Dry
	Town of East Troy	650041	Private	Marsh	Shrubs/fair	90-180	Muck	10x15	48	10.0	Minnows	- -
	Town of East Troy	650042	Private	Marsh	Shrubs/fair	40-80	Muck	5x6	48	5.0	Minnows	- -
	Town of East Troy	650043	Private	Marsh	Shrubs/fair	10-20	Muck	5x5	48	2.0	None	- -
	Town of East Troy	650044	Private	Marsh	Grass/fair	5-10	Muck	5x10	49	6.0	None	- -
	Town of East Troy	650045	Private	Marsh	Shrubs/poor	10-20	Muck	10x10	48	2.0	None	- -
	Town of East Troy	650046	Private	Marsh	Grass/fair	15-30	Muck	6x6	50	5.0	None	- -
	Town of East Troy	650047	Private	Timbered	Trees/good	20-40	Sand	50x100	48	20.0	Minnows	- -
	Town of East Troy	650048	Private	Marsh	Grass/fair	120-240	Muck	- -	- -	100.0	Trout	Mukwonago Farm Club. There is fishing for club members only
	Town of East Troy	650257	- -	- -	- -	- -	- -	- -	- -	0.0	- -	- -
	Town of Geneva	650049	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Geneva	650050	Private	Marsh	Grass/fair			- -	- -	0.0	None	- -
	Town of Geneva	650051	Private	Marsh	Grass/fair	5-10	Muck	20x50	52	5.0	None	- -
	Town of Geneva	650052	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	There is a cornfield around the spring and rocks piled in the old springhead
	Town of Geneva	650053	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Geneva	650054	Private	Pasture	Grass/poor	10-20	Muck	10x15	49	25.0	Minnows	- -
	Town of Geneva	650055	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Geneva	650056	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Geneva	650057	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Geneva	650058	Private	Timbered	Trees/fair	10-20	Muck	10x50	48	5.0	None	- -
	Town of Geneva	650059	Private	Timbered	Trees/fair	10-20	Muck	15x10	48	5.0	None	- -
	Town of Geneva	650060	Private	Cultivated	Grass/fair	20-40	Muck	50x200	49	10.0	Minnows	- -
	Town of Geneva	650061	Private	Pasture	Grass/fair	10-20	Muck	20x30	48	5.0	None	- -
	Town of Geneva	650062	Private	Pasture	Grass/poor	30-60	Muck	30x10	50	10.0	None	- -
	Town of LaFayette	650063	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaFayette	650064	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaFayette	650065	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of LaFayette	650066	Private	Pasture	Grass/poor	10-20	Muck	150x100	- -	15.0	None	- -
	Town of LaFayette	650067	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaFayette	650068	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaFayette	650069	Private	Pasture	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaFayette	650070	Private	Pasture	Grass/poor	5-10	Muck	5x10	50	10.0	Minnows	The spring is ditched
	Town of LaFayette	650071	Private	Pasture	Grass/fair	5-10	Muck	5x20	52	15.0	Minnows	The spring is ditched
	Town of LaFayette	650072	Private	Gravel pit	Grass/fair	40-80	Muck	150x150	- -	20.0	Minnows	The pond has five listed springs in or closely feeding it
	Town of LaFayette	650073	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	The creek is completely dry. There were two listed springs dry
	Town of LaFayette	650074	Private	Cultivated	Grass/fair	15-30	Muck	50x200	- -	8.0	Minnows	- -
	Town of LaFayette	650075	Private	Timbered	Trees/good	20-40	Muck	10x10	49	20.0	None	- -
	Town of LaFayette	650076	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	In the middle of corn field
	Town of LaFayette	650077	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	In the middle of corn field
	Town of LaFayette	650078	Private	Cultivated	Grass/good	5-10	Muck	5x5	50	5.0	None	- -
	Town of LaFayette	650079	Private	Cultivated	Grass/good	5-10	Muck	5x10	52	5.0	None	- -
	Town of LaFayette	650080	Private	Fish hatchery	Grass/poor	10-20	Gravel	1x1	48	50.0	Trout	Trout Valley. The well was drilled a year and a half ago
	Town of LaFayette	650081	Private	Fish hatchery	Shrubs/good	15-30	Muck	30x30	- -	50.0	Trout	Trout Valley
	Town of LaFayette	650082	Private	Grassland	Grass/good	10-20	Gravel	10x10	48	20.0	None	Trout Valley
	Town of LaFayette	650083	Private	Public fishing	Grass/poor	20-40	Muck	- -	- -	40.0	Trout	Trout Valley
	Town of LaFayette	650084	Private	Grassland	Grass/fair	- -	- -	- -	- -	0.0	None	Trout Valley. Two listed springs are in the pond
	Town of LaFayette	650085	Private	Pasture	Trees/poor	- -	- -	- -	- -	0.0	None	Trout Valley
	Town of LaFayette	650086	Private	Pasture	Trees/poor	- -	- -	- -	- -	0.0	None	- -
	Town of LaFayette	650087	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaFayette	650088	Private	Marsh, pasture	Grass, shrubs/good	120-240	Muck	- -	- -	250.0	Bullheads, minnows	Sugar Creek. Eight listed springs
	Town of LaFayette	650089	Private	Marsh, pasture	Grass, shrubs/good	120-240	Muck	- -	- -	150.0	Bullheads, minnows	Sugar Creek. Six listed springs
	Town of LaFayette	650090	Private	Marsh, pasture	Grass, shrubs/good	120-240	Muck	- -	- -	150.0	Bullheads, minnows	Sugar Creek. Three listed springs
	Town of LaFayette	650091	Private	Marsh, pasture	Grass, shrubs/good	240-480	Muck	- -	- -	250.0	Bullheads, minnows	Sugar Creek. Twelve listed springs
	Town of LaFayette	650092	Private	Marsh, pasture	Grass, shrubs/good	30-60	Muck	- -	- -	50.0	Bullheads, minnows	Sugar Creek. Two listed springs
	Town of LaGrange	650093	Private	Timbered	Trees/fair	40-80	Muck	- -	- -	40.0	Bluegills, bullheads	Millpond. The pond is mainly used for recreation purposes
	Town of LaGrange	650094	Private	Timbered	Trees/fair	20-40	Muck	- -	- -	0.0	Bluegills	The outlet is dry
	Town of LaGrange	650095	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The spring is dry
	Town of LaGrange	650096	Private	Marsh	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaGrange	650097	Private	Marsh	Grass/fair	- -	- -	- -	- -	0.0	None	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of LaGrange	650098	Private	Marsh	Grass/fair	10-20	Muck	10x15	52	10.0	None	The spring runs off through pipe 150 feet to main ditch
	Town of LaGrange	650099	Private	Marsh	Grass/fair	15-30	Muck	20x100	58	40.0	None	The three listed springs are ditched
	Town of LaGrange	650100	Private	Pasture	Grass/poor	- -	- -	3x8	- -	0.0	None	The owner has pump on spring to water livestock
	Town of LaGrange	650101	Private	Cultivated	Crops/good	- -	- -	- -	- -	0.0	None	Corn field now
	Town of LaGrange	650102	Private	Marsh	Grass/poor	10-20	Muck	50x60	- -	10.0	None	The ponds have just been constructed within the last two years
	Town of LaGrange	650103	Private	Marsh	Grass/poor	20-40	Muck	- -	- -	150.0	None	The ponds have just been constructed within the last two years
	Town of LaGrange	650104	Private	Marsh	Grass/poor	15-30	Muck	- -	- -	15.0	None	The newest of the three ponds
	Town of LaGrange	650105	Private	Timbered	Trees/good	10-20	Muck	5x5	48	5.0	None	The spring is 10 feet from main ditch
	Town of LaGrange	650106	Private	Cultivated	Grass/fair	5-10	Sand	10x10	48	5.0	None	The spring is ditched
	Town of LaGrange	650107	Private	Cultivated	Grass/fair	6-12	Sand	10x50	50	10.0	None	The spring is ditched
	Town of LaGrange	650108	Private	Trout fishing ponds	No cover	40-80	Rock	10x10	52	80.0	Trout	Rainbow Springs. The spring runs steady all year. The owner has year-round fishing on his ponds. The well was drilled six years ago (1952)
	Town of LaGrange	650109	Private	Trout fishing ponds	No cover	40-80	Sand	5x5	48	220.0	Trout	Rainbow Springs. The spring runs steady all year. The owner has year-round fishing on his ponds. The well was drilled six years ago (1952)
	Town of LaGrange	650110	Private	Cultivated	Grass/fair	5-10	Muck	10x15	49	15.0	None	- -
	Town of LaGrange	650111	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaGrange	650112	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaGrange	650113	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaGrange	650114	Private	Cultivated	Grass/good	- -	- -	- -	- -	0.0	None	- -
	Town of LaGrange	650115	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	- -
	Town of LaGrange	650116	Private	Marsh	Grass/good	- -	- -	- -	- -	0.0	None	- -
	Town of LaGrange	650117	Private	Timbered	Trees/good	- -	- -	- -	- -	0.0	None	- -
	Town of LaGrange	650118	Private	Cultivated	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Linn	650119	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	The creek is completely dry. There were two listed springs dry
	Town of Linn	650120	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The creek is completely dry. There were two listed springs dry
	Town of Linn	650121	Private	Cultivated	Grass/fair	5-10	Muck	10x15	52	2.0	None	The spring is drying up slowly
	Town of Linn	650122	Private	Cultivated	Grass/good	- -	- -	- -	- -	0.0	None	The spring was ditched and ditch is now completely dry

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of Linn	650123	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The creek is completely dry. There were two listed springs dry
	Town of Linn	650124	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The creek is completely dry. There were two listed springs dry
	Town of Linn	650125	Private	Cultivated	Crops/good	- -	- -	- -	- -	0.0	None	There is a corn field over the old spring area
	Town of Linn	650126	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	Completely dry
	Town of Linn	650127	Private	Pasture	Grass/fair	- -	- -	- -	- -	0.0	None	The creek still has some water in it
	Town of Linn	650128	Private	Timbered	Trees/good	- -	- -	- -	- -	0.0	None	There are two listed springs completely dry that used to run in a pond
	Town of Linn	650129	Private	Timbered	Trees/good	- -	- -	- -	- -	0.0	None	There are two listed springs completely dry
	Town of Linn	650130	Private	Homestead	Grass/fair	- -	- -	- -	- -	0.0	None	The spring was in the back yard of a home, but dried up two years ago
	Town of Linn	650131	Private	Timbered	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Linn	650132	Private	Timbered	Trees/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Lyons	650133	Private	Marsh	Grass/fair	20-40	Muck	5x5	51	3.0	None	The owner dug the springhead open, but still has dammed most of flow
	Town of Lyons	650134	Private	Backyard	No cover	20-40	Sand	4x4	48	5.0	None	The spring is in a cement spring box. There is only half the normal flow now
	Town of Lyons	650135	Private	Marsh	Grass/fair	30-60	Muck	100x50	48	40.0	Trout	- -
	Town of Lyons	650136	Private	Barnyard	Grass/poor	10-20	Muck	50x60	- -	15.0	None	The owner uses water for barn purposes
	Town of Lyons	650137	Private	Marsh	Grass/fair	20-40	Muck	20x30	51	10.0	None	The spring is in a marsh in a large kettle. The stream only runs 50 feet
	Town of Lyons	650138	Private	Marsh	Grass/fair	15-30	Muck	10x30	48	20.0	Minnows	15 feet away from main creek
	Town of Lyons	650139	Private	Pasture	Grass/poor	10-20	Muck	5x6	49	5.0	None	- -
	Town of Lyons	650140	Private	Pasture	Grass/fair	30-60	Muck	10x15	50	5.0	None	- -
	Town of Lyons	650141	Private	Timbered	Trees/good	10-20	Muck	20x30	48	20.0	None	- -
	Town of Lyons	650142	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	Grass is growing in the dry streambed
	Town of Lyons	650143	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The spring was ditched and it stopped flowing
	Town of Lyons	650144	Private	Abandoned pasture	No cover	20-40	Clay	- -	- -	70.0	None	The owner has constructed a pond over the springs
	Town of Lyons	650145	Private	Abandoned pasture	Grass/poor	5-10	Sand	2x2	59	15.0	None	- -
	Town of Lyons	650146	Private	Abandoned pasture	Grass/poor	5-10	Sand	20x10	48	10.0	None	- -
	Town of Lyons	650147	Private	Abandoned pasture	Grass/poor	10-20	Muck	100x150	48	10.0	None	- -
	Town of Lyons	650148	Private	Abandoned pasture	No cover	10-20	Gravel	4x4	48	20.0	None	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of Lyons	650149	Private	Abandoned pasture	Grass/poor	10-20	Muck	100x200	50	5.0	None	- -
	Town of Lyons	650150	Private	Marsh	Shrubs/good	20-40	Muck	- -	48	80.0	None	- -
	Town of Sharon	650151	Private	Pasture	Grass/poor	- -	Gravel	30x80	- -	8.0	Bass	Owner, Mr. Carlson, is in process of constructing private fish ponds
	Town of Sharon	650152	Private	Pasture	Grass/poor	- -	Gravel	80x100	49	5.0	Minnows	Spring outlet is a drain pipe about 200 yards from road on south bank of creek
	Town of Sharon	650153	Private	Pasture	Grass/good	- -	Gravel	15x20	49	0.5	Minnows	Spring located on south bank of creek about 200 feet east of bridge
	Town of Sharon	650154	Private	Pasture	Grass/good	- -	Gravel	10x15	49	2.0	Minnows	Spring located on south bank of creek about 180 feet east of bridge
	Town of Sharon	650155	Private	Pasture	Grass/poor	- -	Gravel	- -	49	1,500.0	Minnows	- -
	Town of Sharon	650156	Private	- -	- -	- -	- -	- -	- -	0.0	- -	Cornfield present and dry run is planted with corn
	Town of Sharon	650157	Private	- -	- -	- -	- -	- -	- -	0.0	- -	Cornfield present and dry run is planted with corn
	Town of Sharon	650158	Private	- -	- -	- -	- -	- -	- -	0.0	- -	Small mud hole for pigs, only wet after rain
	Town of Sharon	650159	Private	Pasture	Grass/fair	- -	Muck	40x60	49	3.0	None	The spring runs into an oat field
	Town of Sharon	650160	Private	Pasture	Grass/fair	- -	Muck	40x60	49	2.0	None	The spring runs into an oat field
	Town of Sharon	650161	Private	Pasture	Grass/good	- -	Muck	50x100	49	1.5	None	South of CTH B. Drains into small muddy creek
	Town of Sharon	650162	Private	Pasture	Grass/fair	- -	Muck	50x120	49	4.0	None	Spring located in clump of trees in the pasture
	Town of Sharon	650163	Private	Pasture	Grass/fair	- -	Gravel	- -	- -	50.0	Minnows	Measurement of the flow is a comparison of flow prior to and after stream passes springhead on Mr. Carlson's property
	Town of Sharon	650164	Private	Pasture	Grass/fair, trees	- -	Muck	20x70	50	4.0	None	- -
	Town of Spring Prairie	650165	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The streambed is completely dry. Three springs on old survey are dry
	Town of Spring Prairie	650166	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	The streambed is dry
	Town of Spring Prairie	650167	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	The spring is dry and has a few years growth in it
	Town of Spring Prairie	650168	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	Dry
	Town of Spring Prairie	650169	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	The three springs and the stream have dried up in the last five years
	Town of Spring Prairie	650170	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	The spring is dry and is used as a rubbish dump

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of Spring Prairie	650171	Private	Marsh	Grass/good	10-20	Sand	10x30	48	40.0	Minnows	The stream has a lot of watercress
	Town of Spring Prairie	650172	Private	Marsh	Grass/good	15-30	Sand	15x20	49	30.0	Minnows	The stream has a lot of watercress
	Town of Spring Prairie	650173	Private	Marsh	Shrubs/good	10-20	Sand	50x40	48	35.0	Minnows	The stream has a lot of watercress
	Town of Spring Prairie	650174	Private	Pasture	Grass/poor	20-40	Muck	40x20	50	15.0	Minnows	The stream has a lot of cover after it leaves the spring area
	Town of Spring Prairie	650175	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	Dry
	Town of Spring Prairie	650176	Private	Cultivated	Grass/fair	10-20	Muck	10x15	49	10.0	None	The spring is on the edge of a cultivated field
	Town of Spring Prairie	650177	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	The whole spring area with six listed springs is dry
	Town of Spring Prairie	650178	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Spring Prairie	650179	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	The two listed springs in the area are dry
	Town of Spring Prairie	650180	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	Dry
	Town of Spring Prairie	650181	Private	Pasture	Grass/fair	5-10	Muck	10x5	51	5.0	None	The flow in the stream has been cut to about one-tenth of the original flow
	Town of Spring Prairie	650182	Private	Pasture	Grass/fair	15-30	Muck	40x20	50	30.0	Minnows	- -
	Town of Spring Prairie	650183	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	There were five listed springs dried up in the area
	Town of Spring Prairie	650184	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The streambed is covered with grass
	Town of Spring Prairie	650185	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	The stream is completely dry
	Town of Spring Prairie	650186	Private	Timbered	Trees/fair	10-20	Muck	6x5	49	5.0	None	The spring runs into Sugar Creek
	Town of Spring Prairie	650187	Private	Timbered	Trees/fair	5-10	Muck	15x5	50	2.0	None	The spring runs into Sugar Creek
	Town of Spring Prairie	650188	Private	Marsh	Grass/good	15-30	Muck	50x100	48	20.0	Minnows	- -
	Town of Spring Prairie	650189	Private	Cultivated	Grass/fair	15-30	Sand	10x5	51	15.0	Minnows	- -
	Town of Spring Prairie	650190	Private	Cultivated	Grass/fair	40-80	Sand	5x5	50	10.0	Minnows	- -
	Town of Spring Prairie	650191	Private	Gravel pit	No cover	20-40	Gravel	100x150	- -	5.0	Minnows	The flow has dropped considerably over the last few years
	Town of Spring Prairie	650192	Private	Gravel pit	No cover	20-40	Gravel	100x150	- -	5.0	Minnows	The flow has dropped considerably over the last few years

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of Spring Prairie	650193	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	Minnows	- -
	Town of Spring Prairie	650194	Private	Marsh	Grass/fair	40-80	Muck	10x10	50	25.0	Minnows	- -
	Town of Spring Prairie	650195	Private	Marsh	Shrubs/fair	40-80	Muck	6x4	48	20.0	Minnows	- -
	Town of Spring Prairie	650196	Private	Marsh	Shrubs/fair	20-40	Muck	10x5	48	20.0	Minnows	- -
	Town of Spring Prairie	650197	Private	Marsh	Shrubs/fair	30-60	Muck	5x5	48	10.0	Minnows	- -
	Town of Spring Prairie	650198	Private	Marsh	Grass/fair	10-20	Muck	20x20	49	20.0	Minnows	- -
	Town of Spring Prairie	650199	Private	Timbered	Trees/fair	20-40	Sand	10x20	48	50.0	None	- -
	Town of Spring Prairie	650200	Private	Timbered	Trees/fair	10-20	Sand	5x5	48	30.0	None	- -
	Town of Spring Prairie	650201	Private	Timbered	Trees/fair	5-10	Sand	20-30	48	15.0	None	- -
	Town of Spring Prairie	650202	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Spring Prairie	650203	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Spring Prairie	650204	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Spring Prairie	650205	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Spring Prairie	650206	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Sugar Creek	650207	Private	Cultivated	Grass/fair	40-80	Muck	10x20	48	45.0	None	The spring runs into a shooting preserve across the road
	Town of Sugar Creek	650208	Private	Pasture	Grass/poor	40-80	Muck	10x10	49	15.0	None	The spring runs into a shooting preserve across the road
	Town of Sugar Creek	650209	Private	Cultivated	Grass/fair	40-80	Muck	20x20	50	30.0	None	The spring runs into a shooting preserve across the road
	Town of Sugar Creek	650210	Private	Pasture	Grass/poor	80-160	Muck	50x50	52	40.0	None	- -
	Town of Troy	650211	Private	Marsh	Grass/fair	10-20	Muck	3x3	50	10.0	None	The spring is 10 feet from the main stream
	Town of Troy	650212	Private	Marsh	Grass/fair	5-10	Muck	15x10	51	5.0	None	- -
	Town of Troy	650213	Private	Pasture	Grass/poor	20-40	Muck	10x5	48	15.0	None	- -
	Town of Troy	650214	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Troy	650215	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Troy	650216	Private	Timbered	Trees/fair	40-80	Muck	- -	- -	0.0	Minnows	The pond has no outlet but used to have some flow

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of Troy	650217	Private	Grassland	Grass/fair	10-20	Muck	20x10	50	5.0	None	- -
	Town of Troy	650218	Private	Timbered	Trees/fair	10-20	Muck	5x5	49	8.0	None	- -
	Town of Troy	650219	Private	Timbered	Trees/fair	15-30	Muck	10x10	48	10.0	None	- -
	Town of Troy	650220	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	There is grass growing in old creek bed
	Town of Troy	650221	Private	Timbered	Trees/fair	10-20	Muck	10x20	49	5.0	None	The spring has been ditched
	Town of Troy	650222	Private	Cultivated	Grass/fair	20-40	Muck	10x25	48	10.0	None	The spring has been ditched
	Town of Troy	650223	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Troy	650224	Private	Cultivated	Grass/fair	5-10	Muck	5x2	49	3.0	None	The spring is ditched
	Town of Troy	650225	Private	Cultivated	Grass/fair	10-20	Muck	6x6	51	5.0	None	The spring is ditched
	Town of Troy	650226	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The owner has corn planted over the old spring area
	Town of Troy	650227	Private	Cultivated	Trees/fair	20-40	Muck	10x20	48	20.0	None	- -
	Town of Troy	650228	Private	Marsh	Grass/fair	20-40	Muck	10x5	48	20.0	Minnows	- -
	Town of Troy	650229	Private	Marsh	Grass/fair	20-40	Muck	15x15	49	30.0	Minnows	- -
	Town of Troy	650230	Private	Marsh	Grass/fair	40-80	Muck	30x40	48	60.0	Minnows	- -
	Town of Troy	650231	Private	Marsh	Grass/fair	20-40	Muck	15x10	48	30.0	Minnows	- -
	Town of Troy	650232	Private	Marsh	Grass/fair	20-40	Muck	10x20	48	10.0	Minnows	- -
	Town of Troy	650233	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	Minnows	The spring bed is covered with grass
	Town of Troy	650234	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	Minnows	The spring bed is covered with grass
	Town of Walworth	650235	Semi-public	Timbered	brush/good	1-2	Stone	20x50	49	105.0	None	Located behind Fontana Public School
	Town of Walworth	650236	Private	Pasture	Grass/fair	2-4	Muck	- -	- -	0.0	None	Man-made private duck pond, spring fed. Could not measure flow. No outlet
	Town of Walworth	650237	Private	Semi-timbered	Grass/good	- -	- -	25x50	- -	0.0	None	Used as a dump for rotten timber
	Town of Walworth	650239	Private	Pasture	Grass/fair	2-2	Silt, gravel	20x30	49	4.0	None	Spring feeds creek that crosses road. Located 200 yards south of road
	Town of Walworth	650240	Private	Pasture	Grass/poor	2-3	Muck	15x50	50	5.0	None	Measurement taken from tile pipe north of road about 40 feet
	Town of Whitewater	650241	Private	Cultivated	Grass/good	80-160	Muck	10x15	48	30.0	None	The stream is ditched
	Town of Whitewater	650242	Private	Cultivated	Grass/fair	40-80	Muck	15x30	48	50.0	None	- -
	Town of Whitewater	650243	Private	Roadside	No cover	40-80	Gravel	1x0.5	48	5.0	None	The springs are 10 feet from the road
	Town of Whitewater	650244	Private	Roadside	No cover	40-80	Gravel	1x1	48	10.0	None	The springs are 10 feet from the road
	Town of Whitewater	650245	Private	Cultivated	Grass/good	40-80	Muck	10x10	50	40.0	None	- -
	Town of Whitewater	650246	Private	Cultivated	Grass/fair	60-120	Muck	20x40	48	70.0	None	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Walworth (continued)	Town of Whitewater	650247	Private	Timbered	Trees/fair	80-160	Sand	10x20	48	60.0	None	The owner has dug up the channel and cleaned it out
	Town of Whitewater	650248	Private	Timbered	Trees/fair	80-160	Sand	50x50	48	40.0	None	- -
	Town of Whitewater	650249	Private	Timbered	Trees/fair	80-160	Sand	60x30	48	80.0	None	- -
	Town of Whitewater	650250	Private	Timbered	Trees/fair	80-160	Sand	10x5	48	50.0	None	- -
	Town of Whitewater	650251	Private	Marsh	Shrubs/fair	40-80	Muck	10x10	48	60.0	None	- -
	Town of Whitewater	650252	Private	Pasture	Grass/fair	20-40	Muck	5x5	50	10.0	None	- -
	Town of Whitewater	650253	Private	Cultivated	Grass/fair	10-20	Muck	5x2	50	15.0	None	- -
	Town of Whitewater	650254	Private	Cultivated	Grass/fair	10-20	Muck	6x10	48	20.0	None	10 feet from the road
	Town of Whitewater	650255	Private	Cultivated	Grass/fair	15-30	Muck	20x10	50	40.0	None	- -
	Town of Whitewater	650256	Private	Pasture	Grass/fair	- -	- -	- -	- -	0.0	None	The whole stream is dry
	Village of Fontana on Lake Geneva	650238	Private	Timbered	Trees	3-5	Stone	100x200	49	80.0	None	Spring feeds creek that crosses road. Located in Ayer Park
Washington	Town of Barton	670007	- -	- -	Marsh	- -	- -	- -	- -	0.0	Largemouth bass, panfish	- -
	Town of Farmington	670002	- -	- -	- -	- -	- -	- -	- -	0.0	Smallmouth bass	- -
	Town of Farmington	670003	- -	- -	- -	- -	- -	- -	- -	0.0	Largemouth bass, panfish	- -
	Town of Farmington	670012	- -	- -	Hardwood swamp	- -	- -	- -	- -	0.0	Largemouth bass, panfish, northern pike	- -
	Town of Polk	670001	- -	- -	Grass and tamarack marsh	- -	- -	- -	- -	0.0	Largemouth and smallmouth bass, northern pike, panfish	- -
	Town of Polk	670005	- -	- -	Marsh	- -	- -	- -	- -	0.0	Trout	- -
	Town of Polk	670011	- -	- -	Pastured lowland	- -	- -	- -	- -	0.0	Largemouth bass, panfish, northern pike	- -
	Town of Richfield	670000	- -	- -	Marsh deposits	- -	- -	- -	- -	0.0	Largemouth bass, panfish, northern pike	- -
	Town of Trenton	670004	- -	- -	Pasture	- -	- -	- -	- -	0.0	Brown trout	- -
	Town of Trenton	670006	- -	- -	- -	- -	- -	- -	- -	0.0	Largemouth bass, panfish, trout, musky	- -
	Town of Trenton	670013	- -	- -	Developed	- -	- -	- -	- -	0.0	Trout, largemouth bass, panfish, northern pike	- -
	Town of West Bend	670008	- -	- -	- -	- -	- -	- -	- -	0.0	Panfish	- -
	Town of West Bend	670010	- -	- -	Wetland	- -	- -	- -	- -	0.0	Largemouth bass, northern pike, panfish, walleye	- -
	Village of Germantown	670009	- -	- -	- -	- -	- -	- -	- -	0.0	Minnows, bullheads, panfish	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha	City of Brookfield	680001	Private	Subdivision	Grass/poor	5-10	Muck	20x50	- -	0.0	None	The outlet to pond and stream is dry. The water level in the pond has dropped
	City of Brookfield	680002	Private	Gravel pit	None	30-60	Gravel	100x100	48	30.0	None	The spring is in a gravel pit that is still being worked
	City of Brookfield	680003	Private	Front lawn	Grass/poor	10-20	Muck	20x30	- -	0.0	None	The spring has become clogged up
	City of Brookfield	680004	Private	Backyard	Grass/poor	10-20	Muck	- -	- -	2.0	Catfish/minnows	There is water bubbling up in about six places in the pond, but the outlet is dry
	City of Brookfield	680005	Private	Subdivision	Grass/poor	20-40	Muck	10x5	48	4.0	None	The spring flows into a pond dug in a marsh area in a subdivision
	City of Brookfield	680006	Private	Cultivated	Trees/fair	40-80	Muck	50x20	48	50.0	None	- -
	City of Brookfield	680007	Private	Cultivated	Grass/fair	- -	Muck	- -	- -	0.0	None	Dried up
	City of Delafield	680016	Private	Timbered	Trees/poor	5-10	Muck	3x6	50	10.0	Minnows	The spring head is clogged up with sticks and stones
	City of Muskego	680170	Private	Pasture	Grass/fair	5-10	Muck	3x6	48	15.0	None	- -
	City of Muskego	680171	Private	Marsh	Grass/poor	10-20	Muck	30x15	50	30.0	Minnows	- -
	City of Muskego	680172	Private	Pasture	Grass/poor	35-70	Sand	20x30	48	20.0	None	- -
	City of Muskego	680172	Private	Pasture	Grass/poor	35-70	Sand	20x30	- -	20.0	None	- -
	City of Muskego	680173	Private	Pasture	Grass/poor	15-30	Muck	5x5	48	5.0	None	- -
	City of Muskego	680174	Private	Cultivated	Shrubs/fair	15-30	Muck	3x6	48	10.0	None	- -
	City of Muskego	680175	Private	Marsh	Grass/good	20-40	Muck	6x10	48	20.0	Minnows	- -
	City of Muskego	680176	Private	Marsh	Grass/fair	- -	- -	- -	- -	0.0	None	Dried up
	City of Muskego	680177	Private	Cultivated	Grass/poor	5-10	Sand	6x6	- -	0.0	None	It was noted the water level dropped about a foot
	City of Muskego	680178	Private	Cultivated	Shrubs/good	- -	- -	- -	- -	0.0	None	Dried up
	City of Muskego	680179	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	Dried up
	City of Muskego	680180	Private	Cultivated	Grass/fair	20-40	Muck	50x15	48	45.0	Minnows	There is a slight drop in the water level of stream
	City of Muskego	680181	Private	Front lawn	Grass/poor	- -	- -	- -	- -	0.0	None	Dried up
	City of Muskego	680182	Private	Backyard lawn	Grass/poor	50-100	Sand	2x2	48	60.0	Minnows	- -
	City of Muskego	680183	Private	Front lawn	Grass/poor	10-20	Sand	2x2	48	3.0	None	The spring has dried up considerably
	City of Muskego	680184	Private	Garage	None	10-20	Gravel	5x5	48	8.0	None	The spring is in a garage and runs out through tile
	City of Muskego	680185	Private	Tree nursery	Grass/poor	10-20	Gravel	50x30	48	10.0	None	- -
	City of New Berlin	680186	Private	Marsh	Shrubs/fair	20-40	Sand	5x20	48	100.0	Minnows	There is very large gravel pit being worked in nearby area of the spring
	City of New Berlin	680187	Private	Cultivated	Grass/good	- -	- -	- -	- -	0.0	None	- -
	City of New Berlin	680188	Private	Front lawn	Grass/poor	5-10	Sand	10x10	48	15.0	None	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	City of New Berlin	680189	Private	Marsh	Grass/fair	10-20	Muck	100x10	48	30.0	None	- -
	City of New Berlin	680190	Private	Cultivated	Shrubs/good	10-20	Muck	40x20	48	5.0	None	The stream is polluted
	City of New Berlin	680191	Private	Farm lawn	Grass/poor	15-30	Sand	2x2	48	20.0	None	- -
	City of New Berlin	680192	Private	Subdivision	Grass/fair	10-20	Muck	100x100	48	15.0	Minnows	- -
	City of New Berlin	680193	Private	Backyard	Grass/poor	5-10	Sand	100x150	48	10.0	None	- -
	City of New Berlin	680194	Private	Cultivated	Grass/poor	15-30	Muck	20x20	48	3.0	None	The spring is in a pond used for swimming
	City of New Berlin	680195	Private	Timbered	Trees/fair	40-80	Muck	10x7	48	40.0	Minnows	- -
	City of Oconomowoc	680198	Private	Cultivated	Grass/fair	10-20	Muck	3x10	48	15.0	None	- -
	City of Oconomowoc	680199	Private	Cultivated	Grass/fair	10-20	Muck	5x5	48	20.0	None	- -
	City of Pewaukee	680213	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	City of Pewaukee	680214	Private	Cultivated	Grass/fair	15-30	Muck	5x20	48	8.0	None	- -
	City of Pewaukee	680216	Private	Cultivated	Grass/fair	30-60	Muck	30x5	48	3.0	None	- -
	City of Pewaukee	680217	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	- -
	City of Pewaukee	680218	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	The four listed springs in the area are dried up
	City of Pewaukee	680220	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The six springs listed in area are dry
	City of Pewaukee	680221	Private	Marsh	Grass/fair	10-20	Muck	50x10	48	2.0	None	- -
	City of Pewaukee	680222	Private	Marsh	Grass/fair	15-30	Muck	10x10	48	5.0	None	- -
	City of Waukesha	680219	Private	Gravel pit	None	20-40	Sand	100x100	48	50.0	None	The spring is in a gravel pit that is being worked. The owner is going to construct a pond after work in
	City of Waukesha	680253	Private	Pasture	Grass/poor	10-20	Muck	50x40	- -	40.0	None	The owner dug up the springs for use in irrigating crops
	City of Waukesha	SEWRPC4	Private	- -	Wetland complex	- -	- -	- -	- -	0.0	- -	Fruits Pond Fen and Cambridge Avenue Fen
	City of Waukesha	680262	Private	Timbered	Trees/good	10-20	Muck	58x15	48	10.0	None	- -
	City of Waukesha	680263	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Brookfield	680008	Private	Marsh	Grass/fair	10-20	Sand	3x6	48	10.0	None	The flow has slowed down
	Town of Delafield	680009	Private	Marsh	Grass/fair	10-20	Muck	20x20	48	30.0	None	- -
	Town of Delafield	680010	Private	Marsh	Grass/fair	10-20	Muck	30x40	48	15.0	None	- -
	Town of Delafield	680011	Private	Pasture	Grass/poor	5-10	Muck	20x25	48	5.0	None	- -
	Town of Delafield	680012	Private	Timbered	Trees/good	25-50	Muck	50x50	48	25.0	Minnows	- -
	Town of Delafield	680013	Private	Cultivated	Grass/fair	35-70	Muck	15x50	48	125.0	Minnows	- -
	Town of Delafield	680014	Private	Marsh	Grass/fair	30-60	Muck	50x50	48	20.0	None	- -
	Town of Delafield	680015	Private	Marsh	Grass/fair	80-160	Muck	- -	48	200.0	Bass/bluegills	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	Town of Delafield	SEWRPC5	Public/ private	Lake access site	Grass/wetland	- -	- -	- -	- -	0.0	- -	Pewaukee Lake access fen
	Town of Eagle	680017	Private	Pasture	Grass/poor	12-25	Muck	3x3	48	5.0	None	The springs were not found in the indicated spots
	Town of Eagle	680018	Private	Pasture	Grass/poor	12-25	Muck	3x3	48	2.0	None	The springs were not found in the indicated spots
	Town of Eagle	680019	Private	Marsh	Trees/fair	10-20	Muck	5x5	48	10.0	None	The springs run south into a private fish hatchery
	Town of Eagle	680020	Private	Marsh	Grass/fair	10-20	Muck	5x10	48	25.0	None	- -
	Town of Eagle	680021	Private	Marsh	Grass/poor	10-20	Muck	25x20	48	50.0	None	- -
	Town of Eagle	680022	Private	Fish hatchery	Grass/poor	10-20	Gravel	10x10	48	50.0	Trout	Private fish hatchery
	Town of Eagle	680023	Private	Fish hatchery	Grass/poor	3-6	Sand	5x5	50	2.0	Trout	Private fish hatchery
	Town of Eagle	680024	Private	Fish hatchery	Grass/poor	5-10	Sand	10x20	48	20.0	Trout	Private fish hatchery
	Town of Eagle	680025	Private	Roadside	Grass/poor	40-80	Muck	125x50	48	180.0	None	- -
	Town of Eagle	680026	Private	Pasture	Grass/poor	20-40	Muck	10x5	48	5.0	Minnows	- -
	Town of Eagle	680027	Private	Cultivated	Shrubs/good	40-80	Muck	40x20	48	40.0	Minnows	- -
	Town of Eagle	680028	Private	Pasture	Grass/fair	4-8	Muck	15x15	48	1.0	Minnows	- -
	Town of Eagle	680029	State	Marsh	Shrubs/good	15-30	Muck	5x6	49	10.0	Minnows	- -
	Town of Eagle	680030	Private	Pasture	Grass/fair	10-20	Muck	10x40	48	1.0	None	- -
	Town of Eagle	680031	Private	Pasture	Grass/fair	15-80	Muck	100x100	48	10.0	None	- -
	Town of Eagle	680032	Private	Timbered	Trees/fair	60-120	Muck	- -	48	70.0	Trout	The resort's private fishing ponds
	Town of Eagle	680033	Private	Marsh	Shrubs/fair	5-10	Muck	10x10	48	10.0	None	- -
	Town of Eagle	680034	Private	Marsh	Shrubs/fair	15-30	Muck	3x9	49	15.0	None	- -
	Town of Eagle	680035	Private	Timbered	Trees/fair	10-20	Muck	10x50	48	5.0	None	- -
	Town of Eagle	680036	Private	Marsh	Grass/good	10-20	Muck	50x50	48	10.0	Minnows	- -
	Town of Eagle	680037	Private	Cultivated	Grass/fair	5-10	Muck	10x20	48	30.0	None	- -
	Town of Eagle	680038	Private	Pasture	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Eagle	680039	Private	Pasture	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Eagle	680040	Private	Marsh	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Eagle	680041	Private	Resort area	None	10-20	Rock	10x10	48	60.0	None	A roof is built over the spring
	Town of Eagle	680042	Private	Resort area	None	10-20	Rock	10x10	48	25.0	None	The spring is in a cement pipe
	Town of Eagle	680043	Private	Resort area	None	15-30	Rock	10x10	48	10.0	None	The spring is in a cement pipe
	Town of Eagle	680044	Private	Resort area	Grass/poor	15-30	Muck	100x120	50	20.0	Minnows	The pond is 50 yards from the lake
	Town of Eagle	680045	Private	Golf course	Grass/poor	10-20	Muck	80x50	51	10.0	None	Eagle Springs Resort Golf Course
	Town of Eagle	680046	Private	Golf course	Grass/poor	15-30	Muck	50x100	48	15.0	None	Eagle Springs Resort Golf Course
	Town of Genesee	680047	Private	Marsh	Shrubs/good	15-30	Sand	2x5	48	10.0	None	The springs have been ditched in cultivated fields

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	Town of Genesee	680048	Private	Cultivated	Grass/good	10-20	Muck	10x5	48	3.0	None	The springs have been ditched in cultivated fields
	Town of Genesee	680049	Private	Cultivated	Grass/good	1-2	Muck	2x3	49	1.0	Minnows	- -
	Town of Genesee	680050	Private	Cultivated	Grass/fair	2-4	Sand	10x20	48	10.0	None	- -
	Town of Genesee	680051	Private	Cultivated	Trees/good	3-6	Muck	2x2	48	8.0	Minnows	- -
	Town of Genesee	680052	Private	Cultivated	Grass/poor	30-60	Sand	15x35	48	50.0	None	Game farm. The springs have been run into main ditch
	Town of Genesee	680053	Private	Pasture	Grass/fair	10-20	Sand	6x10	48	40.0	None	Game farm. The springs have been run into main ditch
	Town of Genesee	680054	Private	Cultivated	Grass/poor	2-4	Muck	1x1	50	1.0	None	Game farm. The springs have been run into main ditch
	Town of Genesee	680055	Private	Cultivated	Trees/fair	40-80	Sand	100x200	48	15.0	None	Game farm. The springs have been run into main ditch
	Town of Genesee	680056	Private	Marsh	Grass/poor	1-2	Muck	5x5	50	0.0	None	- -
	Town of Genesee	680057	Private	Marsh	Grass/poor	3-6	Sand	15x10	48	50.0	None	- -
	Town of Genesee	680058	Private	Marsh	Grass/poor	3-6	Muck	20x10	48	4.0	None	- -
	Town of Genesee	680059	Private	Cultivated	Grass/poor	10-20	Sand	3x10	48	200.0	None	- -
	Town of Genesee	680060	Private	Marsh	Grass/fair	8-16	Muck	50x75	48	30.0	Trout	Private fish hatchery
	Town of Genesee	680061	Private	Pasture	Grass/poor	10-20	Muck	5x5	48	50.0	None	- -
	Town of Genesee	680062	Private	Cultivated	Trees/fair	10-20	Muck	5x5	48	20.0	None	- -
	Town of Genesee	680063	Private	Timbered	Trees/good	15-30	Sand	100x50	48	150.0	Minnows/bluegill	Private pond
	Town of Genesee	680064	Private	Pasture	Grass/fair	5-10	Muck	3x2	48	1.0	None	The spring only runs 10 feet to the main creek
	Town of Genesee	680065	Private	Cultivated	Grass/poor	- -	Dry	- -	- -	0.0	None	Dry
	Town of Genesee	680066	Private	Pasture	Grass/poor	10-20	Muck	30x100	50	10.0	Bullheads	The spring stream runs across the road into a pond
	Town of Genesee	680067	Private	Marsh	Grass/shrubs/fair	20-40	Gravel	30x20	48	250.0	Trout	Private fish hatchery
	Town of Genesee	680068	Private	Marsh	Grass/poor	10-20	Sand	20x20	48	60.0	Trout	Private fish hatchery
	Town of Genesee	680069	Private	Marsh	Shrubs/fair	1-2	Muck	4x4	48	2.0	None	Private fish hatchery
	Town of Genesee	680070	Private	Pasture	Grass/poor	10-20	Sand	50x20	48	15.0	None	The spring is covered with gravel, but there is an outlet
	Town of Genesee	680071	Private	Pasture	Grass/poor	15-30	Muck	10x10	48	40.0	None	- -
	Town of Genesee	680072	Private	Cultivated	Grass/fair	15-30	Muck	20x10	48	40.0	None	- -
	Town of Genesee	680073	Private	Cultivated	Shrubs/good	3-6	Muck	2x6	48	1.0	None	The spring has dried up considerably in past few years
	Town of Genesee	680074	Private	Marsh	Grass/poor	10-20	Muck	100x30	48	3.0	None	The spring area is commercialized now
	Town of Genesee	680075	Private	Marsh	Grass/fair	1-2	Sand	20x20	48	20.0	None	The spring area is commercialized now
	Town of Genesee	680076	Private	Marsh	None	10-20	Gravel	10x10	48	60.0	None	There is a small brick building built over spring

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	Town of Genesee	680077	Private	Marsh	None	10-20	Gravel	15x15	48	40.0	None	There is a small brick building built over spring
	Town of Genesee	680078	Private	Pasture	Grass/poor	15-30	Muck	10x15	48	50.0	None	The flow has remained steady in the summer
	Town of Genesee	680079	Private	Marsh	Grass/fair	1-2	Muck	10x30	50	2.0	None	- -
	Town of Genesee	680080	Private	Pasture	Grass/fair	5-10	Muck	50x100	48	20.0	None	- -
	Town of Genesee	680081	Private	Cultivated	Trees/poor	80-160	Muck	- -	48	250.0	Bass/minnows	- -
	Town of Genesee	680082	Private	Pasture	Grass/poor	1-2	Muck	3x2	48	1.0	None	- -
	Town of Genesee	680082	Private	Pasture	Grass/poor	1-2	Muck	3x2	- -	1.0	None	- -
	Town of Genesee	680083	Private	Marsh	Shrubs/fair	5-10	Muck	15x10	48	1.0	None	- -
	Town of Lisbon	680084	Private	Front yard	Grass/poor	10-20	Gravel	100x50	48	40.0	Bass/bluegill	The springs flow into ponds of a wildlife refuge across the road
	Town of Lisbon	680085	Private	Barnyard	Grass/poor	15-30	Muck	- -	- -	0.0	None	The owner sealed the spring about a year ago
	Town of Lisbon	680086	Private	Marsh	Grass/poor	10-20	Muck	20x35	48	150.0	None	- -
	Town of Lisbon	680087	Private	Timbered	Trees/shrubs/good	10-20	Sand	10x30	48	100.0	None	- -
	Town of Lisbon	680088	Private	Timbered	Trees/shrubs/good	15-30	Muck	10x20	48	20.0	None	- -
	Town of Lisbon	680089	Private	Timbered	Trees/shrubs/good	20-40	Muck	10x20	48	60.0	None	- -
	Town of Lisbon	680090	Private	Timbered	Trees/shrubs/good	20-40	Muck	20x20	48	40.0	None	- -
	Town of Lisbon	680091	Private	Timbered	Trees/shrubs/good	20-40	Muck	10x3	48	10.0	None	- -
	Town of Lisbon	680092	Private	Timbered	Trees/shrubs/good	20-40	Muck	10x15	48	20.0	None	- -
	Town of Lisbon	680093	Private	Private hatchery	Grass/brush	20-40	Muck	- -	48	50.0	Bass/minnows	Spring is utilized for ponds. Private fish hatchery #1036, owner Noel Billings
	Town of Lisbon	680094	Private	Marsh	Grass/fair	1-2	Muck	1x1	48	1.0	Trout	- -
	Town of Lisbon	680095	Private	Marsh	Trees/poor	10-20	Muck	100x50	48	100.0	Trout	- -
	Town of Lisbon	680096	Private	Timbered	Trees/fair	20-40	Muck	20x20	48	20.0	Trout	- -
	Town of Lisbon	680097	Private	Stone quarry	None	15-30	Gravel	100x100	48	30.0	None	Private fish hatchery #1002, owner A.C. Halquist
	Town of Lisbon	680098	Private	Cultivated	Grass/fair	25-50	Sand	10x20	48	40.0	None	- -
	Town of Merton	680101	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	The creek bed is completely dry
	Town of Merton	680102	Private	Pasture	Grass/poor	15-30	Muck	10x10	60	0.0	None	There is watercress on the spring, but water is stagnant
	Town of Merton	680103	Private	Cultivated	Trees/fair	30-60	Muck	20x10	48	30.0	Bass/trout	The spring is 100 feet from the Oconomowoc River
	Town of Merton	680107	Private	Resort area	Trees/fair	20-40	Muck	10x15	48	25.0	Bass	The spring runs into Mud Lake
	Town of Merton	680108	Private	Cultivated	Grass/poor	20-40	Muck	- -	48	15.0	Minnows	The spring runs into Mud Lake
	Town of Mukwonago	680003	- -	- -	- -	- -	- -	- -	- -	0.0		- -
	Town of Mukwonago	680114	Private	Pasture	Grass/poor	2-4	Muck	30x20	48	10.0	None	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	Town of Mukwonago	680115	Private	Pasture	Grass/poor	7-14	Muck	8x4	48	40.0	None	The owner has a watering tank sunk in the springhead
	Town of Mukwonago	680116	Private	Pasture	None	2-4	Sand	10x10	48	20.0	None	The spring is covered by a pile of rocks
	Town of Mukwonago	680117	Private	Pasture	Grass/poor	1-2	Sand	75x100	48	25.0	None	- -
	Town of Mukwonago	680118	Private	Marsh	Grass/good	10-20	Muck	10x20	48	90.0	None	- -
	Town of Mukwonago	680119	Private	Marsh	Shrubs/good	20-40	Muck	5x5	48	40.0	None	- -
	Town of Mukwonago	680120	Private	Marsh	Shrubs/good	20-40	Muck	5x10	48	20.0	None	- -
	Town of Mukwonago	680121	Private	Marsh	Grass/fair	5-10	Muck	3x3	48	2.0	None	- -
	Town of Mukwonago	680122	Private	Marsh	Grass/fair	5-10	Muck	10x10	48	4.0	None	- -
	Town of Mukwonago	680123	Private	Marsh	Shrubs/poor	30-60	Muck	10x15	48	60.0	None	- -
	Town of Mukwonago	680124	Private	Marsh	Grass/good	10-20	Muck	4x4	48	10.0	None	- -
	Town of Mukwonago	680125	Private	Pasture	Shrubs/poor	5-10	Muck	2x3	48	4.0	None	- -
	Town of Mukwonago	680126	Private	Pasture	Shrubs/poor	3-6	Muck	50x50	48	5.0	None	- -
	Town of Mukwonago	680127	Private	Pasture	Grass/poor	5-10	Muck	1x2	48	3.0	None	- -
	Town of Mukwonago	680128	Private	Timbered	Trees/fair	20-40	Muck	- -	48	60.0	Minnows	The springs are in the pond
	Town of Mukwonago	680129	Private	Cultivated	Grass/fair	40-80	Muck	- -	48	65.0	Minnows	There are about two or three springs in the pond
	Town of Mukwonago	680130	Private	Cultivated	Grass/fair	30-60	Muck	10x50	56	0.0	None	There were two springs dug up in a system of irrigation ditches
	Town of Mukwonago	680131	Private	Cultivated	Grass/poor	10-20	Muck	10x100	58	0.0	None	The spring is dug up in an irrigation ditch
	Town of Mukwonago	680132	Private	Marsh	Grass/fair	2-4	Sand	40x30	48	20.0	None	- -
	Town of Mukwonago	680133	Private	Marsh	Grass/fair	12-24	Muck	2x3	48	35.0	None	- -
	Town of Mukwonago	680134	Private	Marsh	Grass/fair	8-16	Sand	8x6	48	10.0	None	- -
	Town of Mukwonago	680135	Private	Farm yard	Grass/poor	40-80	Sand	100x150	48	150.0	Bullheads/bluegills	The spring feeds into Roxy Lake, a recreational area
	Town of Mukwonago	680136	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	Dry

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	Town of Mukwonago	680137	Private	Marsh	Grass/poor	40-80	Sand	- -	48	35.0	None	The owner at one time had a pond over the spring, but he now has dam broken down
	Town of Mukwonago	680138	Private	Marsh	Grass/poor	20-40	Sand	4x4	48	25.0	None	- -
	Town of Mukwonago	680139	Private	Marsh	Grass/good	5-10	Muck	10x20	48	2.0	None	- -
	Town of Mukwonago	680140	Private	Pasture	Shrubs/fair	10-20	Muck	20x50	48	5.0	None	- -
	Town of Mukwonago	680141	Private	Marsh	Shrubs/fair	10-20	Muck	15x20	48	15.0	None	- -
	Town of Mukwonago	680142	Private	Marsh	Grass/fair	15-30	Muck	- -	48	25.0	None	- -
	Town of Mukwonago	680143	Private	Marsh	Grass/fair	10-20	Muck	50x50	48	5.0	None	- -
	Town of Mukwonago	680144	Private	Marsh	Shrubs/fair	15-30	Clay	100x100	48	15.0	None	- -
	Town of Mukwonago	680145	Private	Timbered	Trees/good	10-20	Sand	10x20	48	30.0	None	- -
	Town of Mukwonago	680146	Private	Marsh	Shrubs/good	15-30	Sand	- -	48	5.0	None	- -
	Town of Mukwonago	680147	Private	Timbered	Trees/good	10-20	Gravel	10x10	48	10.0	None	- -
	Town of Mukwonago	680148	Private	Marsh	Grass/poor	10-20	Muck	15x30	48	25.0	None	- -
	Town of Mukwonago	680149	Private	Timbered	Trees/good	12-24	Sand	7x10	48	5.0	None	- -
	Town of Mukwonago	680150	Private	Marsh	Grass/poor	15-30	Muck	9x10	48	10.0	Minnows	- -
	Town of Mukwonago	680151	Private	Timbered	Shrubs/good	5-10	Muck	30x20	48	40.0	Minnows	- -
	Town of Mukwonago	680152	Private	Timbered	Trees/good	3-6	Muck	5x6	48	1.0	Minnows	- -
	Town of Mukwonago	680153	Private	Timbered	Shrubs/good	9-18	Sand	20x40	48	2.0	Minnows	- -
	Town of Mukwonago	680154	Private	Timbered	Shrubs/good	10-20	Muck	20x20	48	5.0	Minnows	The spring bubbles up on edge of river channel
	Town of Mukwonago	680155	Private	Timbered	Trees/good	10-20	Muck	50x20	48	5.0	Minnows	The spring bubbles up on edge of river channel
	Town of Mukwonago	680156	Private	Timbered	Trees/good	20-40	Muck	40x40	48	10.0	Minnows	- -
	Town of Mukwonago	680157	Private	Timbered	Trees/good	25-50	Muck	20x30	48	15.0	Minnows	- -
	Town of Mukwonago	680158	Private	Timbered	Trees/good	30-60	Sand	10x15	48	10.0	Minnows	- -
	Town of Mukwonago	680159	Private	Timbered	Trees/good	30-60	Muck	100x20	48	10.0	Bluegills/minnows	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	Town of Mukwonago	680160	Private	Marsh	Grass/poor	50-100	Muck	- -	48	15.0	Bluegills/minnows	- -
	Town of Mukwonago	680161	Private	Timbered	Trees/good	5-10	Muck	10x20	48	15.0	Bluegill	- -
	Town of Mukwonago	680162	Private	Timbered	Trees/good	15-30	Muck	50x50	48	20.0	Bluegill	- -
	Town of Mukwonago	680163	Private	Marsh	Grass/good	50-100	Muck	- -	48	60.0	Bluegill	- -
	Town of Mukwonago	680164	Private	Timbered	Trees/fair	5-10	Muck	100x50	48	10.0	Bluegill	- -
	Town of Mukwonago	680166	Private	Timbered	Trees/good	15-30	Muck	10x10	48	10.0	Bass/minnows	- -
	Town of Mukwonago	680168	Private	Cultivated	Grass/fair	15-30	Sand	2.5x20	48	40.0	None	- -
	Town of Mukwonago	680169	Private	Cultivated	Shrubs/fair	10-20	Muck	15x30	50	10.0	None	- -
	Town of Oconomowoc	680001	- -	- -	- -	- -	- -	- -	- -	0.0	- -	- -
	Town of Oconomowoc	680196	Private	Cultivated	Grass/fair	- -	- -	- -	- -	0.0	None	The spring has dried up, and the owner has planted corn over the area
	Town of Oconomowoc	680197	Private	Pasture	Grass/poor	10-20	Muck	20x20	48	5.0	None	- -
	Town of Oconomowoc	680200	Private	Timbered	Trees/fair	15-30	Muck	20x40	48	5.0	None	- -
	Town of Ottawa	680004	- -	- -	- -	- -	- -	- -	- -	0.0	- -	- -
	Town of Ottawa	680201	Private	Marsh	Grass/poor	10-20	Gravel	10x5	48	110.0	None	- -
	Town of Ottawa	680202	Private	Cultivated	Trees/poor	30-60	Muck	- -	48	20.0	Minnows/bluegills	- -
	Town of Ottawa	680203	Private	Pasture	Grass/poor	5-10	Muck	120x50	48	25.0	None	- -
	Town of Ottawa	680204	Private	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Ottawa	680205	Private	Timbered	Trees/good	20-40	Muck	100x50	48	40.0	None	- -
	Town of Ottawa	680206	Private	Farm yard	None	10-20	Sand	15x10	48	50.0	None	Stone building is built over the spring
	Town of Ottawa	680207	State	Timbered	Trees/fair	- -	- -	- -	- -	0.0	None	The ditch is still mucky
	Town of Ottawa	680208	Private	Cultivated	Shrubs/fair	20-40	Sand	100x50	48	80.0	None	The springs are ditched
	Town of Ottawa	680209	Private	Cultivated	Shrubs/good	10-20	Muck	15x15	48	30.0	None	The spring is ditched
	Town of Ottawa	680210	Private	Timbered	Trees/good	- -	- -	- -	- -	0.0	None	- -
	Town of Ottawa	680211	Private	Timbered	Trees/good	- -	- -	- -	- -	0.0	None	- -
	Town of Ottawa	680212	Private	Marsh/timbered	Grass/good/Trees	50-100	Muck	- -	48	400.0	Bass/trout/minnows	There are approximately one-half to a dozen spring heads in marsh
	Town of Summit	680223	Private	Timbered	Trees/good	40-80	Muck	5x10	48	20.0	None	- -
	Town of Summit	680225	Private	Marsh	Grass/good	20-40	Muck	10x50	48	20.0	Minnows	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	Town of Vernon	680226	Private	Trout range	Grass/poor	8-16	Gravel	10x10	48	20.0	Trout	The owner is constructing a trout range
	Town of Vernon	680227	Private	Trout range	Grass/poor	8-16	Sand	20x10	48	20.0	Trout/bluegill	The owner is constructing a trout range
	Town of Vernon	680228	Private	Trout range	Grass/shrubs/fair	8-16	Muck	15x10	48	40.0	Trout	The owner is constructing a trout range
	Town of Vernon	680229	Private	Cultivated	Grass/fair	10-20	Sand	20x20	- -	0.0	Bluegill	The water level dropped two feet when the spring flow stopped
	Town of Vernon	680230	Private	Marsh	Grass/fair	5-10	Sand	- -	48	10.0	Bluegill/bass	- -
	Town of Vernon	680231	Private	Marsh	Grass/good	5-10	Muck	20x20	48	15.0	None	- -
	Town of Vernon	680238	Private	Front lawn	Trees/fair	50-100	Muck	- -	48	5.0	Bullheads/bluegills	- -
	Town of Vernon	680239	Private	Timbered	Trees/good	35-70	Muck	10x15	48	45.0	None	- -
	Town of Waukesha	680240	Private	Marsh	Shrubs/good	10-20	Sand	4x3	48	20.0	None	- -
	Town of Waukesha	680241	Private	Marsh	Shrubs/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Waukesha	680242	Private	Marsh	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Waukesha	680243	Private	Marsh	Grass/fair	2-4	Muck	4x2	50	0.0	None	- -
	Town of Waukesha	680244	Private	Marsh	Shrubs/good	20-40	Muck	80x10	48	70.0	Catfish/minnows	- -
	Town of Waukesha	680245	Private	Marsh	Shrubs/good	10-20	Muck	50x5	48	40.0	Catfish/minnows	- -
	Town of Waukesha	680246	Private	Marsh	Grass/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Waukesha	680247	Private	Marsh	Shrubs/fair	- -	- -	- -	- -	0.0	None	- -
	Town of Waukesha	680248	Private	Marsh	Shrubs/good	- -	- -	- -	- -	0.0	None	- -
	Town of Waukesha	680249	Private	Cultivated	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Waukesha	680250	Private	Timbered	Trees/good	20-40	Muck	20x10	48	20.0	Catfish	- -
	Town of Waukesha	680251	Private	Pasture	Grass/poor	10-20	Muck	10x15	48	10.0	Minnows	- -
	Town of Waukesha	680252	Private	Backyard	Grass/poor	10-20	Sand	100x100	48	15.0	None	The spring pond is used as a private swimming hole
	Town of Waukesha	680254	Private	Timbered	Trees/fair	15-30	Muck	10x15	48	5.0	Bullheads/pike	- -
	Town of Waukesha	680255	Private	Pasture	Grass/poor	- -	- -	- -	- -	0.0	None	- -
	Town of Waukesha	680256	Private	Pasture	Grass/poor	20-40	Sand	50x50	48	50.0	Pike/bullheads	- -
	Town of Waukesha	680257	Private	Timbered	Trees/good	30-60	Muck	5x10	48	30.0	Bullheads	- -
	Town of Waukesha	680258	Private	Marsh	Shrubs/fair	25-50	Muck	30x40	48	35.0	Pike/bullheads	- -
	Town of Waukesha	680259	Private	Pasture	Grass/poor	5-10	Muck	15x30	48	8.0	Minnows	- -
	Town of Waukesha	680260	Private	Cultivated	Grass/fair	30-60	Sand	50x100	48	10.0	Minnows	- -
	Town of Waukesha	680261	Private	Cultivated	Grass/poor	40-80	Muck	20x10	48	15.0	Minnows	- -
	Town of Waukesha	680264	Public	City dump	None	- -	- -	- -	- -	0.0	None	City dump. None of the four listed springs are flowing
	Town of Waukesha	680265	Private	Pasture	Shrubs/fair	7-14	Muck	10x15	48	20.0	None	- -
	Village of Big Bend	680002	- -	- -	- -	- -	- -	- -	- -	0.0	- -	- -

Appendix A (continued)

County	Municipality	Spring ID[a]	Owner	Land Use	Cover Type	Acres Drained Into Spring Area	Bottom Type	Spring Dimensions (feet)	Spring Temperature (ºF)	Flow (GPM)	Fish Present In or Near Spring	Remarks
Waukesha (continued)	Village of Big Bend	680232	Private	Marsh	Grass/fair	20-40	Muck	15x10	48	50.0	Minnows	- -
	Village of Big Bend	680233	Private	Front lawn	Grass/poor	20-40	Gravel	20x10	48	100.0	Trout/minnows	The spring has run consistently ever since 1930
	Village of Big Bend	680234	Private	Marsh	Grass/good	15-30	Muck	100x100	48	30.0	Trout	The spring feeds into the channel which feeds the large pond south of Big Bend
	Village of Big Bend	680235	Private	Marsh	Grass/good	15-30	Muck	- -	48	40.0	Trout	This one does the same
	Village of Big Bend	680236	Private	Timbered	Trees/good	10-20	Muck	- -	48	25.0	Trout	Private fish hatchery
	Village of Big Bend	680237	Private	Timbered	Trees/good	10-20	Muck	150x100	48	60.0	Trout	Private fish hatchery
	Village of Chenequa	680104	Private	Resort area	Trees/fair	5-10	Sand	10x10	48	10.0	Minnows	The spring is near CTH C
	Village of Chenequa	680105	Private	Resort area	Trees/fair	15-30	Muck	100x80	48	50.0	Bass	The spring runs into Pine Lake
	Village of Chenequa	680106	Private	Resort area	Trees/fair	10-20	Muck	50x75	48	20.0	Bass	The spring runs into Pine Lake
	Village of Chenequa	680109	Private	Resort area	Grass/poor	10-20	Sand	20x20	48	25.0	Minnows	The spring runs into Pine Lake
	Village of Chenequa	680110	Private	Resort area	Trees/fair	15-30	Sand	15x30	48	10.0	Minnows	The spring runs into Pine Lake
	Village of Chenequa	680111	Private	Resort area	Grass/fair	10-20	Sand	8x4	48	20.0	Bass/bluegill	The spring runs into Pine Lake
	Village of Chenequa	680112	Private	Resort area	Trees/fair	5-10	Muck	10x30	48	20.0	Bass/bluegill	The spring runs into Pine Lake
	Village of Chenequa	680113	Private	Resort area	Trees/fair	25-50	Muck	40x50	48	30.0	Minnows	The spring runs into Pine Lake
	Village of Dousman	680224	Private	Marsh	Grass/fair	60-120	Sand	- -	48	40.0	None	- -
	Village of Menomonee Falls	680099	Private	Pasture	Trees/fair	20-40	Muck	- -	48	25.0	None	The stream is polluted
	Village of Menomonee Falls	680100	Private	Gravel pit	None	10-20	Gravel	90x110	48	20.0	None	- -
	Village of Mukwonago	680165	Private	Timbered	Trees/good	10-20	Muck	50x15	48	5.0	None	- -
	Village of Mukwonago	680167	Private	Marsh	Grass/good	5-10	Muck	5x8	48	10.0	None	- -
	Village of Pewaukee	680215	Private	Timbered	Trees/fair	25-50	Muck	8x4	48	5.0	None	- -

NOTE: Data on springs is historic information collected under three programs carried out from 1930 through 1985. The majority of the springs data for the Region was obtained from a Wisconsin Conservation Department survey carried out in all seven counties of the Region. Only a limited number of the locations of the springs have been field checked and some of the springs no longer exist.

[a]*Identification number assigned for 2007 Wisconsin Wildlife Federation Inventory.*

Source: Wisconsin Wildlife Federation and Wisconsin Geological and Natural History Survey.

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Appendix B

GLOSSARY OF TERMS
AND LIST OF ABBREVIATIONS

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GLOSSARY OF TERMS

Aquifer:	A geological sediment or rock capable of transmitting useable quantities of water under normal hydraulic gradients. Groundwater occurs within three major aquifers that underlie the Region. From the land's surface downward, they are: 1) the sand and gravel deposits in the glacial drift; 2) the shallow dolomite strata in the underlying bedrock; and 3) the deeper sandstone, dolomite, siltstone, and shale strata. Because of their proximity to the land surface and hydraulic interconnection, the first two aquifers are commonly referred to collectively as the "shallow aquifer," while the latter is referred to as the "deep aquifer." Within most of the Southeastern Wisconsin Region, the shallow and deep aquifers are separated by the Maquoketa shale, which forms a relatively impermeable barrier between the two aquifers. Within the areas of the Region where the Maquoketa shale is absent, the shallow aquifer is sometimes defined as including the deeper dolomite and the upper sandstone strata.
Aquitard:	A geological sediment or rock layer that restricts the flow of groundwater from one aquifer to another, or restricts flow from an aquifer to a surface water system feature. An aquitard can act to confine an aquifer.
Average Day Demand:	The average quantity over a one-year period of daily water usage in a municipal water system.
Average Day Pumpage:	The average quantity pumped over a one-year period of daily water usage in a municipal water system.
Baseflow:	That part of stream discharge that results from groundwater flowing into the stream or other surface waterbody. That flow is not affected by surface runoff.
Baseflow Depletion:	A decrease in baseflow to a waterbody over a time period.
Baseflow Reduction Index	A groundwater budget index that assesses groundwater-derived baseflow changes over a time period.
Capacity:	The ability of available water utility resources to meet the quantity, quality, peak loads, and other service needs of the customers served by the utility.
Community Water System:	A public water system which serves at least 15 service connections used by year-round residents, or regularly serves at least 25 year-round residents. Any public water system serving seven or more homes, 10 or more mobile homes, 10 or more apartment units, or 10 or more condominium units is considered a community water system, unless information is available to indicate that 25 year-round residents will not be served.
Confined Aquifer:	A water-bearing geological formation whose upper boundary is a layer which does not transmit water readily.
Confining Unit, Confined Bed:	A body of relatively impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers.

Demand to Supply Ratio:	A groundwater budget index that compares the amount of water withdrawn or replenished from an aquifer by humans to the amount of natural inflow in a base year.
Diurnal Demand Curve:	A curve which describes changes in the quantities of water used by customers over a one-day period.
Dolomite:	Dolomite rocks are rocks made of calcium magnesium carbonate. Many rock formations in Wisconsin which are referred to as limestone are actually dolomite.
Drawdown:	The difference between the pumping water level and static water level in a well. For an aquifer system, the difference between the natural condition water level and the water level as influenced by withdrawal of groundwater.
Drawup:	An increase in the level of the aquifer water table or the potentiometric surface, as compared to the level at a defined base time.
Effluent:	Discharged wastewater such as the treated waste from industrial facilities or wastewater treatment plants.
Elevated Storage:	A facility for storing water supplies that maintains a hydraulic grade in the system.
Elevated Tank:	A tank used for storage in a water distribution system, which is raised above the surface of the ground and supported by posts or columns.
Environmental Corridors:	Areas in the landscape encompassing concentrations of the best remaining elements of the natural resource base, including the best remaining wetlands, woodlands, and wildlife habitat areas; surface water and associated shorelands and floodplains; and related features, such as existing park and open space sites, scenic views, and natural area sites.
Equipotential Line:	A contour line along which groundwater hydraulic head is the same. Groundwater flow will move perpendicular to these lines from high head to lower head.
Fire Flow Rate:	The maximum flow rate that can be supplied by a water distribution system at a specified location and residual pressure (usually expressed as gallons per minute).
Formation:	A geological sediment or rock unit having properties consistent enough to be mapped.
Groundwater:	Water beneath the surface of the ground in a saturated zone.
Groundwater Depletion:	The removal of water supplies, without equivalent replacement, from an aquifer.
Groundwater Recharge:	The entry of water into the saturated zone of an aquifer.
Hazen Williams Pipe Roughness Coefficient:	A coefficient which is used to determine the energy (pressure) loss due to friction that will occur as water under pressure flows through a pipe.

High-Capacity Property:	A property on which a high capacity well or well system exists or is to be constructed.
High-Capacity Well:	A well constructed on a high capacity property.
High-Capacity Well System:	One or more wells, drillholes or mine shafts on a property that have a combined approved pump capacity of 70 or more gallons per minute.
Human Influence Ratio:	A groundwater budget index intended to quantify the portion of the groundwater budget that is controlled by human activity.
Hydraulic Conductivity (K):	A measure of how easily water moves through a geologic medium. The horizontal hydraulic conductivity (K_h) is a measure of how easily water can move in the horizontal direction and the vertical hydraulic conductivity (K_v) is a measure of how easily water can move in the vertical direction. Due to the stratified nature of geologic materials, the horizontal hydraulic conductivity if typically higher than the vertical hydraulic conductivity by one or more orders of magnitude.
Hydraulic Grade:	The piezometric surface, i.e. the height to which water will rise to in a piezometer.
Hydraulic Gradient:	Difference in hydraulic head or grade between two measuring points within a water system. In an aquifer, the rate of change of hydraulic head per unit of distance of flow at a given point and in a given direction.
Hydraulic Head:	Hydraulic grade expressed as feet or pressure above the base of the piezometer or a well. Head can vary both vertically and spatially in a groundwater system. Groundwater flows from high to low heads, so it is the driving force in groundwater systems.
Hydrology:	Study of the physical behavior of water from its occurrence as precipitation to its entry into streams, lakes, reservoirs, and aquifers and its return to the ocean or atmosphere.
Infiltration:	The movement of water into and through soil.
Maximum Contaminant Level:	The maximum permissible level of a contaminant in water which is deliverable to any user in a public water system.
Maximum Contaminant Level Goal:	The maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur and which allows an adequate margin of safety. Maximum contaminant level goals are nonenforceable health goals.
Maximum Day Demand:	The highest quantity of daily water usage in a municipal water system in a given year.
Maximum Day Ratio:	The ratio of maximum day pumpage to average pumpage, expressed as a multiplier.

Maximum Residual Disinfectant Level:	A level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.
Maximum Residual Disinfectant Level Goal:	The maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of persons would occur and which allows an adequate margin of safety. Maximum residual disinfectant level goals are nonenforceable health goals and do not reflect the benefit of the addition of the disinfectant for control of waterborne microbial contaminants.
Municipal Water System:	A community water system owned by a city, village, county, town, town sanitary district, utility district, public inland lake and rehabilitation district, municipal water district or a Federal, State, county or municipal-owned institution for congregate care or correction, or a privately owned water utility serving the foregoing.
Noncommunity Water System:	A public water system that serves fewer than 25 year-round residents. A noncommunity water system is either a nontransient, noncommunity water system or a transient, noncommunity water system.
Nontransient, Noncommunity Water System:	A noncommunity water system that regularly serves at least 25 of the same persons over six months per year. Examples of nontransient noncommunity water systems include those serving schools, day care centers and factories.
Other-than-Municipal, Community Water System:	A community water system that serves at least 25 year-round residents, or serves 15 service connections used by year-round residents (anything greater than six months is considered year-round), and is not a municipal water system. Examples of these include mobile home parks, subdivisions, apartments, and condominiums.
Peak Hour Demand:	The rate of water usage during the highest hour use generally on a maximum usage day.
Peak Hour Demand Ratio:	The ratio of peak hour pumpage to peak day pumpage, usually expressed as a multiplier.
Permeability:	The capacity of rock or soil to transmit water.
Potable:	Suitable for drinking.
Potentiometric Surface:	Level to which water in a confined aquifers rises in wells which breach the confining unit. A surface representing the total head of groundwater and defined by levels to which water will rise in tightly cased wells.

Public Water System:	A system providing piped water to the public for human consumption, if the system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. A public water system is either a “community water system” or a “noncommunity water system.” A public water system includes: a) Any collection, treatment, storage, and distribution facilities under control of the operator of the public water system and used primarily in connection with the public water system, and b) Any collection or pretreatment storage facilities not under control of the operator of the public water system which are used primarily in connection with the public water system.
Pumpage:	The total volume of water pumped from a source or sources during a unit of time.
Pumping Water Level:	The water level in a well while it is being pumped can be expressed as feet below surface or as an elevation.
Recharge:	The downward movement of water through soil to groundwater.
Residence Time:	The time required for inflow to fill the full volume of a lake.
Residual Pressure:	Pressure at a specified location in the water distribution system when water is being removed or flowing.
Retail Water Service:	An arrangement whereby customer communities receive full service from a water supplier, including the provision of treated water, customer billing, and distribution system operation and maintenance.
Static Water Level:	The water level in a well when no water is being pumped from the aquifer can be expressed as feet below surface or as an elevation.
Subcontinental Divide:	The boundary separating the Mississippi River and Great Lakes-St. Lawrence River surface water drainage systems.
Surface Water:	All water which is open to the atmosphere and subject to surface runoff. Examples of surface water includes streams, rivers, lakes, and wetlands.
Sustainability	The condition of beneficially using a resource in such a way that the uses support current and probable future uses, while simultaneously ensuring that the resource is not unacceptably damaged by such a beneficial use.
Total Dynamic Head:	The total energy that a pump must overcome to deliver a given flow rate including suction lift, discharge, and friction losses.
Transient Noncommunity System:	A noncommunity water system that serves at least 25 people at least 60 days of the year. Examples of transient noncommunity water systems include those serving restaurants, taverns, motels, churches, campgrounds and parks.
Transmissivity:	The rate at which water is transmitted through a unit width of an aquifer under a unit gradient. It can be expressed as gallons per day per foot (gpd/ft) or feet squared ($feet^2$)per day.

Unaccounted-for Water:	The difference between the volume of water pumped into the distribution system and the volume of water sold or otherwise accounted-for. (Generally expressed as a percentage of total pumpage).
Unconfined Aquifer	A water-bearing geological formation whose upper boundary is the water table.
Urban Services Area:	The area which is developed or expected to develop in the future and require municipal utility services.
Water Demand:	The amount of water required by a water user or users at a specific point or area within a water distribution system.
Water Distribution Main:	A water pipe which primarily extends water to customer services and provide fire protection to an area of the water system.
Water Distribution System:	A group of water mains usually consisting of a network of piping, including transmission and distribution mains which is designed to deliver water from water supplies to water users.
Water Supply System:	Facilities designed to collect, pump, and furnish a supply of water for meeting water demands.
Water Table:	The highest elevation of fully saturated sediment or rock in a geological profile. The water table is the surface on which the fluid pressure in the pores of an aquifer is exactly atmospheric.
Water Transmission Main:	A large water pipe which is used to extend and convey water between a water system's supply/storage facilities and distribution mains. The definition of a water transmission main depends upon the function of the pipeline concerned within the system concerned. Thus, no minimum specific size can be associated with this term.
Wholesale Water Service:	An arrangement whereby customer communities purchase treated water and provide it to their customers through their own water utilities, retaining responsibilities for operation of its water system, including customer billing and distribution system operation and maintenance.
Wisconsin Unique Well Number:	A unique five-digit alphanumeric code assigned to by the Wisconsin Department of Natural Resources to identify individual wells.

LIST OF ABBREVIATIONS

ASR	Aquifer Storage and Recovery
AWWA	American Water Works Association
BRI	Baseflow Reduction Index
CDBG	Community Development Block Grant
CMAR	Compliance Maintenance Annual Report
CWFP	Wisconsin Clean Water Fund Program
DATCP	Wisconsin Department of Agriculture, Trade, and Consumer Protection
DSR	Demand to Supply Ratio
fps	Feet per Second
ft	Feet
GAC	Wisconsin Groundwater Advisory Committee
gpcd	Gallons per Capita per Day
gpd	Gallons per Day
gpm	Gallons per Minute
gpm/ft	Gallons per Minute per Foot
GRN	Groundwater Reporting Network
HIR	Human Influence Ratio
in	Inches
L.F.	Linear Foot
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MG	Million Gallons
mg	Milligram
mg/l	Milligram per liter
mg/l $CaCO_3$	Milligram per liter expressed as an equivalent concentration of calcium carbonate
mgd	Million Gallons per Day
mgy	Million Gallons per Year
MMSD	Milwaukee Metropolitan Sewerage District
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
mrem	Milirem (1/1,000 of a rem which is a standardized dosage of ionizing radiation)
NGVD	National Geodetic Vertical Datum

O&M	Operations and Maintenance
pCi/l	Picocuries per liter
PPCP	Pharmaceuticals and Personal Care Products
PSC	Public Service Commission of Wisconsin
SEWRPC	Southeastern Wisconsin Regional Planning Commission
SDWA	Safe Drinking Water Act
SDWLP	Wisconsin Safe Drinking Water Loan Program
USDA-RUS	U.S. Department of Agriculture Rural Utilities Service
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VOC	Volatile Organic Compound
WDOA	Wisconsin Department of Administration
WDOC	Wisconsin Department of Commerce
WDNR	Wisconsin Department of Natural Resources
WGNHS	Wisconsin Geological and Natural History Survey
WRDA	Water Resources Development Act
WRWA	Wisconsin Rural Water Association
WWTP	Wastewater Treatment Plant

Appendix C

LAKE MICHIGAN WATER TREATMENT PLANT RAW WATER AND FINISHED WATER QUALITY CHARACTERISTICS

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Table C-1

LAKE MICHIGAN WATER TREATMENT PLANT RAW WATER QUALITY CHARACTERISTICS

Class and Parameter	Concentration[a]				
	Allowable Concentration Standard	Milwaukee 2005 (median)	Racine 2005 (mean)	Kenosha 2006 (mean)	Oak Creek 2005
Chemical and Physical Parameters					
Alkalinity, as CaCO3	NR	109	112	108	112
Hardness, Calcium, as CaCO3	NR	93	- -	- -	137
Hardness, Total, as CaCO3	NR	135	- -	135	- -
pH (Standard Units)	6.5-8.5	8.26	8.01	8.05	8.1
Total Dissolved Solids (TDS) calc.	500	170	- -	- -	- -
Total Organic Carbon	NR	2.0	1.91	- -	- -
Clarity					
Turbidity , NTU ' 95 Percent of the Time	<0.3 NTUs in minimum of 95 percent of monthly samples	0.99 NTU	11.4 NTU	11.4-14.3 NTU[b]	3.8 NTU
Inorganic Chemicals					
Aluminum	0.2	0.02	- -	- -	- -
Antimony	0.006	<0.0012	- -	- -	- -
Arsenic	0.05	<0.0025	- -	- -	- -
Barium	2	0.020	- -	- -	- -
Beryllium	0.004	<0.0004	- -	- -	- -
Boron	NR	0.0175	- -	- -	- -
Cadmium	0.005	<0.0012	- -	- -	- -
Calcium	- -	34	- -	- -	- -
Chloride	250	12.65	- -	- -	- -
Chlorine, Total	4	- -	- -	- -	- -
Chromium	0.1	0.0029	- -	- -	- -
Copper	NR	0.009	- -	- -	
Cyanide	0.2	<0.020	- -	- -	- -
Fluoride	4.0	0.11	- -	- -	0.10
Iron	0.3	0.007	0.06	- -	- -
Lead	NR	<0.0025	- -	- -	- -
Magnesium	NR	11	- -	- -	- -
Manganese	0.05	<0.5	- -	- -	- -
Mercury	0.002	<0.0010	- -	- -	- -
Nickel	0.1	4.6	- -	- -	- -
Nitrate and Nitrite, Total, as Nitrogen	10	0.295	- -	- -	- -
Nitrate, as Nitrogen	10	0.295	- -	- -	- -
Nitrite, as Nitrogen	1	<0.010	- -	- -	- -
Ortho-phosphate	NR	0.0056	- -	- -	- -
Potassium	NR	1.3	- -	- -	- -
Selenium	0.05	<0.0025	- -	- -	- -
Sodium	- -	6.37	- -	- -	- -
Sulfate	500 (proposed)	20.5	- -	- -	- -
Thallium	0.002	<0.0012	- -	- -	- -
Zinc	5	<0.005	- -	- -	- -

Table C-1 (continued)

Class and Parameter	Concentration[a]				
	Allowable Concentration Standard	Milwaukee 2005 (median)	Racine 2005 (mean)	Kenosha 2006 (mean)	Oak Creek 2005
Microbiological					
Coliform, Total, Presence in 100mL	<5 percent positive samples	6	13.9	81	- -
Crypotsporidium parvum, oocycsts/L	TT	<0.020[c]	- -	- -	- -
Giardia lamblia, cysts/L	TT	<0.020[d]	- -	- -	- -
Organic Chemicals					
1,1,1,2-Tetrachloroethane	NR	<0.0005	- -	- -	- -
1,1,1-Trichloroethane	0.2	<0.0005	- -	- -	- -
1,1,2,2-Tetrachloroethane	NR	<0.0005	- -	- -	- -
1,1,2-Trichloroethane	0.005	<0.0005	- -	- -	- -
1,1-Dichloroethane	NR	<0.0005	- -	- -	- -
1,1-Dichloroethylene	0.007	<0.0005	- -	- -	- -
1,1-Dichloropropene (2003)	NR	<0.0005	- -	- -	- -
1,2-Dichloroethane	0.005	<0.0005	- -	- -	- -
1,2,3-Trichloropropane	NR	<0.0005	- -	- -	- -
1,2,4-Trichlorobenzene	0.07	<0.0005	- -	- -	- -
1,2-Dibromoethane (EDB)	NR	<0.0002	- -	- -	- -
1,2-Dichlorobenzene	0.6	<0.0005	- -	- -	- -
1,2-Dichloroethylene, cis	0.07	<0.0005	- -	- -	- -
1,2-Dichloroethylene, trans	0.1	<0.0005	- -	- -	- -
1,2-Dichloropropane	0.005	<0.0005	- -	- -	- -
1,3-Dichlorobenzene	NR	<0.0005	- -	- -	- -
1,3-Dichloropropane	NR	<0.0005	- -	- -	- -
1,3-Dichloropropene (2003)	NR	<0.0005	- -	- -	- -
1,4-Dichlorobenzene	0.075	<0.0005	- -	- -	- -
1-2 Dibromo 3 chloropropane (DBCP)	0.00002	<0.00001	- -	- -	- -
2,2-Dichloropropane	NR	<0.0005	- -	- -	- -
2,4,5-TP (Silvex)	0.05	<0.0001	- -	- -	- -
2,4-D	0.07	<0.0001	- -	- -	- -
1, 2 -Chlorotoluene (o-)	NR	<0.0005	- -	- -	- -
1, 4 -Chlorotoluene (p-)	NR	<0.0005	- -	- -	- -
3-Hydroxycarbofuran	NR	<0.0005	- -	- -	- -
Adipate, di(2-ethylhexyl)	0.4	<0.0006	- -	- -	- -
Alachlor	0.002	<0.0001	- -	- -	- -
Aldicarb	0.003	<0.0005	- -	- -	- -
Aldicarb sulfone	0.002	<0.0007	- -	- -	- -
Aldicarb sulfoxide	0.004	<0.0005	- -	- -	- -
Aldrin	NR	<0.0001	- -	- -	- -
Atrazine	0.003	<0.0001	- -	- -	- -
Benzene	0.005	<0.0005	- -	- -	- -
Bromobenzene	NR	<0.0005	- -	- -	- -
Bromochloromethane	NR	<0.0005	- -	- -	- -
Bromodichloromethane	0.08	<0.0005	- -	- -	- -
Bromoform	0.08	<0.0005	- -	- -	- -

Table C-1 (continued)

Class and Parameter	Concentration[a]				
	Allowable Concentration Standard	Milwaukee 2005 (median)	Racine 2005 (mean)	Kenosha 2006 (mean)	Oak Creek 2005
Organic Chemicals (continued)					
Bromomethane	NR	<0.0005	- -	- -	- -
Butachlor	NR	<0.0001	- -	- -	- -
Carbaryl	NR	<0.0005	- -	- -	- -
Carbofuran	0.04	<0.0009	- -	- -	- -
Carbon Tetrachloride	0.005	<0.0005	- -	- -	- -
Chlordane	0.002	<0.0001	- -	- -	- -
Chlordane, alpha	0.002	<0.0001	- -	- -	- -
Chlordane, gamma	0.002	<0.0001	- -	- -	- -
Chlorobenzene	0.1	<0.0005	- -	- -	- -
Chloroethane	NR	<0.0005	- -	- -	- -
Chloroform	0.08	<0.0005	- -	- -	- -
Chloromethane	NR	<0.0005	- -	- -	- -
Dalapon	0.2	<0.0010	- -	- -	- -
Di (2-ethylhexyl) adipate	0.4	<0.0006	- -	- -	- -
Di (2-ethylhexyl) phthalate	0.006	<0.0006	- -	- -	- -
Dibromochloromethane	0.08	<0.0005	- -	- -	- -
Dibromomethane	NR	<0.0005	- -	- -	- -
Dicamba	NR	<0.0001	- -	- -	- -
Dichloromethane (methylene chloride)	0.005	<0.0005	- -	- -	- -
Dieldrin	- -	<0.0001	- -	- -	- -
Dinoseb	0.007	<0.0001	- -	- -	- -
Dioxin (2,3,7,8-TCDD)	0.00000003	<0.000000005	- -	- -	- -
Diquat	0.02	<0.0004	- -	- -	- -
Endothall	0.1	<0.009	- -	- -	- -
Endrin	0.002	<0.00001	- -	- -	- -
Ethylbenzene	0.7	<0.0005	- -	- -	- -
Ethylene dibromide (EDB)	0.00005	<0.00001	- -	- -	- -
gamma-Benzene hexachloride (Lindane)	0.0002	<0.00002	- -	- -	- -
Glyphosate (Round-up)	0.7	<0.0060	- -	- -	- -
Heptachlor	0.0004	<0.00004	- -	- -	- -
Heptachlor epoxide	0.0002	<0.00002	- -	- -	- -
Hexachlorobenzene	0.001	<0.0001	- -	- -	- -
Hexachlorobutadiene	NR	<0.0005	- -	- -	- -
Hexachlorocyclopentadiene	0.05	<0.0001	- -	- -	- -
Methomyl	NR	<0.0005	- -	- -	- -
Methoxychlor	0.04	<0.0001	- -	- -	- -
Methyl-t-butyl ether (MTBE) (UCMR)	NR	<0.0005	- -	- -	- -
Metolachlor (Dual)	NR	<0.0001	- -	- -	- -
Metribuzin (Sencor)	NR	<0.0001	- -	- -	- -
Oxamyl (Vydate)	0.2	<0.0010	- -	- -	- -
PAHs(benzo(a)-pyrene)	0.0002	<0.00002	- -	- -	- -
Pentachlorophenol	0.001	<0.001	- -	- -	- -
Picloram (Tordon)	0.5	<0.0001	- -	- -	- -

Table C-1 (continued)

Class and Parameter	Concentration[a] Allowable Concentration Standard	Milwaukee 2005 (median)	Racine 2005 (mean)	Kenosha 2006 (mean)	Oak Creek 2005
Organic Chemicals (continued)					
Polychlorinated Byphenyls (PCB's), Total	0.0005	- -	- -	- -	- -
Aroclor 1016	NR	<0.00008	- -	- -	- -
Aroclor 1221	NR	<0.002	- -	- -	- -
Aroclor 1232	NR	<0.0005	- -	- -	- -
Aroclor 1242	NR	<0.0003	- -	- -	- -
Aroclor 1248	NR	<0.0001	- -	- -	- -
Aroclor 1254	NR	<0.0001	- -	- -	- -
Aroclor 1260	NR	<0.0002	- -	- -	- -
Propachlor	NR	<0.0001	- -	- -	- -
Simazine	0.004	<0.00007	- -	- -	- -
Styrene	0.1	<0.0005	- -	- -	- -
Tetrachloroethylene	0.005	<0.0005	- -	- -	- -
Toluene	1	<0.0005	- -	- -	- -
Toxaphene	0.003	<0.0010	- -	- -	- -
Trichloroethylene	0.005	<0.0005	- -	- -	- -
Trihalomethanes, Total	0.08	<0.0005	- -	- -	- -
Vinyl Chloride	0.002	<0.0002	- -	- -	- -
Xylenes Total	10	<0.0005	- -	- -	- -
Radionuclides (pCi/L)					
BETA/photon emitters	0	- -	- -	- -	- -
Gross Alpha	15 pCi/L	- -	- -	- -	- -
Gross Beta	50 pCi/L	- -	- -	- -	- -
Radium – 226[e]	5 pCi/L	- -	- -	- -	- -
Radium – 228[e]	5pCi/L	- -	- -	- -	- -
Radon-222	NR	- -	- -	- -	- -
Strontium-90	8 pCi/L	- -	- -	- -	- -
Tritium	20,000 pCi/L	- -	- -	- -	- -
Uranium, Total	20 pCi/L	- -	- -	- -	- -

NOTE: NR = Not regulated; ND = Not detected, TT = Treatment Technique

[a] *Concentration in mg/l, except where noted.*

[b] *The lower figure reflects the average turbidity of raw water entering sand filtration, the larger figure reflects the average turbidity of raw water entering membrane filtration.*

[c] Cryptosporidium parvum *was detected in one out of 52 tests.*

[d] Giardia lambila *was detected in 10 out of 52 tests.*

[e] *The 5.0 pCi/L maximum contaminant level standard applies to the combined activity of both Radium-226 and Radium-228.*

Source: U.S. Environmental Protection Agency, Kenosha Water Utility, Milwaukee Water Works, Oak Creek Water and Sewer Utility, Racine Water Utility, Consumer Confidence Reports, and SEWRPC.

Table C-2

LAKE MICHIGAN WATER TREATMENT PLANT FINISHED WATER QUALITY CHARACTERISTICS

Class and Parameter	Concentration[a]						
	Allowable Concentration Standard	Milwaukee 2005 (Median)	Racine 2005	Kenosha 2006	Port Washington 2004	Oak Creek 2005	South Milwaukee 2004
Chemical and Physical Parameters							
Alkalinity, as CaCO3	NR	99	105	101	107	- -	- -
Hardness, Calcium, as CaCO3	NR	94	- -	- -	81	- -	- -
Hardness, Total, as CaCO3	NR	134	140	134	129	- -	- -
pH	6.5-8.5 Standard Units	7.55 Standard Units	7.5 Standard Units	7.4 Standard Units	7.4 Standard Units	- -	- -
Total Dissolved Solids (TDS) calc.	500	176	- -	- -	307	- -	- -
Total Organic Carbon	NR	1.5	1.5	- -	- -	- -	- -
Clarity							
Turbidity , NTU ' 95 Percent of the Time	<0.3 NTUs in minimum of 95 percent of monthly samples	0.06 NTU	0.06 NTU	0.02 NTU	0.08 NTU	0.09 NTU	- -
Inorganic Chemicals							
Aluminum	0.2	0.056	<0.02	- -	- -	- -	- -
Antimony	0.006	<0.0010	<0.001	0.002	0.0	- -	0.0026
Arsenic	0.05	<0.0020	<0.002	0.0011	0.0	- -	0.001
Barium	2	0.019	0.019	0.02	0.02	0.18	0.021
Beryllium	0.004	<0.0003	<0.0003	<0.00017	0.0	- -	- -
Boron	NR	0.017	<0.2	- -	- -	- -	- -
Cadmium	0.005	<0.001[b]	<0.001	0.0011	0	- -	- -
Calcium	NR	36[b]	36	- -	32.4	- -	- -
Chloride	250	13.4	16	- -	37.3	- -	- -
Chlorine, Total	4	1.33	1	- -	1.3	- -	- -
Chromium	0.1	0.002	0.0098	0.0011	0.003	- -	0.001
Copper	NR	<0.002	<0.02	- -	0.13	0.28	0.0416
Cyanide	0.2	<0.020	<0.02	<0.005	- -	- -	- -
Fluoride	4.0	1.0	1.12	1.0	1.1	0.7	0.0012
Iron	0.3	<0.003	0.02	- -	0.00013	- -	- -
Lead	NR	<0.002	<0.003	- -	0.0066	0.0055	0.00711
Magnesium	NR	11	12	- -	13.4	- -	- -
Manganese	0.05	<0.0005	0.0075	- -	- -	- -	- -
Mercury	0.002	<0.0001	<0.0002	<0.00016	0	- -	- -
Nickel	0.1	<0.001	0.0025	0.0013	0.0038	0.0046	- -
Nitrate and Nitrite, Total, as Nitrogen	10	0.29	0.3	0.57	0.8	- -	- -
Nitrate, as Nitrogen	10	0.29	0.3	- -	<0.3	0.4	- -
Nitrite, as Nitrogen	1	<0.010	<0.01	<0.0067	0	- -	- -
Ortho-phosphate	NR	1.9	0.24	- -	- -	- -	- -
Potassium	NR	1.3	1.42	- -	- -	- -	- -
Selenium	0.05	<0.002	<0.002	<0.002	0	- -	0.001
Sodium	NR	7.86[b]	6.2	9.4	6.5	13	7.3
Sulfate	500 (proposed)	30	27	27	23	22	30
Thallium	0.002	<0.0004	<0.0004	<0.00098	0	- -	0.0004
Zinc	5	<0.005	0.086	- -	0.12	- -	- -

Table C-2 (continued)

Class and Parameter	Concentration[a]						
	Allowable Concentration Standard	Milwaukee 2005 (Median)	Racine 2005	Kenosha 2006	Port Washington 2004	Oak Creek 2005	South Milwaukee 2004
Microbiological							
Coliform, Total, Presence in 100mL	<5 percent positive samples	0	0	- -	0	- -	- -
Crypotsporidium parvum, oocysts/100 L	TT	<0.200[c]	- -	- -	- -	- -	- -
Giardia lamblia, cysts/100 L	TT	<0.200[c]	- -	- -	- -	- -	- -
Organic Chemicals							
1,1,1,2-Tetrachloroethane	NR	<0.0005	<0.0001	<0.00018	- -	- -	- -
1,1,1-Trichloroethane	0.2	<0.0005	<0.0005	<0.00017	ND	- -	- -
1,1,2,2-Tetrachloroethane	NR	<0.0005	<0.0001	<0.00015	- -	- -	- -
1,1,2-Trichloroethane	0.005	<0.0005	<0.0005	<0.00017	ND	- -	- -
1,1-Dichloroethane	NR	<0.0005	<0.0001	<0.00018	- -	- -	- -
1,1-Dichloroethylene	0.007	<0.0005	<0.0002	<0.00019	ND	- -	- -
1,1-Dichloropropene	NR	<0.0005[b]	<0.0001	<0.00017	- -	- -	- -
1,2-Dichloroethane	0.005	<0.0005	<0.0005	<0.00019	ND	- -	- -
1,2,3-Trichloropropane	NR	<0.0005	<0.0002	<0.0003	- -	- -	- -
1,2,4-Trichlorobenzene	0.07	<0.0005	<0.0005	<0.00018	ND	- -	- -
1,2-Dibromoethane (EDB)	NR	<0.0002	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	0.6	<0.0005	<0.0005	<0.00018	ND	- -	- -
1,2-Dichloroethylene, cis	0.07	<0.0005	<0.0005	<0.00018	ND	- -	- -
1,2-Dichloroethylene, trans	0.1	<0.0005	<0.0005	<0.00017	ND	- -	- -
1,2-Dichloropropane	0.005	<0.0005	<0.0005	<0.00017	ND	- -	- -
1,3-Dichlorobenzene	NR	<0.0005	<0.0001	<0.00016	- -	- -	- -
1,3-Dichloropropane	NR	<0.0005	<0.0001	<0.0002	- -	- -	- -
1,3-Dichloropropene	NR	<0.0005	<0.0001	<0.00036	- -	- -	- -
1,4-Dichlorobenzene	0.075	<0.0005	<0.0005	<0.00017	ND	- -	- -
1-2 Dibromo 3 chloropropane (DBCP)	0.00002	<0.00001	<0.0002	- -	- -	- -	- -
2,2-Dichloropropane	NR	<0.0005	<0.0002	<0.00018	- -	- -	- -
2,4,5-TP (Silvex)	0.05	<0.0001	<0.0001	<0.0001	ND	- -	- -
2,4-D	0.07	<0.0001	<0.0001	<0.0001	ND	- -	- -
1, 2 -Chlorotoluene (o-)	NR	<0.0005	<0.0002	<0.00018	- -	- -	- -
1, 4 -Chlorotoluene (p-)	NR	<0.0005	<0.0002	<0.00016	- -	- -	- -
3-Hydroxycarbofuran	NR	<0.0005	- -	<0.00091	- -	- -	- -
Alachlor	0.002	<0.0001	<0.0001	<0.0001	ND	- -	- -
Aldicarb	0.003	<0.0005	<0.0005	<0.00045	ND	- -	- -
Aldicarb sulfone	0.002	<0.0004	<0.0007	<0.00048	ND	- -	- -
Aldicarb sulfoxide	0.004	<0.0005	<0.0005	<0.00026	ND	- -	- -
Aldrin	NR	<0.0001	<0.0001	<0.0001	- -	- -	- -
Atrazine	0.003	<0.0001	<0.0001	<0.0001	ND	- -	- -
Benzene	0.005	<0.0005	<0.0005	<0.00017	ND	- -	- -
Bromobenzene	NR	<0.0005	<0.0002	<0.00018	- -	- -	- -
Bromochloromethane	NR	<0.0005	- -	- -	0.0054	- -	- -
Bromodichloromethane	0.08	0.0018	0.0063	0.013	0.00728	0.00733	0.00955
Bromoform	0.08	<0.005	<0.0005	0.0006	0.0005	0.00036	0.00008
Bromomethane	NR	<0.0005	<0.0005	<0.00017	- -	- -	- -
Butachlor	NR	<0.0001	<0.0001	<0.0001	- -	- -	- -

Table C-2 (continued)

Class and Parameter	Concentration[a]						
	Allowable Concentration Standard	Milwaukee 2005 (Median)	Racine 2005	Kenosha 2006	Port Washington 2004	Oak Creek 2005	South Milwaukee 2004
Organic Chemicals (continued)							
Carbaryl	NR	<0.0005	<0.001	<0.00059	- -	- -	- -
Carbofuran	0.04	<0.0009	<0.0009	0.00051	ND	- -	- -
Carbon Tetrachloride	0.005	<0.0005	<0.0005	0.00022	ND	- -	- -
Chlordane	0.002	<0.0002	<0.0001	<0.0004	ND	- -	- -
Chlordane, alpha	0.002	<0.0001	<0.0001	- -	- -	- -	- -
Chlordane, gamma	0.002	<0.0001	<0.0001	- -	- -	- -	- -
Chlorobenzene	0.1	<0.0005	<0.0005	0.00019	ND	- -	- -
Chloroethane	NR	<0.0005	<0.0005	<0.0005	- -	- -	- -
Chloroform	0.08	<0.0015	0.0084	0.023	0.0073	0.01168	0.01565
Chloromethane	NR	<0.0005	<0.0005	<0.00016	- -	- -	- -
Dalapon	0.2	<0.001	<0.0001	<0.001	ND	- -	- -
Di (2-ethylhexyl) adipate	0.4	<0.0006	<0.0006	<0.0006	- -	- -	- -
Di (2-ethylhexyl) phthalate	0.006	<0.0006	<0.0006	<0.0006	- -	- -	- -
Dibromoacetic acid	NR	<0.001	<0.001	- -	- -	- -	- -
Dibromochloromethane	0.08	0.0012	0.0027	0.0064	0.037	0.00393	0.00367
Dibromochloropropane	0.0006	- -	<0.0001	- -	- -	- -	- -
Dibromomethane	NR	<0.0005	<0.0001	<0.00018	0.0023	- -	- -
Dicamba	NR	<0.0001	<0.0001	<0.0001	- -	- -	- -
Dichloroacetic Acid	NR	0.0013	0.0056	- -	- -	- -	- -
Dichloromethane (methylene chloride)	0.005	<0.0005	<0.0005	<0.00019	ND	- -	- -
Dieldrin	NR	- -	<0.0001	<0.0001	- -	- -	- -
Dinoseb	0.007	<0.0001	<0.0001	<0.0001	ND	- -	- -
Dioxin (2,3,7,8-TCDD)	0.00000003	<0.000000005	<0.000000005	<0.0000000052	ND	- -	- -
Diquat	0.02	<0.0004	<0.0004	<0.0004	ND	- -	- -
Endothall	0.1	<0.009	<0.009	<0.00053	ND	- -	- -
Endrin	0.002	<0.00001	<0.00001	<0.00011	ND	- -	- -
Ethylbenzene	0.7	<0.0005	<0.0005	<0.00018	ND	- -	- -
Ethylene dibromide (EDB)	0.00001	<0.00001	<0.00001	- -	- -	- -	- -
gamma-Benzene hexachloride (Lindane)	0.0002	<0.00002	<0.00002	<0.000051	ND	- -	- -
Glyphosate (Round-up)	0.7	<0.006	<0.006	<0.0037	ND	- -	- -
Haloacetic acids, Total	0.060	0.0016	0.012	0.012	0.012	- -	0.016
Heptachlor	0.0004	<0.00004	<0.00004	<0.00055	ND	- -	- -
Heptachlor epoxide	0.0002	<0.00002	<0.00002	<0.000059	ND	- -	- -
Hexachlorobenzene	0.001	<0.0001	<0.0001	<0.0001	ND	- -	- -
Hexachlorobutadiene	NR	<0.0001	- -	- -	ND	- -	- -
Hexachlorocyclopentadiene	0.05	<0.0001	<0.0001	<0.0001	- -	- -	- -
Methomyl	NR	<0.0005	<0.0005	<0.00048	- -	- -	- -
Methoxychlor	0.04	<0.0001	<0.0001	<0.0001	ND	- -	- -
Methyl-t-butyl ether (MTBE) (UCMR)	NR	<0.0005	- -	- -	0.002	- -	- -
Metolachlor (Dual)	NR	<0.0001	<0.0001	<0.0001	- -	- -	- -
Metribuzin (Sencor)	NR	<0.0001	<0.0001	<0.0001	- -	- -	- -
Oxamyl (Vydate)	0.2	<0.001	<0.001	<0.00048	ND	- -	- -
PAHs(benzo(a)-pyrene)	0.0002	<0.00002	<0.00002	<0.00002	- -	- -	- -
Pentachlorophenol	0.001	<0.00004	<0.00004	<0.00004	ND	- -	- -
Picloram (Tordon)	0.5	<0.0001	<0.0001	<0.0001	ND	- -	- -

Table C-2 (continued)

Class and Parameter	Concentration[a]						
	Allowable Concentration Standard	Milwaukee 2005 (Median)	Racine 2005	Kenosha 2006	Port Washington 2004	Oak Creek 2005	South Milwaukee 2004
Organic Chemicals (continued)							
Polychlorinated Byphenyls (PCB's), Total	0.0005	- -	<0.0005	- -	ND	- -	- -
Aroclor 1016	NR	<0.00008	- -	<0.0002	- -	- -	- -
Aroclor 1221	NR	<0.002	- -	<0.00035	- -	- -	- -
Aroclor 1232	NR	<0.0005	- -	<0.00036	- -	- -	- -
Aroclor 1242	NR	<0.0003	- -	<0.00029	- -	- -	- -
Aroclor 1248	NR	<0.0001	- -	<0.00036	- -	- -	- -
Aroclor 1254	NR	<0.0001	- -	<0.00018	- -	- -	- -
Aroclor 1260	NR	<0.0002	- -	<0.00021	- -	- -	- -
Propachlor	NR	<0.0001	<0.0001	<0.0001	- -	- -	- -
Simazine	0.004	<0.00007	<0.00007	<0.000079	ND	- -	- -
Styrene	0.1	<0.0005	<0.0002	<0.00017	ND	- -	- -
Tetrachloroethylene	0.005	<0.0005	<0.0005	<0.00018	ND	- -	- -
Toluene	1	<0.0005	<0.0005	<0.00017	ND	- -	- -
Toxaphene	0.003	<0.001	<0.001	<0.00047	ND	- -	- -
Trichloroacetic Acid	NR	<0.001	0.0061	- -	- -	- -	- -
Trichloroethylene	0.005	<0.0005	<0.0005	<0.00018	ND	- -	- -
Trihalomethanes, Total	0.08	0.0036	- -	0.080	0.02	0.024	0.029
Vinyl Chloride	0.002	<0.0002[d]	<0.0002	<0.00017	ND	- -	- -
Xylenes Total	10	<0.0005[d]	<0.0005	<0.00054	ND	- -	- -
Radionuclides (pCi/L)							
BETA/photon emitters	0	- -	- -	- -	3 pCi/L	- -	- -
Gross Alpha	15 pCi/L	<2.9 pCi/L[d]	0.4 pCi/L	- -	1 pCi/L	0.1 pCi/L	0.1 pCi/L
Gross Beta	50 pCi/L	<4 pCi/L[d]	1.6 pCi/L	- -	- -	- -	- -
Radium – 226	5 pCi/L[e]	0.15 pCi/L[d]	0.13 pCi/L	- -	ND	- -	- -
Radium – 228	5 pCi/L[e]	0.7 pCi/L[d]	0.8 pCi/L	- -	ND	- -	- -
Radon-222	NR	<17 pCi/L[d]	14 pCi/L	- -	- -	- -	- -
Strontium-90	8 pCi/L	0.7 pCi/L[d]	1.0 pCi/L	- -	- -	- -	- -
Tritium	20,000 pCi/L	<300 pCi/L[d]	20 pCi/L	- -	- -	- -	- -
Uranium, Total	20 pCi/L	0.54 pCi/L[d]	0.9 pCi/L	- -	- -	- -	- -

NOTE: NR = Not regulated; ND = Not detected

[a] *Concentration in mg/l, except where noted.*

[b] *Result from 2003.*

[c] *There were no detections of* Cryptosporidium parvum, *or* Giardia lambila *in 52 tests.*

[d] *Result from 2004.*

[e] *The 5.0 pCi/L maximum contaminant level standard applies to the combined activity of both Radium-226 and Radium-228.*

Source: U.S. Environmental Protection Agency, Kenosha Water Utility, Milwaukee Water Works, Oak Creek Water and Sewer Utility, City of Port Washington Water Utility, Racine Water Utility, Consumer Confidence Reports, and SEWRPC.

Appendix D

SELECTED CHARACTERISTICS OF EXISTING, OTHER-THAN-MUNICIPAL, SELF-SUPPLIED RESIDENTIAL, INDUSTRIAL, COMMERCIAL, AGRICULTURAL, AND IRRIGATION WATER SUPPLY SYSTEMS IN THE SOUTHEASTERN WISCONSIN REGION: 2005

NOTE: The data presented in this appendix are derived largely from the Wisconsin Department of Natural Resources data bases. Some of the data lack currency since no periodic reporting was required as of 2006 for most of the self-supplied water systems. As of 2008, the Wisconsin Department of Natural Resources was in the process of updating the data base concerned. Updated information on the self-supplied public and nonpublic water supply systems can be obtained from the WDNR staff as this information becomes available.

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Table D-1

SELECTED CHARACTERISTICS OF PRIVATE RESIDENTIAL COMMUNITY WATER SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2005

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Kenosha County														
KN 01	OTM	Village Plaza Apartments	Village of Paddock Lake	A	28	EN387	1992	143	L	L	- -	1,680[d]	- -	- -
KN 02	OTM	Timber Ridge Mobile Home Park	Village of Pleasant Prairie	C	- -	DS614	1991	150	H	L[f]	- -	N/A	- -	- -
KN 03	OTM	Lakeview Apartments	Village of Silver Lake	A	30	BO485	- -	190	L	L	- -	1,800[d]	- -	Ion exchange
KN 04	OTM	Silver Crest Apartments	Village of Silver Lake	A	80	BG073	1982	81	H	H[f]	100	36,000[e]	72,000	- -
KN 05	OHC TNC	Chateau Du Lac Condominiums	Village of Twin Lakes	A	25	GF011 BO534	1993 1984	88 78	H	L[f] L	- - - -	1,500[d]	- -	- - - -
KN 06	OTM	Colonial View Apartments	Village of Twin Lakes	A	48	BO521	- -	- -	L	L	- -	2,880[d]	- -	- -
KN 07	OTM	425 Holy Hill Apartments	Village of Twin Lakes	A	50	BO523	1980	155	L	L	- -	3,000[d]	- -	Ion exchange
KN 08	OTM	Lakewood Village Apartments	Village of Twin Lakes	A	125	DS663 CS543	1991 1991	260 275	L	L L	- - - -	7,500[d]	- -	Ion exchange - -
KN 9	OTM	Lincoln Crest Apartments	Village of Twin Lakes	A	32	KY628	1997	78	L	L	- -	1,920[d]	- -	- -
KN 10	OTM	Maple Leaf Manor	Village of Twin Lakes	A	50	BG076 BG074	1960 1984	- - 70	H	H[f] H[f]	125 75	6,000[e] 27,000[e]	8,000 - -	- - - -
KN 11	TNC	Regis Landing Condominiums	Village of Twin Lakes	A	41	FX296	1984	70	L	L	- -	2,460[d]	- -	- -
KN 12	OTM	Tan Oak Apartments	Village of Twin Lakes	A	325	JE502 JE501	- - - -	- - - -	L	L L	- - - -	19,500[d]	- -	- - - -
KN 13	OTM	Timber Ridge Apartments	Village of Twin Lakes	A	35	BO533	- -	116	L	L	- -	2,100[d]	- -	Ion exchange
KN 14	OTM	Twin Lakes Park Water Cooperative	Village of Twin Lakes	B	35	BO516	- -	250	L	L	- -	2,100[d]	- -	- -
KN 15	OTM	Van Woods Estates	Village of Twin Lakes	B	80	GT014 BO518	1973 1975	370 1,164	L	L L	- - - -	4,800[d]	- -	- - - -
KN 15A	OTM	Rainbow Lake Manor	Town of Bristol	C	350	BO524 AY634 HU154	1976 1988 1995	132 148 132	L	L L L	- - - - - -	20,000[d]	- - - - - -	- - - - - -
KN 15B	OTM	Knolls Water Cooperative	Town of Randall	B	400	BO513 HJ093	1938 1994	135 139	H	L L	- - - -	24,000[d]	- - - -	Hypochlorination, pre - -
KN 15C	OTM	Nippersink Wisconsin Well Service	Town of Randall	B	51	BO692	- -	- -	L	L	- -	3,060[d]	- -	- -

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Kenosha County (continued)														
KN 16	OHC	Mill Creek Villas Condo Association	Town of Salem	A	- -	MW265	1999	98	H	L[f]	25	4,000[d]	- -	- -
						OA118	2001	107		L[f]	25	4,000[d]	- -	- -
						OA119	2001	105		L[f]	25	4,000[d]	- -	- -
						OA137	2000	105		L[f]	25	4,000[d]	- -	- -
						OA190	2000	115		L[f]	25	4,000[d]	- -	- -
						OW016	2001	100		L[f]	25	4,000[d]	- -	- -
						QR734	2003	100		L[f]	25	4,000[d]	- -	- -
						RI313	2003	99		L[f]	25	4,000[d]	- -	- -
						RI317	2003	78		L[f]	25	4,000[d]	- -	- -
						RI319	2004	76		L[f]	25	4,000[d]	- -	- -
						QR733	2003	101		L[f]	25	4,000[d]	- -	- -
						OW017	2001	100		L[f]	25	4,000[d]	- -	- -
						RV714	2004	84		L[f]	25	4,000[d]	- -	- -
						MW234	1999	99		L[f]	25	4,000[d]	- -	- -
KN 17	OTM	52nd Avenue Water Group	Town of Somers	B	35	JD372	- -	141	L	L	- -	2,100[d]	- -	- -
						JD373	- -	78		L	- -			- -
						JD374	- -	270		L	- -			- -
KN 18	OTM	Country Charm Estates	Town of Somers	B	80	FX297	1966	190	L	L	- -	4,800[d]	- -	- -
KN 19	OTM	Eagle Chateau Apartments	Town of Somers	A	125	BO498	1973	225	H	L[f]	60	15,000[e]	27,000[f]	- -
						CP803	1990	225		- -[f]	- -	- -	- -	- -
KN 20	OTM	Elizabeth Manor Apartments	Town of Somers	A	30	FX303	1973	158	L	L	- -	1,800[d]	- -	- -
KN 21	OTM	Oakdale Estates Mobile Home Park	Town of Somers	C	220	BO531	- -	- -	L	L	- -	13,200[d]	- -	- -
						BO528	- -	300		L	- -			- -
						BO529	- -	- -		L	- -			- -
						B0530	- -	- -		L	- -			- -
KN 22	OTM	Pleasant Prairie Mobile Home Park	Town of Somers	C	60	BO496	- -	128	L	L	- -	3,600[d]	- -	- -
						BO497	- -	268		L	- -			- -
KN 23	OTM	Wheatland Estates Mobile Home Court	Town of Wheatland	C	450	BO519	- -	73	L	L	- -	27,000[d]	- -	- -
						BO520	1971	137		L	- -			- -
Kenosha County: 26 Systems			- -	- -	2,785	- -	- -	- -	- -	55 Wells	- -	- -	- -	- -
Milwaukee County														
MK 01	OTM	Franklin Mobile Homes, LLC	City of Franklin	C	310	BO568	- -	- -	H	L	- -	18,600[d]	- -	- -
						BO570	- -	- -		L	- -			- -
						BO569	- -	- -		L	- -			- -
	OHC					DU250	1990	383		H[f]	- -			- -
MK 02	OTM	Meadows Condo Association, Ltd.	City of Franklin	C	50	FX311	1972	340	L	L	- -	3,000[d]	- -	- -
MK 03	OTM	Robert William Park Water Association	City of Milwaukee	B	1,065	BG434	1955	305	H	H[f]	200	288,000[e]	288,000[f]	Hypochlorination, post
						BG433	1955	306		H[f]	200	288,000[e]	288,000[f]	Hypochlorination, post
MK 04[g]	OHC	Bayside Woods[g]	Village of Bayside	B	629	JD357	1978	532	H	H[f]	320	150,000[e]	200,000[f]	- -
						BG426	1978	432		H[f]	320	230,000[e]	460,000[f]	- -

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Milwaukee County (continued)														
MK 05	OTM	Northway Water Coop	Village of Bayside	B	120	BO546 BO545	1953 1953	205 218	H	H[f] L	100 - -	72,000[e] - -	144,000[f] - -	- - - -
MK 06	OTM	Vista Del Mar	Village of Bayside	B	70	BO562	1957	300	L	L	- -	4,200[d]	- -	- -
MK 07	OTM	Blossom Heath 1	Village of Hales Corners	B	100	FX308	1956	440	H	H[f]	135	97,000[e]	194,000[f]	- -
MK 08	OTM	Hales Happiness Subdivision	Village of Hales Corners	B	400	BO553 BO554	1982 1956	1,041 1,060	L	L L	- - - -	24,000[e]	- -	- - - -
MK 09	OTM	Whitnall Garden Apartments	Village of Hales Corners	A	200	BG440	1967	1,070	H	H[f]	- -	43,000[e]	86,000[f]	Ion exchange
MK 10	OHC	Private Residence	Village of River Hills	E	- -	HM190 - - LK026	1993 - - 1998	145 150 142	H	H[f] H[f] H[f]	26 37 30	6,000[e] 22,000[e] 30,000[e]	37,000[f] 53,000[f] 43,000[f]	- - - - - -
Milwaukee County: 10 Systems			- -	- -	2,944	- -	- -	- -	- -	19 wells	- -	- -	- -	- -
Ozaukee County														
OZ 01	OTM	Beechwood Farms Estates	City of Mequon	B	300	AJ779 CW500	1990 - -	300 415	H	H[f] H[f]	330 500	238,000[e] 360,000[e]	476,000[f] 720,000[f]	- - - -
OZ 02	OTM	Brighton Ridge Subdivision	City of Mequon	B	200	ES251	- -	415	H	H[f]	170	122,000[e]	244,000[f]	- -
OZ 03[h]	OTM	Concordia University[h]	City of Mequon	D	1,500	BO591	1957	635	H	H[f]	80	61,000[e]	87,000[f]	Hypochlorination, post; ion exchange; sequestration
OZ 04	OTM	Country Terrace Condo Homes	City of Mequon	A	200	FX316	1973	455	H	H[f]	260	187,000[e]	374,000[f]	- -
OZ 05	OHC	Essex Place Condominium Association	City of Mequon	A	- -	OC049 LT295 LL742 NM780 LT319	2000 1998 1998 2000 1998	224 180 146 223 245	H	L[f] L[f] L[f] L[f] L[f]	14 14 14 14 14	- - - - - - - - - -	1,000[f] 1,000[f] 1,000[f] 1,000[f] 1,000[f]	- - - - - - - - - -
OZ 06	OTM	Haddonstone Subdivision	City of Mequon	B	195	FX328	1987	640	H	H[f]	250	11,700[e]	360,000[f]	- -
OZ 07[g]	OHC	Heritage Estates Owners Association[g]	City of Mequon	B	- -	BO603	1973	300	H	L[f]	- -	24,000[e]	72,000[f]	- -
OZ 08	OTM	Highland Colony Estates	City of Mequon	B	88	BO593	1971	315	H	L[f]	- -	25,000[e]	35,000[f]	- -
OZ 09	OTM	Huntington Park	City of Mequon	B	600	BG611 BG428 BG635	1979 1980 1987	552 267 563	H	L[f] H[f] H[f]	54 200 375	39,000[e] 144,000[e] 270,000[e]	78,000[f] 288,000[f] 540,000[f]	- - - - - -
OZ 10	OTM	Kenilworth Subdivision	City of Mequon	B	120	AU054	1988	640	H	H[f]	200	144,000[e]	288,000[f]	- -
OZ 11	OTM	Mequon Colony Estates Condominiums	City of Mequon	A	75	FX319	- -	315	H	L[f]	- -	25,000[e]	35,000[f]	- -
OZ 12	OTM	Mequon on the Square Condominiums	City of Mequon	A	110	BA126	1993	568	L	L	- -	6,600[d]	- -	- -
OZ 13	OTM	Mequon Parc Apartments	City of Mequon	A	70	BO629	1973	300	L	L	- -	4,200[d]	- -	Filtered; ion exchange

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Ozaukee County (continued)														
OZ 14	OTM	Mequon Trail Townhomes	City of Mequon	A	615	CW987 CW999	1990 1990	620 350	H	H[f] H[f]	135 135	97,000[e] 97,000[e]	194,000[f] 194,000[f]	Ion exchange Ion exchange
OZ 15	OTM	Mequon Water Trust	City of Mequon	B	27	FX318	1955		H	H[f]	75	54,000[e]	108,000[f]	- -
OZ 16	OTM	Oakwood Apartments	City of Mequon	A	50	BO653 BO654	1984 1984	624 624	H	H[f] H[f]	- - - -	3,000[d]	- -	Ion exchange Ion exchange
OZ 17	OTM	Park Place Subdivision	City of Mequon	B	260	BG630 BG634	1979 1987	630 300	H	H[f] H[f]	300 - -	216,000[e] 15,600[d]	432,000[f] - -	- - - -
OZ 18	OTM	Pines Subdivision	City of Mequon	B	224	AY345	1992	610	H	H[f]	500	360,000[e]	720,000[f]	- -
OZ 19	OHC	Estate of D. Pollack	City of Mequon	E	- -	BG598	1971	1,170	H	H[f]	200	72,000[e]	187,000[f]	- -
OZ 20	OTM	Ravine Farms Homeowners Association	City of Mequon	B	88	BO598	1976	590	H	H[f]	- -	5,280[d]	- -	- -
OZ 21	OTM	River Lake Subdivision	City of Mequon	B	100	BG636	1987	535	H	H[f]	168	108,000[e]	216,000[f]	- -
OZ 22	OTM	River Trails Estates Water Users	City of Mequon	B	84	BG637	1987	505	H	H[f]	650	468,000[e]	936,000[f]	- -
OZ 23	OTM	Vintage Estates	City of Mequon	B	130	FX329 BA127	1987 1993	628 250	H	H[f] H[f]	250 - -	180,000[e] 7,800[e]	360,000[f] - -	- - - -
OZ 24	OTM	Westchester Lakes Subdivision	City of Mequon	B	300	CW452 DC802	- - - -	575 410	H	H[f] H[f]	150 - -	108,000[e] 18,000[e]	216,000[f] - -	- - - -
OZ 25[h]	OTM	Wisconsin Lutheran Seminary[h]	City of Mequon	D	175	BO624 ET993	1960 1928	64 480	H	L L	- - - -	16,000[e] 24,000[e]	21,000[f] 33,000[f]	Ion exchange Ion exchange
OZ 26	OTM	Woodridge Estates	City of Mequon	B	100	CB598	1989	595	H	H[f]	75	6,000[e]	- -	- -
OZ 27	OTM	Wyngate Subdivision	City of Mequon	B	125	AZ268 AC337	- - 1988	620 560	H	H[f] H[f]	250 - -	180,000[e] 7,500[e]	360,000[f] - -	- - - -
OZ 28	OTM	Trailer Park II, LLC	City of Port Washington	C	30	BO630	1985	160	L	L	- -	1,800[e]	- -	- -
OZ 29	OTM	Alberta Subdivision	Village of Thiensville	B	88	FX322	1968	406	H	H[f]	150	216,000[e]	216,000[f]	- -
OZ 30	OTM	Century Estates	Village of Thiensville	B	430	JE503 FX320 BO613	1968 1965 1960	350 573 350	H	H[f] H[f] H[f]	140 150 250	202,000[e] 216,000[e] 360,000[e]	202,000[f] 216,000[f] 360,000[f]	- - - - - -
OZ 31	OTM	Grand Avenue Apartments	Village of Thiensville	A	100	FX327	1986	100	L	L	- -	6,000[d]	- -	Ion exchange
OZ 32	OTM	Heidel Road Apartments	Village of Thiensville	A	80	BO621 BO628	- - - -	145 147	L	L L	- - - -	4,800[d]	- -	Ion exchange Ion exchange
OZ 33	OTM	Laurel Acres	Village of Thiensville	B	276	EQ934 BO616	1992 1956	200 586	H	H[f] H[f]	200 - -	144,000[e] 16,560[d]	288,000[f] - -	Hypochlorination, post; sequestration Hypochlorination, post
OZ 34	OTM OHC	Laurel Lakes AKA Lake Bluff Condos	Village of Thiensville	A	130	FW869 BO619 CW604	1993 1972 1990	425 250 559	H H	L[f] L[f] H[f]	- - - - - -	4,800[d] 3,000[d] - -	- - - - - -	Ion exchange Ion exchange - -

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Ozaukee County (continued)														
OZ 35	OTM	Linden Lane Apartments	Village of Thiensville	A	165	BO612 BO623	- - 1976	102 175	L	L L	- - - -	9,900[d]	- -	Ion exchange Ion exchange
OZ 36	OTM	River Garden Apartments	Village of Thiensville	A	75	BO609	1972	435	L	L	- -	4,500[d]	- -	Ion exchange
OZ 37	OTM	Village Glen Apartments	Village of Thiensville	A	25	BO618	1961	191	L	L	- -	1,500[d]	- -	Ion exchange
OZ 38	OTM	Village Heights Apartments	Village of Thiensville	A	130	FX324	1951	559	H	H[f]	200	60,000[e]	120,000[f]	- -
OZ 39	OTM	Water's Edge Condo Association	Village of Thiensville	A	75	FX421	- -	- -	L	L	- -	4,500[d]	- -	- -
OZ 40	OTM	White Coach Condos	Village of Thiensville	A	30	SR722	- -	985	L	L	- -	1,800[d]	- -	Ion exchange
OZ 41	OTM	Williamsburg Apartments	Village of Thiensville	A	198	BO610 DB976 BO617	1973 1990 - -	340 503 455	L	L L L	- - - - - -	11,880[d]	- -	Ion exchange Ion exchange Ion exchange
OZ 42	OTM	Pioneer Grafton Mobile Home Park	Town of Grafton	C	150	NY611 NY658	- - - -	179 180	H	H[f] H[f]	- - - -	9,000[d]	- -	- - - -
OZ 43	OTM	Stonecroft Condominium Association	Town of Grafton	A	50	BO590	1973	450	H	L[f]	- -	19,000[e]	28,000[f]	- -
Ozaukee County: 43 Systems			- -	- -	7,768	- -	- -	- -	- -	67 wells	- -	- -	- -	- -
Racine County														
RC 01	OTM	Riverside Apartments	Village of Rochester	A	33	BO671	1986	127	L	L	- -	1,980[d]	- -	Ion exchange
RC 02	OTM	Browns Lake Mobile Home Court	Town of Burlington	C	225	BO659 BO660	1975 1979	330 140	L	L L	- - - -	13,500[d]	- - - -	- - - -
RC 03	TNC	Island View Condominiums	Town of Burlington	A	25	FX336	1958	182	H	H[f]	125	40,000[e]	50,000[f]	- -
RC 04	OHC	Lakeview Landing Condos	Town of Burlington	A	26	SS417	2004	675	H	- -[f]	- -	1,560[d]	- -	- -
RC 05	OTM	Eagle Lake Manor	Town of Dover	B	300	BO656 BO664	- - - -	- - - -	L	L L	- - - -	18,000[d]	- -	- - - -
RC 06	OTM	Hickory Haven	Town of Dover	C	303	BO672 BO673	1969 1972	179 194	L	L L	- - - -	18,180[d]	- -	- - - -
RC 07	TNC	Regency Club Condominiums	Town of Dover	A	74	AY633	1988	159	L	L	- -	4,440[d]	- -	- -
RC 08	OTM	Cozy Acres Subdivision	Village of Mt. Pleasant	B	120	BO670	1948	205	H	H[f]	- -	86,000	173,000	- -
RC 09	OTM	Jensen's Mobile Home Village	Village of Mt. Pleasant	C	40	BO669	- -	81	L	L	- -	2,400[d]	- -	- -
RC 10	Other High-Cap	Pavillion Apartments	Village of Mt. Pleasant	A	- -	BG731 BG732 - -	1978 1979 - -	150 155 0	H	L[f] L[f] - -[f]	40 40 - -	10,000 10,000 - -	25,000 25,000 - -	- - - - - -
RC 11	OTM	Spring Green	Village of Mt. Pleasant	B	89	FX343 FX342 FX348	1974 1977 1972	224 135 173	L	L L L	- - - - - -	5,340[d]	- -	- - - - - -

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Racine County (continued)														
RC 12	OTM	Harvest View Estates	Town of Yorkville	C	400	FN162 BO678 BO674 BO675 BO676 BO677	1993 1978 1942 1956 1974 1974	257 133 190 223 300 344	H	L[f] L L L L L	- - - - - - - - - - - -	24,000[d]	- -	- - - - - - - - - - - -
Racine County: 12 Systems			- -	- -	1,635	- -	- -	- -	- -	24 wells	- -	- -	- -	- -
Walworth County														
WL 01	OTM	Workmen's Benefits Rec. Society	Village of Genoa City	B	60	FX352 ET922	1961 1955	300 250	L	L L	- - - -	3,600[d]	- -	- - - -
WL 02	OTM	Pioneer Estates of Delavan	Town of Darien	C	240	LI557	1997	550	L	L	- -	14,400[d]	- -	Hypochlorination, pre, inhibitor, polyphosphate
WL 03	OTM	Delavan Club Condos	Town of Delavan	A	25	CS645 DR567	1990 1992	160 175	H	H[f] H[f]	95 95	68,000[e] 68,000[e]	136,000[f] 136,000[f]	Ion exchange Ion exchange
WL 04	OTM	Geneva Landings	Town of Delavan	A	25	AD930 AD929	1996 1996	145 136	H	- -[f] - -[f]	- - - -	1,500[e]	- -	- - - -
WL 05	OTM	Ludwell Estates Mobile Home Park	Town of Delavan	C	170	BO690 BO704	1960 1966	90 175	L	L L	- - - -	10,200[d]	- -	Hypochlorination, pre - -
WL 06	OTM	Town Hall Apartments	Town of Delavan	A	90	GF096	1993	206	L	L	- -	5,400[d]	- -	Ion exchange
WL 07	OTM	Westshire Farms at the Lake	Town of Delavan	A	300	KY572	1998	118	H	- -[f]	- -	18,000[d]	- -	Hypochlorination, pre, inhibitor, polyphosphate
WL 08	OTM	Coachman's Terrace	Town of Geneva	C	125	BO700	1963	299	L	L	- -	7,500[d]	- -	- -
WL 09	OTM	Geneva National Golf Club	Town of Geneva	B	1,750	AX734 CO567	1991 1990	1,112 237	H	H[f] H[f]	400 800	288,000[e] 576,000[e]	576,000[f] 1,152,000[f]	Hypochlorination, pre Hypochlorination, pre
WL 10	OTM	Interlaken Resort Village	Town of Geneva	B	300	FX351 JD377	1972 1981	1,194 275	H	H[f] H[f]	- - 150	50,000[e] 100,000[e]	100,000[f] 100,000[f]	Hypochlorination, pre, inhibitor, polyphosphate Hypochlorination, pre, inhibitor, polyphosphate
WL 11	OHC	Dreamfield, LLC, Wrigley Development Corporation	Town of Geneva	E	- -	BH126	1971	0	H	L[f]	- -	5,000[e]	20,000[f]	- -
WL 12	TNC	Sterlingworth Condominiums	Town of LaGrange	A	25	IZ095	1959	197	L	L	- -	1,625[d]		- -
WL 13	OHC	Knollwood Subdivision, Cisco Beach	Town of Linn	B	- -	BH142	1969	1137	H	H[f]	350	84,000[e]	168,000[f]	- -
WL 14	TNC	Shore Haven Lake Association	Town of Linn	B	70	LL154	1996	720	L	L	- -	4,200[d]	- -	- -
WL 15	OHC	South Shore Club	Town of Linn	A	- -	RX244 RX245	2002 2002	1,500 1,500	H	- -[f] - -[f]	- - - -	- - - -	- - - -	- - - -

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Walworth County (continued)														
WL 16	OTM	Harbor House	Town of Lyons	D	26	DR206	1990	222	L	L	- -	1,560[d]	- -	Ion exchange
WL 17	OTM	Snug Harbor Inn Mobil Home Park	Town of Richmond	C	55	BO710	1983	278	L	L	- -	3,300[d]	- -	Filtration, greensand, hypochlorination, post, hypochlorination, pre
WL 18	OHC	Shore Woods Subdivision	Town of Sugar Creek	B	- -	BH143	1983	0	H	H[f]	120	43,000[e]	86,000[f]	- -
WL 19	OTM	Vintage on the Ponds	Town of Sugar Creek and Town of Delavan	E	28	KP008	1995	350	L	L	- -	1,680[d]	- -	Filtered, hypochlorination, pre, ion exchange
WL 20	OTM	Willow Run RV Condo Association	Town of Sugar Creek	A	275	GT015	1982	475	H	H[f]	200	10,000[e]	120,000[f]	- -
WL 21	OTM	Troy Terrace Mobile Home Park	Town of Troy	C	180	BO689	1967	60	L	L	- -	10,800[e]	- -	- -
WL 22	OTM	Inspiration Ministries and Meadows Apartments	Town of Walworth	E	80	EL927	1992	246	L	L	- -	4,800[d]	- -	Hypochlorination, pre, sequestration
Walworth County: 22 Systems			- -	- -	3,824	- -	- -	- -	- -	29 wells	- -	- -	- -	- -
Washington County														
WS 01	OTM	Carriage Hills Apartments	Village of Germantown	A	26	BO716	1972	220	L	L	- -	1,560[d]	- -	Ion exchange
WS 02	OTM	Hilltop Highlands Mobile Home Park	Village of Germantown	C	223	FX360	1985	254	H	L[f]	45	2,000[e]	3,000[f]	- -
						BH231	1985	294		L[f]	45	2,000[e]	3,000[f]	- -
						JD358	1985	253		L[f]	45	2,000[e]	3,000[f]	Sequestration; hypochlorination
						BH230	1985	294		L[f]	45	32,000[e]	64,000[f]	- -
	OHC					BH229	1985	234		L[f]	45	32,000[e]	64,000[f]	- -
						BH232	1987	294		L[f]	45	2,000[e]	3,000[f]	- -
						AF466	- -	235		L[f]	45	32,000[e]	64,000[f]	- -
WS 03	OTM	Maple Terrace Mobile Home Park	Village of Germantown	C	124	BO715	1969	252	H	L	50	7,440[d]	- -	- -
						BO714	1966	256		L	- -			- -
WS 04	Other High-Cap	Steeple Hill Condo Association	Village of Newburg	A	- -	- -	- -	0	H	L[f]	30	1,000[e]	1,000[f]	- -
						- -	- -	0		L[f]	30	1,000[e]	1,000[f]	- -
						SJ462	2004	125		L[f]	30	1,000[e]	1,000[f]	- -
						SW011	2005	145		L[f]	30	1,000[e]	1,000[f]	- -
						SW017	2005	140		L[f]	30	1,000[e]	1,000[f]	- -
WS 05	OTM	Wheel Estates Mobile Home Park	Village of Slinger	C	297	FX358	1973	115	L	L	- -	17,820	- -	- -
WS 06	OHC	Lost Nation Condo Association	Town of Barton	A	- -	MG607	1997	252	H	L[f]	60	- -	88,000[f]	- -
						MG631	1998	230		L[f]	60	- -	88,000[f]	- -
						MG675	1998	232		L[f]	60	- -	88,000[f]	- -
						NL120	1999	232		L[f]	60	- -	88,000[f]	- -
						OC818	2000	243		L[f]	60	- -	88,000[f]	- -
						OC873	2001	252		L[f]	60	- -	88,000[f]	- -
						OC884	2001	232		L[f]	60	- -	88,000[f]	- -
						OC900	2002	254		L[f]	60	- -	88,000[f]	- -

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Washington County (continued)														
WS 07	OTM	Voigt's Lakeside Estates	Town of Hartford	C	85	BO717	- -	101	L	L	- -	5,100[d]	- -	- -
WS 08	OTM	Jamestown East Homeowners Association	Town of Trenton	A	40	NY878	2002	290	H	H[f]	- -	2,400[d]	- -	- -
WS 09	OTM	Walsh Subdivision 2	Town of Trenton	B	30	BO723	1970	304	L	L	- -	1,800[d]	- -	- -
WS 10	OTM	Cedar Lake Home	Town of West Bend	D	536	BO722	1978	600	H	H[f]	100	20,000[e]	26,000[f]	Ion exchange
						BH213	1968	955		- -[f]	- -	50,000[e]	70,000[f]	Ion exchange
Washington County: 10 Systems			- -	- -	1,361	- -	- -	- -	- -	29 wells	- -	- -	- -	- -
Waukesha County														
WK 01	OTM	Brookfield Hills Apartments	City of Brookfield	A	700	JB731	1973	419	H	H[f]	70	50,000[e]	100,000[f]	Hypochlorination, post
WK 02	OTM	Congregational Home	City of Brookfield	D	140	BO747	1973	381	H	L[f]	- -	15,000[e]	30,000[f]	Ion exchange
WK 03	OTM	Hidden Pond Court Homeowners Association	City of Brookfield	A	32	DB968	1989	266	L	L	- -	1,920[d]	- -	- -
WK 04	OTM	Country Aire Apartments	Town of Merton	A	330	FX368	1965	500	H	L[f]	23	11,000[e]	33,000[f]	Ion exchange
						FX369	1968	120		L[f]	40	18,000[e]	27,000[f]	Ion exchange
						HU476	1996	162		- -[f]	- -	- -	- -	Ion exchange
						HU483	1996	155		- -[f]	- -	- -	- -	Ion exchange
						HU412	1997	167		- -[f]	- -	- -	- -	Ion exchange
						HU492	1997	164		- -[f]	- -	- -	- -	Ion exchange
WK 05	OTM	Knollcrest	City of Delafield	A	66	FX376	1982	594	H	H[f]	75	27,000[e]	54,000[f]	Ion exchange
WK 06	OTM	Lake Country Apartments	City of Delafield	A	84	FX377	1987	556	H	H[f]	130	94,000[e]	188,000[f]	Ion exchange
WK 07	OHC	Nagawicka Shores Condominiums	City of Delafield	A	- -	BH351	1986	190	H	L[f]	45	5,000[e]	10,000[f]	- -
						- -	1988	130		L[f]	45	5,000[e]	10,000[f]	- -
						BH352	1987	230		- -[f]	45	- -	- -	- -
WK 08	OTM	Nashotah Seminary Apartments	City of Delafield	A	100	ES791	1987	73	H	H[f]	250	20,000[e]	50,000[f]	Ion exchange
WK 09	OTM	Parquelynn Village	City of Delafield	B	450	BO790	1972	220	H	L[f]	- -	17,000[e]	17,000[f]	Hypochlorination, post; sequestration
						BO789	1976	145		L	- -	- -	- -	Hypochlorination, post; sequestration
WK 10	OTM	Durham Meadows Water Trust	City of Muskego	B	700	FX366	1977	94	H	H[f]	150	216,000[e]	2,160,000[f]	- -
						FX365	1972	840		H[f]	300	432,000[e]	432,000[f]	- -
						DW140	1991	120		L[f]	50	- -	- -	- -
WK 11	OTM	Hale Park Meadows Subdivision	City of Muskego	B	720	BH361	1973	1,415	H	- -[f]	- -	43,200[d]	- -	Hypochlorination, post
						BH362	1976	156		- -[f]	- -			Hypochlorination, post
WK 12	OTM	Lake Lore Water Trust	City of Muskego	B	400	GM791	1975	1,445	H	H[f]	150	100,000[e]	150,000[f]	Hypochlorination, pre; ion exchange; sequestration
						BO763	1977	98		H[f]	500	720,000[e]	720,000[f]	- -

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Waukesha County (continued)														
WK 13	OTM	Lake Meadows Water Trust	City of Muskego	B	750	BH348 BH349	1979 1980	96 1,499	H	- -[f] - -[f]	- - - -	45,000[d]	- -	- - - -
WK 14	OTM	Marlan Meadows Homeowners	City of Muskego	B	25	BH332 BH333	1979 1979	347 267	H	H[f] H[f]	110 115	158,000[e] 166,000[e]	158,000[f] 166,000[f]	- - - -
WK 15	OTM	Pioneer Centre Homeowners Association	City of Muskego	A	140	BO765	1973	96	H	L[f]	- -	24,000[e]	48,000[f]	- -
WK 16	OTM	Stoney Creek Apartments	City of Muskego	A	100	GM367	1994	102	H	- -[f]	- -	6,000[d]	- -	Ion exchange
WK 17	OTM	Willow Glen Apartments	City of Muskego	A	75	JD354	1977	112	H	H[f]	150	50,000[e]	70,000[f]	- -
WK 18	OTM	Pheasant Meadows Apartments	City of New Berlin	A	28	EP174	1992	403	H	L[f]	55	1,680[d]	- -	Ion exchange
WK 19	OTM	Country Court Subdivision	City of Pewaukee	B	47	HJ160	1996	215	H	- -[f]	- -	2,820[d]	- -	- -
WK 20	OTM	Carriage Hills Condominiums	Village of Elm Grove	A	50	HJ128	1995	865	H	- -[f]	- -	3,000[d]	- -	Ion exchange
WK 21	OTM	Douglas Plaza Condominiums	Village of Elm Grove	A	88	BO805 BO830	1972 - -	435 300	L	L L	- - - -	5,280[d]	- -	Filtration, greensand; ion exchange
WK 22	OTM OHC	Elm Grove Terrace Condominiums	Village of Elm Grove	A	65	FX373 BH308	- - 1973	397 - -	H	L L[f]	- - - -	- - 15,000[e]	- - 20,000[f]	Activated carbon, granular; aeration, packed tower; filtration, cartridge; filtration, greensand; flocculation; hypochlorination, pre; ion exchange; reverse osmosis; sequestration; ultra-violet radiation; pH adjustment, post - -
WK 23	OTM	Emerald Woods Condominiums	Village of Elm Grove	A	90	MM157 OG942	1998 2000	875 815	H	- -[f] - -[f]	- - - -	5,400[d]	- -	Ion exchange - -
WK 24	OTM	Marian Heights Subdivision	Village of Elm Grove	B	400	BO758	1955	1,708	H	H[f]	800	576,000[e]	1,152,000[f]	- -
WK 25	OTM	Meadows of the Grove	Village of Elm Grove	B	66	BH350	1978	321	H	H[f]	90	64,000[e]	128,000[f]	Hypochlorination, post; sequestration
WK 26	OTM	Notre Dame of Elm Grove	Village of Elm Grove	D	200	BO757 JD356	1956 1981	1,218 1,680	H	L[f] L	- - - -	72,000[e] - -	72,000[f] - -	Filtration, greensand; Ion exchange - -
WK 27	OTM	Park at Elm Grove	Village of Elm Grove	B	85	AC715	1988	1,200	H	H[f]	30	101,000[e]	101,000[f]	Ion exchange
WK 28	OTM	Squires Grove	Village of Elm Grove	A	350	JB732 FX364	1980 1972	998 400	H	H[f] H[f]	100 130	72,000[e] 94,000[e]	144,000[f] 188,000[f]	- - - -
WK 29	OTM	Lannon Mobile Home Park	Village of Lannon	C	345	FV745	1992	353	H	- -[f]	- -	20,700[d]	- -	- -

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Waukesha County (continued)														
WK 30	OHC	Harbors Park Condominiums Association	Village of Nashotah	A	- -	LW257	1997	184	H	L[f]	15	1,000[e]	1,000[f]	- -
						LN897	1997	88		L[f]	20	1,000[e]	2,000[f]	- -
						LU530	1997	109		L[f]	30	1,000[e]	2,000[f]	- -
						LY929	1997	197		L[f]	20	1,000[e]	2,000[f]	- -
						LY934	1997	20		L[f]	20	1,000[e]	2,000[f]	- -
						LY978	1997	113		L[f]	20	1,000[e]	2,000[f]	- -
						LY986	1997	127		L[f]	20	1,000[e]	2,000[f]	- -
						WAUK055	- -	- -		- -	- -	- -	- -	- -
						WAUK056	- -	- -		- -	- -	- -	- -	- -
						WAUK057	- -	- -		- -	- -	- -	- -	- -
						LW266	1997	81		L[f]	20	1,000[e]	2,000[f]	- -
						NG515	1999	119		L[f]	20	1,000[e]	2,000[f]	- -
						NG523	1999	101		L[f]	20	1,000[e]	2,000[f]	- -
						LN890	1997	216		L[f]	20	1,000[e]	2,000 [f]	- -
WK 31	OTM	Prairie Village Subdivision	Village of North Prairie	B	1,600	GM783	1980	225	H	H[f]	300	50,000[e]	100,000[f]	- -
						FX371	1978	165		H[f]	200	120,000[e]	120,000[f]	Hypochlorination, pre
						FX372	1978	865		H[f]	200	120,000[e]	120,000[f]	- -
WK 32	OTM	Hills of Wales Apartments	Village of Wales	A	50	BO777	1975	220	L	L	- -	3,000[d]	- -	Ion exchange
						BO778	1976	220		L	- -			Ion exchange
WK 33	OTM	The Arbors	Town of Delafield	B	280	BA125	1991	1,095	H	H[f]	250	180,000[e]	360,000[f]	- -
WK 33a	OTM	Ethan Allen School	Town of Delafield	D	750	BH358	- -	1,240	H	L	- -	24,000[d]	- -	Hypochlorination, post
						BH359	1969	1,140		H	290	24,000[d]	- -	Hypochlorination, post
WK 34	OTM	Oakton Beach Condominiums	Town of Delafield	A	132	FX375	1982	660	H	L[f]	60	14,000[e]	28,000[f]	Ion exchange
						FX374	1960	675		H[f]	75	18,000[e]	36,000[f]	Ion exchange
WK 35	OTM	Apartments of Stoneridge	Town of Genesee	A	75	DE584	1990	685	H	- -[f]	- -	4,500[d]	- -	Ion exchange
						NZ381	1998	340		- -[f]	- -			- -
						NZ392	2000	735		- -[f]	- -			- -
WK 36	OTM	Brandybrook Subdivision	Town of Wales	B	25	NY868	2001	1,210	H	L[f]	- -	1,500[d]	- -	- -
WK 37	OTM	Willow Springs Mobile Home Park	Town of Lisbon	C	596	BH289	1965	264	H	H[f]	150	22,000[e]	30,000[f]	- -
						BO753	1972	248		H[f]	150	50,000[e]	50,000[f]	- -
WK 38	OTM	The Evergreens	Town of Merton	B	40	BO806	1980	565	H	H[f]	150	108,000[e]	216,000[f]	Ion exchange
WK 39	OHC	Autumn Woods, LLC	Town of Oconomowoc	A	- -	MZ705	2000	203	H	L[f]	25	1,000[e]	2,000[f]	- -
						MZ706	2000	225		L[f]	25	1,000[e]	2,000[f]	- -
						RX892	2002	220		L[f]	25	1,000[e]	2,000[f]	- -
						TQ077	2003	202		L[f]	25	1,000[e]	2,000[f]	- -
						TQ059	2003	202		L[f]	25	1,000[e]	2,000[f]	- -
						TS522	2004	198		L[f]	25	1,000[e]	2,000[f]	- -
						TU812	2005	200		L[f]	25	1,000[e]	2,000[f]	- -
						TV372	2005	200		L[f]	25	1,000[e]	2,000[f]	- -
WK 40	OHC	Mission Lakes Condominiums	Town of Oconomowoc	A	- -	TT057	2004	298	H	- -[f]	- -	- -	- -	- -
WK 41	OTM	Sunnyfield Acres Subdivision	Town of Oconomowoc	B	300	BO773	- -	856	L	L	- -	18,000[d]	- -	Hypochlorination, post; sequestration

Table D-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Type of Development[b]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[c]	Well Capacity[c]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage (gallons per day)[f]	Comments
Waukesha County (continued)														
WK 42	OTM	Westshore Bay Pointe Subdivision	Town of Oconomowoc	B	50	TQ311	2004	240	L	L	- -	3,000[d]	- -	- -
WK 43	OTM	Lad Lake, Inc.	Town of Ottawa	D	48	BO751 BO752	1978 1968	440 395	L	L L	- - - -	2,880[d]	- -	Ion exchange: reverse osmosis Ion exchange: reverse osmosis
WK 44	OTM	Oconomowoc Development Training Center	Town of Summit	D	136	BO828 RH687	1976 2002	481 470	H	L[f] - -[f]	65 - -	36,000[e] - -	50,000[f] - -	Ion exchange Ion exchange
WK 45	OTM	Heaven City Apartment Complex	Town of Vernon	A	40	PT497	- -	- -	L	L	- -	2,400[d]	- -	Ion exchange
WK 46	OTM	Norris Adolescent Center	Town of Vernon	D	120	BO782 GT011	1966 1920	80 277	L	L L	- - - -	7,200[d]	- -	Filtration, pressure sand Filtration, pressure sand
Waukesha County: 47 Systems			- -	- -	10,868	- -	- -	- -	- -	97 Wells	- -	- -	- -	- -
Regional Total: 170 Systems			- -	- -	31,235	- -	- -	- -	- -	320 Wells	- -	- -	- -	- -

[a]OTMs are classified by the Wisconsin Department of Natural Resources as "other-than-municipal community systems."
OHC indicates residential use wells listed in the High Capacity Wells database by the Wisconsin Department of Natural Resources.
TNC indicates residential use wells designated as transient, non-community in the Public Water Supply Systems database.

[b]A = Apartment or condominium
B = Subdivision
C = Mobile Home Park
D = Institution
E = Private Residence

[c]H = High-Capacity (70 gallons per minute or greater)
L = Low-Capacity (less than 70 gallons per minute capacity)

[d]Average water use is estimated based upon review of population data available from the WDNR and SEWRPC and by using 60 gallons per day per capita, unless otherwise noted.

[e]Indicates the approved normal and maximum daily pumpage as included in the WDNR Drinking Water System database. These amounts may be pumped intermittently.

[f]Well is listed as a permitted high-capacity well in the WDNR Drinking Water System database.

[g]System was connected to the We Energies-Water Services system during the years 2000 through 2005.

[h]System is scheduled to be connected to the We Energies-Water Services system during 2006 and 2007.

Source: Wisconsin Department of Natural Resources and SEWRPC.

Table D-2

SELECTED CHARACTERISTICS OF SELF-SUPPLIED INDUSTRIAL WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2005

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Average Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Kenosha County										
KN 01	Lloyd Transportation, Inc.	Village of Pleasant Prairie	Non-Transient, Non-Community	G	1	ES680	L	L	750	- -
KN 03	Lotus Light	Village of Silver Lake	Non-Transient, Non-Community	G	1	DQ887	L	L	750	- -
KN 04	Mann Brothers, Inc.	Town of Brighton	Miscellaneous	G	1	AG445	H	H[d]	135,000	135,000
KN 05	Kenosha Beef International and Birchwood Meats	Town of Paris	Non-Transient, Non-Community	G	2	JF056 JF057	L	L L	5,280	- -
KN 06	Wisconsin Electric Power Company	Town of Paris	Industrial	G	1	EQ940	H	H[d]	36,000	- -
KN 07	Amorim Industrial Solutions	Town of Salem	Non-Transient, Non-Community	G	1	GS090	L	L	1,500	- -
KN 08	Coleman Tool and Manufacturing Company	Town of Somers	Non-Transient, Non-Community	G	1	GU690	L	L	525	- -
KN 09	Amon, B.R. & Sons, Inc.	Town of Wheatland	Industrial	G	2	KEN001 ES267	H	H[d] H[d]	90,000 180,000	360,000 360,000
KN 10	Meyer Material Corporation	Town of Wheatland	Industrial Private Potable	G	2	HJ174 HJ171	H	H[d] L[d]	72,000 1,000	144,000 7,000
Kenosha County: 9 Systems		- -	- -	- -	12	- -	- -	- -	- -	- -
Milwaukee County										
MK 01	Metro Recycling and Disposal Facility	City of Franklin	Non-Transient, Non-Community	G	1	EZ007	L	L	- -	- -
MK 02	Schmitz Ready Mix, Inc.	City of Franklin	Industrial	G	1	HU238	H	H[d]	135,000	288,000
MK 03	Waste Management, Southeast Wisconsin	City of Franklin	Non-Transient, Non-Community	G	1	IW983	L	L	1,050	- -
MK 04	Chicago & Illinois River Marketing	City of Milwaukee	Transient, Non-Community	G	1	IW988	L	L	600	- -
MK 05	Milwaukee Tallow	City of Milwaukee	Industrial	G	1	BE719	H	H[d]	235,000	392,000
MK 06	Newport Corporation	City of Milwaukee	Miscellaneous	G	1	BG410	H	H[d]	30,000	180,000
MK 07	Red Star Yeast	City of Milwaukee	Industrial	G	1	BE712	H	H[d]	1,872,000	1,920,000
MK 08	Mid America Steel Drum, Inc.	City of Oak Creek	Non-Transient, Non-Community	G	1	GO549	L	L	975	- -
MK 09	Briggs and Stratton Corporation	City of Wauwatosa	Industrial Non-Transient, Non-Community	G	2	- - BE698	H	H[d] L	490,000 37,500	865,000 - -
MK 10	S.K Williams Company	City of Wauwatosa	Industrial	G	1	BE715	H	H[d]	384,000	720,000

Table D-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Average Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Milwaukee County (continued)										
MK 11	Wiscold	City of Wauwatosa	Industrial	G	1	- -	H	H[d]	200,000	250,000
MK 12	Kearney & Trecker	City of West Allis	Industrial	G	1	- -	H	H[d]	250,000	320,000
MK 13	Venture Dyne Limited	City of West Allis	Industrial	G	1	BE713	H	H[d]	384,000	560,000
Milwaukee County: 13 Systems		- -	- -	- -	14	- -	- -	- -	- -	- -
Ozaukee County										
OZ 01	ATACO Steel Products Company	City of Cedarburg	Non-Transient, Non-Community	G	1	ET863	L	L	1,350	- -
OZ 02	Ajax Metal Products	City of Mequon	Transient, Non-Community	G	2	ES871 EZ838	L	L L	420 405	- - - -
OZi 03	General Metalworks Corporation	City of Mequon	Non-Transient, Non-Community	G	1	BO642	L	L	750	- -
OZ 04	HB Performance Systems, Inc.	City of Mequon	Non-Transient, Non-Community	G	1	ES875	L	L	5,250	- -
OZ 05	Jorgensen Conveyors, Inc.	City of Mequon	Non-Transient, Non-Community	G	1	FG663	L	L	1,125	- -
OZ 06	Super Sky Products, Inc.	City of Mequon	Non-Transient, Non-Community	G	1	DK859	L	L	1,455	- -
OZ 07	Telsmith, Inc.	City of Mequon	Non-Transient, Non-Community	G	1	JE644	L	L	3,000	- -
OZ 08	Woodlore Division of Allen Edmunds	City of Port Wash	Non-Transient, Non-Community	G	1	AY849	L	L	450	- -
OZ 09	Lakeside Foods, Inc.		Industrial	G	3	BE771 BE772 BE773	H	H[d] H[d] H[d]	60,000 165,000 225,000	72,000 198,000 270,000
OZ 10	Advanced Mfg. Technologies, Inc..	Village of Grafton	Non-Transient, Non-Community	G	1	CI945	L	L	1,140	- -
OZ 11	Cook Composites and Polymers	Village of Saukville	Industrial	G	1	MJ827	H	H[d]	360,000	720,000
OZ 12	Cedar Valley Cheese, Inc.	Town of Fredonia	Industrial Non-Transient, Non-Community	G G G	3	OZKE003 DB579 OO332	H	L[d] L[d] H[d]	26,000 - - 35,000	43,000 72,000 2,888,000
OZ 13	Streu Construction	Town of Fredonia	Industrial	G	1	QO904	H	H[d]	50,000	81,000
OZ 14	Simplicity Manufacturing Company	Town of Port Washington	Irrigation	G	1	BC622	H	H[d]	100,000	150,000
Ozaukee County: 14 Systems		- -	- -	- -	19	- -	- -	- -	- -	- -

Table D-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Average Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Racine County										
RC 01	Echo Lake Farm Produce Company	City of Burlington	Industrial	G	4	BE843 BE844 BE845 BE846	H	L[d] L[d] L[d] L[d]	14,000 14,000 14,000 41,000	16,000 16,000 16,000 50,000
RC 02	Foster-Forbes Glass Company	City of Burlington	Industrial	G	1	BE840	H	H[d]	576,000	576,000
RC 03	Lavelle Industries	City of Burlington	Industrial	G	1	BE832	H	H[d]	144,000	192,000
RC 04	Nestle Chocolate	City of Burlington	Industrial	G	1	BE839	H	H[d]	388,000	388,000
RC 05	Packaging Corporation of America	City of Burlington	Non-Transient, Non-Community	G	1	JE624	H	H[d]	14,000	16,000
RC 06	Tuscarora, Inc.	City of Burlington	Industrial	G	1	BE842	H	H[d]	136,000	190,000
RC 07	S.C. Johnson & Son	City of Racine	Miscellaneous Industrial	G	4	CQ254 BG728 BE830 BE831	H	H[d] L[d] H[d] H[d]	20,000 36,000 132,000 158,000	108,000 42,000 132,000 158,000
RC 08	Sekao, Inc.	Town of Burlington	Industrial	G	2	TU471 TT794	H	H[d] H[d]	40,000 40,000	60,000 60,000
RC 09	Jensen Metal Products	Village of Caledonia	Non-Transient, Non-Community	G	1	ET667	L	L	750	- -
RC 10	Thomas Edison Technical Center	Village of Caledonia	Non-Transient, Non-Community	G	1	BG727	L	L	1,080	- -
RC 11	American Roller Company, Inc.	Town of Dover	Non-Transient, Non-Community	G	1	ES675	L	L	750	- -
RC 12	SBC Service	Village of Mt. Pleasant	Non-Transient, Non-Community	G	1	FG737	L	L	750	- -
RC 13	American Champion Aircraft	Town of Rochester	Non-Transient, Non-Community	G	1	CS700	L	L	900	- -
RC 14	Maple Leaf Farms, Inc.	Town of Yorkville	Industrial Non-Transient, Non-Community	G	11	NO432 BE835 BE834 RAC015 BE847 BE848 LW496 RAC014 IY924 ES809 IY923	H	L[d] L[d] L[d] L[d] L[d] L[d] L H[d] H[d] L L	5,000 16,000 20,000 24,000 50,000 50,000 86,000 479,000 479,000 - - - -	20,000 16,000 20,000 24,000 50,000 70,000 - - 479,000 479,000 - - - -
Racine County: 14 Systems		- -	- -	- -	31	- -	- -	- -	- -	- -

Table D-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Average Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Walworth County										
WL 01	Robinson Wholesale, Inc.	Village of Genoa City	Industrial	G	3	- - - - - -	H	H[d] L - -	216,000 - - - -	216,000 1,000 - -
WL 02	Birds Eye Foods	Town of Darien	Non-Transient, Non-Community	G	1	FH033	L	L	3,750	- -
WL 03	Larsen Company	Town of Darien	Industrial	G	1	BF010	H	H[d]	986,000	2,304,000
WL 04	Walworth Foundries	Town of Darien	Non-Transient, Non-Community	G	1	FG761	L	L	450	- -
WL 05	Amon, B.R. & Sons, Inc..	Town of LaFayette	Industrial	G	2	FX503 FX501	H	H[d] H[d]	76,000 360,000	115,000 720,000
WL 06	Mann Brothers, Inc.	Town of LaFayette	Industrial	G	6	- - QX797 QX796 CZ347 - - - -	H	H[d] H[d] H[d] H[d] H H	30,000 172,000 172,000 360,000 - - - -	110,000 285,000 285,000 720,000 110,000 110,000
WL 07	ITW Filtration	Town of Lyons	Non-Transient, Non-Community	G	1	JD492	L	L	1,200	- -
WL 08	MGA Research Corporation	Town of Lyons	Non-Transient, Non-Community	G	1	JF058	L	L	570	- -
WL 09	Wag Aero	Town of Lyons	Non-Transient, Non-Community	G	1	FH042	L	L	600	- -
WL 10	Debuck, David	Town of Richmond	Industrial	G	2	BE520 BE519	H	L[d] L[d]	8,000 15,000	15,000 30,000
WL 11	Kikkoman Foods, Inc.	Town of Walworth	Non-Transient, Non-Community Industrial	G	4	RX240 FH031 FH032 AY373	H	H[d] H[d] H[d] H[d]	120,000 274,000 360,000 432,000	720,000 432,000 360,000 864,000
WL 12	Tankcraft Corporation	Town of Walworth	Non-Transient, Non-Community	G	2	BE517 BE518	H	L[d] L[d]	4,000 4,000	4,000 4,000
WL 13	Janesville Sand & Gravel Company	Town of Whitewater	Industrial	G	1	WAL049	H	L[d]	1,000	8,000
Walworth County: 13 Systems		- -	- -	- -	26	- -	- -	- -	- -	- -
Washington County										
WS 02	Merget Sand & Gravel	Village of Germantown	Industrial	G	1	BE964	H	H[d]	180,000	180,000
WS 03	Municipal Well & Pump	Village of Germantown	Miscellaneous	G	2	BH237 BH228	H	H[d] H[d]	24,000 100,000	126,000 300,000
WS 04	WI Electric Power Co Germantown	Village of Germantown	Industrial	G	1	BE969	H	H[d]	100,000	100,000

Table D-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Average Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Washington County (continued)										
WS 05	Northland Cranberry	Village of Jackson	Industrial	G	1	WASH09	H	H[d]	56,000	175,000
WS 06	Fly, Bill	Town of Addison	Industrial	G	2	IL295 EQ334	H	H[d] L	24,000 - -	100,000 22,000
WS 07	Sunset Farms	Town of Addison	Industrial	G	4	MZ114 QW461 WASH13 IE882	H	L[d] L[d] L[d] L[d]	8,000 18,000 - - - -	10,000 25,000 1,000 1,000
WS 08	Weasler Engineering	Town of Barton	Non-Transient, Non-Community	G	1	CW600	L	L	3,375	- -
WS 09	Wiedmeyer Service Center	Town of Barton	Transient, Non-Community	G	1	BO730	L	L	465	- -
WS 10	Level Valley Dairy Company	Town of Jackson	Industrial	G	1	BA132	H	H[d]	325,000	325,000
WS 11	Schreiber Foods, Inc.	Town of Jackson	Non-Transient, Non-Community	G	1	BO734	L	L	1,950	- -
WS 12	QuInc.y Resource Group	Town of Polk	Non-Transient, Non-Community	G	1	LD596	L	L	990	- -
WS 13	Wissota Sand & Gravel Co, Inc.	Town of Polk	Industrial	G	2	BE971 BE968	H	H[d] H[d]	240,000 270,000	300,000 432,000
WS 14	Yahara Materials, Inc.	Town of Polk	Industrial	G	1	BE970	H	H[d]	20,000	40,000
WS 15	Strohwig Tool	Town of Richfield	Non-Transient, Non-Community	G	1	FG550	L	L	2,400	- -
WS 16	Jack Walters & Sons Corporation	Town of Wayne	Non-Transient, Non-Community	G	1	BO724	L	L	900	- -
WS 17	Barton Products Corporation	Town of West Bend	Non-Transient, Non-Community	G	1	BO725	L	L	1,290	- -
WS 18	Midwest Assembly Warehouse and Distribution	Town of West Bend	Transient, Non-Community	G	1	WASH08	L	L	555	- -
Washington County: 17 Systems		- -	- -	- -	23	- -	- -	- -	- -	- -
Waukesha County										
WK 01	Milwaukee Electric Tool Company	City of Brookfield	Industrial	G	1	BE984	H	H[d]	50,000	80,000
WK 02	Milwaukee Faucets, Inc.	City of Brookfield	Industrial	G	1	BE978	H	L[d]	10,000	14,000
WK 03	Anamax Corporation	City of Muskego	Industrial	G	1	BE994	H	H[d]	2,000	3,000
WK 04	Muskego Industrial Park	City of Muskego	Industrial	G	2	BE998 BE997	H	L[d] L[d]	8,000 8,000	15,000 15,000
WK 05	New Berlin Redi-Mix, Inc.	City of New Berlin	Miscellaneous	G	2	BH293 SM393	H	H[d] L[d]	20,000 25,000	30,000 50,000

Table D-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Average Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 06	Lake Country Foods, Inc.	City of Oconomowoc	Industrial Non-Transient, Non-Community Non-Transient, Non-Community	G	3	BE995 BO816 BO815	H	H[d] H[d] L	600,000 1,100,000 - -	700,000 1,300,000 - -
WK 07	Pabst Farms, Inc.	City of Oconomowoc	Industrial	G	2	BE993 BE996	H	H[d] H[d]	165,000 181,000	165,000 181,000
WK 08	Payne & Dolan, Inc.	City of Pewaukee	Industrial	G	2	SY362 OD799	H	L[d] H[d]	5,000 30,000	10,000 432,000
WK 09	Scot Industries	City of Pewaukee	Non-Transient, Non-Community	G	1	BO833	L	L	630	- -
WK 10	Wisconsin Electric Power Company	City of Pewaukee	Industrial	G	2	BE989 BE990	H	L[d] H[d]	2,000 220,000	3,000 220,000
WK 11	Generac Power Systems, Inc.	City of Waukesha	Non-Transient, Non-Community	G	1	BO810	L	L	7,500	- -
WK 12	Traffic and Parking Control Co	Village of Elm Grove	Non-Transient, Non-Community	G	1	LK169	L	L	1,425	- -
WK 13	Chemrites Industries, Inc.	Village of Lannon	Non-Transient, Non-Community	G	1	JE596	L	L	1,425	- -
WK 14	Dawson, Dale	Village of Lannon	Industrial	G	1	BE972	H	H[d]	72,000	144,000
WK 15	Schneider Excavating, Inc. and Lannon Petro Quik Mart	Village of Lannon	Transient, Non-Community	G	1	GP874	L	L	1,755	- -
WK 16	Waste Management, Inc.	Village of Menomonee Falls	Miscellaneous	G	5	- - - - - - - - - -	H	L[d] L[d] L[d] L[d] L[d]	- - - - - - - - - -	1,000 1,000 1,000 1,000 1,000
WK 17	Dickton & Masch Manufacturing Company	Village of Nashotah	Industrial Non-Transient, Non-Community	G	5	IW978 GU239 GU238 MF048 GU237	H	L[d] L L L[d] L	1,000 1,350 20,000 - -	7,000 - - 40,000 - -
WK 18	Friday Canning Corporation	Village of Sussex	Industrial	G	1	BE991	H	H[d]	200,000	300,000
WK 19	Beatrice Cheese, Inc.	Town of Brookfield	Industrial	G	2	BE992 BE975	H	H[d] - -[d]	12,000 - -	19,000 - -
WK 20	Master Disposal Property Trust III	Town of Brookfield	Miscellaneous	G	1	- -	H	H[d]	150,000	230,000
WK 21	Central Ready Mixed Concrete	Town of Lisbon	Industrial	G	1	BE986	H	H[d]	50,000	100,000

Table D-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Average Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 22	Genesee Aggregate Corporation	Town of Lisbon	Industrial	G	4	MK438 RX238 - - MK439	H	L[d] H[d] H[d] L	4,000 45,000 205,000 - -	22,000 90,000 410,000 1,000
WK 23	Halquist Stone Company, Inc.	Town of Lisbon	Industrial	G	13	- - - - - - - - - - - - - - TG861 - - - - GM120 IE600 CO705	H	L[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] H[d] H[d] L[d] H[d]	1,000 1,000 1,000 1,000 1,000 1,000 15,000 15,000 22,000 36,000 36,000 36,000 42,000	1,000 1,000 1,000 1,000 1,000 1,000 22,000 30,000 43,000 115,000 115,000 72,000 100,000
WK 24	LaFarge North America	Town of Lisbon	Industrial	G	2	RS681 - -	H	H[d] - -[d]	600,000 - -	720,000 - -
WK 25	Balax, Inc.	Town of Merton	Non-Transient, Non-Community	G	1	JE594	L	L	1,200	- -
WK 26	AT&T Communications	Town of Waukesha	Industrial	G	2	BE988 - -	H	L[d] L[d]	8,000 20,000	14,000 39,000
Waukesha County: 26 Systems		- -	- -	- -	59	- -	- -	- -	- -	- -
Regional Total: 106 Systems		- -	- -	- -	184	- -	- -	- -	- -	- -

[a] *G = Groundwater*
S = Surface Water

[b] *H = High-Capacity (70 gallons per minute or greater)*
L = Low-Capacity (less than 70 gallons per minute capacity)

[c] *The values are the approved normal and maximum daily pumpage included in the WDNR Drinking Water System database. These amounts may be pumped intermittently.*

[d] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System database.*

Source: Wisconsin Department of Natural Resources.

Table D-3

SELECTED CHARACTERISTICS OF SELF-SUPPLIED COMMERCIAL WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2005

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Kenosha County										
KN 001	Dianne's Place	City of Kenosha	Transient, Non-Community	G	1	GO739	L	L	500	- -
KN 002	Brass Ball Mobil and Burger King	Village of Paddock Lake	Non-Transient, Non-Community	G	1	KW586	L	L	2,400	- -
KN 003	Fredays	Village of Paddock Lake	Transient, Non-Community	G	1	GU724	L	L	600	- -
KN 004	Harris Pet Hospital	Village of Paddock Lake	Transient, Non-Community	G	1	HU033	L	L	3,500	- -
KN 005	Holiday Village Laundromat, Dry Cleaner	Village of Paddock Lake	Transient, Non-Community	G	1	EZ927	L	L	12,500	- -
KN 006	J & L Oil, Inc. Station #31	Village of Paddock Lake	Transient, Non-Community	G	1	CH666	L	L	250	- -
KN 007	La Cabana	Village of Paddock Lake	Transient, Non-Community	G	1	JB872	L	L	1,000	- -
KN 008	Lakeside Super Value	Village of Paddock Lake	Non-Transient, Non-Community	G	1	GO780	L	L	900	- -
KN 009	M & I Bank of Burlington	Village of Paddock Lake	Transient, Non-Community	G	1	FI935	L	L	250	- -
KN 010	Paddock Lake Amoco and McDonalds	Village of Paddock Lake	Non-Transient, Non-Community	G	1	KO003	L	L	8,800	- -
KN 011	Paddock Lake Citgo Mart	Village of Paddock Lake	Transient, Non-Community	G	1	EZ818	L	L	250	- -
KN 012	Paddock Lake Cottages	Village of Paddock Lake	Transient, Non-Community	G	1	JB879	L	L	2,990	- -
KN 013	Paddock Lake Dental	Village of Paddock Lake	Transient, Non-Community	G	1	HU046	L	L	3,300	- -
KN 014	Paddock Lake Shell Station	Village of Paddock Lake	Transient, Non-Community	G	1	ET936	L	L	250	- -
KN 015	Pop's Dog House	Village of Paddock Lake	Transient, Non-Community	G	1	PT512	L	L	520	- -
KN 016	Promised Land Family Restaurant	Village of Paddock Lake	Transient, Non-Community	G	1	KA236	L	L	850	- -
KN 017	Snyder Drug	Village of Paddock Lake	Transient, Non-Community	G	1	PT490	L	L	600	- -
KN 018	Subway Sandwich Shop, Paddock Lake	Village of Paddock Lake	Transient, Non-Community	G	1	JF869	L	L	350	- -
KN 019	Village Plaza	Village of Paddock Lake	Non-Transient, Non-Community	G	1	CG370	L	L	5,650	- -
KN 020	Walgreens, Paddock Lake	Village of Paddock Lake	Transient, Non-Community	G	1	KS398	L	L	600	- -
KN 021	Club 94	Village of Pleasant Prairie	Transient, Non-Community	G	1	GQ601	L	L	2,000	- -
KN 022	Halter Wildlife, Inc.	Village of Pleasant Prairie	Transient, Non-Community	G	1	GO763	L	L	500	- -
KN 023	Kenosha Outdoor Theater	Village of Pleasant Prairie	Transient, Non-Community	G	1	PT274	L	L	1,015	- -
KN 024	King's Motel	Village of Pleasant Prairie	Transient, Non-Community	G	1	ET938	L	L	1,625	- -
KN 025	Prairie Harbor Development Company	Village of Pleasant Prairie	Miscellaneous	G	1	BG077	H	H[d]	11,000	110,000
KN 026	Prairie Harbor Yacht Club	Village of Pleasant Prairie	Transient, Non-Community	G	1	ES700	H	L[d]	260	- -
KN 027	Ruffolo's III	Village of Pleasant Prairie	Transient, Non-Community	G	1	HJ098	L	L	1,500	- -
KN 029	The Village Supper Club	Village of Pleasant Prairie	Transient, Non-Community	G	1	GO776	L	L	1,000	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Kenosha County (continued)										
KN 030	Tobin Creek Bar and Grill	Village of Pleasant Prairie	Transient, Non-Community	G	1	JF842	L	L	540	- -
KN 031	U.S. Oil	Village of Pleasant Prairie	Transient, Non-Community	G	1	ET662	L	L	750	- -
KN 032	Binanti's Taste of Italy	Village of Silver Lake	Transient, Non-Community	G	1	KW232	L	L	260	- -
KN 033	Dairy Queen, Silver Lake	Village of Silver Lake	Transient, Non-Community	G	1	EZ819	L	L	750	- -
KN 034	Jim's Road House	Village of Silver Lake	Transient, Non-Community	G	1	EZ956	L	L	1,000	- -
KN 035	Packer Inn	Village of Silver Lake	Transient, Non-Community	G	1	EZ815	L	L	1,000	- -
KN 036	Silver Lake Auto Service	Village of Silver Lake	Transient, Non-Community	G	1	FD445	L	L	520	- -
KN 037	Silver Lake Grill	Village of Silver Lake	Transient, Non-Community	G	1	JF841	L	L	500	- -
KN 038	SS Express Lane	Village of Silver Lake	Transient, Non-Community	G	1	GE528	L	L	250	- -
KN 039	Uncle George's Bar	Village of Silver Lake	Transient, Non-Community	G	1	JB898	L	L	540	- -
KN 040	Beach Bar	Village of Twin Lakes	Transient, Non-Community	G	1	GO582	L	L	500	- -
KN 041	Big Al's Pizza	Village of Twin Lakes	Transient, Non-Community	G	1	JF848	L	L	280	- -
KN 042	Bodi's Bake Shop	Village of Twin Lakes	Transient, Non-Community	G	1	PT241	L	L	610	- -
KN 043	Croz Pub and Grub	Village of Twin Lakes	Transient, Non-Community	G	1	FL561	L	L	1,500	- -
KN 044	Dollar Depot	Village of Twin Lakes	Transient, Non-Community	G	1	EZ924	L	L	300	- -
KN 045	Donovan's Reef	Village of Twin Lakes	Transient, Non-Community	G	1	GO608	L	L	1,625	- -
KN 046	JDA Citgo of Twin Lakes	Village of Twin Lakes	Transient, Non-Community	G	1	KP001	L	L	270	- -
KN 047	Lancelot Pizza	Village of Twin Lakes	Transient, Non-Community	G	1	PT244	L	L	290	- -
KN 048	Lucky's Restaurant	Village of Twin Lakes	Transient, Non-Community	G	1	GV864	L	L	6,200	- -
KN 049	Mad Dan's Restaurant	Village of Twin Lakes	Transient, Non-Community	G	1	PT243	L	L	1,000	- -
KN 050	Manny's Snack Shack	Village of Twin Lakes	Transient, Non-Community	G	1	JF850	L	L	250	- -
KN 051	My Place	Village of Twin Lakes	Transient, Non-Community	G	1	MU199	L	L	500	- -
KN 052	Niko's Restaurant	Village of Twin Lakes	Transient, Non-Community	G	1	GO765	L	L	1,000	- -
KN 053	Pink House	Village of Twin Lakes	Transient, Non-Community	G	1	PT245	L	L	3,250	- -
KN 054	Rumpoles Bowling Center	Village of Twin Lakes	Transient, Non-Community	G	1	PT242	L	L	270	- -
KN 055	Sentry Foods in Twin Lakes	Village of Twin Lakes	Non-Transient, Non-Community	G	1	GU722	L	L	3,400	- -
KN 056	Studio Eleven	Village of Twin Lakes	Transient, Non-Community	G	1	GQ602	L	L	500	- -
KN 057	Subway Sandwich Shop, Twin Lakes	Village of Twin Lakes	Transient, Non-Community	G	1	GV844	L	L	830	- -
KN 058	The New Straw Hat	Village of Twin Lakes	Transient, Non-Community	G	1	IX222	L	L	2,040	- -
KN 059	The Triangle	Village of Twin Lakes	Transient, Non-Community	G	1	IZ239	L	L	1,040	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Kenosha County (continued)										
KN 060	Touch of Class	Village of Twin Lakes	Transient, Non-Community	G	1	JF849	L	L	500	- -
KN 061	Twin Lakes Amoco	Village of Twin Lakes	Transient, Non-Community	G	1	JF847	L	L	1,000	- -
KN 062	Twin Lakes Country Club	Village of Twin Lakes	Transient, Non-Community	G	1	GU687	L	L	540	- -
KN 063	Twin Lakes Park Mt Moriah	Village of Twin Lakes	Transient, Non-Community	G	1	FX294	L	L	4,810	- -
KN 064	Twin Lakes Professional Building	Village of Twin Lakes	Transient, Non-Community	G	1	GV845	L	L	4,400	- -
KN 065	Twin Lakes True Value Hardware	Village of Twin Lakes	Transient, Non-Community	G	1	EZ923	L	L	250	- -
KN 066	Twin Lakes Vault Restaurant	Village of Twin Lakes	Transient, Non-Community	G	1	GV865	L	L	270	- -
KN 067	U.S. Bank, Lake Geneva: Twin Lakes	Village of Twin Lakes	Transient, Non-Community	G	1	JF845	L	L	560	- -
KN 068	Jeddy's Bar	Town of Brighton	Transient, Non-Community	G	1	KY602	L	L	540	- -
KN 069	Wagner's Tavern	Town of Brighton	Transient, Non-Community	G	1	GO781	L	L	1,000	- -
KN 070	Bristol House II	Town of Bristol	Transient, Non-Community	G	1	DO314	L	L	500	- -
KN 071	Congo River Adventure Golf	Town of Bristol	Transient, Non-Community	G	1	AE565	L	L	1,050	- -
KN 072	Countryside Convenience Center	Town of Bristol	Transient, Non-Community	G	1	CS628	L	L	1,030	- -
KN 073	Days Inn	Town of Bristol	Transient, Non-Community	G	1	BG061	H	H[d]	75,000	100,000
KN 074	Factory Outlet Centre	Town of Bristol	Miscellaneous	G	4	BG081 BG079 BG078 BG080	H	H[d] L[d] L[d] L[d]	3,000 7,000 7,000 15,000	5,000 15,000 15,000 25,000
KN 075	Grizzly's Saloon	Town of Bristol	Transient, Non-Community	G	1	GO768	L	L	1,040	- -
KN 076	Kentucky Fried Chicken	Town of Bristol	Transient, Non-Community	G	1	JB871	L	L	1,200	- -
KN 077	Preet Petroleum and Pizza Time	Town of Bristol	Transient, Non-Community	G	1	AY617	L	L	5,000	- -
KN 078	Red School Cafe	Town of Bristol	Transient, Non-Community	G	1	JD479	L	L	500	- -
KN 079	Renaissance Entertainment Corporation	Town of Bristol	Miscellaneous	G	1	OR823	H	H[d]	125,000	216,000
KN 080	Taco Bell #3242	Town of Bristol	Transient, Non-Community	G	1	FD443	L	L	250	- -
KN 081	Vaj's Garage Restaurant	Town of Bristol	Transient, Non-Community	G	1	GO770	L	L	500	- -
KN 082	Wendy's	Town of Bristol	Transient, Non-Community	G	1	EZ952	L	L	8,480	- -
KN 083	Birchwood Transport, Inc.	Town of Paris	Transient, Non-Community Other High Capacity; Industrial	G	2	JF865 JF864	L	L L	600	- -
KN 084	Bristol Motel	Town of Paris	Transient, Non-Community	G	1	GO772	L	L	1,755	- -
KN 085	Espositos	Town of Paris	Transient, Non-Community	G	1	GT017	L	L	250	- -
KN 086	Great Lakes Dragaway	Town of Paris	Transient, Non-Community	G	1	EZ871	L	L	1,500	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Kenosha County (continued)										
KN 087	Paris Motel	Town of Paris	Transient, Non-Community	G	1	IX221	L	L	1,690	- -
KN 088	The Tin Cup	Town of Paris	Transient, Non-Community	G	1	GV839	L	L	1,000	- -
KN 089	Whispering Oaks	Town of Paris	Transient, Non-Community	G	1	HQ907	L	L	520	- -
KN 090	American Girl, Inc. Warehouse and Gander Mountain	Town of Randall	Non-Transient, Non-Community	G	2	GO112 EZ861	H	H[d] L	8,000 - -	136,000 - -
KN 091	Bassett Hound	Town of Randall	Transient, Non-Community	G	1	GO611	L	L	500	- -
KN 092	Lakehouse Grille	Town of Randall	Transient, Non-Community	G	1	GO777	L	L	1,000	- -
KN 093	Nippersink Well Service	Town of Randall	Transient, Non-Community	G	1	BO692	L	L	610	- -
KN 094	Tommy's Lakeside Pub and Grill	Town of Randall	Transient, Non-Community	G	1	PT277	L	L	500	- -
KN 095	75th Street Inn	Town of Salem	Transient, Non-Community	G	1	DF882	L	L	1,000	- -
KN 096	Citgo Trevor Mart, Inc.	Town of Salem	Transient, Non-Community	G	1	IW994	L	L	250	- -
KN 097	Colony House Restaurant	Town of Salem	Transient, Non-Community	G	1	IZ254	L	L	540	- -
KN 098	Cowmark Cafe	Town of Salem	Transient, Non-Community	G	1	GP802	L	L	250	- -
KN 099	Cross Lake Inn	Town of Salem	Transient, Non-Community	G	1	GU723	L	L	1,040	- -
KN 100	Dynies	Town of Salem	Transient, Non-Community	G	1	CS510	L	L	1,000	- -
KN 101	Eldorado's	Town of Salem	Transient, Non-Community	G	1	GV790	L	L	1,000	- -
KN 102	Foxy's Bar	Town of Salem	Transient, Non-Community	G	1	GO735	L	L	540	- -
KN 103	Gander Mountain, Inc.	Town of Salem	Miscellaneous	G	4	- - - - - - - -	H	L[d] L[d] L[d] L[d]	1,000 - - 3,000 - -	14,000 28,000 43,000 - -
KN 104	Highway 83 Gas Mart	Town of Salem	Transient, Non-Community	G	1	JA317	L	L	250	- -
KN 105	Kelly's Pub	Town of Salem	Transient, Non-Community	G	1	GO732	L	L	1,060	- -
KN 106	Last Resort Tavern	Town of Salem	Transient, Non-Community	G	1	JB897	L	L	540	- -
KN 107	Marcombs Steak House	Town of Salem	Transient, Non-Community	G	1	GO736	L	L	520	- -
KN 108	Mars Trading Post Inn	Town of Salem	Transient, Non-Community	G	1	KA232	L	L	520	- -
KN 109	Michael's Pub	Town of Salem	Transient, Non-Community	G	1	PT522	L	L	1,100	- -
KN 110	Papa's Sports Bar and Grill	Town of Salem	Transient, Non-Community	G	1	GU200	L	L	540	- -
KN 111	Pizza Time in the Old Firehouse	Town of Salem	Transient, Non-Community	G	1	EZ813	L	L	300	- -
KN 112	Ralph’s Ace of Hearts	Town of Salem	Transient, Non-Community	G	1	IZ241	L	L	500	- -
KN 113	Ranch Sweet Shop	Town of Salem	Transient, Non-Community	G	1	JF870	L	L	250	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Kenosha County (continued)										
KN 114	Rob's River's Edge Pub and Grub	Town of Salem	Transient, Non-Community	G	1	JB900	L	L	860	- -
KN 115	Roofs & Bricks Bar & Grill	Town of Salem	Transient, Non-Community	G	1	HB234	L	L	1,000	- -
KN 116	Salem Mini Mart	Town of Salem	Transient, Non-Community	G	1	FH066	L	L	250	- -
KN 117	Siebert's Pub	Town of Salem	Transient, Non-Community	G	1	JF868	L	L	2,060	- -
KN 118	Silver Lake Marina	Town of Salem	Transient, Non-Community	G	1	NT041	L	L	750	- -
KN 119	Spring Valley Country Club	Town of Salem	Transient, Non-Community	G	1	IZ008	H	L[d]	540	- -
KN 120	State Line Inn	Town of Salem	Transient, Non-Community	G	1	IZ012	L	L	1,000	- -
KN 121	The Hideout	Town of Salem	Transient, Non-Community	G	1	JD478	L	L	540	- -
KN 122	Trevor Center	Town of Salem	Non-Transient, Non-Community	G	1	RK866	L	L	900	- -
KN 123	Trevor Mini Mart	Town of Salem	Transient, Non-Community	G	1	ET960	L	L	250	- -
KN 124	Twin Oaks Country Inn	Town of Salem	Transient, Non-Community	G	1	PT278	L	L	250	- -
KN 125	Wash Tub Laundromat	Town of Salem	Transient, Non-Community	G	1	EZ812	L	L	6,250	- -
KN 126	Wilmot Auto Service	Town of Salem	Transient, Non-Community	G	1	PT279	L	L	250	- -
KN 127	Wilmot Stage Stop	Town of Salem	Transient, Non-Community	G	1	PT280	L	L	250	- -
KN 128	Airport Inn	Town of Somers	Transient, Non-Community	G	1	SE991	L	L	1,040	- -
KN 129	Barb and John's Hangar	Town of Somers	Transient, Non-Community	G	1	IY991	L	L	270	- -
KN 130	BB's Pub	Town of Somers	Transient, Non-Community	G	1	IZ247	L	L	560	- -
KN 131	Easterday Motel	Town of Somers	Transient, Non-Community	G	1	NO415	L	L	1,625	- -
KN 132	Hankes Kenosha Quick Mart	Town of Somers	Transient, Non-Community	G	1	GU196	L	L	500	- -
KN 133	Maplecrest Country Club	Town of Somers	Transient, Non-Community	G	1	ML638	L	L	1,500	- -
KN 134	Mars Cheese Castle	Town of Somers	Transient, Non-Community	G	1	GP783	L	L	250	- -
KN 135	Mastermen Sports	Town of Somers	Transient, Non-Community	G	1	JF867	L	L	350	- -
KN 136	Middle Branch Saloon	Town of Somers	Transient, Non-Community	G	1	GO764	L	L	2,000	- -
KN 137	Open Pantry Food Mart, Somers	Town of Somers	Transient, Non-Community	G	1	GU686	L	L	450	- -
KN 138	R & D's Roadside Saloon	Town of Somers	Transient, Non-Community	G	1	JB878	L	L	1,000	- -
KN 139	S&S Business Enterprises, LLC	Town of Somers	Transient, Non-Community	G	1	IY990	L	L	320	- -
KN 140	Somers Mobil	Town of Somers	Transient, Non-Community	G	1	JB876	L	L	750	- -
KN 141	Star Bar Restaurant	Town of Somers	Transient, Non-Community	G	1	JB892	L	L	500	- -
KN 142	TW Pub and Grill	Town of Somers	Transient, Non-Community	G	1	IZ256	L	L	1,000	- -
KN 143	B & D Village Inn	Town of Wheatland	Transient, Non-Community	G	1	GV861	L	L	270	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Kenosha County (continued)										
KN 144	Change A Pace	Town of Wheatland	Transient, Non-Community	G	1	IY997	L	L	540	- -
KN 145	Knocker's Bar and Grill	Town of Wheatland	Transient, Non-Community	G	1	GV867	L	L	500	- -
KN 146	Lily Lake Resort	Town of Wheatland	Transient, Non-Community	G	1	JB880	L	L	1,625	- -
KN 147	Local Folks	Town of Wheatland	Transient, Non-Community	G	1	JF863	L	L	540	- -
KN 148	Luisa's Pizza and Restaurant	Town of Wheatland	Transient, Non-Community	G	1	GO734	L	L	530	- -
KN 149	Marino's Country Aire Banquet Hall	Town of Wheatland	Transient, Non-Community	G	1	JF866	L	L	6,050	- -
KN 150	Oakland Pit Stop	Town of Wheatland	Transient, Non-Community	G	1	PT276	L	L	300	- -
KN 151	Sit N' Bull	Town of Wheatland	Transient, Non-Community	G	1	GV843	L	L	500	- -
KN 152	Sundance	Town of Wheatland	Transient, Non-Community	G	1	PT273	L	L	1,950	- -
Kenosha County: 151 Systems		- -	- -	- -	159	- -	- -	- -	- -	- -
Milwaukee County										
MK 001	Mama Bears	City of Cudahy	Non-Transient, Non-Community	G	1	GV027	L	L	900	- -
MK 002	Southwoods of Cudahy	City of Cudahy	Transient, Non-Community	G	1	IY899	L	L	4,100	- -
MK 003	Buckhorn Inn	City of Franklin	Transient, Non-Community	G	1	IW985	L	L	1,000	- -
MK 004	Charcoal Grill	City of Franklin	Transient, Non-Community	G	1	ES870	L	L	3,120	- -
MK 005	Conway Central Express	City of Franklin	Transient, Non-Community	G	1	IW989	L	L	1,650	- -
MK 006	Crossroads II Pizza	City of Franklin	Transient, Non-Community	G	1	IZ185	L	L	250	- -
MK 007	Crystal Ridge	City of Franklin	Transient, Non-Community	G	1	IW991	L	L	250	- -
MK 008	El Rancho Motel	City of Franklin	Transient, Non-Community	G	1	GU695	L	L	1,625	- -
MK 009	Embassy Motel	City of Franklin	Transient, Non-Community	G	1	GU700	L	L	6,825	- -
MK 010	Four Angels Restaurant	City of Franklin	Transient, Non-Community	G	1	AP344	L	L	1,040	- -
MK 011	Hideaway Pub and Eatery	City of Franklin	Transient, Non-Community	G	1	IY966	L	L	1,000	- -
MK 012	Jalisco Family Restaurant	City of Franklin	Transient, Non-Community	G	1	GU732	L	L	870	- -
MK 013	Knotty Pine Motel	City of Franklin	Transient, Non-Community	G	1	GU696	L	L	2,080	- -
MK 014	Kwik Stop	City of Franklin	Transient, Non-Community	G	1	IZ127	L	L	260	- -
MK 015	La Toscana	City of Franklin	Transient, Non-Community	G	1	AWO014	L	L	790	- -
MK 016	Michaelangelos	City of Franklin	Transient, Non-Community	G	1	AP343	L	L	270	- -
MK 017	Modern 41 Motel	City of Franklin	Transient, Non-Community	G	1	GV898	L	L	2,080	- -
MK 018	Oakwood Discovery Stage	City of Franklin	Non-Transient, Non-Community	G	1	GV899	L	L	850	- -
MK 019	Oakwood Park Golf Course	City of Franklin	Transient, Non-Community	G	1	EZ839	L	L	1,420	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Milwaukee County (continued)										
MK 020	On the Border	City of Franklin	Transient, Non-Community	G	1	GO551	L	L	6,060	- -
MK 021	Park Motel	City of Franklin	Transient, Non-Community	G	1	GU699	L	L	3,380	- -
MK 022	Plaza Motel	City of Franklin	Transient, Non-Community	G	1	GU739	L	L	2,210	- -
MK 023	Rawson Pub	City of Franklin	Transient, Non-Community	G	1	IY894	L	L	540	- -
MK 024	Romey's Place	City of Franklin	Transient, Non-Community	G	1	GU737	L	L	1,020	- -
MK 025	Skylark Lanes	City of Franklin	Transient, Non-Community	G	1	IY892	L	L	2,030	- -
MK 026	Skyway Motel	City of Franklin	Transient, Non-Community	G	1	ET957	L	L	3,250	- -
MK 027	St. Martins Inn	City of Franklin	Transient, Non-Community	G	1	IZ182	L	L	500	- -
MK 028	Sunrise Motel	City of Franklin	Transient, Non-Community	G	1	GU697	L	L	1,625	- -
MK 029	The Landmark, Franklin	City of Franklin	Transient, Non-Community	G	1	IY954	L	L	1,000	- -
MK 030	Travelers Motel	City of Franklin	Transient, Non-Community	G	1	GU693	L	L	1,625	- -
MK 031	Whitnall View Motel	City of Franklin	Transient, Non-Community	G	1	IZ192	L	L	1,625	- -
MK 032	Wild Breed Saloon	City of Franklin	Transient, Non-Community	G	1	IY898	L	L	1,000	- -
MK 033	Brynwood Country Club	City of Milwaukee	Transient, Non-Community	G	1	GO547	L	L	3,100	- -
MK 034	General Mitchell International Airport	City of Milwaukee	Non-Transient, Non-Community	G	1	EZ912	L	L	- -	- -
MK 035	Bestway Bus Co.	City of Oak Creek	Transient, Non-Community	G	1	FG782	L	L	1,710	- -
MK 036	Woodland Golf Course	City of Oak Creek	Transient, Non-Community	G	1	GU694	L	L	1,040	- -
MK 037	Daniel J. Katz Building	Village of Bayside	Transient, Non-Community	G	1	IY971	L	L	825	- -
MK 038	George Pandls in Bayside	Village of Bayside	Transient, Non-Community	G	2	GU734 GU735	L	L L	1,030	- -
MK 039	Great Midwest Bank	Village of Bayside	Transient, Non-Community	G	1	IY977	L	L	310	- -
MK 040	Open Pantry	Village of Bayside	Transient, Non-Community	G	1	IY967	L	L	370	- -
MK 041	Sendiks	Village of Bayside	Non-Transient, Non-Community	G	1	DK474	L	L	9,820	- -
MK 042	TCF Bank, Bayside	Village of Bayside	Non-Transient, Non-Community	G	1	AR615	L	L	750	- -
MK 043	The Speakeasy	Village of Bayside	Transient, Non-Community	G	1	GV894	L	L	8,000	- -
MK 044	US Bank, Bayside	Village of Bayside	Transient, Non-Community	G	1	IY976	L	L	470	- -
MK 045	Diamond Jim's Stoneridge Inn	Village of Hales Corners	Transient, Non-Community	G	1	FG139	L	L	1,160	- -
MK 046	Hale Park Professional Building	Village of Hales Corners	Transient, Non-Community	G	1	IZ195	L	L	720	- -
MK 047	Whitnall Park Office Building	Village of Hales Corners	Transient, Non-Community	G	1	IZ191	L	L	1,575	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Milwaukee County (continued)										
MK 048	Milwaukee County Country Club	Village of River Hills	Transient, Non-Community	G	2	IY958 IY959	L	L L	6,400 - -	- - - -
MK 049	River Tennis Club	Village of River Hills	Transient, Non-Community	G	1	GV029	L	L	270	- -
Milwaukee County: 49 Systems		- -	- -	- -	51	- -	- -	- -	- -	- -
Ozaukee County										
OZ 001	Cedar Crest Specialties	City of Cedarburg	Non-Transient, Non-Community	G	1	ET866	L	L	500	- -
OZ 002	Five Corners Dodge	City of Cedarburg	Non-Transient, Non-Community	G	1	GO782	L	L	370	- -
OZ 003	Five Corners GMC Sales and Service	City of Cedarburg	Non-Transient, Non-Community	G	1	DK904	L	L	350	- -
OZ 004	Five Corners Professional Building	City of Cedarburg	Non-Transient, Non-Community	G	1	GC253	L	L	750	- -
OZ 005	Aguila Building	City of Mequon	Transient, Non-Community	G	1	IC433	L	L	5,750	- -
OZ 006	Alpine Village	City of Mequon	Transient, Non-Community	G	1	FO289	L	L	2,080	- -
OZ 007	Armons	City of Mequon	Transient, Non-Community	G	1	IY881	L	L	1,500	- -
OZ 008	Bel Mar Offices I & II	City of Mequon	Non-Transient, Non-Community	G	1	DE274	L	L	900	- -
OZ 009	Best Western Quiet House Motel	City of Mequon	Transient, Non-Community	G	1	HN480	L	L	1,885	- -
OZ 010	Coldwell Banker Real Estate	City of Mequon	Transient, Non-Community	G	1	DB979	L	L	945	- -
OZ 011	Comprehensive Real Estate Development	City of Mequon	Non-Transient, Non-Community	G	1	GU189	L	L	650	- -
OZ 012	Donges Bay Clubhouse	City of Mequon	Transient, Non-Community	G	1	GU183	L	L	2,060	- -
OZ 01 3	East Field Office Center	City of Mequon	Non-Transient, Non-Community	G	1	KA425	L	L	1,050	- -
OZ 014	East Town Shops	City of Mequon	Transient, Non-Community	G	1	CI941	L	L	720	- -
OZ 015	East Towne Square	City of Mequon	Transient, Non-Community Non-Transient, Non-Community	G	6	DU296 IZ133 IZ134 FG671 GV023 IZ135	L	L L L L L L	300 500 750 550 400 1,300	- - - - - - - - - - - -
OZ 016	East Towne Veterinary Clinic	City of Mequon	Transient, Non-Community	G	1	DN488	L	L	1,350	- -
OZ 017	Edge of Town	City of Mequon	Transient, Non-Community	G	1	GT124	L	L	550	- -
OZ 018	Ethan Allen Home Interiors	City of Mequon	Transient, Non-Community	G	1	GV891	L	L	300	- -
OZ 019	Ferrantes	City of Mequon	Transient, Non-Community	G	1	GU216	L	L	2,000	- -
OZ 020	Galleria Offices	City of Mequon	Non-Transient, Non-Community	G	1	GP950	L	L	825	- -
OZ 021	Glen Oaks Office Park	City of Mequon	Non-Transient, Non-Community	G	1	EO806	L	L	5,625	- -
OZ 022	Granite Microsystems	City of Mequon	Non-Transient, Non-Community	G	1	DN499	L	L	1,290	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Ozaukee County (continued)										
OZ 023	Grapes & Grain	City of Mequon	Transient, Non-Community	G	1	GV022	L	L	830	- -
OZ 024	Highland House	City of Mequon	Transient, Non-Community	G	1	GU204	L	L	4,100	- -
OZ 025	Howard's Pub & Grill	City of Mequon	Transient, Non-Community	G	1	IZ121	L	L	900	- -
OZ 026	Kwik Trip 325, Mequon	City of Mequon	Transient, Non-Community	G	1	FG630	L	L	500	- -
OZ 027	Lakeside Development	City of Mequon	Non-Transient, Non-Community	G	2	CW575 KP274	L	L L	1,320 - -	- - - -
OZ 028	Lane Commercial Building	City of Mequon	Transient, Non-Community	G	1	GT127	L	L	440	- -
OZ 029[e]	Libby Montana[e]	City of Mequon	Transient, Non-Community	G	1	GU173	L	L	2,000	- -
OZ 031	M & I Bank Mequon	City of Mequon	Transient, Non-Community	G	1	CW614	L	L	270	- -
OZ 032	Marathon II	City of Mequon	Transient, Non-Community	G	1	EZ002	L	L	2,100	- -
OZ 033	McDonalds, Mequon	City of Mequon	Transient, Non-Community	G	1	EP930	L	L	15,240	- -
OZ 034	Mequon Business Park	City of Mequon	Non-Transient, Non-Community	G	2	CY278 AX014	H	H[d] L	- - - -	288,000 - -
OZ 035	Mequon Care Center, Inc.	City of Mequon	Miscellaneous	G	2	FX315 GM790	H	L[d] L[d]	16,000 16,000	21,000 21,000
OZ 036	Mequon Country Club	City of Mequon	Transient, Non-Community	G	1	GU220	L	L	4,000	- -
OZ 037	Mequon Marketplace Pick N' Save and Wells Fargo	City of Mequon	Non-Transient, Non-Community Transient, Non-Community	G	2	KO431 LT271	L	L L	1,200 500	- - - -
OZ 038	Mequon Medical Park	City of Mequon	Transient, Non-Community	G	1	GV059	L	L	2,250	- -
OZ 039	Mequon Office Complex	City of Mequon	Non-Transient, Non-Community	G	2	SK174 ES908	L	L L	1,500 1,500	- - - -
OZ 040	Mequon Racquet Club	City of Mequon	Transient, Non-Community	G	1	GO786	L	L	3,400	- -
OZ 041	Mequon Soccer Club	City of Mequon	Transient, Non-Community	G	1	AY347	L	L	600	- -
OZ 042	Merchants Square	City of Mequon	Transient, Non-Community	G	1	FG676	L	L	470	- -
OZ 043	Missing Links Golf Range	City of Mequon	Transient, Non-Community	G	1	GU217	L	L	500	- -
OZ 044	New Citgo Mequon	City of Mequon	Transient, Non-Community	G	1	BL249	L	L	3,020	- -
OZ 045	Nichol Park Golf Range	City of Mequon	Transient, Non-Community	G	1	FE987	L	L	1,280	- -
OZ 046	Norscot Group, Inc.	City of Mequon	Non-Transient, Non-Community	G	1	ES873	L	L	1,500	- -
OZ 047	North Shore Cinema	City of Mequon	Transient, Non-Community	G	1	CB588	L	L	5,050	- -
OZ 048	North Shore Country Club	City of Mequon	Transient, Non-Community	G	1	KY557	L	L	500	- -
OZ 049	North Shore Office Building	City of Mequon	Transient, Non-Community	G	1	FG673	L	L	1,500	- -
OZ 050	Northshore Mobil	City of Mequon	Transient, Non-Community	G	1	FG650	L	L	500	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Ozaukee County (continued)										
OZ 051[f]	Ozaukee Country Club[f]	City of Mequon	Transient, Non-Community	G	1	AR619	L	L	10,500	- -
OZ 052[f]	Pavillion Shopping Center[f]	City of Mequon	Miscellaneous	G	2	HJ154 BA133	H	H[d] H[d]	10,000 10,000	20,000 20,000
OZ 053	Pigskin Inn	City of Mequon	Transient, Non-Community	G	1	GU172	L	L	1,040	- -
OZ 054	Port Zedler Motel	City of Mequon	Transient, Non-Community	G	1	GQ525	L	L	2,470	- -
OZ 055	Range Line Inn	City of Mequon	Transient, Non-Community	G	2	FO238 GU214	L	L L	1,500 - -	- - - -
OZ 056	River Centre	City of Mequon	Non-Transient, Non-Community	G	2	GU188 GU187	L	L L	1,990 1,350	- - - -
OZ 057	Riversite	City of Mequon	Miscellaneous Non-Transient, Non-Community	G	2	- - AU515	H	H[d] L	144,000 - -	288,000 - -
OZ 058	Roettgers Oil, Mequon Mobil Mart	City of Mequon	Transient, Non-Community	G	1	DU230	L	L	270	- -
OZ 059	Schaum Publications, Inc.	City of Mequon	Transient, Non-Community	G	1	AR635	L	L	400	- -
OZ 060	Schmidt & Bartelt Funeral Home	City of Mequon	Transient, Non-Community	G	1	GV052	L	L	- -	- -
OZ 061	Sommers, Inc.	City of Mequon	Non-Transient, Non-Community	G	1	FG664	L	L	640	- -
OZ 062	Taylor & Dunns Public House	City of Mequon	Transient, Non-Community	G	1	EM354	L	L	5,400	- -
OZ 063	The Landmark, Mequon	City of Mequon	Transient, Non-Community	G	1	GU178	L	L	500	- -
OZ 064[e]	Towne Market Mobil[e]	City of Mequon	Transient, Non-Community	G	1	FG629	L	L	520	- -
OZ 065	US Bank, Mequon	City of Mequon	Transient, Non-Community	G	1	FG672	L	L	640	- -
OZ 066	Village Green Condominiums	City of Mequon	Non-Transient, Non-Community	G	1	IC398	L	L	2,340	- -
OZ 067	Walgreens, Mequon	City of Mequon	Transient, Non-Community	G	1	MF215	L	L	620	- -
OZ 068	Wulff's Island Sybaris Motel	City of Mequon	Transient, Non-Community	G	1	ES867	L	L	3,120	- -
OZ 069	Smith Brothers Fish Shanty Restaurant	City of Port Washington	Transient, Non-Community	G	1	GE920	H	H[d]	125,000	173,000
OZ 070	Lakeside Packaging Santa Maria Camp	Village of Belgium	Transient, Non-Community	G	1	IZ675	L	L	2,250	- -
OZ 071	No Nos	Village of Newburg	Transient, Non-Community	G	1	RU106	L	L	2,080	- -
OZ 072	Albanese's of Mequon	Village of Thiensville	Transient, Non-Community	G	1	GT123	L	L	1,000	- -
OZ 073	American Credit Union	Village of Thiensville	Miscellaneous	G	1	- -	H	- -[d]	- -	- -
OZ 074	Bank Mutual	Village of Thiensville	Transient, Non-Community	G	1	FG618	L	L	550	- -
OZ 075	CDE Properties	Village of Thiensville	Transient, Non-Community	G	1	FG680	L	L	350	- -
OZ 076	Chuck's Place	Village of Thiensville	Transient, Non-Community	G	1	GU207	L	L	1,000	- -
OZ 077	East Sun Restaurant	Village of Thiensville	Transient, Non-Community	G	1	IY883	L	L	500	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Ozaukee County (continued)										
OZ 078	Fiddleheads	Village of Thiensville	Transient, Non-Community	G	1	IZ281	L	L	270	- -
OZ 079	Jenior Tire & Automotive	Village of Thiensville	Transient, Non-Community	G	1	FG645	L	L	250	- -
OZ 080	M & I Bank Thiensville	Village of Thiensville	Transient, Non-Community	G	1	ES753	L	L	250	- -
OZ 081	McNabb & Risley	Village of Thiensville	Transient, Non-Community	G	1	FG619	L	L	375	- -
OZ 082	Milas European Bakery & Café	Village of Thiensville	Transient, Non-Community	G	1	PT500	L	L	1,550	- -
OZ 083	One Hour Martinizing	Village of Thiensville	Transient, Non-Community	G	1	GP813	L	L	11,500	- -
OZ 084	Ozaukee Bank, Thiensville	Village of Thiensville	Transient, Non-Community	G	1	GL894	L	L	450	- -
OZ 085	Prime Minister Family Restaurant	Village of Thiensville	Transient, Non-Community	G	1	GU218	L	L	1,070	- -
OZ 086	Remington's River Inn	Village of Thiensville	Transient, Non-Community	G	1	KO980	L	L	1,860	- -
OZ 087	Roettgers Oil, Thiensville Mobil Mart	Village of Thiensville	Transient, Non-Community	G	1	GU185	L	L	520	- -
OZ 088	Schmit Ford Mercury Corporation	Village of Thiensville	Non-Transient, Non-Community	G	1	DQ138	L	L	440	- -
OZ 089	Schramka Densow Funeral Home	Village of Thiensville	Transient, Non-Community	G	1	FG589	L	L	250	- -
OZ 090	Shullys Catering	Village of Thiensville	Transient, Non-Community	G	1	DK945	L	L	300	- -
OZ 091	Skippy's Sports Pub	Village of Thiensville	Transient, Non-Community	G	1	GU209	L	L	500	- -
OZ 092	Studio Café and Gallery	Village of Thiensville	Transient, Non-Community	G	1	GU177	L	L	770	- -
OZ 093	Suburban Motors	Village of Thiensville	Transient, Non-Community	G	1	FE984	L	L	4,740	- -
OZ 094	Thiensville Mequon Small Animal Clinic	Village of Thiensville	Transient, Non-Community	G	1	GO789	L	L	2,050	- -
OZ 095	Thiensville Mill Professional Building	Village of Thiensville	Transient, Non-Community	G	1	BO650	L	L	555	- -
OZ 096	Thiensville Professional Park	Village of Thiensville	Non-Transient, Non-Community	G	1	FG615	L	L	1,905	- -
OZ 097	Village BP	Village of Thiensville	Transient, Non-Community	G	1	GU208	L	L	4,520	- -
OZ 098	Village Center	Village of Thiensville	Transient, Non-Community	G	1	IZ128	L	L	600	- -
OZ 099	Walgreens, Thiensville	Village of Thiensville	Transient, Non-Community	G	1	NA747	H	L[d]	1,220	1,000
OZ 100	Lake Church Inn	Town of Belgium	Transient, Non-Community	G	1	IZ122	L	L	1,820	- -
OZ 101	Squires Country Club	Town of Belgium	Transient, Non-Community	G	1	GV900	L	L	3,160	- -
OZ 102	Ozaukee Skateland	Town of Cedarburg	Transient, Non-Community	G	1	CZ511	L	L	1,480	- -
OZ 103	PDQ Cedarburg	Town of Cedarburg	Transient, Non-Community	G	1	KO435	L	L	8,170	- -
OZ 104	The Road House	Town of Cedarburg	Transient, Non-Community	G	1	ET870	L	L	1,260	- -
OZ 105	Tri Par, Wauwatosa Road	Town of Cedarburg	Transient, Non-Community	G	1	LL743	L	L	270	- -
OZ 106	Wayne's Drive-In	Town of Cedarburg	Transient, Non-Community	G	1	LL786	L	L	5,100	- -
OZ 107	Dawg House	Town of Fredonia	Transient, Non-Community	G	1	IY888	L	L	500	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Ozaukee County (continued)										
OZ 108	Five Pillars Supper Club	Town of Fredonia	Transient, Non-Community	G	1	GU229	L	L	1,030	- -
OZ 109	Glory Days Bar & Grill	Town of Fredonia	Transient, Non-Community	G	1	IY893	L	L	500	- -
OZ 110	Little Kohler Haus	Town of Fredonia	Transient, Non-Community	G	1	GU230	L	L	1,020	- -
OZ 111	Mueller's Sales & Service	Town of Fredonia	Transient, Non-Community	G	1	FG540	L	L	250	- -
OZ 112	Runaways	Town of Fredonia	Transient, Non-Community	G	1	IZ125	L	L	600	- -
OZ 113	Schwai's Meats and Sausage	Town of Fredonia	Transient, Non-Community	G	1	IZ057	L	L	500	- -
OZ 114	Edgewater Golf Club	Town of Grafton	Transient, Non-Community	G	1	GU738	L	L	1,020	- -
OZ 115	Fire Ridge Golf Club	Town of Grafton	Transient, Non-Community	G	1	EM229	L	L	500	- -
OZ 116	Ghost Town Tavern & Restaurant	Town of Grafton	Transient, Non-Community	G	1	GU224	L	L	1,000	- -
OZ 117	Rick's Pioneer Mobil	Town of Grafton	Transient, Non-Community	G	1	ET898	L	L	260	- -
OZ 118	Driftwood Motel	Town of Port Washington	Transient, Non-Community	G	1	GV060	L	L	1,625	- -
OZ 119	Memories	Town of Port Washington	Transient, Non-Community	G	1	FH039	L	L	1,000	- -
OZ 120	Nisleits Country Inn	Town of Port Washington	Transient, Non-Community	G	1	IZ124	L	L	2,100	- -
OZ 121	R & R Bar & Grill	Town of Port Washington	Transient, Non-Community	G	1	GT129	L	L	740	- -
OZ 122	McCarthy's	Town of Saukville	Transient, Non-Community	G	1	GU681	L	L	500	- -
OZ 123	Riveredge Nature Center, Sugar Inn	Town of Saukville	Transient, Non-Community	G	1	FG647	L	L	500	- -
OZ 124	Riverview Inn	Town of Saukville	Transient, Non-Community	G	1	GV895	L	L	540	- -
OZ 125	The Bog Golf Course	Town of Saukville	Transient, Non-Community	G	5	EM251 EM252 EM248 KO926 EM247	H	L L L L L	3,400 - - - - - - - -	- - - - - - - - - -
Ozaukee County: 125 Systems		- -	- -	- -	142	- -	- -	- -	- -	- -
Racine County										
RC 001	Browns Lake Golf Course	City of Burlington	Transient, Non-Community	G	1	IY922	L	L	3,000	- -
RC 002	Scrub N' Suds Car Wash	City of Racine	Miscellaneous	G	2	- - - -	H	L[d] L[d]	10,000 10,000	19,000 19,000
RC 003	Chances	Village of Rochester	Transient, Non-Community	G	1	IY948	L	L	1,000	- -
RC 004	Coral Reef	Village of Rochester	Transient, Non-Community	G	1	GT016	L	L	500	- -
RC 005	Rochester Mini Mart	Village of Rochester	Transient, Non-Community	G	1	GT019	L	L	270	- -
RC 006	AmericInn Motel	Town of Burlington	Transient, Non-Community	G	1	JE621	L	L	3,640	- -
RC 007	Beachview Grocery	Town of Burlington	Transient, Non-Community	G	1	GP928	L	L	1,000	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Racine County (continued)										
RC 008	Beachview Motel & Lounge	Town of Burlington	Transient, Non-Community	G	1	GP927	L	L	3,250	- -
RC 009	Billy Ds	Town of Burlington	Transient, Non-Community	G	1	JE622	L	L	1,000	- -
RC 010	Cottonpicker Restaurant	Town of Burlington	Transient, Non-Community	G	1	GS016	L	L	2,200	- -
RC 011	Countryside Pub	Town of Burlington	Transient, Non-Community	G	1	FD490	L	L	540	- -
RC 012	Hunny Tree, Inc.	Town of Burlington	Transient, Non-Community	G	1	IZ550	L	L	250	- -
RC 013	Little Country Store	Town of Burlington	Transient, Non-Community	G	1	IX223	L	L	1,000	- -
RC 014	Sun Ray Hills Clubhouse	Town of Burlington	Transient, Non-Community	G	1	FG129	L	L	6,040	- -
RC 015	The Waterfront	Town of Burlington	Transient, Non-Community	G	1	GS018	L	L	1,000	- -
RC 016	Thomas Bus Service	Town of Burlington	Transient, Non-Community	G	1	FG794	L	L	330	- -
RC 017	Bob & Kathy's Country Pump	Village of Caledonia	Transient, Non-Community	G	1	FG812	L	L	2,020	- -
RC 018	Brossman's Bar	Village of Caledonia	Transient, Non-Community	G	1	GT075	L	L	1,000	- -
RC 019	Buy Right Auto Parts	Village of Caledonia	Transient, Non-Community	G	1	JA292	L	L	270	- -
RC 020	Cabbage Heads Tavern	Village of Caledonia	Transient, Non-Community	G	1	GT074	L	L	1,000	- -
RC 021	Dead End Saloon	Village of Caledonia	Transient, Non-Community	G	1	JE633	L	L	1,000	- -
RC 022	Franksville United Methodist Church	Village of Caledonia	Transient, Non-Community	G	1	EZ875	L	L	3,030	- -
RC 023	Freudenwald Oldsmobile Dealership	Village of Caledonia	Transient, Non-Community	G	1	FG809	L	L	320	- -
RC 024	Greg's Catering and Restaurant	Village of Caledonia	Transient, Non-Community	G	1	AP346	L	L	250	- -
RC 025	Husher Pub & Grill	Village of Caledonia	Transient, Non-Community	G	1	GT072	L	L	1,000	- -
RC 026	Jellystone Park Camp Resort	Village of Caledonia	Transient, Non-Community	G	2	GT068 GT069	L	L L	25,000 - -	- - - -
RC 027	Lou's Custard & Franksville Oil Company	Village of Caledonia	Transient, Non-Community	G	1	IZ215	L	L	1,030	- -
RC 028	Meadows Family Restaurant	Village of Caledonia	Transient, Non-Community	G	1	AP347	L	L	630	- -
RC 029	Pilot Corporation and Arbys	Village of Caledonia	Non-Transient, Non-Community	G	1	AX026	L	L	3,350	- -
RC 030	Rudy's Shop Rite North	Village of Caledonia	Transient, Non-Community	G	1	FD481	L	L	300	- -
RC 031	Seven Mile Amoco	Village of Caledonia	Transient, Non-Community	G	1	JE628	L	L	250	- -
RC 032	Seven Mile Motel	Village of Caledonia	Transient, Non-Community	G	1	GT064	L	L	1,850	- -
RC 033	Shamrocks Pub & Grill	Village of Caledonia	Transient, Non-Community	G	1	GT071	L	L	750	- -
RC 034	South Hills Country Club	Village of Caledonia	Transient, Non-Community	G	1	JE636	L	L	1,960	- -
RC 035	Swan Farms	Village of Caledonia	Transient, Non-Community	G	1	GT077	L	L	1,040	- -
RC 036	The Depot Bar & Grill	Village of Caledonia	Transient, Non-Community	G	1	GT110	L	L	1,040	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Racine County (continued)										
RC 037	US Bank, Franksville	Village of Caledonia	Transient, Non-Community	G	1	ES807	L	L	1,240	- -
RC 038	Witts End	Village of Caledonia	Transient, Non-Community	G	1	CU670	L	L	1,000	- -
RC 039	Auctioneers Inn	Town of Dover	Transient, Non-Community	G	1	GS019	L	L	500	- -
RC 040	Bat & Brew	Town of Dover	Transient, Non-Community	G	1	FD487	L	L	1,000	- -
RC 041	Dover Center Strip Mall	Town of Dover	Transient, Non-Community	G	1	RL559	L	L	1,650	- -
RC 042	Dover Food Mart	Town of Dover	Transient, Non-Community	G	1	FH027	L	L	270	- -
RC 043	Dover Inn	Town of Dover	Transient, Non-Community	G	1	FD488	L	L	1,000	- -
RC 044	Eagle Inn on the Lake	Town of Dover	Transient, Non-Community	G	1	GS020	L	L	540	- -
RC 045	Hogs Nest	Town of Dover	Transient, Non-Community	G	1	GO569	L	L	500	- -
RC 046	Kansasville Quick Mart	Town of Dover	Transient, Non-Community	G	1	DT327	L	L	250	- -
RC 047	Wildlife Refuge Bar	Town of Dover	Transient, Non-Community	G	1	GT062	L	L	500	- -
RC 048	Borzynski's Farm Market	Village of Mt. Pleasant	Transient, Non-Community	G	5	FD450	H	L[d]	290	- -
RC 049	Burger King, Mt. Pleasant	Village of Mt. Pleasant	Transient, Non-Community	G	1	FI463	L	L	8,200	- -
RC 050	Holiday Inn Express	Village of Mt. Pleasant	Transient, Non-Community	G	1	ME440	L	L	10,725	- -
RC 051	Kwik Trip 686, Sturtevant	Village of Mt. Pleasant	Transient, Non-Community	G	1	KO015	L	L	5,050	- -
RC 052	McDonalds, Mt. Pleasant	Village of Mt. Pleasant	Transient, Non-Community	G	1	AH758	L	L	7,700	- -
RC 053	Meadowbrook Country Club	Village of Mt. Pleasant	Transient, Non-Community	G	2	FG736 FG735	L	L L	3,000 3,320	- - - -
RC 054	Olivia's Restaurant	Village of Mt. Pleasant	Transient, Non-Community	G	1	JE512	L	L	1,000	- -
RC 055	Pinocchio's Drive In	Village of Mt. Pleasant	Transient, Non-Community	G	1	IZ221	L	L	2,050	- -
RC 056	Pudgy's Pub	Village of Mt. Pleasant	Transient, Non-Community	G	1	GV870	L	L	1,000	- -
RC 057	Racine Cooperative Nursery	Village of Mt. Pleasant	Transient, Non-Community	G	1	ET954	L	L	900	- -
RC 058	Ramada Limited	Village of Mt. Pleasant	Transient, Non-Community	G	1	JB461	L	L	6,500	- -
RC 059	Satguru Petroleum	Village of Mt. Pleasant	Transient, Non-Community	G	1	JE635	L	L	250	- -
RC 060	TCF Bank, Mt. Pleasant	Village of Mt. Pleasant	Transient, Non-Community	G	1	ES813	L	L	340	- -
RC 061	Towne Ford	Village of Mt. Pleasant	Non-Transient, Non-Community	G	1	ES821	L	L	420	- -
RC 062	Vic's Clique	Village of Mt. Pleasant	Transient, Non-Community	G	1	IZ229	L	L	1,000	- -
RC 063	Western Village Shopping Center	Village of Mt. Pleasant	Non-Transient, Non-Community	G	1	ES825	L	L	1,000	- -
RC 064	American Eagle Restaurant	Town of Norway	Transient, Non-Community	G	1	GS014	L	L	500	- -
RC 065	Chupster's	Town of Norway	Transient, Non-Community	G	1	AU133	L	L	280	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Racine County (continued)										
RC 066	Danco Shop & Run	Town of Norway	Transient, Non-Community	G	1	GS012	L	L	500	- -
RC 067	Kelly's Bleachers II	Town of Norway	Transient, Non-Community	G	1	IX219	L	L	540	- -
RC 068	Little VIP Child Care	Town of Norway	Non-Transient, Non-Community	G	1	JF052	L	L	630	- -
RC 069	Lots for Tots	Town of Norway	Non-Transient, Non-Community	G	1	FQ207	L	L	1,065	- -
RC 070	Lure-U-Inn, LLC	Town of Norway	Transient, Non-Community	G	1	GS011	L	L	1,000	- -
RC 071	Old Penny Bar	Town of Norway	Transient, Non-Community	G	1	JE515	L	L	1,080	- -
RC 072	Sportsmans Resort	Town of Norway	Transient, Non-Community	G	1	RN192	L	L	500	- -
RC 073	The Tavern	Town of Norway	Transient, Non-Community	G	1	JB465	L	L	1,100	- -
RC 074	Time Out Tavern, Watertight Plumbing	Town of Norway	Transient, Non-Community	G	1	GS017	L	L	290	- -
RC 075	Wind Lake Amoco	Town of Norway	Transient, Non-Community	G	1	IZ108	L	L	250	- -
RC 076	Wind Lake Plaza	Town of Norway	Transient, Non-Community	G	2	JF054 JF053	L	L L	1,240 - -	- - - -
RC 077	Blackhawk Corporation Condos	Town of Raymond	Non-Transient, Non-Community	G	1	KM454	L	L	3,840	- -
RC 078	Corner Pub & Grill	Town of Raymond	Transient, Non-Community	G	1	GU164	L	L	1,040	- -
RC 079	Lady Luck	Town of Raymond	Transient, Non-Community	G	1	GT073	L	L	500	- -
RC 080	Lolly's	Town of Raymond	Transient, Non-Community	G	1	GP930	L	L	1,000	- -
RC 081	Metro Milwaukee Auto Auction	Town of Raymond	Miscellaneous Non-Transient, Non-Community Miscellaneous Miscellaneous Non-Transient, Non-Community Non-Transient, Non-Community Non-Transient, Non-Community Transient, Non-Community	G G G G G G G G	8	- - DQ151 - - EZ973 LI567 AY636 CU276 EZ972	H	L[d] L[d] H[d] L[d] L L L L	- - 3,000 3,000 9,000 400 600 1,125 3,500	14,000 56,000 79,000 216,000 - - - - - - - -
RC 082	North Shore WInchester Gun Club	Town of Raymond	Transient, Non-Community	G	1	GP795	L	L	760	- -
RC 083	Raymond Heights Golf Center	Town of Raymond	Transient, Non-Community	G	1	GU161	L	L	560	- -
RC 084	Roettger's Raymond Mobil	Town of Raymond	Transient, Non-Community	G	1	FD485	L	L	500	- -
RC 085	Seven Mile Fair	Town of Raymond	Transient, Non-Community: Miscellaneous Miscellaneous Non-Transient, Non-Community: Miscellaneous Non-Transient, Non-Community	G G G G	4	GT078 RAC017 HR225 GT079	H	L[d] L[d] L[d] L	4,000 10,000 10,000 1,500	14,000 19,000 86,000 - -
RC 086	Seven Mile Station	Town of Raymond	Transient, Non-Community	G	1	ET797	L	L	270	- -
RC 087	The Hideout	Town of Raymond	Transient, Non-Community	G	1	GT105	L	L	1,000	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Racine County (continued)										
RC 088	Welch's A & W	Town of Raymond	Transient, Non-Community	G	1	GP757	L	L	1,000	- -
RC 089	Burger King, Rochester	Town of Rochester	Transient, Non-Community	G	1	ES802	L	L	5,220	- -
RC 090	Dales Bar	Town of Rochester	Transient, Non-Community	G	2	IZ201 MA098	L L	L L	500 - -	- - - -
RC 091	Hitch N' Post	Town of Rochester	Transient, Non-Community	G	1	KL298	L	L	1,000	- -
RC 092	Lynch Truck Center	Town of Rochester	Non-Transient, Non-Community	G	1	OG433	L	L	- -	- -
RC 093	The Bunker	Town of Rochester	Transient, Non-Community	G	1	IZ222	L	L	540	- -
RC 094	Captain Missy's	Town of Waterford	Transient, Non-Community	G	1	JA311	L	L	500	- -
RC 095	Charlie's Pub & Grill	Town of Waterford	Transient, Non-Community	G	1	EJ050	L	L	500	- -
RC 096	Chris's Cruise Inn	Town of Waterford	Transient, Non-Community	G	1	FD482	L	L	500	- -
RC 097	Dooley's Knot Inn	Town of Waterford	Transient, Non-Community	G	1	PT261	L	L	1,500	- -
RC 098	Grebes One Stop	Town of Waterford	Transient, Non-Community	G	1	FG830	L	L	250	- -
RC 099	Rivermoor Country Club	Town of Waterford	Transient, Non-Community	G	1	ES803	L	L	6,160	- -
RC 100	Roma's Tichigan Lake Inn	Town of Waterford	Transient, Non-Community	G	1	JF060	L	L	1,000	- -
RC 101	Ron's Service	Town of Waterford	Transient, Non-Community	G	1	FG826	L	L	1,300	- -
RC 102	Tichigan Diner	Town of Waterford	Transient, Non-Community	G	1	FD483	L	L	500	- -
RC 103	Uncle Dales Hilltop	Town of Waterford	Transient, Non-Community	G	1	CG162	L	L	540	- -
RC 104	White Fox Den II	Town of Waterford	Transient, Non-Community	G	1	GV868	L	L	500	- -
RC 105	Apple Holler Restaurant	Town of Yorkville	Transient, Non-Community	G	1	EZ941	L	L	1,200	- -
RC 106	Country Rose Bakery Cafe	Town of Yorkville	Transient, Non-Community	G	1	RO946	L	L	1,200	- -
RC 107	International Sports Complex	Town of Yorkville	Transient, Non-Community	G	2	GQ564 IZ228	L	L L	6,000 - -	- - - -
RC 108	Ives Grove Golf Course	Town of Yorkville	Transient, Non-Community	G	1	FD449	L	L	10,100	- -
RC 109	Martin Ford	Town of Yorkville	Transient, Non-Community	G	1	FG816	L	L	720	- -
RC 110	Mike Ben-Ben, Inc.	Town of Yorkville	Non-Transient, Non-Community	G	1	ES812	L	L	250	- -
RC 111	Pelia Petroleum Country Mart	Town of Yorkville	Transient, Non-Community	G	1	FH029	L	L	340	- -
RC 112	Rockin' Robin	Town of Yorkville	Transient, Non-Community	G	1	KY648	L	L	500	- -
RC 113	Roger Palmen Chevrolet, Inc.	Town of Yorkville	Transient, Non-Community	G	1	FG815	L	L	450	- -
Racine County: 113 Systems		- -	- -	- -	129	- -	- -	- -	- -	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Walworth County										
WL 001	Lake Lawn Resort	City of Delavan	Non-Transient, Non-Community	G	2	BO686 AR314	L	L L	81,380 - -	- - - -
WL 002	S S Express Lane #12	City of Elkhorn	Transient, Non-Community	G	1	EZ959	L	L	270	- -
WL 003	Lake Geneva Raceway	City of Lake Geneva	Transient, Non-Community: Miscellaneous (April-October) Transient, Non-Community	G G	2	BH165 BH166	H	L[d] L	1,000 2,080	5,000 - -
WL 004	West Wind Diner	Village of Darien	Transient, Non-Community	G	1	EZ945	L	L	280	- -
WL 005	Big Foot Country Club	Village of Fontana-on-Geneva Lake	Transient, Non-Community	G	1	FG189	L	L	1,100	- -
WL 006	The Hideaway	Village of Genoa City	Transient, Non-Community	G	1	ET947	L	L	500	- -
WL 007	Chefs Corner	Village of Williams Bay	Transient, Non-Community	G	1	GT104	L	L	750	- -
WL 008	Rote Oil & Lenon Bus Service	Town of Bloomfield	Transient, Non-Community	G	1	II698	L	L	650	- -
WL 009	Uncle Ed's	Town of Bloomfield	Transient, Non-Community	G	1	GP784	L	L	1,000	- -
WL 010	Corners Inn	Town of Darien	Transient, Non-Community	G	1	CR551	L	L	500	- -
WL 011	Country Station	Town of Darien	Transient, Non-Community	G	1	MX716	L	L	250	- -
WL 012	Countryside Family Restaurant	Town of Darien	Transient, Non-Community	G	1	EZ887	L	L	2,000	- -
WL 013	Richmond House	Town of Darien	Transient, Non-Community	G	1	CU191	L	L	800	- -
WL 014	The Show Palace Club	Town of Darien	Transient, Non-Community	G	1	ME252	L	L	540	- -
WL 015	Vegas Gentleman's Club	Town of Darien	Transient, Non-Community	G	1	GT109	L	L	3,100	- -
WL 016	Browns Services Wisconsin Golf	Town of Delavan	Transient, Non-Community	G	1	EZ884	L	L	500	- -
WL 017	Cat Tails	Town of Delavan	Transient, Non-Community	G	1	GP781	L	L	500	- -
WL 018	Dairy Queen, Delavan	Town of Delavan	Transient, Non-Community	G	1	ID175	L	L	270	- -
WL 019	Delavan Lake Resort	Town of Delavan	Miscellaneous	G	4	NY870 NY869 BH148 BH147	H	H[d] H[d] H[d] H[d]	80,000 10,000 10,000 144,000	180,000 260,000 260,000 288,000
WL 020	Delavan Lake Yacht Club	Town of Delavan	Transient, Non-Community	G	1	IZ169	L	L	1,060	- -
WL 021	Econo Lodge Inn and Suites	Town of Delavan	Transient, Non-Community	G	1	CQ268	L	L	5,200	- -
WL 022	El Rancho Restaurant	Town of Delavan	Transient, Non-Community	G	1	OG913	L	L	270	- -
WL 023	Esquire Lounge	Town of Delavan	Transient, Non-Community	G	1	IZ061	L	L	500	- -
WL 024	Hogan's Goat	Town of Delavan	Transient, Non-Community	G	1	CR465	L	L	500	- -
WL 025	Inn Between	Town of Delavan	Transient, Non-Community	G	1	AR738	L	L	1,000	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Walworth County (continued)										
WL 026	Lakeview Motel	Town of Delavan	Transient, Non-Community	G	1	EZ946	L	L	1,820	- -
WL 027	Leo B's	Town of Delavan	Transient, Non-Community	G	2	NF944 NF954	L	L L	390 - -	- - - -
WL 028	Maxi-Shell Mini Mart	Town of Delavan	Transient, Non-Community	G	1	OG960	L	L	250	- -
WL 029	Mid Lakes Village	Town of Delavan	Transient, Non-Community	G	1	IG444	L	L	495	- -
WL 030	North Shore Bar & Grill	Town of Delavan	Transient, Non-Community	G	1	IZ080	L	L	1,000	- -
WL 031	Pat's Place	Town of Delavan	Transient, Non-Community	G	1	NZ321	L	L	500	- -
WL 032	Pirates Cove	Town of Delavan	Transient, Non-Community	G	1	IZ085	L	L	500	- -
WL 033	Ralph's Steak House	Town of Delavan	Transient, Non-Community	G	1	CU270	L	L	1,000	- -
WL 034	Schumaker's Sandwich Shoppe	Town of Delavan	Transient, Non-Community	G	1	HL577	L	L	500	- -
WL 035	Super Z's	Town of Delavan	Transient, Non-Community	G	1	HI638	L	L	540	- -
WL 036	Tigers Too	Town of Delavan	Transient, Non-Community	G	1	NZ322	L	L	500	- -
WL 037	TW's Applegate Restaurant	Town of Delavan	Transient, Non-Community	G	1	PS843	L	L	310	- -
WL 038	Village Supper Club	Town of Delavan	Transient, Non-Community	G	1	HJ576	L	L	4,000	- -
WL 039	Waterfront	Town of Delavan	Transient, Non-Community	G	1	CR474	L	L	500	- -
WL 040	Dockside Grog & Galley	Town of East Troy	Transient, Non-Community	G	1	FG181	L	L	500	- -
WL 041	Double D's Pub and Eatery	Town of East Troy	Transient, Non-Community	G	1	GU170	L	L	820	- -
WL 042	Elegant Farmer, Inc.	Town of East Troy	Transient, Non-Community	G	1	GP865	L	L	1,200	- -
WL 043	Lake Beulah Country Club	Town of East Troy	Transient, Non-Community	G	1	GU729	L	L	1,500	- -
WL 044	Lake Beulah Yacht Club	Town of East Troy	Transient, Non-Community	G	1	GO750	L	L	600	- -
WL 045	Lake House Beulah Pub	Town of East Troy	Transient, Non-Community	G	1	GU194	L	L	6,000	- -
WL 046	Roma's Ristorante & Lounge	Town of East Troy	Transient, Non-Community	G	1	GU193	L	L	1,000	- -
WL 047	Anthony's Steak House & Club 21	Town of Geneva	Transient, Non-Community	G	1	GO642	L	L	2,980	- -
WL 048	Foley's Bar & Grill	Town of Geneva	Transient, Non-Community	G	1	TT578	L	L	700	- -
WL 049	French Country Inn	Town of Geneva	Transient, Non-Community	G	1	ET927	L	L	2,925	- -
WL 050	Mars Resort	Town of Geneva	Transient, Non-Community	G	1	GS027	L	L	8,125	- -
WL 051	Alpine Valley Resort	Town of LaFayette	Non-Transient, Non-Community Miscellaneous	G G G	3	RX227 BH131 WAL010	H	L[d] H[d] H[d]	6,000 33,000 33,000	12,000 47,000 47,000
WL 052	Crossroads Motel	Town of LaFayette	Transient, Non-Community	G	1	IZ166	L	L	1,625	- -
WL 053	Kountry Inn	Town of LaFayette	Transient, Non-Community	G	1	IZ070	L	L	2,000	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Walworth County (continued)										
WL 054	La Grange General Store	Town of LaGrange	Transient, Non-Community	G	1	GU162	L	L	1,020	- -
WL 055	Lauderdale Country Club	Town of LaGrange	Transient, Non-Community	G	1	IZ073	L	L	1,500	- -
WL 056	Lauderdale Landing	Town of LaGrange	Transient, Non-Community	G	1	IZ074	L	L	500	- -
WL 057	Elgin Club	Town of Linn	Transient, Non-Community	G	1	FB337	L	L	1,625	- -
WL 058	Lake Geneva Club	Town of Linn	Transient, Non-Community	G	2	QK245 ET926	L	L L	7,800 - -	- - - -
WL 059	Lake Geneva Country Club: Clubhouse	Town of Linn	Non-Transient, Non-Community	G	1	DK985	L	L	2,500	- -
WL 060	Lake Geneva Highlands	Town of Linn	Transient, Non-Community	G	1	GQ566	L	L	9,750	- -
WL 061	Lake Geneva Yacht Club	Town of Linn	Transient, Non-Community	G	1	FR530	L	L	4,240	- -
WL 062	Lazy Cloud Inn	Town of Linn	Transient, Non-Community	G	1	GT103	L	L	1,625	- -
WL 063	Oak Shores Club	Town of Linn	Transient, Non-Community	G	1	IZ081	L	L	1,950	- -
WL 064	Owl Tavern	Town of Linn	Transient, Non-Community	G	1	PT006	L	L	500	- -
WL 065	Pier, LLC Grocery	Town of Linn	Transient, Non-Community	G	1	GS084	L	L	260	- -
WL 066	Skinny's Lake Shore	Town of Linn	Transient, Non-Community	G	1	HR775	L	L	270	- -
WL 067	Skinny's South	Town of Linn	Transient, Non-Community	G	1	QP050	L	L	540	- -
WL 068	Sybil Lane	Town of Linn	Transient, Non-Community	G	1	PT010	L	L	3,250	- -
WL 069	The Geneva Inn	Town of Linn	Miscellaneous Transient, Non-Community: Miscellaneous Transient, Non-Community	G G G	3	- - LI564 CT012	H	L[d] L L	25,000 13,000 - -	75,000 - - - -
WL 070	Bonnie & Betty's	Town of Lyons	Transient, Non-Community	G	1	GU671	L	L	1,000	- -
WL 071	Brute Golf Course Halfway House	Town of Lyons	Transient, Non-Community	G	1	GM446	L	L	2,000	- -
WL 072	Grand Geneva Resort	Town of Lyons	Miscellaneous	G	5	BH134 BH135 BH136 BH137 BH133	H	L[d] H[d] H[d] H[d] H[d]	48,000 82,000 403,000 288,000 288,000	72,000 164,000 403,000 576,000 576,000
WL 073	Highlands Golf Course Halfway House	Town of Lyons	Transient, Non-Community	G	1	HL870	L	L	2,000	- -
WL 074	Showboat of Lyons	Town of Lyons	Transient, Non-Community	G	2	LT438 LT437	L	L L	5,920	- -
WL 075	Twisted Sisters	Town of Lyons	Transient, Non-Community	G	1	GU730	L	L	800	- -
WL 076	Ye Olde Hotel	Town of Lyons	Transient, Non-Community	G	1	EZ934	L	L	250	- -
WL 077	Nippersink Country Club	Town of Randall	Transient, Non-Community	G	1	IZ104	L	L	4,300	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Walworth County (continued)										
WL 078	Duck Inn	Town of Richmond	Transient, Non-Community	G	1	IZ170	L	L	600	- -
WL 079	Snug Harbor Inn	Town of Richmond	Transient, Non-Community	G	1	PT489	L	L	5,300	- -
WL 080	The Real McCoy's	Town of Richmond	Transient, Non-Community	G	1	JF854	L	L	600	- -
WL 081	Tubby's Too Bar & Grill	Town of Richmond	Transient, Non-Community	G	1	PS842	L	L	540	- -
WL 082	Turtle Lake Inn	Town of Richmond	Transient, Non-Community	G	1	GU688	L	L	1,250	- -
WL 083	Uncle Bucks	Town of Richmond	Transient, Non-Community	G	1	JE514	L	L	1,500	- -
WL 084	The Boars Nest	Town of Sharon	Transient, Non-Community	G	1	GT107	L	L	560	- -
WL 085	Meadowlark Acres, Inc.	Town of Spring Prairie	Transient, Non-Community	G	1	FG741	L	L	2,600	- -
WL 086	Shavers General Store	Town of Spring Prairie	Transient, Non-Community	G	1	CP801	L	L	250	- -
WL 087	Stowell Catering Service, Inc.	Town of Spring Prairie	Transient, Non-Community	G	1	ES696	L	L	320	- -
WL 088	Abell's Country Lunch & Tavern	Town of Sugar Creek	Transient, Non-Community	G	1	IZ152	L	L	1,000	- -
WL 089	Blue Overall	Town of Sugar Creek	Transient, Non-Community	G	1	LX620	L	L	500	- -
WL 090	Creek Mobil	Town of Sugar Creek	Transient, Non-Community	G	1	AQ481	L	L	270	- -
WL 091	Delisles Steak Ranch	Town of Sugar Creek	Transient, Non-Community	G	1	FD484	L	L	600	- -
WL 092	Sugar Creek Inn	Town of Sugar Creek	Transient, Non-Community	G	1	PS841	L	L	500	- -
WL 093	Walworth Inn	Town of Sugar Creek	Transient, Non-Community	G	1	GO744	L	L	500	- -
WL 094	Wandawega Country Club	Town of Sugar Creek	Transient, Non-Community	G	1	FH025	L	L	4,000	- -
WL 095	Millie's Restaurant	Town of Walworth	Transient, Non-Community	G	2	PT514 AT380	L	L L	5,000 - -	- - - -
WL 096	Whitewater Country Club	Town of Whitewater	Transient, Non-Community	G	1	GV785	L	L	1,600	- -
Walworth County: 96 Systems		- -	- -	- -	113	- -	- -	- -	- -	- -
Washington County										
WS 001	Goeman Wood Products, Inc.	City of Hartford	Non-Transient, Non-Community	G	1	TU446	L	L	1,155	- -
WS 002	Hartford Theatres, Doubleday Dental Clinic	City of Hartford	Transient, Non-Community	G	1	GE871	L	L	20,240	- -
WS 003	Uptowne Motorcars	City of Hartford	Transient, Non-Community	G	1	ES899	L	L	310	- -
WS 004	Newburg Brewery	City of West Bend	Transient, Non-Community	G	1	PT210	L	L	500	- -
WS 005	Germantown Learning Center and Childcare	Village of Germantown	Non-Transient, Non-Community	G	1	FB749	L	L	1,860	- -
WS 006	Germantown Mutual Insurance	Village of Germantown	Non-Transient, Non-Community	G	1	LT190	L	L	600	- -
WS 007	Holy Hill Travel Plaza	Village of Germantown	Transient, Non-Community	G	1	WASH06	L	L	1,040	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Washington County (continued)										
WS 008	Kal's Service-Amoco	Village of Germantown	Transient, Non-Community	G	1	FV780	L	L	500	- -
WS 009	KJ's Bar and Grill	Village of Germantown	Transient, Non-Community	G	1	MN439	L	L	1,060	- -
WS 010	Lake Park Golf Course Club House	Village of Germantown	Transient, Non-Community	G	1	FG706	L	L	1,830	- -
WS 011	Passport Inn	Village of Germantown	Transient, Non-Community	G	1	GO655	L	L	750	- -
WS 012	Sports Corner Bar & Grill	Village of Germantown	Transient, Non-Community	G	1	ET659	L	L	840	- -
WS 013	The Bear, Inc.	Village of Germantown	Transient, Non-Community	G	1	PT230	L	L	3,000	- -
WS 014	Tiny T's	Village of Germantown	Transient, Non-Community	G	1	PT213	L	L	500	- -
WS 015	Tom's Kuhburg Junction	Village of Germantown	Transient, Non-Community	G	1	GV807	L	L	520	- -
WS 016	West Bend Savings and Loan	Village of Germantown	Transient, Non-Community	G	1	IW977	L	L	2,600	- -
WS 017	Willow Creek Amoco	Village of Germantown	Transient, Non-Community	G	1	GV810	L	L	2,060	- -
WS 018	United Building Centers	Village of Jackson	Non-Transient, Non-Community	G	1	AP285	H	L[d]	10,000	25,000
WS 019	Parkside	Village of Newburg	Transient, Non-Community	G	1	FH049	L	L	740	- -
WS 020	Tri Par Oil Gas Station and Mini-Mart Newburg	Village of Newburg	Transient, Non-Community	G	1	DB963	L	L	3,120	- -
WS 021	Whatever's Inn	Village of Newburg	Transient, Non-Community	G	1	PT209	L	L	500	- -
WS 022	Ackerville Lawn and Garden	Village of Slinger	Transient, Non-Community	G	1	FH045	L	L	370	- -
WS 023	Amber Inn	Village of Slinger	Transient, Non-Community	G	1	GO652	L	L	880	- -
WS 024	Kettle Moraine Bowl	Village of Slinger	Transient, Non-Community	G	1	GO674	L	L	790	- -
WS 025	Breakaway Bar & Grill	Town of Addison	Transient, Non-Community	G	1	IZ373	L	L	560	- -
WS 026	Kreilkamp Trucking, Inc.	Town of Addison	Transient, Non-Community Non-Transient, Non-Community	G	2	SQ442 LI597	L	L L	400 - -	- - - -
WS 027	Little Red Inn	Town of Addison	Transient, Non-Community	G	1	PT220	L	L	2,060	- -
WS 028	M J Stevens	Town of Addison	Transient, Non-Community	G	1	AP341	L	L	540	- -
WS 029	The Waterin Hole	Town of Addison	Transient, Non-Community	G	1	GO751	L	L	600	- -
WS 030	Underground Saloon	Town of Addison	Transient, Non-Community	G	1	SV807	L	L	12,120	- -
WS 031	Lake Lenwood Resort	Town of Barton	Transient, Non-Community	G	1	PT203	L	L	1,250	- -
WS 032	Lighthouse Lanes	Town of Barton	Transient, Non-Community	G	1	PT204	L	L	1,000	- -
WS 033	Pier 144	Town of Barton	Transient, Non-Community	G	1	GV919	L	L	2,060	- -
WS 034	Shlufty's Inn	Town of Barton	Transient, Non-Community	G	1	GO659	L	L	500	- -
WS 035	Church Road Station, Inc.	Town of Erin	Transient, Non-Community	G	1	PT529	L	L	500	- -
WS 036	Down Slope Pub	Town of Erin	Transient, Non-Community	G	1	PT224	L	L	600	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Washington County (continued)										
WS 037	Erin Inn	Town of Erin	Transient, Non-Community	G	1	JE650	L	L	500	- -
WS 038	Erin Motel and Restaurant	Town of Erin	Transient, Non-Community	G	1	ET660	L	L	3,575	- -
WS 039	Tally Ho Inn	Town of Erin	Transient, Non-Community	G	1	AA206	L	L	560	- -
WS 040	Buddie's Place	Town of Farmington	Transient, Non-Community	G	1	PT218	L	L	540	- -
WS 041	Dicks Club 144	Town of Farmington	Transient, Non-Community	G	1	PT496	L	L	500	- -
WS 042	Enright's Tap	Town of Farmington	Transient, Non-Community	G	1	GO666	L	L	540	- -
WS 043	Fire Escape	Town of Farmington	Transient, Non-Community	G	1	PT228	L	L	800	- -
WS 044	Goeden's Auto Body	Town of Farmington	Transient, Non-Community	G	1	FG566	L	L	540	- -
WS 045	Marshalls Country Corner	Town of Farmington	Transient, Non-Community	G	1	AW103	L	L	560	- -
WS 046	Turner Hall	Town of Farmington	Transient, Non-Community	G	1	DD465	L	L	500	- -
WS 047	Cody's	Town of Germantown	Transient, Non-Community	G	1	PT222	L	L	680	- -
WS 048	Riteway Bus Service Germantown	Town of Germantown	Transient, Non-Community	G	1	GV808	L	L	330	- -
WS 049	Snapper's Saloon	Town of Germantown	Transient, Non-Community	G	1	GV871	L	L	1,020	- -
WS 050	Goeman's Rapid Mart Hartford	Town of Hartford	Transient, Non-Community	G	1	AC212	L	L	300	- -
WS 051	Guerndt's Bar	Town of Hartford	Transient, Non-Community	G	1	WASH05	L	L	520	- -
WS 052	Hahn True Value Hardware	Town of Hartford	Transient, Non-Community	G	1	GQ614	L	L	1,200	- -
WS 053	Hartford Country Club	Town of Hartford	Transient, Non-Community	G	1	GT087	L	L	500	- -
WS 054	Hook, Line and Sinker	Town of Hartford	Transient, Non-Community	G	1	GU103	L	L	1,160	- -
WS 055	Karen & Schemy's	Town of Hartford	Transient, Non-Community	G	1	EZ889	L	L	500	- -
WS 056	Pike Lake House Inn	Town of Hartford	Transient, Non-Community	G	1	GU107	L	L	1,060	- -
WS 057	Reef Point Resort	Town of Hartford	Transient, Non-Community	G	1	EN165	L	L	500	- -
WS 058	Shipwreck Inn	Town of Hartford	Transient, Non-Community	G	1	GV927	L	L	950	- -
WS 059	St Lawrence C-Way	Town of Hartford	Transient, Non-Community	G	1	JE534	L	L	800	- -
WS 060	Jail House Pub & Grill	Town of Jackson	Transient, Non-Community	G	1	PT225	L	L	540	- -
WS 061	Lamm Garden Center	Town of Jackson	Transient, Non-Community	G	1	KY491	L	L	250	- -
WS 062	Amerahn	Town of Kewaskum	Transient, Non-Community	G	1	PT219	L	L	500	- -
WS 063	Hon E Kor Country Club	Town of Kewaskum	Transient, Non-Community	G	1	PT214	L	L	1,500	- -
WS 064	St. Michael's Tavern	Town of Kewaskum	Transient, Non-Community	G	1	GO658	L	L	520	- -
WS 065	Sunburst Ski Area: Summit Ski Corporation	Town of Kewaskum	Transient, Non-Community	G	2	FG760 MO390	H	L[d] L[d]	1,000 1,000	5,000 5,000

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Washington County (continued)										
WS 066	Cedar Lake Pub	Town of Polk	Transient, Non-Community	G	1	GO628	L	L	500	- -
WS 067	Emily's	Town of Polk	Transient, Non-Community	G	1	PT246	L	L	1,000	- -
WS 068	Harley's Steak House	Town of Polk	Transient, Non-Community	G	1	GO626	L	L	270	- -
WS 069	Headquarters Bar	Town of Polk	Transient, Non-Community	G	1	PT493	L	L	500	- -
WS 070	Heidel's	Town of Polk	Transient, Non-Community	G	1	PT212	L	L	500	- -
WS 071	Kruepke Trucking, Inc.	Town of Polk	Transient, Non-Community	G	1	BO735	L	L	525	- -
WS 072	Pioneer Plaza	Town of Polk	Transient, Non-Community	G	1	PT229	L	L	820	- -
WS 073	Richfield Pub	Town of Polk	Transient, Non-Community	G	1	CV350	L	L	500	- -
WS 074	Scenic View Country Club	Town of Polk	Transient, Non-Community	G	1	GV926	L	L	3,000	- -
WS 075	Sheryl's Club 175	Town of Polk	Transient, Non-Community	G	1	GT084	L	L	540	- -
WS 076	Slinger Shell	Town of Polk	Transient, Non-Community	G	1	GE699	L	L	500	- -
WS 077	Springs Motel	Town of Polk	Transient, Non-Community	G	1	EZ890	L	L	1,625	- -
WS 078	Wurth Adams Nuts and Bolts	Town of Polk	Non-Transient, Non-Community	G	1	SK191	L	L	300	- -
WS 079	Advanced Health Care Hubertus Clinic	Town of Richfield	Transient, Non-Community	G	1	LH768	L	L	4,150	- -
WS 080	Amici's	Town of Richfield	Transient, Non-Community	G	1	KM079	L	L	270	- -
WS 081	Arrowhead Springs Golf Course	Town of Richfield	Transient, Non-Community	G	1	PT216	L	L	500	- -
WS 082	Chalet Shopping Center	Town of Richfield	Transient, Non-Community	G	1	AP342	L	L	740	- -
WS 083	Donna's Tavern	Town of Richfield	Transient, Non-Community	G	1	GO664	L	L	620	- -
WS 084	Fox & Hounds Restaurant	Town of Richfield	Transient, Non-Community	G	2	JE613 PT020	L	L L	4,200 - -	- - - -
WS 085	Johnny Manhattan's	Town of Richfield	Transient, Non-Community	G	1	PT494	L	L	1,000	- -
WS 086	Kaul Oil Mini Mart 66	Town of Richfield	Transient, Non-Community	G	1	BO736	L	L	1,030	- -
WS 087	Lake Five Service	Town of Richfield	Transient, Non-Community	G	1	IZ443	L	L	1,050	- -
WS 088	Little Red School House, Colgate	Town of Richfield	Non-Transient, Non-Community	G	1	JE645	L	L	1,335	- -
WS 089	Loggers Park Club House, American Health & Fitness	Town of Richfield	Transient, Non-Community	G	1	SS002	H	L[d]	3,000	28,000
WS 090	M & I BANK Menomonee Falls, Richfield	Town of Richfield	Transient, Non-Community	G	1	FG684	L	L	250	- -
WS 091	Millis Transfer, Inc.	Town of Richfield	Transient, Non-Community	G	1	FE971	L	L	1,830	- -
WS 092	Piggly Wiggly Supermarket #84	Town of Richfield	Non-Transient, Non-Community	G	1	KP280	L	L	5,850	- -
WS 093	Pioneer Bowl	Town of Richfield	Transient, Non-Community	G	1	GO673	L	L	560	- -
WS 094	Pleasant Hill Inn	Town of Richfield	Transient, Non-Community	G	1	GU745	L	L	540	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Washington County (continued)										
WS 095	Richfield Chalet	Town of Richfield	Transient, Non-Community	G	1	GV804	L	L	3,200	- -
WS 096	Richfield Plaza	Town of Richfield	Non-Transient, Non-Community	G	1	JE643	L	L	800	- -
WS 097	Richfield Truck Stop	Town of Richfield	Transient, Non-Community	G	1	JE540	L	L	1,000	- -
WS 098	Sawmill Inn	Town of Richfield	Transient, Non-Community	G	1	JE550	L	L	1,080	- -
WS 099	Sunset View Restaurant	Town of Richfield	Transient, Non-Community	G	1	GU106	L	L	520	- -
WS 100	The Copper Dock	Town of Richfield	Transient, Non-Community	G	1	GU744	L	L	500	- -
WS 101	The Country Mart	Town of Richfield	Transient, Non-Community	G	1	FO635	L	L	520	- -
WS 102	Uncle Johnny's	Town of Richfield	Transient, Non-Community	G	1	GV802	L	L	640	- -
WS 103	Wally & Bees	Town of Richfield	Transient, Non-Community	G	1	FG190	L	L	500	- -
WS 104	Whiskey River	Town of Richfield	Transient, Non-Community	G	1	BO739	L	L	1,020	- -
WS 105	Zimmerman's Kettle Hills Golf Course	Town of Richfield	Transient, Non-Community	G	1	FG725	L	L	600	- -
WS 106	El Rey Mexican Restaurant West Bend	Town of Trenton	Transient, Non-Community	G	1	PT247	L	L	250	- -
WS 107	Stocky's Fast Track	Town of Trenton	Transient, Non-Community	G	1	RP644	L	L	250	- -
WS 108	Walden's A Supper Club	Town of Trenton	Transient, Non-Community	G	1	PT248	L	L	1,000	- -
WS 109	West Bend Lakes Golf & Recreation	Town of Trenton	Transient, Non-Community	G	1	PT202	L	L	500	- -
WS 110	C/W's Place	Town of Wayne	Transient, Non-Community	G	1	PT492	L	L	520	- -
WS 111	Cedar Valley Retreat Campus	Town of Wayne	Transient, Non-Community	G	1	PT208	L	L	350	- -
WS 112	Cross Roads Tap	Town of Wayne	Transient, Non-Community	G	1	FE978	L	L	540	- -
WS 113	Jugs Hitching Post	Town of Wayne	Transient, Non-Community	G	1	ET691	L	L	540	- -
WS 114	Little Folks School House	Town of Wayne	Non-Transient, Non-Community	G	1	FE975	L	L	420	- -
WS 115	Big Cedar Lake Resort	Town of West Bend	Transient, Non-Community	G	1	PT221	L	L	3,575	- -
WS 116	House of Heilman	Town of West Bend	Transient, Non-Community	G	1	FG726	L	L	500	- -
WS 117	JoJo's Bar & Grill	Town of West Bend	Transient, Non-Community	G	1	PT207	L	L	1,000	- -
WS 118	Linden Inn	Town of West Bend	Transient, Non-Community	G	1	AK549	L	L	1,500	- -
WS 119	Our Place	Town of West Bend	Transient, Non-Community	G	1	PT205	L	L	500	- -
WS 120	Schultz's White Tail Inn	Town of West Bend	Transient, Non-Community	G	1	SL318	L	L	2,000	- -
WS 121	Silver Lake Country Inn	Town of West Bend	Transient, Non-Community	G	1	QW463	L	L	2,060	- -
WS 122	Tri Par Oil Company West Bend	Town of West Bend	Transient, Non-Community	G	1	GQ615	L	L	1,800	- -
WS 123	West Bend Country Club	Town of West Bend	Transient, Non-Community	G	1	PT491	L	L	1,500	- -
Washington County: 123 Systems		- -	- -	- -	126	- -	- -	- -	168,090	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County										
WK 001	Allstate Insurance Company	City of Brookfield	Miscellaneous	G	1	BF088	H	H[d]	50,000	80,000
WK 002	Arbys, Brookfield	City of Brookfield	Transient, Non-Community	G	1	ES862	L	L	5,200	- -
WK 003	Brookside Chevrolet	City of Brookfield	Non-Transient, Non-Community	G	1	FG610	L	L	1,000	- -
WK 004	Crest Cadillac	City of Brookfield	Non-Transient, Non-Community	G	1	JE604	L	L	400	- -
WK 005	For Pete's Sake	City of Brookfield	Transient, Non-Community	G	1	JE620	L	L	1,100	- -
WK 006	Grecian Inn	City of Brookfield	Transient, Non-Community	G	1	JE619	L	L	10,400	- -
WK 007	Imperial Service Center	City of Brookfield	Transient, Non-Community	G	1	PT463	L	L	550	- -
WK 008	International Foundation of Employee Benefit	City of Brookfield	Non-Transient, Non-Community	G	1	GQ619	L	L	2,100	- -
WK 009	Jack Safro Motor Used Car Store	Town of Brookfield	Non-Transient, Non-Community	G	1	FG609	L	L	1,100	- -
WK 010	Jack Safro Toyota, Inc.	Town of Brookfield	Non-Transient, Non-Community	G	1	QS508	L	L	2,150	- -
WK 011	Jakes Lounge in Brookfield	City of Brookfield	Transient, Non-Community	G	1	PS920	L	L	600	- -
WK 012	Lees Dairy Treats	City of Brookfield	Transient, Non-Community	G	1	EZ798	L	L	530	- -
WK 013	Longrove Associates Plaza 173	City of Brookfield	Non-Transient, Non-Community	G	1	JE609	L	L	6,750	- -
WK 014	Pilgrim Executive Center	City of Brookfield	Transient, Non-Community	G	1	PS845	L	L	720	- -
WK 015	Richter Realty & Investment	City of Brookfield	Miscellaneous	G	1	BF085	H	H[d]	24,000	48,000
WK 016	Sabellas Pub	City of Brookfield	Transient, Non-Community	G	1	CE122	L	L	1,080	- -
WK 017	Squires I	City of Brookfield	Non-Transient, Non-Community	G	1	GQ616	L	L	1,500	- -
WK 018	Sticks and Stones	City of Brookfield	Transient, Non-Community	G	1	PS847	L	L	620	- -
WK 019	VIP Executive Center	City of Brookfield	Non-Transient, Non-Community	G	1	GU747	L	L	900	- -
WK 020	American Legion Post 196	City of Delafield	Transient, Non-Community	G	1	PS879	L	L	700	- -
WK 021	Bank One, Delafield	City of Delafield	Transient, Non-Community	G	1	PS974	L	L	310	- -
WK 022	Daybreak Center	City of Delafield	Transient, Non-Community	G	1	ET920	L	L	1,050	- -
WK 023	Delafield Convenience	City of Delafield	Transient, Non-Community	G	1	- -	L	L	270	- -
WK 024	Donnybrook Wine and Cheese	City of Delafield	Transient, Non-Community	G	1	- -	L	L	270	- -
WK 025	Fishbones	City of Delafield	Transient, Non-Community	G	1	PS970	L	L	540	- -
WK 026	Great Lakes Tire Service	City of Delafield	Transient, Non-Community	G	1	PS932	L	L	340	- -
WK 027	Heritage Ridge Office Centre	City of Delafield	Miscellaneous	G	1	- -	H	H[d]	24,000	136,000
WK 028	J & D Enterprises, Inc.	City of Delafield	Miscellaneous	G	3	BH303 BH312 - -	H	L[d] L[d] L[d]	3,000 17,000 9,000	14,000 17,000 19,000

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 029	Jessica's Café	City of Delafield	Transient, Non-Community	G	1	PS963	L	L	1,040	- -
WK 030	Kurt's Steak House	City of Delafield	Transient, Non-Community	G	1	PS966	L	L	1,080	- -
WK 031	Lang Investments	City of Delafield	Miscellaneous	G	2	HU444 SZ241	H	L H	1,000 75,000	5,000 150,000
WK 032	Lumber Inn	City of Delafield	Transient, Non-Community	G	1	PS968	L	L	2,050	- -
WK 033	Milwaukee Street Traders	City of Delafield	Transient, Non-Community	G	1	WAUK098	L	L	350	- -
WK 034	Nagawicka Yacht Club	City of Delafield	Transient, Non-Community	G	1	CI273	L	L	520	- -
WK 035	Ruggeris Ristorante	City of Delafield	Transient, Non-Community	G	1	PS969	L	L	1,150	- -
WK 036	The Prickly Pear	City of Delafield	Transient, Non-Community	G	1	PS964	L	L	500	- -
WK 037	Walmart Center	City of Delafield	Non-Transient, Non-Community	G	1	EZ911	H	H[d]	24,000	136,000
WK 038	Weissgerber's Seven Seas	City of Delafield	Transient, Non-Community	G	1	PS880	L	L	1,680	- -
WK 039	Wholly Cow Frozen Custard	City of Delafield	Transient, Non-Community	G	1	DV398	L	L	260	- -
WK 040	Zin-Uncommon California Italian Restaurant	City of Delafield	Transient, Non-Community	G	1	SS019	L	L	290	- -
WK 041	Amann's Beach Club	City of Muskego	Transient, Non-Community	G	1	JF123	L	L	540	- -
WK 042	Arbys, Muskego	City of Muskego	Transient, Non-Community	G	1	JF807	L	L	1,200	- -
WK 043	Aud Mar Restaurant	City of Muskego	Transient, Non-Community	G	1	JF834	L	L	550	- -
WK 044	Basses Country Delight	City of Muskego	Transient, Non-Community	G	1	AY465	L	L	270	- -
WK 045	Club Durham	City of Muskego	Transient, Non-Community	G	1	JF837	L	L	660	- -
WK 046	Country Squire Supper Club	City of Muskego	Transient, Non-Community	G	1	JF069	L	L	500	- -
WK 047	De Marinis Denoon Saloon	City of Muskego	Transient, Non-Community	G	1	JF124	L	L	2,200	- -
WK 048	Hunters Nest	City of Muskego	Transient, Non-Community	G	1	JF835	L	L	1,000	- -
WK 049	Jill's Fabric Care Center	City of Muskego	Transient, Non-Community	G	1	JF070	L	L	250	- -
WK 050	Kara Oke Inn	City of Muskego	Transient, Non-Community	G	1	JF129	L	L	640	- -
WK 051	Laidlaw Transit	City of Muskego	Transient, Non-Community	G	1	GQ620	L	L	800	- -
WK 052	Lakeview Tavern	City of Muskego	Transient, Non-Community	G	1	RU883	L	L	1,040	- -
WK 053	Lincoln Point Mall	City of Muskego	Non-Transient, Non-Community	G	1	AU127	L	L	- -	- -
WK 054	Linda's Place	City of Muskego	Transient, Non-Community	G	1	JF836	L	L	520	- -
WK 055	Loomis Petro Mart	City of Muskego	Transient, Non-Community	G	1	CP322	L	L	250	- -
WK 056	Mather Lanes	City of Muskego	Transient, Non-Community	G	1	JF126	L	L	540	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 057	Mug Zs Pub and Grill	City of Muskego	Transient, Non-Community	G	1	JF128	L	L	1,080	- -
WK 058	Muskego Lakes Country Club	City of Muskego	Transient, Non-Community	G	1	JF838	L	L	620	- -
WK 059	Muskego Lakes Subs & Liquors, Inc.	City of Muskego	Transient, Non-Community	G	1	PT579	L	L	260	- -
WK 060	Onyx Water Services, Midwest Office	City of Muskego	Transient, Non-Community	G	2	AY485	L	L	950	- -
						PS724		L	1,640	- -
WK 061	Schmidt's Refuge	City of Muskego	Transient, Non-Community	G	1	JF125	L	L	860	- -
WK 062	The Breakers	City of Muskego	Transient, Non-Community	G	1	QL952	L	L	1,500	- -
WK 063	The Brick House	City of Muskego	Transient, Non-Community	G	1	JF064	L	L	1,000	- -
WK 064	Tres Locos	City of Muskego	Transient, Non-Community	G	1	JF831	L	L	1,020	- -
WK 065	Valley Green Golf Course	City of Muskego	Transient, Non-Community	G	1	JF806	L	L	500	- -
WK 066	Villa Italian Restaurant & Pizzaria	City of Muskego	Transient, Non-Community	G	1	JF833	L	L	1,100	- -
WK 067	Wonderlust Coffee Gallery	City of Muskego	Transient, Non-Community	G	1	WAUK106	L	L	500	- -
WK 068	Deer Haven Golf Course	City of New Berlin	Transient, Non-Community	G	1	HU344	L	L	2,200	- -
WK 069	Double Gees	City of New Berlin	Transient, Non-Community	G	1	PS727	L	L	1,260	- -
WK 070	Haybaler's	City of New Berlin	Transient, Non-Community	G	1	PS721	L	L	2,060	- -
WK 071	Hoeppner Horn Brothers Post 5716	City of New Berlin	Transient, Non-Community	G	1	JA338	L	L	820	- -
WK 072	Kats Deli & Coffee Shop, LLC	City of New Berlin	Transient, Non-Community	G	1	JA334	L	L	250	- -
WK 073	Mannigans Irish Pub	City of New Berlin	Transient, Non-Community	G	1	PT518	L	L	560	- -
WK 074	Matty's Bar and Grill	City of New Berlin	Transient, Non-Community	G	1	PS725	L	L	1,000	- -
WK 075	Moorland Golf Center	City of New Berlin	Transient, Non-Community	G	1	ON956	L	L	10,660	- -
WK 076	Mustang Shelly's Roadhouse	City of New Berlin	Transient, Non-Community	G	1	JA337	L	L	2,000	- -
WK 077	Nickels	City of New Berlin	Transient, Non-Community	G	1	PS726	L	L	600	- -
WK 078	Nineteenth Hole Country Club	City of New Berlin	Transient, Non-Community	G	1	AF551	L	L	500	- -
WK 079	Pendulum Pub	City of New Berlin	Transient, Non-Community	G	1	JA345	L	L	1,060	- -
WK 080	Prospect Hill Tavern	City of New Berlin	Transient, Non-Community	G	1	JA335	L	L	540	- -
WK 081	Quick Trip Pantry	City of New Berlin	Transient, Non-Community	G	1	GP855	L	L	280	- -
WK 082	Rainbow Restaurant	City of New Berlin	Transient, Non-Community	G	1	JA332	L	L	500	- -
WK 083	Rindt Citgo	City of New Berlin	Transient, Non-Community	G	1	KQ042	L	L	780	- -
WK 084	United States Fire Protection	City of New Berlin	Transient, Non-Community	G	1	CV509	L	L	280	- -
WK 085	West Side Pub	City of New Berlin	Transient, Non-Community	G	1	JA333	L	L	560	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 086	Yuenkel, Dr. James	City of New Berlin	Transient, Non-Community	G	1	GP857	L	L	2,250	- -
WK 087	Andreas Red Rooster	City of Pewaukee	Transient, Non-Community	G	1	WAUK088	L	L	250	- -
WK 088	Boy Scouts of America	City of Pewaukee	Transient, Non-Community	G	1	PT468	L	L	350	- -
WK 089	Docs Dry Dock	City of Pewaukee	Transient, Non-Community	G	1	PS994	L	L	1,560	- -
WK 090	Firehouse Pub & Grill	City of Pewaukee	Transient, Non-Community	G	1	PS983	L	L	1,060	- -
WK 091	Five O'Clock Club of Pewaukee	City of Pewaukee	Transient, Non-Community	G	1	PS981	L	L	1,040	- -
WK 092	Jacks Pantry Café	City of Pewaukee	Transient, Non-Community	G	1	OJ856	L	L	1,020	- -
WK 093	Kahuna's	City of Pewaukee	Transient, Non-Community	G	1	RY584	L	L	500	- -
WK 094	Lake Country Wine and Spirits	City of Pewaukee	Transient, Non-Community	G	1	WAUK093	L	L	270	- -
WK 095	Michaels House of Prime	City of Pewaukee	Transient, Non-Community	G	1	PS987	L	L	770	- -
WK 096	Sardinos/Rocky East Side Pub	City of Pewaukee	Transient, Non-Community	G	1	PS986	L	L	680	- -
WK 097	The Sports Dock	City of Pewaukee	Transient, Non-Community	G	1	PS985	L	L	540	- -
WK 098	Willow Run Golf Club	City of Pewaukee	Transient, Non-Community	G	1	PT008	L	L	1,620	- -
WK 099	Wonderland Tap	City of Pewaukee	Transient, Non-Community	G	1	PT478	L	L	2,040	- -
WK 100	Broad A Corporation	City of Waukesha	Non-Transient, Non-Community	G	1	IX265	L	L	- -	- -
WK 101	Burger King, Waukesha	City of Waukesha	Transient, Non-Community	G	1	PT476	L	L	5,050	- -
WK 102	New China Buffet	City of Waukesha	Transient, Non-Community	G	1	PT477	L	L	3,050	- -
WK 103	164 Citgo	Village of Big Bend	Transient, Non-Community	G	1	AK398	L	L	250	- -
WK 104	Blue Heron Supper Club	Village of Big Bend	Transient, Non-Community	G	1	JF898	L	L	1,000	- -
WK 105	Busy B's Café	Village of Big Bend	Transient, Non-Community	G	1	JF821	L	L	550	- -
WK 106	Club Shamrock	Village of Big Bend	Transient, Non-Community	G	1	JF899	L	L	560	- -
WK 107	Coach House Grill	Village of Big Bend	Transient, Non-Community	G	1	JF826	L	L	1,040	- -
WK 108	Dannys Tavern	Village of Big Bend	Transient, Non-Community	G	1	JF823	L	L	1,040	- -
WK 109	Edgewood Plaza	Village of Big Bend	Transient, Non-Community	G	1	JF900	L	L	340	- -
WK 110	For Heavens Cakes	Village of Big Bend	Transient, Non-Community	G	1	LY383	L	L	550	- -
WK 111	Jerome Drugs and Corner Market	Village of Big Bend	Transient, Non-Community	G	1	CT573	L	L	380	- -
WK 112	McDonalds, Vernon	Village of Big Bend	Non-Transient, Non-Community	G	1	AK390	L	L	500	- -
WK 113	Mill Pond Tavern	Village of Big Bend	Transient, Non-Community	G	1	- -	L	L	1,020	- -
WK 114	Steins Gardens and Gifts, Big Bend	Village of Big Bend	Transient, Non-Community	G	1	SY361	L	L	1,200	- -
WK 115	Chenequa Country Club	Village of Chenequa	Transient, Non-Community	G	1	AT942	L	L	1,400	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 116	13000 West Bluemound Building	Village of Elm Grove	Non-Transient, Non-Community	G	1	JE608	L	L	- -	- -
WK 117	Autumn Grove Mall	Village of Elm Grove	Transient, Non-Community	G	1	IZ555	L	L	300	- -
WK 118	Bakers Square	Village of Elm Grove	Non-Transient, Non-Community	G	1	ES725	L	L	4,150	- -
WK 119	Building Trades Office	Village of Elm Grove	Non-Transient, Non-Community	G	1	ET798	L	L	4,500	- -
WK 120	Caroline's	Village of Elm Grove	Transient, Non-Community	G	1	PS896	L	L	540	- -
WK 121	Clark Oil Station #1809	Village of Elm Grove	Transient, Non-Community	G	1	JF860	L	L	270	- -
WK 122	Elm Grove Inn	Village of Elm Grove	Transient, Non-Community	G	1	ET761	L	L	600	- -
WK 123	Elm Grove Park & Shop	Village of Elm Grove	Transient, Non-Community	G	2	PS893 ET767	L	L L	4,500 620	- - - -
WK 124	Elmbrook C-Store & Car Wash	Village of Elm Grove	Transient, Non-Community	G	1	- -	L	L	270	- -
WK 125	Enterprise Bluemound	Village of Elm Grove	Non-Transient, Non-Community	G	1	GV930	L	L	2,250	- -
WK 126	First Realty - GMAC	Village of Elm Grove	Transient, Non-Community	G	1	PS898	L	L	1,350	- -
WK 127	Kurtz Realty	Village of Elm Grove	Transient, Non-Community	G	1	PS895	L	L	2,000	- -
WK 128	Le Cakery	Village of Elm Grove	Transient, Non-Community	G	1	JF859	L	L	340	- -
WK 129	Loaf & Jug Restaurant	Village of Elm Grove	Transient, Non-Community	G	1	PS892	L	L	350	- -
WK 130	O'Donoghue's Irish Pub	Village of Elm Grove	Transient, Non-Community	G	1	JF856	L	L	1,060	- -
WK 131	Patch Work LTD	Village of Elm Grove	Transient, Non-Community	G	1	PS891	L	L	350	- -
WK 132	Pilgrim Place Office Park	Village of Elm Grove	Non-Transient, Non-Community	G	1	AJ617	L	L	- -	- -
WK 133	Pizzaria Uno	Village of Elm Grove	Transient, Non-Community	G	1	PS902	L	L	3,720	- -
WK 134	Plank Road Plaza	Village of Elm Grove	Non-Transient, Non-Community	G	1	BF086	L	L	800	- -
WK 135	Premier Ecole and Nari Remodeling	Village of Elm Grove	Transient, Non-Community	G	1	WAUK102	L	L	280	- -
WK 136	Sentry Foods #342	Village of Elm Grove	Non-Transient, Non-Community	G	1	DW144	L	L	500	- -
WK 137	Shops of Elm Grove/ Ethel & Mae's	Village of Elm Grove	Transient, Non-Community	G	1	PS894	L	L	570	- -
WK 138	TCF Bank, Elm Grove	Village of Elm Grove	Transient, Non-Community	G	1	SG045	L	L	890	- -
WK 139	United Parcel Service	Village of Elm Grove	Miscellaneous Non-Transient, Non-Community Miscellaneous Miscellaneous	G	4	BF087 GV914 EM273 GM371	H	H[d] H[d] H[d] H[d]	93,000 93,000 130,000 130,000	172,000 172,000 200,000 200,000
WK 140	Village Court LTD	Village of Elm Grove	Non-Transient, Non-Community	G	1	ET762	L	L	2,350	- -
WK 141	Walgreens, Elm Grove	Village of Elm Grove	Transient, Non-Community	G	1	PS901	L	L	1,150	- -
WK 142	Western Racquet Club	Village of Elm Grove	Non-Transient, Non-Community	G	1	JE539	L	L	4,700	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 143	Westfahl Office Building	Village of Elm Grove	Transient, Non-Community	G	1	JF858	L	L	1,750	- -
WK 144	Sluggers	Village of Hartland	Transient, Non-Community	G	1	PS903	L	L	2,040	- -
WK 145	Lac La Belle Country Club and Golf Course	Village of Lac La Belle	Transient, Non-Community: Irrigation	G	1	OT741	H	L[d]	4,400	1,000
WK 146	Dug Out	Village of Lannon	Transient, Non-Community	G	1	PS874	L	L	800	- -
WK 147	Lannon House	Village of Lannon	Transient, Non-Community	G	1	TU433	L	L	540	- -
WK 148	Mibb's & Viv's	Village of Lannon	Transient, Non-Community	G	1	GT082	L	L	1,060	- -
WK 149	Whiskey Hollow	Village of Lannon	Transient, Non-Community	G	1	PS872	L	L	660	- -
WK 150	Abler's Whiskey Corner	Village of Menomonee Falls	Transient, Non-Community	G	1	ME225	L	L	540	- -
WK 151	Citgo Food Mart	Village of Menomonee Falls	Transient, Non-Community	G	1	PS996	L	L	400	- -
WK 152	Kohl's Distribution Center	Village of Menomonee Falls	Non-Transient, Non-Community	G	1	JE602	L	L	500	- -
WK 153	Silver Spring Golf Center	Village of Menomonee Falls	Transient, Non-Community Non-Transient, Non-Community	G	2	NJ370 JE598	L	L L	500 12,000	- - - -
WK 154	The Last Lap	Village of Menomonee Falls	Transient, Non-Community	G	1	PS995	L	L	600	- -
WK 155	Wanaki Golf Course	Village of Menomonee Falls	Transient, Non-Community	G	1	DB940	L	L	500	- -
WK 156	Bogeys on Main	Village of Merton	Transient, Non-Community	G	1	PS972	L	L	560	- -
WK 157	Merton Custard Shoppe	Village of Merton	Transient, Non-Community	G	1	QV033	L	L	270	- -
WK 158	Merton Sub Shop	Village of Merton	Transient, Non-Community	G	1	MP508	L	L	270	- -
WK 159	Pistola Pete's Pizza	Village of Merton	Transient, Non-Community	G	1	PS960	L	L	1,540	- -
WK 160	Nashotah Club House	Village of Nashotah	Transient, Non-Community	G	1	PS939	L	L	1,060	- -
WK 161	Picnic Basket Nashotah	Village of Nashotah	Transient, Non-Community	G	1	PS940	L	L	270	- -
WK 162	Red Circle Inn	Village of Nashotah	Transient, Non-Community	G	1	AY856	L	L	500	- -
WK 163	North Prairie Dental Clinic	Village of North Prairie	Transient, Non-Community	G	1	JF895	L	L	1,350	- -
WK 164	Prairie Animal Hospital	Village of North Prairie	Transient, Non-Community	G	1	GS003	L	L	1,700	- -
WK 165	The Flavour House	Village of North Prairie	Transient, Non-Community	G	1	JF894	L	L	270	- -
WK 166	Kiltie, Inc.	Village of Oconomowoc Lake	Transient, Non-Community	G	1	PS927	L	L	2,000	- -
WK 167	Lakeland Oldsmobile	Village of Oconomowoc Lake	Transient, Non-Community	G	1	LY969	L	L	740	- -
WK 168	Oconomowoc Lake Club	Village of Oconomowoc Lake	Transient, Non-Community	G	1	PS926	L	L	2,000	- -
WK 169	Silver Lake Auto Center	Village of Oconomowoc Lake	Transient, Non-Community	G	1	RS029	L	L	260	- -
WK 170	Back to Bread	Village of Wales	Transient, Non-Community	G	1	MF057	L	L	480	- -
WK 171	McAdams Pick N' Save	Village of Wales	Non-Transient, Non-Community	G	1	LU800	L	L	3,500	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 172	Subway Sandwich Shop, Wales	Village of Wales	Transient, Non-Community	G	1	MH313	L	L	1,180	- -
WK 173	Summit Avenue Professional Building	Village of Wales	Transient, Non-Community	G	1	PS907	L	L	375	- -
WK 174	Wales Lawn & Garden, Inc.	Village of Wales	Transient, Non-Community	G	1	PS881	L	L	540	- -
WK 175	Wales Retail Center	Village of Wales	Transient, Non-Community	G	2	TQ415 SB080	L	L L	290	- -
WK 176	Adventure Unlimited and Subway Sandwich Shop	Town of Brookfield	Transient, Non-Community	G	1	LT414	L	L	1,100	- -
WK 177	Culvers, Brookfield	Town of Brookfield	Transient, Non-Community	G	1	ME410	L	L	250	- -
WK 178	Regency Court	Town of Brookfield	Transient, Non-Community Non-Transient, Non-Community	G	4	EX965 JE610 EX963 EX964	L	L L L L	250 1,200 400 1,050	- - - - - - - -
WK 179	Silver Spur Restaurant	Town of Brookfield	Transient, Non-Community	G	1	PS728	L	L	250	- -
WK 180	Tee Aire Golf Range	Town of Brookfield	Transient, Non-Community	G	1	PS916	L	L	1,040	- -
WK 181	Three Brothers Pumping Station	Town of Brookfield	Transient, Non-Community	G	1	ME417	L	L	550	- -
WK 182	Weisflog's Home & Remodeling Showroom Gallery	Town of Brookfield	Transient, Non-Community	G	1	WAUK105	L	L	390	- -
WK 183	Airmans Sandtrap	Town of Delafield	Transient, Non-Community	G	1	PS878	L	L	1,000	- -
WK 184	Buck Rub Outfitters	Town of Delafield	Transient, Non-Community	G	1	OS037	L	L	540	- -
WK 185	Franks Tap	Town of Delafield	Transient, Non-Community	G	1	PS992	L	L	1,000	- -
WK 186	Golden Anchor	Town of Delafield	Transient, Non-Community	G	1	PS991	L	L	2,080	- -
WK 187	Lakeview Lodge	Town of Delafield	Transient, Non-Community	G	1	PS989	L	L	1,000	- -
WK 188	Molly's Gluten Free Bakery	Town of Delafield	Transient, Non-Community	G	1	PT009	L	L	290	- -
WK 189	Nagawaukee Golf Course	Town of Delafield	Transient, Non-Community	G	1	ET905	L	L	1,000	- -
WK 190	Pewaukee Yacht Club	Town of Delafield	Transient, Non-Community	G	1	PS999	L	L	540	- -
WK 191	Western Lakes Golf Club	Town of Delafield	Transient, Non-Community	G	1	PS990	L	L	4,240	- -
WK 192	Apron Annie's Enterprises	Town of Eagle	Transient, Non-Community	G	1	KR360	L	L	1,030	- -
WK 193	B & H Lumber	Town of Eagle	Transient, Non-Community	G	1	HM744	L	L	360	- -
WK 194	Brookwood Inn	Town of Eagle	Transient, Non-Community	G	2	JD491 JA324	L	L L	2,100	- -
WK 195	Eagle Medical Center	Town of Eagle	Transient, Non-Community	G	1	OG925	L	L	1,700	- -
WK 196	Eagle Spring Pub	Town of Eagle	Transient, Non-Community	G	1	JA323	L	L	1,060	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 197	Eagle Springs Golf Resort	Town of Eagle	Transient, Non-Community	G	1	JF891	L	L	500	- -
WK 198	Gillettes Country Store	Town of Eagle	Transient, Non-Community	G	1	JF809	L	L	330	- -
WK 199	Gillettos Pizza & Custard	Town of Eagle	Transient, Non-Community	G	1	JF810	L	L	1,020	- -
WK 200	House in the Woods Auction Gallery	Town of Eagle	Transient, Non-Community	G	1	FI403	L	L	250	- -
WK 201	Cornerstone Restaurant	Town of Genesee	Transient, Non-Community	G	1	WAUK108	L	L	380	- -
WK 202	Finn's Bar & Grill	Town of Genesee	Transient, Non-Community	G	1	PS886	L	L	800	- -
WK 203	Genesee Family Care	Town of Genesee	Transient, Non-Community	G	1	GQ805	L	L	1,550	- -
WK 204	Genesee Market	Town of Genesee	Transient, Non-Community	G	1	GS004	L	L	250	- -
WK 205	In Cahoots	Town of Genesee	Transient, Non-Community	G	1	ET590	L	L	600	- -
WK 206	Kwik Trip 358, Wales	Town of Genesee	Transient, Non-Community	G	1	PS884	L	L	1,570	- -
WK 207	Kwik Trip 687, Wales	Town of Genesee	Transient, Non-Community	G	1	LU793	L	L	250	- -
WK 208	Leduc's Frozen Custard	Town of Genesee	Transient, Non-Community	G	1	IZ287	L	L	270	- -
WK 209	Old Country Store	Town of Genesee	Transient, Non-Community	G	1	PT520	L	L	350	- -
WK 210	Paisono's Pizzeria	Town of Genesee	Transient, Non-Community	G	1	NN881	L	L	560	- -
WK 211	Reichert Enterprises, LLC	Town of Genesee	Transient, Non-Community	G	1	GI592	L	L	3,500	- -
WK 212	Saxes Restaurant	Town of Genesee	Transient, Non-Community	G	1	PS883	L	L	830	- -
WK 213	The Legend at Brandybrook Golf Course	Town of Genesee	Transient, Non-Community: Irrigation	G	1	RH480	H	L[d]	560	1,000
WK 214	Union House Inn	Town of Genesee	Transient, Non-Community	G	1	ET583	L	L	1,100	- -
WK 215	Alstad's Turning Point (Citgo)	Town of Lisbon	Transient, Non-Community	G	1	IA422	L	L	540	- -
WK 216	Fairways of Woodside	Town of Lisbon	Transient, Non-Community	G	1	CP096	L	L	280	- -
WK 217	Halquist Stone Company Showroom	Town of Lisbon	Transient, Non-Community	G	1	ON823	L	L	440	- -
WK 218	Ironwood Golf Course	Town of Lisbon	Transient, Non-Community	G	1	GF735	L	L	2,300	- -
WK 219	Lied's Garden Center	Town of Lisbon	Transient, Non-Community: Miscellaneous Transient, Non-Community	G	2	FX741 ES780	H	L[d] L	10,000 - -	21,000 - -
WK 220	Songbird Hill Golf Course	Town of Lisbon	Transient, Non-Community	G	1	DT448	L	L	580	- -
WK 221	C Who's Inn	Town of Merton	Transient, Non-Community	G	1	PS934	L	L	580	- -
WK 222	Chenequa Country Club	Town of Merton	Transient, Non-Community	G	1	MK421	L	L	740	- -
WK 223	CJ's Daybreak III	Town of Merton	Transient, Non-Community	G	1	PS957	L	L	280	- -
WK 224	Dottie's Citgo	Town of Merton	Transient, Non-Community	G	1	FN211	L	L	1,550	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 225	Dottie's Home Bakery and Liquor	Town of Merton	Transient, Non-Community	G	1	HR408	L	L	5,670	- -
WK 226	Joe Armieli's Meat N Place	Town of Merton	Transient, Non-Community	G	1	NF791	L	L	2,200	- -
WK 227	Kuhtz General Store	Town of Merton	Transient, Non-Community	G	1	PS935	L	L	780	- -
WK 228	Naylor's Bear Trap	Town of Merton	Transient, Non-Community	G	1	PS953	L	L	1,080	- -
WK 229	North Lake Inn	Town of Merton	Transient, Non-Community	G	1	PS952	L	L	2,600	- -
WK 230	Ox & Cats Sport Bar & Grill	Town of Merton	Transient, Non-Community	G	1	PS958	L	L	560	- -
WK 231	Stonebank Pub & Eatery	Town of Merton	Transient, Non-Community	G	1	PS975	L	L	1,060	- -
WK 232	Woody's Bar & Grill	Town of Merton	Transient, Non-Community	G	1	PS954	L	L	1,100	- -
WK 233	JR's Tavern and Resort	Town of Mukwonago	Transient, Non-Community	G	1	JA321	L	L	6,100	- -
WK 234	Lakeside Inn	Town of Mukwonago	Transient, Non-Community	G	1	JE698	L	L	680	- -
WK 235	Rainbow Springs Golf Course	Town of Mukwonago	Transient, Non-Community: Miscellaneous	G	1	BH287	H	H[d]	100,000	200,000
WK 236	Reggie's Lakeview	Town of Mukwonago	Transient, Non-Community	G	1	OO968	L	L	560	- -
WK 237	Trolly Trap	Town of Mukwonago	Transient, Non-Community	G	1	JE697	L	L	640	- -
WK 238	Aliota's Hideaway	Town of Oconomowoc	Transient, Non-Community	G	1	PS931	L	L	1,000	- -
WK 239	Amnisia Reef	Town of Oconomowoc	Transient, Non-Community	G	1	PS929	L	L	640	- -
WK 240	Associated Bank of Oconomowoc	Town of Oconomowoc	Transient, Non-Community	G	1	CI902	L	L	1,040	- -
WK 241	Bergman & Holm Dental Group	Town of Oconomowoc	Transient, Non-Community	G	1	FE901	L	L	3,100	- -
WK 242	Bertrand's Point Comfort Inn	Town of Oconomowoc	Transient, Non-Community	G	1	PS837	L	L	680	- -
WK 243	Brown Street Mall	Town of Oconomowoc	Transient, Non-Community	G	1	PS829	L	L	1,580	- -
WK 244	Dock of the Bay	Town of Oconomowoc	Transient, Non-Community	G	1	IZ374	L	L	660	- -
WK 245	First Bank Financial Center	Town of Oconomowoc	Transient, Non-Community	G	1	HX355	L	L	700	- -
WK 246	Glenda's Café	Town of Oconomowoc	Transient, Non-Community	G	1	PS930	L	L	350	- -
WK 247	Jollymon's	Town of Oconomowoc	Transient, Non-Community	G	1	PS836	L	L	540	- -
WK 248	JP's Waterline Saloon	Town of Oconomowoc	Transient, Non-Community	G	1	PT519	L	L	500	- -
WK 249	Kenny's Killin' Time	Town of Oconomowoc	Transient, Non-Community	G	1	GT059	L	L	540	- -
WK 250	Kwik Trip 360, Oconomowoc	Town of Oconomowoc	Transient, Non-Community	G	1	PS729	L	L	250	- -
WK 251	La Belle Motel	Town of Oconomowoc	Transient, Non-Community	G	1	PS821	L	L	1,625	- -
WK 252	Lake Area Alano Club	Town of Oconomowoc	Transient, Non-Community	G	1	CP204	L	L	3,000	- -
WK 253	Last Round Up	Town of Oconomowoc	Transient, Non-Community	G	1	PS928	L	L	520	- -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 254	M Anderson Legion Post	Town of Oconomowoc	Transient, Non-Community	G	1	PS838	L	L	520	- -
WK 255	Mapleway Bowl & Restaurant	Town of Oconomowoc	Transient, Non-Community	G	1	PS730	L	L	2,000	- -
WK 256	Oconomowoc Golf Club	Town of Oconomowoc	Transient, Non-Community	G	2	SK200 BD693	H	L[d] H[d]	1,000 28,000	2,000 55,000
WK 257	Okauchee Convenience Center	Town of Oconomowoc	Transient, Non-Community	G	1	WAUK109	L	L	270	- -
WK 258	Open Pantry Food Mart, Oconomowoc	Town of Oconomowoc	Transient, Non-Community	G	1	FK261	L	L	270	- -
WK 259	Pauline's Supper Club	Town of Oconomowoc	Transient, Non-Community	G	1	PS831	L	L	1,000	- -
WK 260	Phil's Pizza Palace, Inc.	Town of Oconomowoc	Transient, Non-Community	G	1	WAUK101	L	L	270	- -
WK 261	Ron's Cozy Corner	Town of Oconomowoc	Transient, Non-Community	G	1	PS922	L	L	1,000	- -
WK 262	Rookies	Town of Oconomowoc	Transient, Non-Community	G	1	PS833	L	L	560	- -
WK 263	Schwefel's	Town of Oconomowoc	Transient, Non-Community	G	1	PS823	L	L	1,500	- -
WK 264	Tom & Di's Rustic Inn	Town of Oconomowoc	Transient, Non-Community	G	1	PS825	L	L	1,000	- -
WK 265	Victoria's	Town of Oconomowoc	Transient, Non-Community	G	1	PS832	L	L	600	- -
WK 266	Weissgerber's Golden Mast	Town of Oconomowoc	Transient, Non-Community	G	1	PS835	L	L	500	- -
WK 267	Winestein's Café and Wine Market	Town of Oconomowoc	Transient, Non-Community	G	1	RL413	L	L	280	- -
WK 268	Badger Raceway Park	Town of Ottawa	Transient, Non-Community	G	1	TE673	L	L	250	- -
WK 269	Kettle Moraine Golf Club	Town of Ottawa	Transient, Non-Community	G	1	PT483	L	L	1,100	- -
WK 270	We Energies Delafield Service Center	Town of Ottawa	Non-Transient, Non-Community	G	1	EZ835	L	L	2,325	- -
WK 271	Channel Inn	Town of Summit	Transient, Non-Community	G	1	QI988	L	L	1,000	- -
WK 272	Hogg Alley	Town of Summit	Transient, Non-Community	G	1	AY241	L	L	1,000	- -
WK 273	Millers Sandy Beach	Town of Summit	Transient, Non-Community	G	1	PS888	L	L	500	- -
WK 274	Ole's	Town of Summit	Transient, Non-Community	G	1	ET826	L	L	620	- -
WK 275	Paganica Golf Course	Town of Summit	Transient, Non-Community	G	1	PT481	L	L	500	- -
WK 276	Big Verns	Town of Vernon	Transient, Non-Community	G	1	JF829	L	L	1,020	- -
WK 277	Cerny's Midway Market	Town of Vernon	Transient, Non-Community	G	1	GU109	L	L	3,550	- -
WK 278	Edgewood Golf Course	Town of Vernon	Transient, Non-Community	G	3	MP747 CT897 - -	H	L[d] L[d] L	1,000 1,000 - -	1,000 5,000 - -
WK 279	Morningstar Golfers Club	Town of Vernon	Transient, Non-Community	G	3	MW416 OH555 MW415	L	L L L	270 480 540	- - - - - -

Table D-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day[c]
Waukesha County (continued)										
WK 280	Vernon Valley Golf Course	Town of Vernon	Transient, Non-Community	G	1	MK466	L	L	500	- -
WK 281	Woodland Dental Group	Town of Vernon	Transient, Non-Community	G	1	AY453	L	L	2,050	- -
WK 282	Merrill Hills Country Club	Town of Waukesha	Transient, Non-Community	G	1	PS978	L	L	6,380	- -
WK 283	Tallingers, Inc.	Town of Waukesha	Transient, Non-Community	G	1	PS977	L	L	2,030	- -
Waukesha County: 283 Systems		- -	- -	- -	303	- -	- -	- -	- -	- -
Region: 940 Systems		- -	- -	- -	1,023	- -	- -	- -	- -	- -

[a] *G = Groundwater*
S = Surface Water

[b] *H = High-Capacity (70 gallons per minute or greater)*
L = Low-Capacity (less than 70 gallons per minute capacity)

[c] *Values reported are listed as being approved normal and maximum pumpage in the WDNR Drinking Water System database, where available. Where not available, average daily pumpage was calculated utilizing standard unit values for the type of facility involved. These amounts may be pumped intermittently.*

[d] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System Database.*

[e] *System is scheduled to be connected to the We-Energies-Water Services system during 2006 and 2007.*

[f] *System was connected to the We-Energies-Water Services system during the years 2000 and 2005.*

Source: Wisconsin Department of Natural Resources and SEWRPC.

Table D-4

SELECTED CHARACTERISTICS OF SELF-SUPPLIED INSTITUTIONAL AND RECREATIONAL WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2005

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Kenosha County										
KN 001	Christ American Lutheran Church	Village of Paddock Lake	Transient, Non-Community	G	1	FG607	L	L	1,600	- -
KN 002	Westosha High School & Addition	Village of Paddock Lake	Non-Transient, Non-Community	G	2	FL688 GQ573	H	H[d] - -[d]	15,000 - -	30,000 - -
KN 003	American Legion Post 293	Village of Silver Lake	Transient, Non-Community	G	1	EZ926	L	L	2,000	- -
KN 004	Polliwogs and Caterpillars	Village of Silver Lake	Non-Transient, Non-Community	G	1	JF055	L	L	450	- -
KN 005	Riverview School	Village of Silver Lake	Non-Transient, Non-Community	G	1	CS639	H	L[d]	6,000	75,000
KN 006	Silver Lake County Park	Village of Silver Lake	Miscellaneous Transient, Non-Community	G	2	BG069 FG608	H	H[d] L	30,000 - -	- - - -
KN 007	American Legion Post 544	Village of Twin Lakes	Transient, Non-Community	G	1	IX229	L	L	1,000	- -
KN 008	Grace Lutheran Child Development Center	Village of Twin Lakes	Non-Transient, Non-Community	G	1	ES683	L	L	650	- -
KN 009	Just Like Home Assisted Living	Village of Twin Lakes	Transient, Non-Community	G	1	BO515	L	L	1,980	- -
KN 010	Lakewood School	Village of Twin Lakes	Non-Transient, Non-Community	G	1	ES681	H	L[d]	6,120	- -
KN 011	Lance Park Scout House	Village of Twin Lakes	Transient, Non-Community	G	1	LG904	L	L	1,250	- -
KN 012	Melody Park Campground	Village of Twin Lakes	Transient, Non-Community	G	2	IZ106 IZ107	L	L L	7,600 7,800	- - - -
KN 013	Randall School	Village of Twin Lakes	Non-Transient, Non-Community	G	2	HO445 ES684	H	H[d] H[d]	15,000 15,000	30,000 30,000
KN 014	St John's Catholic Church	Village of Twin Lakes	Transient, Non-Community	G	1	JF846	L	L	4,500	- -
KN 015	Twin Lakes Municipal Building	Village of Twin Lakes	Transient, Non-Community	G	1	DK817	L	L	400	- -
KN 016	Twin Lakes West Side Park	Village of Twin Lakes	Transient, Non-Community	G	1	IZ109	L	L	250	- -
KN 017	Wywood Community Center	Village of Twin Lakes	Transient, Non-Community	G	1	BO517	L	L	390	- -
KN 018	Brighton No. 1 School District	Town of Brighton	Non-Transient, Non-Community	G	1	GU728	H	L[d]	2,625	- -
KN 019	Brightondale County Park	Town of Brighton	Transient, Non-Community	G	1	IZ250	L	L	500	- -
KN 020	Happy Acres Kamp Ground	Town of Brighton	Transient, Non-Community	G	1	EZ870	L	L	10,000	- -
KN 021	St. Francis Church and Providence Catholic School	Town of Brighton	Non-Transient, Non-Community	G	1	ES672	H	- -[d]	13,500	- -
KN 022	Union League Boys and Girls Club	Town of Brighton	Miscellaneous Transient, Non-Community	G	5	QP015 - - EZ868 EZ865 EZ866	H	- -[d] - -[d] - -[d] L L	4,000 4,000 - - 7,250	- - - - - - - -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Kenosha County (continued)										
KN 023	Wisconsin Department of Natural Resources Bong Recreation Area	Town of Brighton	Transient, Non-Community	G	13	ES913 ES916 ES915 ES920 ES919 ES918 ES921 ES883 ES912 GF055 ES917 ES882 ES914	L	L L L L L L L L L L L L L	1,000 125 125 125 125 125 375 250 450 125 125 250 125	- -
KN 024	Bristol Woods Pringle Nature Center	Town of Bristol	Transient, Non-Community	G	1	IZ252	L	L	125	- -
KN 025	Conservation Club of Kenosha County	Town of Bristol	Transient, Non-Community	G	1	GP805	L	L	375	- -
KN 026	First Christian Church	Town of Bristol	Transient, Non-Community	G	1	MZ728	L	L	4,040	- -
KN 027	Independent Apostolic Lutheran Church	Town of Bristol	Transient, Non-Community	G	1	HM085	L	L	270	- -
KN 028	St Scholastica Church	Town of Bristol	Transient, Non-Community	G	1	GV771	L	L	260	- -
KN 029	Waukegan Bowman	Town of Bristol	Transient, Non-Community	G	1	IX230	L	L	500	- -
KN 030	Western Kenosha Senior Center	Town of Bristol	Transient, Non-Community	G	1	GP869	L	L	450	- -
KN 031	Paris School	Town of Paris	Non-Transient, Non-Community	G	1	ES685	H	L[d]	7,000	7,000
KN 032	Kids Stuff	Town of Randall	Non-Transient, Non-Community	G	1	IX225	L	L	675	- -
KN 033	La Salette Missionaries	Town of Randall	Transient, Non-Community	G	1	GV848	L	L	290	- -
KN 034	Messiah Lutheran Church	Town of Randall	Transient, Non-Community	G	1	GV840	L	L	1,310	- -
KN 035	Westosha Baptist Church	Town of Randall	Transient, Non-Community	G	1	GU134	L	L	250	- -
KN 036	Wilmot Mountain Ski Area	Town of Randall	Transient, Non-Community	G	1	IZ236	L	L	250	- -
KN 037	Apostolic Jesus Name Assembly	Town of Salem	Transient, Non-Community	G	1	ET742	L	L	300	- -
KN 038	Camp Crown	Town of Salem	Transient, Non-Community	G	2	AX732 AX733	L	L L	1,250	- -
KN 039	Camp Wonderland (Salvation Army)	Town of Salem	Miscellaneous Transient, Non-Community	G	5	BG065 BG064 ET969 ET956 ET970	H	H[d] H[d] L L L	8,000 14,000 - - - - - -	- - - - - - - - - -
KN 040	Community Baptist Church	Town of Salem	Transient, Non-Community	G	1	FG592	L	L	1,540	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Kenosha County (continued)										
KN 041	Fox River Park	Town of Salem	Transient, Non-Community	G	2	FG596 FG595	L	L L	500	- -
KN 042	Holy Name Church	Town of Salem	Transient, Non-Community	G	1	IZ238	L	L	250	- -
KN 043	Old Settlers Park	Town of Salem	Transient, Non-Community	G	1	FG597	L	L	125	- -
KN 044	Roots & Wings Child Care Center	Town of Salem	Non-Transient, Non-Community	G	1	GU967	L	L	645	- -
KN 045	Salem Grade School	Town of Salem	Non-Transient, Non-Community	G	3	GQ572 GQ571 KY629	H	L[d] L[d] H[d]	2,000 5,000 38,000	4,000 12,000 50,000
KN 046	Trevor St. Graded School Salem	Town of Salem	Non-Transient, Non-Community	G	2	ES678 ID614	H	L[d] L[d]	2,000 5,000	4,000 10,000
KN 047	Western Kenosha Historical Society	Town of Salem	Transient, Non-Community	G	1	JA318	L	L	250	- -
KN 048	Wilmot Grade School	Town of Salem	Non-Transient, Non-Community	G	1	ES677	H	- -[d]	2,100	- -
KN 049	Wilmot High School	Town of Salem	Non-Transient, Non-Community	G	1	GF027	H	H[d]	26,000	52,000
KN 050	Bethany Lutheran Church	Town of Somers	Transient, Non-Community	G	1	JF844	L	L	1,250	- -
KN 051	Petrifying Springs Park	Town of Somers	Transient, Non-Community	G	3	FG749 FG746 FG748	L	L L L	500	- -
KN 052	Shoreland Lutheran High School	Town of Somers	Non-Transient, Non-Community	G	1	GQ575	H	L[d]	8,000	8,000
KN 053	Somers School	Town of Somers	Non-Transient, Non-Community	G	1	GQ574	H	- -[d]	10,200	- -
KN 054	Somers Town Hall	Town of Somers	Transient, Non-Community	G	1	JF843	L	L	250	- -
KN 055	Somers United Church of Christ	Town of Somers	Transient, Non-Community	G	1	GU721	L	L	2,010	- -
KN 056	Camp Oh Da Ko Ta	Town of Wheatland	Transient, Non-Community	G	1	GV784	L	L	3,250	- -
KN 057	St. Alphonsus Catholic School	Town of Wheatland	Non-Transient, Non-Community	G	1	ES673	H	- -[d]	9,465	- -
KN 058	Wheatland Center School Middle School	Town of Wheatland	Non-Transient, Non-Community	G	1	MM540	H	L[d]	6,000	12,000
Kenosha County: 58 Systems:		- -	- -	- -	89	- -	- -	- -	- -	- -
Milwaukee County										
MK 001	Country Dale School	City of Franklin	Non-Transient, Non-Community	G	1	NI277	H	H[d]	10,000	15,000
MK 002	Croatian Park	City of Franklin	Transient, Non-Community	G	1	IW990	L	L	250	- -
MK 003	Froeming Park	City of Franklin	Transient, Non-Community	G	1	IZ672	L	L	125	- -
MK 004	Milwaukee County House of Corrections	City of Franklin	State Institution	G	2	- - - -	H	H[d] H[d]	216,000 - -	432,000 - -
MK 005	St. Martin of Tours Congregation and School	City of Franklin	Non-Transient, Non-Community	G	1	SV631	H	L[d]	2,000	4,000

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Milwaukee County (continued)										
MK 006	Tri County Baptist Church	City of Franklin	Transient, Non-Community	G	1	LW313	L	L	1,000	- -
MK 007	Wehr Nature Center	City of Franklin	Miscellaneous Transient, Non-Community	G	2	BG424 IZ184	H	H[d] L	10,000 - -	15,000 - -
MK 008	Xaverian Missionary Fathers	City of Franklin	Miscellaneous	G	1	BG418	H	H[d]	1,000	1,000
MK 009	Whitnall Area Schools	City of Greenfield	School	G	1	BH778	H	H[d]	37,000	37,000
MK 010	Whitnall Middle School	City of Greenfield	School	G	1	BH779	H	H[d]	50,000	50,000
MK 011	Brown Deer Park Comfort Station	City of Milwaukee	Transient, Non-Community	G	1	EM257	L	L	500	- -
MK 012	Milwaukee County Museum	City of Milwaukee	Miscellaneous	G	1	BG411	H	H[d]	144,000	144,000
MK 013	Milwaukee County Zoo	City of Milwaukee	Miscellaneous	G	1	BG407	H	H[d]	272,000	533,000
MK 014	New Life Community Church, Milwaukee	City of Milwaukee	Transient, Non-Community	G	1	IY960	L	L	2,530	- -
MK 015	Pryor Avenue Iron Well	City of Milwaukee	Transient, Non-Community	G	1	GU733	L	L	1,000	- -
MK 016	UWM Geology Department	City of Milwaukee	State Institution	G	1	CZ579	H	H[d]	72,000	144,000
MK 017	Wilson Park	City of Milwaukee	Miscellaneous	G	1	BG412	H	H[d]	70,000	270,000
MK 018	Bender Park	City of Oak Creek	Transient, Non-Community	G	1	MZ712	L	L	130	- -
MK 019	Falk Park Well	City of Oak Creek	Transient, Non-Community	G	1	IZ282	L	L	500	- -
MK 020	St. John's Evangelical Lutheran Church	City of Oak Creek	Transient, Non-Community Non-Transient, Non-Community	G	2	IZ181 EZ008	H	L L[d]	4,000 2,000	- - 5,000
MK 021	Menomonee River Parkway Comfort House	City of Wauwatosa	Transient, Non-Community	G	1	GV893	L	L	150	- -
MK 022	Bayside School	Village of Bayside	Non-Transient, Non-Community	G	1	BH582	H	H[d]	28,000	28,000
MK 023	Bayside Village Hall	Village of Bayside	Transient, Non-Community	G	1	IY970	L	L	430	- -
MK 024	Brown Deer High School	Village of Brown Deer	School	G	1	BH583	H	H[d]	17,000	20,000
MK 025	Emanuel United Church of Christ	Village of Hales Corners	Transient, Non-Community	G	1	IY975	L	L	1,190	- -
MK 026	Hales Corners Park	Village of Hales Corners	Miscellaneous	G	1	BG414	H	H[d]	86,000	138,000
MK 027	Whitnall Park Golf Course	Village of Hales Corners	Transient, Non-Community	G	2	IZ187 IZ189	L	L L	3,080 500	- - - -
MK 028	Whitnall Park Lutheran Church	Village of Hales Corners	Transient, Non-Community	G	1	IZ190	L	L	750	- -
MK 029	Emanuel Bne Jeshrun Center	Village of River Hills	Transient, Non-Community	G	1	IZ673	L	L	1,760	- -
MK 030	Hill Point Church	Village of River Hills	Transient, Non-Community	G	1	IY956	L	L	2,520	- -
MK 031	Indian Hill School	Village of River Hills	Non-Transient, Non-Community	G	1	IZ196	L	L	9,450	- -
MK 032	River Hills Village Hall	Village of River Hills	Transient, Non-Community	G	1	IY895	L	L	460	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Milwaukee County (continued)										
MK 033	St. Christopher's Episcopal Church	Village of River Hills	Transient, Non-Community	G	1	IY900	L	L	1,530	- -
MK 034	University School of Milwaukee	Village of River Hills	Non-Transient, Non-Community School	G	3	EZ005 EZ006 RV874	H	H[d] H[d] H[d]	20,000 100,000 - -	72,000 150,000 3,000
Milwaukee County: 34 Systems		- -	- -	- -	40	- -	- -	- -	- -	- -
Ozaukee County										
OZ 001	Advanced Health Care	City of Mequon	Transient, Non-Community	G	1	FN196	L	L	5,950	- -
OZ 002	American Behavioral Clinic	City of Mequon	Transient, Non-Community	G	1	GV057	L	L	8,250	- -
OZ 003	American Legion Bar 457	City of Mequon	Transient, Non-Community	G	1	GU206	L	L	540	- -
OZ 004[e]	Beautiful Savior Lutheran Church[e]	City of Mequon	Transient, Non-Community	G	1	FG625	L	L	3,000	- -
OZ 005	Beth El Ner Tamid Synagogue	City of Mequon	Transient, Non-Community	G	1	FG665	L	L	1,680	- -
OZ 006	Center for Jewish Life	City of Mequon	Non-Transient, Non-Community	G	1	RV860	L	L	1,200	- -
OZ 007	Congregation Anshai Lebowitz	City of Mequon	Transient, Non-Community	G	1	FG666	L	L	250	- -
OZ 008	Crossroads of Mequon	City of Mequon	Transient, Non-Community	G	1	DK826	L	L	5,950	- -
OZ 009	Crossroads Presbyterian Church	City of Mequon	Transient, Non-Community	G	1	FH043	L	L	1,090	- -
OZ 010	Donges Bay School	City of Mequon	Non-Transient, Non-Community	G	1	ES901	H	H[d]	8,700	- -
OZ 011	Hand Doctors of Milwaukee	City of Mequon	Transient, Non-Community	G	1	FG649	L	L	1,750	- -
OZ 012	Highland Family Health Center	City of Mequon	Transient, Non-Community	G	1	IY890	L	L	1,800	- -
OZ 013	Homestead High School	City of Mequon	Non-Transient, Non-Community	G	1	IZ136	H	L[d]	18,000	36,000
OZ 014	House of Prayer Lutheran Church, Linsmeier School	City of Mequon	Non-Transient, Non-Community	G	1	DK824	L	L	885	- -
OZ 015	Kids Kingdom	City of Mequon	Non-Transient, Non-Community	G	1	HN490	L	L	2,400	- -
OZ 016	Kingdom Hall Jehovah's Witnesses	City of Mequon	Transient, Non-Community	G	1	KO950	L	L	2,000	- -
OZ 017	Lake Shore Middle School	City of Mequon	Non-Transient, Non-Community	G	1	ES770	H	H[d]	7,000	7,000
OZ 018[e]	MATC North Campus[e]	City of Mequon	Non-Transient, Non-Community	G	1	FH041	H	H[d]	40,000	63,000
OZ 019	Mee Kwon Park	City of Mequon	Transient, Non-Community	G	2	IZ123 GU174	L	L L	250 3,080	- - - -
OZ 020	Mequon City Hall	City of Mequon	Non-Transient, Non-Community	G	1	IZ137	L	L	6,170	- -
OZ 021	Mequon Montessori	City of Mequon	Non-Transient, Non-Community	G	1	FS979	L	L	900	- -
OZ 022	Mequon Rotary Park	City of Mequon	Transient, Non-Community	G	2	HN488 MF201	L	L L	125 1,250	- - - -
OZ 023	Mequon Safety Building	City of Mequon	Non-Transient, Non-Community	G	1	GU182	L	L	300	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Ozaukee County (continued)										
OZ 024	Mequon United Methodist Church	City of Mequon	Non-Transient, Non-Community	G	1	DK823	L	L	1,550	- -
OZ 025	North Shore Dental Group	City of Mequon	Transient, Non-Community	G	1	FG667	L	L	2,500	- -
OZ 026	Oriole Lane School	City of Mequon	Non-Transient, Non-Community	G	1	ES769	H	L[d]	4,000	8,000
OZ 027	Rangeline Elementary School	City of Mequon	School	G	1	BH766	H	L[d]	7,000	7,000
OZ 028	Spirit Life Church	City of Mequon	Transient, Non-Community	G	1	DT490	L	L	290	- -
OZ 029	St. Cecilia & James Mequon Campus	City of Mequon	School	G	1	OZKE007	H	- -[d]	- -	- -
OZ 030	St. John's Lutheran Church	City of Mequon	Transient, Non-Community	G	1	FG590	L	L	770	- -
OZ 031	St. Boniface Episcopal Church	City of Mequon	Non-Transient, Non-Community	G	1	AM264	L	L	3,975	- -
OZ 032	St. James Congregation	City of Mequon	Non-Transient, Non-Community	G	1	IZ140	L	L	5,300	- -
OZ 033	Steffen Middle School	City of Mequon	Non-Transient, Non-Community	G	1	ES895	H	H[d]	173,000	173,000
OZ 034	Trinity Evangelical Lutheran Church and School	City of Mequon	Non-Transient, Non-Community Transient, Non-Community Transient, Non-Community	G	3	GO813 FG628 FG669	H	L[d] L L	5,000 1,500 2,060	20,000 - - - -
OZ 035	Unitarian Church North	City of Mequon	Transient, Non-Community	G	1	SL308	H	H[d]	1,000	1,000
OZ 036	Vestica Healthcare	City of Mequon	Non-Transient, Non-Community	G	1	CO726	L	L	1,275	- -
OZ 037	Virmond Park	City of Mequon	Transient, Non-Community	G	1	FG648	L	L	1,000	- -
OZ 038	Wilson School	City of Mequon	Non-Transient, Non-Community	G	1	IZ142	H	H[d]	108,000	108,000
OZ 039	St. Mary's Parish Church and School	Village of Belgium	Non-Transient, Non-Community	G	1	GP819	H	H[d]	- -	- -
OZ 040	Waubedonia County Park	Village of Fredonia	Transient, Non-Community	G	1	DA648	L	L	125	- -
OZ 041	Lime Kiln Park	Village of Grafton	Transient, Non-Community	G	1	FG729	L	L	125	- -
OZ 042	Little Red School House, Grafton	Village of Grafton	Non-Transient, Non-Community	G	1	GP833	L	L	1,350	- -
OZ 043	Ozaukee Daycare Center, Ulao Center	Village of Grafton	Non-Transient, Non-Community	G	1	IZ138	L	L	750	- -
OZ 044	Newburg Wastewater Treatment Facility	Village of Newburg	Wastewater Treatment Plant	G	1	MD060	H	- -[d]	- -	- -
OZ 045	Living Hope Lutheran Church and Here We Grow Daycare	Village of Saukville	Non-Transient, Non-Community	G	1	EQ835	L	L	1,875	- -
OZ 046	BTK Inc.	Village of Thiensville	Transient, Non-Community	G	1	FG661	L	L	1,250	- -
OZ 047	Calvary Evangelical Lutheran School	Village of Thiensville	Non-Transient, Non-Community	G	1	BO637	H	L[d]	1,000	2,000
OZ 048	Grace Lutheran Church	Village of Thiensville	Transient, Non-Community	G	1	GU184	L	L	1,000	- -
OZ 049	Heart of the Village Day Care	Village of Thiensville	Non-Transient, Non-Community	G	1	GT122	L	L	600	- -
OZ 050	Ozaukee Medical Center	Village of Thiensville	Transient, Non-Community	G	1	FG614	L	L	1,250	- -
OZ 051	St. Cecilia Campus	Village of Thiensville	Non-Transient, Non-Community	G	1	BL258	H	H[d]	3,000	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Ozaukee County (continued)										
OZ 052	St. Cecilia Parish Office and K-5 School	Village of Thiensville	Non-Transient, Non-Community	G	1	BO647	H	H[d]	675	- -
OZ 053	United States Post Office	Village of Thiensville	Non-Transient, Non-Community	G	1	ES766	L	L	520	- -
OZ 054	Harrington Beach State Park	Town of Belgium	Transient, Non-Community	G	5	BO645 KB622 IZ130 BO646 JE647	L	L L L L L	375 250 375 250 375	- - - - - - - - - -
OZ 055	Holy Cross Catholic Church	Town of Belgium	Transient, Non-Community	G	1	FG541	L	L	1,500	- -
OZ 056	Cedarburg Town Hall	Town of Cedarburg	Transient, Non-Community	G	1	ET774	L	L	250	- -
OZ 057	Circle B Recreation Center and Bar	Town of Cedarburg	Transient, Non-Community	G	1	GU179	L	L	2,740	- -
OZ 058	Covered Bridge County Park	Town of Cedarburg	Transient, Non-Community	G	1	GV875	L	L	1,000	- -
OZ 059	Homestead Family Health Center	Town of Cedarburg	Transient, Non-Community	G	1	FG727	L	L	1,450	- -
OZ 060	Redeemer Lutheran Church	Town of Cedarburg	Transient, Non-Community	G	1	FG585	L	L	2,000	- -
OZ 061	Riteway Bus Service	Town of Cedarburg	Transient, Non-Community	G	1	AG693	L	L	400	- -
OZ 062	St Francis Borgia Catholic Church	Town of Cedarburg	Transient, Non-Community	G	1	FG730	L	L	1,500	- -
OZ 063	Badger Campsite	Town of Fredonia	Transient, Non-Community	G	1	IF536	L	L	1,250	- -
OZ 064	Camp JCC	Town of Fredonia	Transient, Non-Community	G	2	IZ058 IZ059	L	L L	15,000 9,150	- - - -
OZ 065	Jewish Community Center of Milwaukee	Town of Fredonia	Miscellaneous (April to October)	G	1	NW682	H	H[d]	72,000	144,000
OZ 066	Ozaukee County Fish and Game	Town of Fredonia	Transient, Non-Community	G	1	FG570	L	L	125	- -
OZ 067	St. Mary's Catholic Church	Town of Fredonia	Transient, Non-Community	G	1	FG646	L	L	1,000	- -
OZ 068	St. Paul's Community Church	Town of Fredonia	Transient, Non-Community	G	1	FG612	L	L	750	- -
OZ 069	Waubeka Fire Department	Town of Fredonia	Transient, Non-Community	G	1	IZ129	L	L	4,000	- -
OZ 070	Ozaukee Congregation Church	Town of Grafton	Transient, Non-Community	G	2	NA713 ES868	L	L L	4,020	- -
OZ 071	St. John's Lutheran Church	Town of Grafton	Transient, Non-Community	G	1	FG668	L	L	1,020	- -
OZ 072	Wisconsin Electric Power Company	Town of Grafton	Industrial	G	1	BE776	H	L[d]	12,000	30,000
OZ 073	Faith Baptist Church, Port Washington	Town of Port Washington	Transient, Non-Community	G	1	FG696	L	L	600	- -
OZ 074	Kingdom Hall of Jehovah's Witnesses	Town of Port Washington	Transient, Non-Community	G	1	FG584	L	L	250	- -
OZ 075	Open Door Bible Church	Town of Port Washington	Transient, Non-Community	G	1	GP892	L	L	250	- -
OZ 076	Portview Christian Center	Town of Port Washington	Transient, Non-Community	G	1	FG690	L	L	3,080	- -
OZ 077	St. Simon the Fisherman Episcopal Church	Town of Port Washington	Transient, Non-Community	G	1	FG704	L	L	500	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Ozaukee County (continued)										
OZ 078	Camp Will-O-Rill	Town of Saukville	Transient, Non-Community	G	5	FG714 FG716 FG717 FG713 FG715	L	L L L L L	1,250 1,250 1,750 1,250 2,000	- - - - - - - - - -
OZ 079	H H Peter's Youth Camp	Town of Saukville	Transient, Non-Community	G	1	FG681	L	L	1,250	- -
OZ 080	Hawthorne Hills County Park	Town of Saukville	Transient, Non-Community	G	2	GO767 GO766	L	L L	570	- -
OZ 081	Pioneer Village	Town of Saukville	Transient, Non-Community	G	1	FG723	L	L	125	- -
OZ 082	Riveredge Nature Center	Town of Saukville	Miscellaneous Transient, Non-Community	G	2	- - CB595	H	H[d] L	50,000 - -	100,000 - -
OZ 083	Saukville Town Hall	Town of Saukville	Transient, Non-Community	G	1	FG547	L	L	2,250	- -
Ozaukee County: 83 Systems		- -	- -	- -	99	- -	- -	- -	- -	- -
Racine County										
RC 001	Burlington Municipal Airport	City of Burlington	Transient, Non-Community	G	1	LK038	L	L	520	- -
RC 002	Peace Lutheran Church	City of Burlington	Transient, Non-Community	G	1	FG801	L	L	3,020	- -
RC 003	Wisconsin Department of Natural Resources Root River Steelhead Facility	City of Racine	Miscellaneous	G	4	DR537 DR538 - - - -	H	L[d] L[d] L[d] L[d]	86,000 86,000 86,000 86,000	- - - - - - 86,000
RC 004	First Congregational Church, Rochester	Village of Rochester	Transient, Non-Community	G	1	FG742	L	L	2,050	- -
RC 005	Bushnell Park	Town of Burlington	Transient, Non-Community	G	1	JE623	L	L	125	- -
RC 006	Camp Maclean, YMCA of Chicago	Town of Burlington	Transient, Non-Community Miscellaneous	G	7	OA136 KY640 IZ235 - - - - - - - -	H	L[d] L[d] L[d] - -[d] L[d] L[d] L[d]	2,000 5,000 15,000 - - - - - - - -	43,000 15,000 86,000 - - 11,000 15,000 11,000
RC 007	Fischer Park	Town of Burlington	Transient, Non-Community	G	1	JE630	L	L	5,000	- -
RC 008	Kingdom Hall of Jehovah's Witnesses	Town of Burlington	Transient, Non-Community	G	1	GO742	L	L	1,100	- -
RC 009	Riverwood Community Church	Town of Burlington	Transient, Non-Community	G	1	FG793	L	L	1,250	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Racine County (continued)										
RC 010	St. Francis Monastery	Town of Burlington	Miscellaneous Other-Than-Municipal Community	G G G G	4	FN134 BG726 FH058 NQ275	H	L[d] L[d] L[d] - -[d]	22,000 29,000 - - - -	44,000 58,000 29,000 - -
RC 011	Winkler School	Town of Burlington	Non-Transient, Non-Community	G	1	LK032	H	- -[d]	5,100	- -
RC 012	Apostolic Faith Church	Town of Caledonia	Transient, Non-Community	G	1	HW747	L	L	520	- -
RC 013	Armstrong Park Archery Barn	Town of Caledonia	Transient, Non-Community	G	1	JB466	L	L	290	- -
RC 014	Caledonia Town Hall	Town of Caledonia	Non-Transient, Non-Community	G	1	FG806	L	L	400	- -
RC 015	Good Shepherd Lutheran Church	Town of Caledonia	Transient, Non-Community	G	1	FG731	L	L	2,000	- -
RC 016	Kingdom Hall of Jehovah's Witnesses	Town of Caledonia	Transient, Non-Community	G	1	GO623	L	L	2,000	- -
RC 017	Mount Pleasant Park	Town of Caledonia	Transient, Non-Community	G	2	FG797 CU300	L	L L	500 125	- - - -
RC 018	S.C. Johnson, Wingspread Conference Center	Town of Caledonia	Miscellaneous	G	2	AE568 - -	H	- -[d] - -[d]	- - - -	- - - -
RC 019	St. Louis Church	Town of Caledonia	Transient, Non-Community	G	1	ES820	H	- -[d]	3,000	- -
RC 020	Trinity Lutheran Church and School	Town of Caledonia	Non-Transient, Non-Community	G	2	ES823 ES824	H	L[d] L	5,970 525	- - - -
RC 021	Dover Center School	Town of Dover	Non-Transient, Non-Community	G	1	GT063	H	L	2,205	- -
RC 022	Dover Town Hall	Town of Dover	Transient, Non-Community	G	1	FH024	L	L	250	- -
RC 023	Eagle Lake Park	Town of Dover	Transient, Non-Community	G	1	FH023	L	L	255	- -
RC 024	Kansasville Graded School	Town of Dover	Non-Transient, Non-Community	G	1	ES674	H	- -[d]	1,740	- -
RC 025	Lakeview Specialty Hospital	Town of Dover	Non-Transient, Non-Community	G	1	BO679	L	L	1,250	- -
RC 026	Community Church of Nazarene	Village of Mt. Pleasant	Transient, Non-Community	G	1	FG122	L	L	2,030	- -
RC 027	First Reformed Church	Village of Mt. Pleasant	Transient, Non-Community	G	1	FG733	L	L	2,000	- -
RC 028	Lutheran Chapel of the Cross	Village of Mt. Pleasant	Transient, Non-Community	G	1	FG123	L	L	1,000	- -
RC 029	Sanders Park	Village of Mt. Pleasant	Transient, Non-Community	G	1	JD473	L	L	10,000	- -
RC 030	Colonel Heg Memorial Park	Town of Norway	Transient, Non-Community	G	1	FG822	L	L	140	- -
RC 031	Drought School	Town of Norway	Non-Transient, Non-Community	G	1	GP875	H	- -[d]	2,250	- -
RC 032	Lakeview School, Norway	Town of Norway	Non-Transient, Non-Community	G	1	GP876	H	- -[d]	6,450	- -
RC 033	Norway Evangelical Lutheran Church	Town of Norway	Transient, Non-Community	G	1	EZ874	L	L	3,780	- -
RC 034	Norway Town Hall	Town of Norway	Transient, Non-Community	G	1	GV841	L	L	1,100	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Racine County (continued)										
RC 035	St. Clare Catholic Church	Town of Norway	Transient, Non-Community	G	1	FG825	L	L	2,000	- -
RC 036	North Cape Lutheran Church	Town of Raymond	Transient, Non-Community	G	1	RS883	L	L	3,040	- -
RC 037	Raymond Baptist Church	Town of Raymond	Transient, Non-Community	G	1	FG817	L	L	750	- -
RC 038	Raymond Community Church	Town of Raymond	Transient, Non-Community	G	1	FG818	L	L	1,080	- -
RC 039	Raymond School	Town of Raymond	Non-Transient, Non-Community	G	1	ES806	H	L[d]	6,000	12,000
RC 040	Raymond Seventh Adventist Church	Town of Raymond	Transient, Non-Community	G	1	IZ223	L	L	1,000	- -
RC 041	Raymond Town Hall	Town of Raymond	Transient, Non-Community	G	1	FG819	L	L	340	- -
RC 042	West Allis Bowmen	Town of Raymond	Transient, Non-Community	G	1	FG810	L	L	250	- -
RC 043	English Settlement Church	Town of Rochester	Transient, Non-Community	G	1	FG780	L	L	500	- -
RC 044	Honey Creek Community Baptist Church	Town of Rochester	Transient, Non-Community	G	1	IZ211	L	L	500	- -
RC 045	Wadewitz Nature Camp	Town of Rochester	Transient, Non-Community	G	3	IX228 IX227 IX226	L	L L L	1,350	- - - - - -
RC 046	Caldwell United Methodist Church	Town of Waterford	Transient, Non-Community	G	1	FG828	L	L	740	- -
RC 047	Green Meadows Farm (4-H)	Town of Waterford	Transient, Non-Community	G	1	EK253	L	L	780	- -
RC 048	Tichigan Lake Civic Center	Town of Waterford	Transient, Non-Community	G	1	FG829	L	L	1,000	- -
RC 049	Washington School	Town of Waterford	Non-Transient, Non-Community	G	2	GL776 BG744	H	L[d] H[d]	2,000 720,000	6,000 1,440,000
RC 050	Kingdom Hall of Jehovah's Witnesses	Town of Yorkville	Transient, Non-Community	G	1	FG791	L	L	700	- -
RC 051	Racine County Highway Building	Town of Yorkville	Non-Transient, Non-Community	G	2	ES815 IZ216	L	L L	1,500	- - - -
RC 052	Trinity Evangelical Lutheran Church	Town of Yorkville	Transient, Non-Community	G	1	FG776	L	L	2,500	- -
RC 053	Yorkville School	Town of Yorkville	Non-Transient, Non-Community	G	1	GP877	H	H[d]	5,000	10,000
Racine County: 53 Systems		- -	- -	- -	72	- -	- -	- -	- -	- -
Walworth County										
WL 001	Sarinas Nursing Home	City of Delavan	Miscellaneous Other-Than-Municipal Community	G	2	- - HU146	H	L[d] - -[d]	2,000 - -	5,000 - -
WL 002	Twin Oaks Shelter for the Homeless	City of Delavan	Transient, Non-Community	G	1	NV093	L	L	1,000	- -
WL 003	Emmanuel Baptist Church	City of Elkhorn	Transient, Non-Community	G	1	DK815	L	L	1,510	- -
WL 004	Tibbet Primary School	City of Elkhorn	Non-Transient, Non-Community	G	1	SA305	L	L	3,720	- -
WL 005	Lakewood Baptist	City of Lake Geneva	Transient, Non-Community	G	1	ET948	L	L	250	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Walworth County (continued)										
WL 006	Mt. Zion Christian Church	City of Lake Geneva	Non-Transient, Non-Community	G	1	BA396	H	L	5,090	- -
WL 007	Wood School District 4	City of Lake Geneva	Non-Transient, Non-Community	G	1	RH985	H	L[d]	2,000	3,000
WL 008	East Troy Municipal Airport	Village of East Troy	Transient, Non-Community	G	1	II347	L	L	250	- -
WL 009	Faith Christian School	Village of Williams Bay	Non-Transient, Non-Community	G	2	QK252 QT989	H	L[d] L	2,000 4,125	5,000 - -
WL 010	Berean Grace Church	Town of Bloomfield	Transient, Non-Community	G	1	ET944	L	L	650	- -
WL 011	Wisconsin Department of Transportation Rest Area 24, Bloomfield	Town of Bloomfield	Transient, Non-Community	G	1	ET722	L	L	750	- -
WL 012	Walworth County Metropolitan Sewerage District	Town of Darien	Wastewater Treatment Plant	G	1	IL447	H	L[d]	- -	1,000
WL 013	Christian Life Church	Town of Delavan	Transient, Non-Community	G	1	GP867	L	L	1,270	- -
WL 014	Delavan Township Park	Town of Delavan	Transient, Non-Community	G	1	FG796	L	L	150	- -
WL 015	East Delavan Baptist Church	Town of Delavan	Transient, Non-Community	G	1	EZ883	L	L	1,000	- -
WL 016	House in the Woods Camp	Town of Delavan	Transient, Non-Community	G	2	IZ078 LN397	L	L L	4,600	- - - -
WL 017	Bnai Brith Beber Camp	Town of East Troy	Miscellaneous	G	7	- -	H	L[d]	1,000	5,000
				G		- -		L[d]	- -	1,000
			Transient, Non-Community: Miscellaneous	G		IZ157		L[d]	1,000	2,000
				G		IZ160		L[d]	4,000	25,000
				G		LZ776		L[d]	5,000	43,000
			Transient, Non-Community	G		IZ158		L	- -	- -
				G		IZ159		L	- -	- -
WL 018	Camp Alice Chester	Town of East Troy	Miscellaneous	G	9	- -	H	L[d]	5,000	10,000
			Transient, Non-Community: Miscellaneous			EZ849		L[d]	5,000	10,000
						EZ850		L[d]	5,000	10,000
						EZ847		L[d]	5,000	10,000
						ET751		L[d]	5,000	10,000
						EZ846		L[d]	5,000	10,000
						EZ848		L[d]	5,000	10,000
			Transient, Non-Community			ET753		L	- -	- -
						ST942		L	- -	- -
WL 019	Camp Edwards, YMCA	Town of East Troy	Transient, Non-Community: Miscellaneous	G	6	GU682	H	L[d]	1,000	1,000
				G		NZ984		L[d]	1,000	26,000
				G		GU683		L[d]	1,000	1,000
				G		GU684		L[d]	3,000	5,000
			Miscellaneous	G		DR462		- -[d]	- -	- -
				G		II396		L[d]	- -	17,000

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Walworth County (continued)										
WL 020	East Troy Town Hall	Town of East Troy	Transient, Non-Community	G	1	FG750	L	L	300	- -
WL 021	Natures Classroom Montessori School, Bnai Brith Beber Camp	Town of East Troy	Non-Transient, Non-Community	G	1	SG078	H	L[d]	20,000	40,000
WL 022	New Life Community Church, East Troy	Town of East Troy	Transient, Non-Community	G	1	GP866	L	L	250	- -
WL 023	Salvation Army Lake Camp	Town of East Troy	Miscellaneous Transient, Non-Community	G G G G G	5	BH145 BH144 GU168 GU167 GU166	H	H[d] H[d] L L L	8,000 8,000 - - - - - -	12,000 12,000 - - - - - -
WL 024	Calvary Community Church and School	Town of Geneva	Miscellaneous Transient, Non-Community	G G	2	HO474 ES830	H	L[d] L	30,000 - -	72,000 - -
WL 025	Como Community Church	Town of Geneva	Transient, Non-Community	G	1	GP862	L	L	2,000	- -
WL 026	Lakeland Nursing Home	Town of Geneva	State Institution	G G	2	- - - -	H	H[d] H[d]	80,000 80,000	100,000 100,000
WL 027	Mercy Walworth Medical Center	Town of Geneva	Non-Transient, Non-Community	G	1	AR739	H	H[d]	36,000	130,000
WL 028	Church of Jesus Christ Latter Day Saints	Town of LaFayette	Transient, Non-Community	G	1	PT511	L	L	2,010	- -
WL 029	Lafayette Town Hall	Town of LaFayette	Transient, Non-Community	G	1	GS001	L	L	250	- -
WL 030	Price Park	Town of LaFayette	Transient, Non-Community	G	1	QR013	L	L	250	- -
WL 031	Wisconsin Department of Transportation Rest Area 35, Lafayette	Town of LaFayette	Transient, Non-Community	G	1	FG790	L	L	4,000	- -
WL 032	Wisconsin Department of Transportation Rest Area 36, Lafayette	Town of LaFayette	Transient, Non-Community	G	1	FG789	L	L	4,000	- -
WL 033	Camp Juniper Knoll	Town of LaGrange	Transient, Non-Community	G	1	GP863	L	L	20,000	- -
WL 034	Kettle Moraine State Forest La Grange Camp	Town of LaGrange	Miscellaneous	G	1	JB836	H	- -[d]	- -	- -
WL 035	Kettle Moraine State Forest Muir Trail Head	Town of LaGrange	Transient, Non-Community	G	1	NM160	H	L[d]	125	- -
WL 036	Kettle Moraine State Forest Nordic Lot	Town of LaGrange	Transient, Non-Community	G	1	JB837	H	L[d]	125	- -
WL 037	Lauderdale Lakes Marina	Town of LaGrange	Transient, Non-Community	G	1	OO998	L	L	1,625	- -
WL 038	Lutherdale Bible Camp	Town of LaGrange	Transient, Non-Community	G	2	IZ076 JF853	L	L L	9,350	- -
WL 039	Pottawatomie Hills Girl Scout Camp	Town of LaGrange	Transient, Non-Community	G	5	ET705 ET703 ET704 ET707 ET706	L	L L L L L	5,000	- -
WL 040	Chapel on the Hill Church	Town of Linn	Transient, Non-Community	G	1	GS086	L	L	3,030	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Walworth County (continued)										
WL 041	Linn United Presbyterian	Town of Linn	Transient, Non-Community	G	1	EZ930	L	L	5,040	- -
WL 042	Reek School	Town of Linn	Non-Transient, Non-Community	G	1	BO707	H	- -[d]	1,965	- -
WL 043	Traver School	Town of Linn	Non-Transient, Non-Community	G	1	ES828	H	L[d]	2,000	3,000
WL 044	Cornerstone Ministries	Town of Lyons	Transient, Non-Community	G	1	GO630	L	L	700	- -
WL 045	Lyons Center Elementary School	Town of Lyons	Non-Transient, Non-Community	G	1	MG052	L	L	2,205	- -
WL 046	Riverview Park	Town of Lyons	Transient, Non-Community	G	1	DS688	L	L	125	- -
WL 047	St. Joseph's Parish	Town of Lyons	Transient, Non-Community	G	1	OT672	L	L	250	- -
WL 048	Christus Evangelical Lutheran Church	Town of Richmond	Transient, Non-Community	G	1	FG743	L	L	1,200	- -
WL 049	Scenic Ridge Campground	Town of Richmond	Transient, Non-Community	G	3	GV781 GV782 GV783	L	L L L	3,000 250 5,000	- - - - - -
WL 050	Walworth County Natureland	Town of Richmond	Transient, Non-Community	G	1	IZ100	L	L	125	- -
WL 051	Fontana-Walworth Water Pollution Control Commission	Town of Sharon	Wastewater Treatment Plant	G	2	BG723 - -	H	L[d] L[d]	11,000 11,000	11,000 11,000
WL 052	Triune Lutheran Church	Town of Sharon	Transient, Non-Community	G	1	ET930	L	L	750	- -
WL 053	Happy Hollow Program Center	Town of Spring Prairie	Transient, Non-Community	G	2	AX538 IZ065	L	L L	4,000 6,250	- - - -
WL 054	Spring Prairie United Methodist Church	Town of Spring Prairie	Transient, Non-Community	G	1	IZ093	L	L	420	- -
WL 055	Bethel United Methodist Church	Town of Sugar Creek	Transient, Non-Community	G	1	EZ882	L	L	1,000	- -
WL 056	Kingdom Hall of Jehovah's Witnesses	Town of Sugar Creek	Transient, Non-Community	G	1	GP785	L	L	1,000	- -
WL 057	Millard Church	Town of Sugar Creek	Transient, Non-Community	G	1	EZ920	L	L	1,000	- -
WL 058	Sugar Creek Lutheran Church	Town of Sugar Creek	Transient, Non-Community	G	1	EZ933	L	L	250	- -
WL 059	Booth Lake Memorial Park	Town of Troy	Transient, Non-Community	G	2	GU165 II374	L	L L	750 125	- - - -
WL 060	Chapman Hills Girl Scout Camp	Town of Troy	Transient, Non-Community	G	2	ET702 ET968	L	L L	5,000	- -
WL 061	Oakwood Knoll Girl Scouts	Town of Troy	Transient, Non-Community	G	1	GO749	L	L	1,250	- -
WL 062	Timber Lee Christian Center	Town of Troy	Miscellaneous	G	17	BH119 BH138 BH115 BH116 BH117 BH118	H	L[d] L[d] L[d] L[d] L[d] L[d]	1,000 3,000 5,000 5,000 5,000 5,000	2,000 5,000 6,000 6,000 6,000 6,000

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Walworth County (continued)										
WL 062 (continued)	Timber Lee Christian Center (continued)	Town of Troy (continued)	Transient, Non-Community	G	17	NT048 MU129 GV832 GV834 GV837 GV836 RD181 GV831 GV838 KS785 GV835	H	L[d] - -[d] L L L L L L L L L	2,000 -	2,000 -
WL 063	Christian League for Handicapped	Town of Walworth	Miscellaneous	G	2	BH125 BH124	H	L[d] L[d]	2,000 2,000	7,000 6,000
WL 064	First Baptist Church of Walworth	Town of Walworth	Transient, Non-Community	G	1	EZ881	L	L	300	- -
WL 065	Inspiration Ministries	Town of Walworth	Transient, Non-Community Other-Than-Municipal Community	G	2	IZ163 QK217	H	L - -[d]	3,000 - -	- - - -
WL 066	Camp Joy	Town of Whitewater	Miscellaneous Transient, Non-Community: Miscellaneous	G	5	- - - - - - EZ943 EZ942	H	L[d] L[d] H[d] L[d] L[d]	1,000 29,000 216,000 29,000 29,000	1,000 43,000 432,000 43,000 43,000
WL 067	Channing Well	Town of Whitewater	Transient, Non-Community	G	1	PT515	L	L	125	- -
WL 068	Kettle Moraine State Forest	Town of Whitewater	Transient, Non-Community	G	6	JB842 DC763 OG944 JB841 JB839 JB840	H	- -[d] L[d] L[d] L[d] L[d] L[d]	125 125 125 125 125 125	- - - - - - - - - - - -
WL 069	Lakeview School, Walworth	Town of Whitewater	Non-Transient, Non-Community	G	1	FA608	H	L[d]	4,000	9,000
Walworth County: 69 Systems		- -	- -	- -	135	- -	- -	- -	- -	- -
Washington County										
WS 001A	St. Joseph's Community Hospital	City of West Bend	Industrial	G	1	SS086	H	H[d]	18,000	75,000
WS 001	Regner Park	City of West Bend	Miscellaneous Miscellaneous (April to October)	G	2	BH226 BH227	H	H[d] H[d]	200,000 200,000	200,000 200,000
WS 002	Ridge Run Park	City of West Bend	Transient, Non-Community	G	2	GV818 LU438	L	L L	125	- -
WS 003	Trenton Town Hall	City of West Bend	Transient, Non-Community	G	1	FG119	L	L	250	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Washington County (continued)										
WS 004	American Legion Post	Village of Germantown	Transient, Non-Community	G	1	LT128	L	L	250	- -
WS 005	County Line School	Village of Germantown	Non-Transient, Non-Community	G	1	FH036	H	- -[d]	9,330	- -
WS 006	Germantown Public Works,Village Hall	Village of Germantown	Transient, Non-Community	G	1	ET678	L	L	600	- -
WS 007	Germantown School Administration	Village of Germantown	Transient, Non-Community	G	1	PT488	L	L	320	- -
WS 008	Kennedy Middle School	Village of Germantown	Non-Transient, Non-Community	G	1	GO783	H	- -[d]	10,575	- -
WS 009	Kingdom Hall Jehovah's Witness	Village of Germantown	Transient, Non-Community	G	1	FG698	L	L	250	- -
WS 010	Our Savior United Church of Christ	Village of Germantown	Transient, Non-Community	G	1	FG548	L	L	1,090	- -
WS 011	St. John's United Church of Christ	Village of Germantown	Transient, Non-Community	G	1	FG537	L	L	1,000	- -
WS 012	Stony Hills Presbyterian Church	Village of Germantown	Transient, Non-Community	G	1	GQ570	L	L	250	- -
WS 013	Newburg Sportsman Inc	Village of Newburg	Transient, Non-Community	G	1	FG532	L	L	500	- -
WS 014	St. John's Lutheran School	Village of Newburg	Non-Transient, Non-Community	G	1	ES855	H	- -[d]	2,670	- -
WS 015	Addison Elementary School	Town of Addison	Non-Transient, Non-Community	G	1	RX237	H	H[d]	8,000	13,000
WS 016	St. Peter's Evangelical Lutheran Church	Town of Addison	Transient, Non-Community	G	1	DR794	L	L	450	- -
WS 017	Knights of Columbus 1964	Town of Barton	Transient, Non-Community	G	1	FG120	L	L	2,000	- -
WS 018	Timber Trail Recreation Area	Town of Barton	Transient, Non-Community	G	2	FG710 FG705	L	L L	5,000 1,250	- - - -
WS 019	Discalced Carmelites and Holy Hill Café	Town of Erin	Transient, Non-Community	G	1	JE535	L	L	2,180	- -
WS 020	Erin School	Town of Erin	Non-Transient, Non-Community	G	1	ET994	H	- -[d]	6,000	- -
WS 021	Erin Town Hall and Erin Go Braugh Park	Town of Erin	Transient, Non-Community	G	1	FH044	L	L	1,050	- -
WS 022	Heiliger Huegel Ski Club	Town of Erin	Miscellaneous (November to March)	G	1	BH211	H	H[d]	90,000	180,000
WS 023	St. Mary of the Hill Parish	Town of Erin	Transient, Non-Community	G	1	FG689	L	L	250	- -
WS 024	St. Paul's United Church of Christ	Town of Erin	Transient, Non-Community	G	1	ET671	L	L	750	- -
WS 025	Camp Awana	Town of Farmington	Miscellaneous	G	4	JA256 JA254 JA255 - -	H	L[d] L[d] L[d] L[d]	1,000 1,000 1,000 - -	5,000 5,000 5,000 1,000
WS 026	Farmington Elementary School	Town of Farmington	Non-Transient, Non-Community	G	1	GP763	H	L[d]	4,200	- -
WS 027	Lazy Days Campground	Town of Farmington	Transient, Non-Community	G	4	AE729 FG718 FG719 FG720	L	L L L L	12,500	- -
WS 028	St. Martin's United Church of Christ	Town of Farmington	Transient, Non-Community	G	1	FG682	L	L	250	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Washington County (continued)										
WS 029	Rockfield School	Town of Germantown	Non-Transient, Non-Community	G	1	ET675	H	- -[d]	3,750	- -
WS 030	Hartford Town Hall	Town of Hartford	Transient, Non-Community	G	1	FH048	L	L	270	- -
WS 031	St. John's United Church of Christ	Town of Hartford	Transient, Non-Community	G	1	ON393	L	L	260	- -
WS 032	St. Lawrence Church	Town of Hartford	Transient, Non-Community	G	1	EZ001	H	- -[d]	1,040	- -
WS 033	Town of Hartford Concession Stand Restrooms	Town of Hartford	Transient, Non-Community	G	1	QO745	L	L	250	- -
WS 034	Wisconsin Department of Natural Resources, Pike Lake	Town of Hartford	Transient, Non-Community	G	3	PT217 EZ913 EZ918	L	L L L	285 1,075 700	- - - - - -
WS 035	David's Star Evangelical Lutheran School	Town of Jackson	Miscellaneous Miscellaneous Non-Transient, Non-Community Miscellaneous	G	4	- - - - SN149 - -	H	L[d] L[d] H[d] L[d]	1,000 1,000 5,000 - -	1,000 2,000 10,000 - -
WS 036	Jackson town Hall and Community Center	Town of Jackson	Transient, Non-Community	G	1	GP820	L	L	250	- -
WS 037	Kettle Moraine Lutheran High School	Town of Jackson	Non-Transient, Non-Community	G	1	GP871	H	H[d]	6,000	13,000
WS 038	New Hope United Church of Christ Jackson	Town of Jackson	Transient, Non-Community	G	1	DQ143	L	L	800	- -
WS 039	Pleasant Valley Tennis Club	Town of Jackson	Transient, Non-Community	G	1	LT683	L	L	2,260	- -
WS 040	St. John's Lutheran Church	Town of Jackson	Transient, Non-Community	G	1	RM709	L	L	1,400	- -
WS 041	St. Peter's United Church of Christ	Town of Jackson	Transient, Non-Community	G	1	FG701	L	L	800	- -
WS 042	Trinity Evangelical Lutheran Church and School, Jackson	Town of Jackson	Non-Transient, Non-Community	G	1	SJ278	H	L[d]	1,000	1,000
WS 043	Kettle Moraine State Forest Glacial Trail Hwy H	Town of Kewaskum	Transient, Non-Community: Miscellaneous	G	1	PT215	L	L	125	- -
WS 044	St. Michael's Catholic Church and School	Town of Kewaskum	Transient, Non-Community	G	2	FG531 FG565	L	L L	550 5,030	- - - -
WS 045	Ackerman's Grove County Park	Town of Polk	Transient, Non-Community	G	1	OC811	L	L	125	- -
WS 046	Faith United Church of Christ	Town of Polk	Transient, Non-Community	G	1	FG700	L	L	1,000	- -
WS 047	Heritage Trails County Park	Town of Polk	Transient, Non-Community	G	1	GG155	L	L	125	- -
WS 048	Still Waters Community United Methodist Church	Town of Polk	Transient, Non-Community	G	1	OC037	L	L	300	- -
WS 049	Amy Belle School	Town of Richfield	Non-Transient, Non-Community	G	1	ES903	H	- -[d]	6,405	- -
WS 050	Crown of Life Evangelical Lutheran School and Church	Town of Richfield	Non-Transient, Non-Community	G	1	GU746	H	- -[d]	1,425	- -
WS 051	Daniel Boone Conservation League Club House	Town of Richfield	Transient, Non-Community	G	1	FH021	L	L	4,530	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Washington County (continued)										
WS 052	Emmanuel United Methodist Church	Town of Richfield	Transient, Non-Community	G	1	FG685	L	L	1,000	- -
WS 053	First Presbyterian Church	Town of Richfield	Transient, Non-Community	G	1	FG686	L	L	350	- -
WS 054	Friess Lake School	Town of Richfield	Non-Transient, Non-Community	G	1	TP217	H	L[d]	12,000	24,000
WS 055	Glacier Hills County Park	Town of Richfield	Transient, Non-Community	G	2	FG693 RM058	L	L L	125 500	- - - -
WS 056	Loggers Park – American Health & Fitness	Town of Richfield	Miscellaneous	G	2	FU986 MJ498	H	L[d] L[d]	1,000 1,000	5,000 5,000
WS 057	Minkani YMCA Camp	Town of Richfield	Transient, Non-Community	G	3	GV928 GV929 GV801	L	L L L	15,450	- -
WS 058	Plat Elementary School	Town of Richfield	Non-Transient, Non-Community	G	1	ES907	H	L[d]	2,000	3,000
WS 059	Richfield Elementary School	Town of Richfield	Non-Transient, Non-Community	G	1	JE547	H	- -[d]	6,000[f]	6,000[f]
WS 060	Richfield Fireman's Park & Station No. 1	Town of Richfield	Transient, Non-Community	G	1	ET619	L	L	200	- -
WS 061	Richfield Town Hall and Garage	Town of Richfield	Transient, Non-Community	G	1	GQ611	L	L	310	- -
WS 062	Shepherd of the Hills Lutheran Church	Town of Richfield	Transient, Non-Community	G	1	IZ375	L	L	3,020	- -
WS 063	St. Jacobi Congregational Church	Town of Richfield	Transient, Non-Community	G	1	GO665	L	L	250	- -
WS 064	St. Augustine, Inc.	Town of Richfield	School	G	1	LV077	H	L[d]	3,000	13,000
WS 065	St. Gabriel Church and School	Town of Richfield	School Non-Transient, Non-Community	G	2	SS051 DE637	H	L[d] L[d]	9,000 1,000	15,000 2,000
WS 066	Wooded Hills Bible Church	Town of Richfield	Transient, Non-Community	G	1	GZ636	L	L	260	- -
WS 067	Zion United Methodist Church	Town of Richfield	Transient, Non-Community	G	1	FG683	L	L	250	- -
WS 068	Goeden County Park	Town of Trenton	Transient, Non-Community	G	1	GG154	L	L	125	- -
WS 069	Holy Trinity Congregation	Town of Trenton	Non-Transient, Non-Community	G	1	ES902	H	- -[d]	3,500	- -
WS 070	Sandy Knoll	Town of Trenton	Transient, Non-Community	G	2	IZ441 IZ442	L	L L	220 250	- - - -
WS 071	Salem United Church of Christ	Town of Wayne	Transient, Non-Community	G	1	IZ557	L	L	1,000	- -
WS 072	St. John's United Church of Christ Kohlsville	Town of Wayne	Transient, Non-Community	G	1	FG564	L	L	250	- -
WS 073	Wayne Elementary School	Town of Wayne	Non-Transient, Non-Community	G	1	BH946	H	L[d]	2,000	5,000
WS 074	Zion Evangelical Lutheran Church	Town of Wayne	Transient, Non-Community	G	1	GO653	L	L	1,000	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Washington County (continued)										
WS 075	Camp Silverbrook	Town of West Bend	Transient, Non-Community	G	6	GU987 GU988 GU985 GU986 GU984 GU982	L	L L L L L L	7,500	- -
WS 076	Cedar Lake Wayside	Town of West Bend	Transient, Non-Community	G	1	GV817	L	L	125	- -
WS 077	Full Gospel Church	Town of West Bend	Transient, Non-Community	G	1	DV172	L	L	970	- -
WS 078	Silver Maple School	Town of West Bend	Non-Transient, Non-Community	G	1	ES911	L	L	2,025	- -
WS 079	St. Paul's Evangelical Church	Town of West Bend	Transient, Non-Community	G	1	FG533	L	L	250	- -
Washington County: 80 Systems		- -	- -	- -	106	- -	- -	- -	- -	- -
Waukesha County										
WK 001	Academy of Basic Education	City of Brookfield	School	G	1	- -	H	H[d]	108,000	216,000
WK 002	Brookfield Academy	City of Brookfield	School Non-Transient, Non-Community	G	2	EQ943 BH733	H	L[d] L	1,000 4,290	5,000 - -
WK 003	Brookfield Lutheran Church	City of Brookfield	Miscellaneous	G	3	- - - - - -	H	H[d] H[d] H[d]	200,000 200,000 200,000	650,000 650,000 650,000
WK 004	Christ the King Lutheran Church	City of Brookfield	Transient, Non-Community	G	1	PT461	L	L	3,280	- -
WK 005	Elmbrook Memorial Hospital	City of Brookfield	Miscellaneous Non-Transient, Non-Community	G	2	- - ES732	H	H[d] H[d]	105,000 105,000	158,000 158,000
WK 006	Fairview South School	City of Brookfield	Non-Transient, Non-Community	G	1	ES740	H	H[d]	8,000	8,000
WK 007	McCoy Park	City of Brookfield	Transient, Non-Community	G	1	PT464	L	L	125	- -
WK 008	Poplar Creek Church and School	City of Brookfield	Transient, Non-Community	G	1	TR170	L	L	4,530	- -
WK 009	Trinity United Church of Christ	City of Brookfield	Transient, Non-Community	G	1	PT462	L	L	1,420	- -
WK 010	Wisconsin Memorial Park	City of Brookfield	Miscellaneous Transient, Non-Community	G	5	BH299 BH357 JE615 JE616 JE617	H	L[d] - -[d] L L L	2,000 - - 250	23,000 - - - -
WK 011	Christ the King Lutheran Church	City of Delafield	Transient, Non-Community	G	1	ES776	L	L	5,050	- -
WK 012	Cushing Elementary	City of Delafield	Non-Transient, Non-Community	G	1	JE603	H	- -[d]	3,900	- -
WK 013	Cushing Park	City of Delafield	Transient, Non-Community	G	1	TA552	L	L	125	- -
WK 014	Delafield City Hall	City of Delafield	Transient, Non-Community	G	1	DK819	L	L	400	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 015	Delafield Presbyterian Church	City of Delafield	Transient, Non-Community	G	1	PS971	L	L	250	- -
WK 016	Fireman's Park	City of Delafield	Transient, Non-Community	G	1	DK820	L	L	150	- -
WK 017	Fish Hatchery Center	City of Delafield	Transient, Non-Community	G	1	PS965	L	L	125	- -
WK 018	Kingdom Hall of Jehovah's Witnesses	City of Delafield	Transient, Non-Community	G	1	CP270	L	L	1,020	- -
WK 019	Lake Country School	City of Delafield	Non-Transient, Non-Community	G	1	EQ942	H	L[d]	3,000	7,000
WK 020	Nagawaukee Park	City of Delafield	Transient, Non-Community	G	5	ET903 ET901 ET906 ET908 ET909	L	L L L L L	1,250 500 250 125 125	- - - - - - - - - -
WK 021	Nagawaukee Group Campground	City of Delafield	Transient, Non-Community	G	1	ET904	L	L	2,500	- -
WK 022	St. John's Warming Hut	City of Delafield	Transient, Non-Community	G	1	KU052	L	L	500	- -
WK 023	St. John's Military Academy	City of Delafield	Non-Transient, Non-Community	G	2	IZ380 IZ283	H	H[d] L	70,000 6,000	118,000 - -
WK 024	University Lake School	City of Delafield	Non-Transient, Non-Community	G	4	GU101 GU102 MK453 AT712	H	L[d] - -[d] - - - -[d]	2,000 43,000 7,500 600	3,000 86,000 - - 1,000
WK 025	Atonement Lutheran Church	City of Muskego	Transient, Non-Community	G	1	AY343	L	L	2,250	- -
WK 026	Bethlehem Lutheran Church	City of Muskego	Transient, Non-Community	G	1	ET715	L	L	860	- -
WK 027	Bluhm Park	City of Muskego	Transient, Non-Community	G	2	RI390 JF805	L	L L	125	- -
WK 028	Calvary Evangelical Free Church	City of Muskego	Transient, Non-Community	G	1	ET717	L	L	1,520	- -
WK 029	Heritage Presbyterian Church	City of Muskego	Transient, Non-Community	G	1	PS723	L	L	1,810	- -
WK 030	Horn Field Park	City of Muskego	Transient, Non-Community	G	1	JF127	L	L	125	- -
WK 031	Idle Isle Park	City of Muskego	Transient, Non-Community	G	1	JF065	L	L	125	- -
WK 032	Jensen Recreation Center	City of Muskego	Transient, Non-Community	G	1	JF130	L	L	125	- -
WK 033	Kurth Park	City of Muskego	Transient, Non-Community	G	1	WAUK092	L	L	125	- -
WK 034	Lake Denoon Middle School	City of Muskego	Non-Transient, Non-Community	G	1	MK434	H	H[d]	12,000	24,000
WK 035	Lions Park	City of Muskego	Transient, Non-Community	G	1	WAUK095	L	L	125	- -
WK 036	Mill Valley School	City of Muskego	Non-Transient, Non-Community	G	1	ES773	H	- -[d]	3,450	- -
WK 037	Muskego Elementary School	City of Muskego	Non-Transient, Non-Community	G	1	ES775	H	- -[d]	4,650	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 038	Muskego Park	City of Muskego	Miscellaneous (April to October) Transient, Non-Community	G	3	BH306 EX926 EX927	H	L L L	2,000 125	5,000 - -
WK 039	Praise Fellowship Church	City of Muskego	Transient, Non-Community	G	1	EZ831	L	L	870	- -
WK 040	St. Paul's School	City of Muskego	Non-Transient, Non-Community	G	1	EZ832	H	- -[d]	2,000	6,000
WK 041	Tess Corners Elementary	City of Muskego	Non-Transient, Non-Community	G	1	ES854	H	- -[d]	3,000	- -
WK 042	Bethel Hill United Methodist	City of New Berlin	Transient, Non-Community	G	1	JA341	L	L	1,860	- -
WK 043	Calhoun Park	City of New Berlin	Transient, Non-Community	G	1	JA342	L	L	125	- -
WK 044	Calvary Reformed Church	City of New Berlin	Transient, Non-Community	G	1	JA339	L	L	1,010	- -
WK 045	Eisenhower High School	City of New Berlin	School	G	1	BH763	H	H[d]	42,000	42,000
WK 046	Free Methodist Church	City of New Berlin	Transient, Non-Community	G	1	JA344	L	L	1,020	- -
WK 047	Grace Church	City of New Berlin	Transient, Non-Community	G	1	JA340	L	L	1,010	- -
WK 048	Great Blue Heron Girl Scout Council	City of New Berlin	Transient, Non-Community	G	2	JA348 JA349	L	L L	370 310	- - - -
WK 049	Iglesia Ni Cristo	City of New Berlin	Transient, Non-Community	G	1	JA336	L	L	250	- -
WK 050	Kids Kampus	City of New Berlin	Non-Transient, Non-Community	G	1	JD471	L	L	1,200	- -
WK 051	New Berlin High School and Middle School	City of New Berlin	Non-Transient, Non-Community	G	1	ES747	H	H[d]	22,500	- -
WK 052	Peace Lutheran Church	City of New Berlin	Transient, Non-Community	G	1	JA331	L	L	3,930	- -
WK 053	Prospect Hill School	City of New Berlin	Non-Transient, Non-Community	G	2	GS006 FG763	H	- -[d] L	19,000 7,500	19,000 - -
WK 054	Valley View Park	City of New Berlin	Transient, Non-Community	G	1	JA343	L	L	125	- -
WK 055	Westbrook Wesleyan Church	City of New Berlin	Transient, Non-Community	G	1	JA347	L	L	2,010	- -
WK 056	Summit Elementary	City of Oconomowoc	School	G	1	EX935	H	- -[d]	- -	- -
WK 057	Balmer Park	City of Pewaukee	Transient, Non-Community	G	1	PS915	L	L	125	- -
WK 058	Believers Fellowship Church	City of Pewaukee	Transient, Non-Community	G	1	BO774	L	L	1,545	- -
WK 059	Faith Baptist Church and High School Waukesha	City of Pewaukee	Non-Transient, Non-Community	G	2	IX266 EX966	H	L[d] - -[d]	2,000 2,025	4,000 - -
WK 060	Hindu Temple of Wisconsin	City of Pewaukee	Transient, Non-Community	G	1	MK435	L	L	520	- -
WK 061	Lamb of God Lutheran Church	City of Pewaukee	Transient, Non-Community	G	1	- -	L	L	2,030	- -
WK 062	Nettesheim Park	City of Pewaukee	Transient, Non-Community	G	1	PS984	L	L	125	- -
WK 063	New Vision Brethren in Christ Church	City of Pewaukee	Transient, Non-Community	G	1	QP339	L	L	1,020	- -
WK 064	Shepherd of the Hills	City of Pewaukee	Transient, Non-Community	G	1	CT599	L	L	2,400	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 065	South Park	City of Pewaukee	Transient, Non-Community	G	1	PT469	L	L	125	- -
WK 066	Spanbauer Lake Country Art Gallery	City of Pewaukee	Transient, Non-Community	G	1	ES774	L	L	270	- -
WK 067	Tyme Out Ministries Services	City of Pewaukee	Miscellaneous	G	1	BH284	H	L[d]	8,000	12,000
WK 068	Church of Christ	City of Waukesha	Transient, Non-Community	G	1	PT475	L	L	1,200	- -
WK 069	Good Shepherd Lutheran Corporation	City of Waukesha	Transient, Non-Community	G	1	- -	L	L	1,090	- -
WK 070	Menomonee Park, Waukesha Park	City of Waukesha	Miscellaneous	G	1	- -	H	L[d]	- -	1,000
WK 071	St. Matthias West	City of Waukesha	Transient, Non-Community	G	1	GT915	L	L	765	- -
WK 072	Big Bend Lions Club	Village of Big Bend	Transient, Non-Community	G	1	JF828	L	L	250	- -
WK 073	Big Bend Village Hall	Village of Big Bend	Transient, Non-Community	G	1	ET712	L	L	310	- -
WK 074	Christ Lutheran School and Church	Village of Big Bend	Non-Transient, Non-Community	G	1	ES841	L	L	10,560	- -
WK 075	First United Presbyterian	Village of Big Bend	Non-Transient, Non-Community	G	1	CB354	L	L	4,350	- -
WK 076	St. Joseph's Church and School	Village of Big Bend	Non-Transient, Non-Community	G	1	MQ080	L	L	3,780	- -
WK 077	Chenequa Village Hall	Village of Chenequa	Transient, Non-Community	G	1	PS973	L	L	350	- -
WK 078	American Baptist Churches	Village of Elm Grove	Transient, Non-Community	G	1	PS897	L	L	280	- -
WK 079	Community United Methodist Church	Village of Elm Grove	Non-Transient, Non-Community	G	1	QS526	L	L	2,460	- -
WK 080	Elm Grove Lutheran Church and School	Village of Elm Grove	Non-Transient, Non-Community	G	2	FB525 EZ840	H	- -[d] L[d]	- - 4,000	- - 5,000
WK 081	Elm Grove, Village of	Village of Elm Grove	Miscellaneous	G	1	BH286	H	L[d]	35,000	75,000
WK 082	Giesen Enterprises	Village of Elm Grove	Transient, Non-Community	G	1	PS900	L	L	1,020	- -
WK 083	Pilgrim Park Middle School	Village of Elm Grove	Non-Transient, Non-Community	G	1	RW854	H	- -[d]	16,905	- -
WK 084	St. Edmund's Episcopal Church	Village of Elm Grove	Non-Transient, Non-Community	G	1	JE607	L	L	6,975	- -
WK 085	St. Mary's School and Parish	Village of Elm Grove	Non-Transient, Non-Community	G	1	ES749	L	L	4,500	- -
WK 086	Sunset Playhouse	Village of Elm Grove	Transient, Non-Community	G	1	ET763	L	L	1,515	- -
WK 087	Tonawanda Elementary School	Village of Elm Grove	Non-Transient, Non-Community	G	1	ES746	H	- -[d]	7,000	15,000
WK 088	Divine Redeemer Lutheran School and Church	Village of Hartland	Non-Transient, Non-Community	G	1	LK015	H	- -[d]	6,750	- -
WK 089	Calvary Baptist Church and School West Campus	Village of Lannon	Non-Transient, Non-Community	G	1	KB118	H	L[d]	2,000	5,000
WK 090	Joecks Memorial Park	Village of Lannon	Transient, Non-Community	G	1	PS873	L	L	500	- -
WK 091	Lannon Elementary School	Village of Lannon	Non-Transient, Non-Community	G	1	ES799	H	-[d]	5,625	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 092	St. John's Lutheran Church	Village of Lannon	Non-Transient, Non-Community Transient, Non-Community	G	2	JE601 IN011	L	L L	4,500 3,000	- - - -
WK 093	Falls Baptist Church	Village of Menomonee Falls	School	G	1	AA116	H	L[d]	1,000	4,000
WK 094	Marcy Elementary School	Village of Menomonee Falls	School	G	1	GQ617	H	- -	- -	- -
WK 095	Menomonee Park	Village of Menomonee Falls	Transient, Non-Community	G	4	BH310 PS918 PS917 PS919	L	L L L L	500 1,250 2,500 1,000	- - - - - - - -
WK 096	St. James Catholic Church	Village of Menomonee Falls	Transient, Non-Community	G	1	PS877	L	L	5,110	- -
WK 097	Willow Springs School	Village of Menomonee Falls	Non-Transient, Non-Community	G	1	EM228	H	L[d]	3,000	6,000
WK 098	Zion Evangelical Lutheran Church and School	Village of Menomonee Falls	Non-Transient, Non-Community	G	1	CO948	H	L[d]	3,000	5,000
WK 099	Merton Intermediate School	Village of Merton	Non-Transient, Non-Community	G	1	ES792	H	- -	7,125	- -
WK 100	Merton Primary School	Village of Merton	Non-Transient, Non-Community	G	1	TE752	H	H[d]	50,000	101,000
WK 101	Merton Village Hall	Village of Merton	Transient, Non-Community	G	1	FE979	L	L	300	- -
WK 102	St. John's United Church of Christ	Village of Merton	Transient, Non-Community	G	1	RY386	L	L	540	- -
WK 103	Magee Elementary	Village of Mukwonago	Non-Transient, Non-Community	G	1	AK810	H	L[d]	1,000	1,000
WK 104	Country Christian School	Village of Nashotah	Non-Transient, Non-Community	G	1	GM359	H	L[d]	3,000	6,000
WK 105	Nashotah Fire Department	Village of Nashotah	Transient, Non-Community	G	1	II412	L	L	250	- -
WK 106	Nashotah Village Hall	Village of Nashotah	Transient, Non-Community	G	1	HV703	L	L	270	- -
WK 107	Highview Evangelical Presbyterian Church	Village of North Prairie	Transient, Non-Community	G	1	NN230	L	L	610	- -
WK 108	North Prairie Village Hall and Park	Village of North Prairie	Transient, Non-Community	G	1	- -	L	L	130	- -
WK 109	Kettle Moraine Hospital	Village of Oconomowoc Lake	Miscellaneous	G	1	BH285	H	L[d]	70,000	70,000
WK 110	American College	Village of Pewaukee	Miscellaneous	G	1	- -	H	H[d]	50,000	70,000
WK 111	Templeton Middle School	Village of Sussex	Non-Transient, Non-Community	G	1	ES800	H	- - [d]	6,000	8,000
WK 112	All Saints Lutheran Church	Village of Wales	Transient, Non-Community	G	1	AF115	L	L	270	- -
WK 113	Bethlehem Lutheran Church	Village of Wales	Transient, Non-Community	G	1	PS905	L	L	2,040	- -
WK 114	Jerusalem Presbyterian Church	Village of Wales	Transient, Non-Community	G	1	PS882	L	L	300	- -
WK 115	Kettle Moraine High School	Village of Wales	Non-Transient, Non-Community	G	2	DE058 KP769	H	L[d] H[d]	10,000 48,000	15,000 60,000
WK 116	Kettle Moraine School District	Village of Wales	Miscellaneous	G	1	BH910	H	L[d]	30,000	90,000
WK 117	Kettle Moraine State Forest	Village of Wales	Transient, Non-Community	G	1	DC686	L	L	1,250	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 118	Wales Elementary School	Village of Wales	School	G	1	- -	H	L[d]	10,000	15,000
WK 119	Wales Fireman's Memorial Park	Village of Wales	Transient, Non-Community	G	1	PS980	L	L	250	- -
WK 120	Wales-Genesee Fire Department	Village of Wales	Transient, Non-Community	G	1	SP680	L	L	290	- -
WK 121	Children's Learning Center, Inc.	Town of Brookfield	Non-Transient, Non-Community	G	1	NN238	H	- -	450	- -
WK 122	Brandy Brook Center	Town of Delafield	Transient, Non-Community	G	1	PT470	L	L	250	- -
WK 123	Delafield Town Hall	Town of Delafield	Transient, Non-Community	G	1	FQ359	L	L	270	- -
WK 124	Kettle Moraine Evangelical Free Church	Town of Delafield	Transient, Non-Community	G	1	CW270	L	L	250	- -
WK 125	Kettle Moraine State Forest Lapham Peak	Town of Delafield	Transient, Non-Community: Miscellaneous Transient, Non-Community: Miscellaneous Miscellaneous	G	6	LK174 GU110 GQ577 GQ576 ID174 - -	H	L L L L L - -[d]	750 350 500 135 625	- - - - - - - - - - - -
WK 126	Prairie Hill Waldorf School	Town of Delafield	Non-Transient, Non-Community	G	1	EZ837	H	- -[d]	3,075	- -
WK 127	Schoenstatt Sisters of Mary	Town of Delafield	Transient, Non-Community: Miscellaneous	G	1	BO780	H	L[d]	7,000	14,000
WK 128	St. Anthony's on the Lake School	Town of Delafield	School Non-Transient, Non-Community	G	2	NG681 EX968	H	L[d] L[d]	2,000 5,000	5,000 5,000
WK 129	Zion Presbyterian Church	Town of Delafield	Transient, Non-Community	G	1	PS998	L	L	300	- -
WK 130	Eagleville Elementary School	Town of Eagle	Non-Transient, Non-Community	G	1	ES840	H	- -[d]	1,935	- -
WK 131	Kettle Moraine Ranch	Town of Eagle	Transient, Non-Community	G	1	JF893	L	L	1,100	- -
WK 132	Kettle Moraine State Forest	Town of Eagle	Transient, Non-Community Transient, Non-Community: Miscellaneous Miscellaneous	G	8	DC875 JB834 BO809 JB833 MM768 - - - - JB845	H	L L L[d] - -[d] - -[d] - -[d] H[d] - -[d]	125 500 1,000 - - - - - - 20,000	- - - - 2,000 - - - - - - 24,000 - -
WK 133	Love Laugh & Learn Day Care Center	Town of Eagle	Non-Transient, Non-Community	G	1	ES852	H	- -[d]	600	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 134	Old World Wisconsin	Town of Eagle	Miscellaneous	G	14	- -	H	L[d]	1,000	3,000
						BH314		L[d]	1,000	1,000
						- -		L[d]	- -	- -
						- -		L[d]	- -	- -
						LI448		L[d]	- -	- -
						NC857		L[d]	- -	- -
			Transient, Non-Community: Miscellaneous			GS025		L[d]	7,000	8,000
						KV542		L	125	- -
						PT487		H[d]	3,000	- -
						GS023		L	500	- -
						GS024		L	150	- -
						GS021		L	500	- -
						GS022		L	500	- -
						GS026		L	2,000	- -
WK 135	Bethesda Presbyterian Church	Town of Genesee	Transient, Non-Community	G	1	PT472	L	L	330	- -
WK 136	First Congregational Church, Genesee	Town of Genesee	Transient, Non-Community	G	1	EL660	L	L	940	- -
WK 137	Genesee Town Hall	Town of Genesee	Transient, Non-Community	G	1	KL807	L	L	280	- -
WK 138	Genesee Town Park	Town of Genesee	Transient, Non-Community	G	1	ET587	L	L	125	- -
WK 139	Montessori Methods School	Town of Genesee	Non-Transient, Non-Community School	G	2	ES853	H	L	1,350	- -
						- -		- -[d]	- -	- -
WK 140	Reformation Evangelical Lutheran Church	Town of Genesee	Transient, Non-Community	G	1	AG514	L	L	1,500	- -
WK 141	Riverglen Christian Church	Town of Genesee	Transient, Non-Community	G	1	- -	L	L	2,060	- -
WK 142	St. Paul's Church and School	Town of Genesee	Non-Transient, Non-Community	G	1	MZ719	H	- -[d]	2,250	- -
WK 143	Sunset Park	Town of Genesee	Transient, Non-Community	G	1	RY217	L	L	125	- -
WK 144	Ten Chimneys Program Center	Town of Genesee	Transient, Non-Community	G	1	OJ903	L	L	990	- -
WK 145	Wales Genesee Lions Club Building	Town of Genesee	Transient, Non-Community	G	1	ET588	L	L	500	- -
WK 146	Wee Know Nursery School, Wales	Town of Genesee	Transient, Non-Community	G	1	PT486	L	L	600	- -
WK 147	Wern Valley Sportsmens Club	Town of Genesee	Transient, Non-Community	G	1	CT447	L	L	280	- -
WK 148	Hamilton High School	Town of Lisbon	School	G	1	- -	H	L[d]	6,000	8,000
WK 149	Lisbon Community Park	Town of Lisbon	Transient, Non-Community	G	1	HD974	L	L	125	- -
WK 150	Richmond School	Town of Lisbon	Non-Transient, Non-Community	G	1	FB543	H	L[d]	6,000	10,000
WK 151	Lisbon Town Hall	Town of Lisbon	Transient, Non-Community	G	1	- -	L	L	330	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 152	Camp Whitcomb	Town of Merton	Miscellaneous	G	14	- -	H	L[d]	- -	14,000
						- -		L[d]	- -	14,000
						- -		L[d]	- -	14,000
						- -		L[d]	- -	14,000
						- -		L[d]	- -	7,000
						- -		L[d]	43,000	86,000
						- -		- -[d]	- -	- -
			Transient, Non-Community			GP895		L	1,250	- -
						GP899		L	6,250	- -
						GP898		L	6,250	- -
						PS962		L	1,250	- -
						GP893		L	1,250	- -
						GP896		L	1,250	- -
						GP897		L	1,250	- -
WK 153	Carl Schurz Memorial Park	Town of Merton	Transient, Non-Community	G	2	PS937	L	L	250	- -
						PS938		L		
WK 154	Kettle Moraine United Presbyterian Church	Town of Merton	Transient, Non-Community	G	1	PS976	L	L	1,010	- -
WK 155	Merton Town Hall and Shop	Town of Merton	Transient, Non-Community	G	1	PS956	L	L	290	- -
WK 156	Merton Town Library	Town of Merton	Transient, Non-Community	G	1	PS955	L	L	585	- -
WK 157	Nashotah Park	Town of Merton	Transient, Non-Community	G	1	PS933	L	L	1,255	- -
WK 158	North Lake Elementary School	Town of Merton	Non-Transient, Non-Community	G	1	ES793	H	- -[d]	72,000	72,000
WK 159	Our Savior Evangelical Lutheran Church	Town of Merton	Transient, Non-Community	G	1	MY413	L	L	2,020	- -
WK 160	St. Ann's Church	Town of Merton	Transient, Non-Community	G	1	MQ054	L	L	960	- -
WK 161	St. Anskar Episcopal Church	Town of Merton	Transient, Non-Community	G	1	PS951	L	L	410	- -
WK 162	St. Clare Center	Town of Merton	Transient, Non-Community	G	1	FI214	L	L	300	- -
WK 163	St. Johns Lutheran Church	Town of Merton	Transient, Non-Community	G	1	GP754	L	L	1,260	- -
WK 164	Stone Bank School	Town of Merton	Non-Transient, Non-Community	G	1	EM283	H	H[d]	9,000	18,000
WK 165	Swallow Elementary	Town of Merton	School	G	1	EX933	H	L[d]	11,000	14,000
WK 166	Tyme Out Youth Center	Town of Merton	Transient, Non-Community	G	1	BH915	H	L[d]	3,000	6,000
WK 167	Valley Rod and Gun Club	Town of Merton	Transient, Non-Community	G	1	- -	L	L	2,020	- -
WK 168	Mukwonago County Park	Town of Mukwonago	Transient, Non-Community	G	3	JA327	L	L	135	- -
						JA328		L	500	- -
						JA329		L	530	- -
WK 169	Mukwonago Town Hall	Town of Mukwonago	Transient, Non-Community	G	1	OG938	L	L	460	- -
WK 170	Mukwonago Town Park	Town of Mukwonago	Transient, Non-Community	G	1	DD284	L	L	150	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 171	Our Savior Wesleyan Church	Town of Mukwonago	Transient, Non-Community	G	1	JE696	L	L	270	- -
WK 172	Phantom Lake YMCA Camp	Town of Mukwonago	Transient, Non-Community	G	1	FB562	L	L	7,000	- -
WK 173	Phantom Ranch Bible Camp	Town of Mukwonago	Transient, Non-Community	G	1	LZ758	L	L	7,500	- -
WK 174	Prairie View Elementary School	Town of Mukwonago	Non-Transient, Non-Community	G	1	AH905	H	L[d]	2,000	5,000
WK 175	Rolling Hills Elementary School	Town of Mukwonago	Non-Transient, Non-Community	G	1	NN201	H	H[d]	10,000	20,000
WK 176	Section Elementary School	Town of Mukwonago	Non-Transient, Non-Community	G	1	EX969	H	L[d]	5,000	13,000
WK 177	United Church of Christ, Mukwonago	Town of Mukwonago	Transient, Non-Community	G	1	ET711	L	L	450	- -
WK 178	Alliance Bible Church	Town of Oconomowoc	Transient, Non-Community	G	1	SD717	L	L	7,640	- -
WK 179	Dillon's Prairie House	Town of Oconomowoc	Non-Transient, Non-Community	G	1	ES784	L	L	900	- -
WK 180	Hallett Veterinary Hospital	Town of Oconomowoc	Transient, Non-Community	G	1	MK109	L	L	2,850	- -
WK 181	Holy Trinity Lutheran Church and School	Town of Oconomowoc	Non-Transient, Non-Community	G	2	EX938 RN175	H	L[d] L	1,000 2,490	2,000 - -
WK 182	Little Dumplings Early Learning Center	Town of Oconomowoc	Non-Transient, Non-Community	G	1	PS824	L	L	990	- -
WK 183	Lord of Life Lutheran Church	Town of Oconomowoc	Transient, Non-Community	G	1	PS828	L	L	3,020	- -
WK 184	Meadowview School	Town of Oconomowoc	Non-Transient, Non-Community	G	1	BO817	H	- -[d]	35,000	50,000
WK 185	Oconomowoc Town Hall	Town of Oconomowoc	Transient, Non-Community	G	1	PS826	L	L	250	- -
WK 186	Okauchee Lions Park	Town of Oconomowoc	Transient, Non-Community	G	1	PS839	L	L	125	- -
WK 187	St. Catherine's Church	Town of Oconomowoc	Transient, Non-Community	G	1	- -	L	L	270	- -
WK 188	First Presbyterian Church of Ottawa	Town of Ottawa	Transient, Non-Community	G	1	MJ662	L	L	250	- -
WK 189	Kettle Moraine State Forest	Town of Ottawa	Transient, Non-Community Miscellaneous Transient, Non-Community: Miscellaneous	G	17	JB831 DA860 JB844 ON988 JB825 JB829 JB830 JB828 LE133 JB826 NF777 CW683 AC345 JB823 JB821 GO785 NM159	H	L L[d] - -[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L	500 125 - - 300 70,000 1,000 1,000 2,500 125 125 6,000 125 125 125 125 2,000 125	- - - - - - 1,000 70,000 2,000 2,000 1,000 2,000 - - 12,000 - - - - - - - - 4,000 - -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 190	Ottawa Town Hall	Town of Ottawa	Transient, Non-Community	G	1	PT484	L	L	330	- -
WK 191	Ottawa Town Park	Town of Ottawa	Transient, Non-Community: Miscellaneous (April to October) Transient, Non-Community	G	2	ON987 AD926	H	H[d] L	87,000 - -	174,000 - -
WK 192	Pretty Lake Rehabilitation District	Town of Ottawa	Miscellaneous (April to October)	G	1	DR425	H	H[d]	302,000	605,000
WK 193	Abundant Life Apostolic Church and School	Town of Summit	Non-Transient, Non-Community	G	1	KT519	H	L[d]	1,000	3,000
WK 194	Emmanuel United Church of Christ	Town of Summit	Transient, Non-Community	G	1	LI413	L	L	250	- -
WK 195	Faith Baptist Church, Oconomowoc	Town of Summit	Transient, Non-Community	G	1	PS890	L	L	900	- -
WK 196	Grace Bible Church	Town of Summit	Transient, Non-Community	G	1	ES785	H	L[d]	3,000	7,000
WK 197	IMR Boy Scout Camp	Town of Summit	Transient, Non-Community Transient, Non-Community: Miscellaneous	G	4	EZ789 EZ800 CP333 QQ237	H	L L L L[d]	10,000 10,000	- - - -
WK 198	Perpetual Help Retreat House	Town of Summit	Transient, Non-Community	G	2	FO378 - -	L	L L	340	- -
WK 199	Redemptorist Fathers	Town of Summit	Miscellaneous	G	1	BH278	H	L[d]	10,000	10,000
WK 200	Rogers Memorial Hospital	Town of Summit	Transient, Non-Community: Miscellaneous Miscellaneous Non-Transient, Non-Community	G	10	HJ194 SP606 - - - - NM746 - - - - AH179 AP259 ES794	H	H[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L L	300 2,000 8,000 8,000 - - - - - - - - 44,000	6,000 2,000 14,000 14,000 1,000 1,000 1,000 1,000 - - - -
WK 201	St. Mary Episcopal Church	Town of Summit	Transient, Non-Community	G	1	PS889	L	L	620	- -
WK 202	Summit Town Hall	Town of Summit	Transient, Non-Community	G	1	PS830	L	L	350	- -
WK 203	Big Bend Elementary School	Town of Vernon	Non-Transient, Non-Community	G	1	BH887	H	L[d]	11,000	13,000
WK 204	Country View Campground	Town of Vernon	Transient, Non-Community	G	1	JF824	L	L	2,500	- -
WK 205	Kingdom Hall of Jehovah's Witnesses	Town of Vernon	Transient, Non-Community	G	1	JE694	L	L	1,020	- -
WK 206	Vernon Evangelical Lutheran Church	Town of Vernon	Transient, Non-Community	G	1	JF830	L	L	4,530	- -
WK 207	Vernon Town Hall	Town of Vernon	Transient, Non-Community	G	1	CT259	L	L	300	- -
WK 208	Apostolic Life Tabernacle Church	Town of Waukesha	Transient, Non-Community	G	1	PT473	L	L	1,550	- -

Table D-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Estimated or Approved Normal Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 209	Buddha Haksa	Town of Waukesha	Transient, Non-Community	G	1	LT232	L	L	250	- -
WK 210	Chinook Program Center	Town of Waukesha	Transient, Non-Community	G	2	GO553 GO552	L	L L	1,000 300	- - - -
WK 211	Christ the Servant Lutheran	Town of Waukesha	Transient, Non-Community	G	1	PT474	L	L	2,000	- -
WK 212	Fox River Christian Church	Town of Waukesha	Transient, Non-Community	G	1	NA859	L	L	250	- -
WK 213	Fox River Park	Town of Waukesha	Transient, Non-Community	G	3	QR587 RZ131 RZ133	L	L L L	135	- -
WK 214	Great Blue Heron Girl Scout Council	Town of Waukesha	Transient, Non-Community	G	1	RM029	L	L	1,250	- -
WK 215	Rose Glen Elementary	Town of Waukesha	Non-Transient, Non-Community	G	1	FB524	H	H[d]	8,000	16,000
WK 216	Waukesha Bible Church	Town of Waukesha	Transient, Non-Community	G	1	PT480	L	L	6,540	- -
Waukesha County: 216 Systems		- -	- -	- -	321	- -	- -	- -	- -	- -
Region: 593 Total Systems		- -	- -	- -	862	- -	- -	- -	- -	- -

[a] *G = Groundwater*
S = Surface Water

[b] *H = High-Capacity (70 gallons per minute or greater)*
L = Low-Capacity (less than 70 gallons per minute capacity)

[c] *Values are approved normal or maximum pumpage taken from the WDNR Drinking Water System database, where available. Where not available, average daily pumpage was calculated utilizing standard unit values for the type of facility involved. These amounts may be pumped intermittently.*

[d] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System database.*

[e] *System is scheduled for connection to the We-Energies-Water Services system during 2006 and 2007.*

[f] *Estimated average water use during school days based upon 410 students and faculty at 15 gallons per occupant per day.*

Source: Wisconsin Department of Natural Resources and SEWRPC.

Table D-5

SELECTED CHARACTERISTICS OF SELF-SUPPLIED AGRICULTURAL WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2005

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Kenosha County										
KN 01	Mariani Nursery	Town of Bristol	Irrigation	G	2	- - DO116	H	H[d] H[d]	1,000 2,000	2,000 4,000
KN 02	Red Top Nursery	Town of Randall	Irrigation	G	3	LZ002 LT445 - -	H	H[d] H[d] H[d]	1,000 1,000 - -	91,000 32,000 - -
KN 03	Vincent, Eugene C.	Town of Randall	Irrigation	G	1	BC296	H	H[d]	212,000	440,000
KN 04	Breezy Hill Nursery	Town of Salem	Irrigation	G	2	FN140 - -	H	H[d] H[d]	43,000 36,000	86,000 72,000
Kenosha County: 4 Systems		- -	- -	- -	8	- -	- -	- -	- -	- -
Ozaukee County										
OZ 01	Hahm, Harold & Son	City of Mequon	Irrigation	G	1	BC621	H	H[d]	1,171,000	316,000
OZ 02	Minor's Garden Center, Inc.	City of Mequon	Irrigation	G	1	TQ428	H	H[d]	288,000	324,000
OZ 03	Wayside Nurseries, Inc.	City of Mequon	Irrigation	G	3	RG103 BC625 - -	H	H[d] H[d] H[d]	180,000 75,000 216,000	360,000 298,000 432,000
Ozaukee County: 3 Systems		- -	- -	- -	5	- -	- -	- -	- -	- -
Racine County										
RC 01	Gresls Sod Ranch	Town of Dover	Irrigation	G	2	BD326 BD330	H	H[d] H[d]	144,000 500,000	500,000 800,000
RC 02	Borzynski Farms, Inc.	Village of Mt. Pleasant	Irrigation	G	4	BD342 ES291 GK726 - -	H	H[d] H[d] H[d] H[d]	576,000 432,000 288,000 360,000	1,152,000 864,000 576,000 720,000
RC 03	Burmeister & Son	Town of Norway	Irrigation	G	1	BD319	H	H[d]	600,000	1,200,000
RC 04	Deak Sod Farms	Town of Norway	Irrigation	G	1	BD340	H	H[d]	116,000	576,000
RC 05	Horner Sod Farms, Ltd.	Town of Norway	Irrigation	G	3	BD320 BD316 BD318	H	H[d] H[d] H[d]	750,000 360,000 720,000	750,000 720,000 1,440,000
RC 06	Jasperson Sod Farm	Town of Norway	Irrigation	G	1	- -	H	H[d]	720,000	1,440,000
RCi 07	Jasperson, Lyle and Buster	Town of Norway	Irrigation	G	1	BD328	H	H[d]	360,000	720,000
RC 08	Klitz Brothers Sod Farm, Inc.	Town of Norway	Irrigation	G	2	BD329 BD341	H	H[d] L[d]	79,000 39,000	158,000 86,000
RC 09	Kuehne, Thomas	Town of Norway	Irrigation	G	1	BD317	H	H[d]	720,000	1,440,000

Table D-5 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Racine County (continued)										
RC 10	Rosemont Sod Growers	Town of Norway	Irrigation	G	1	BD332	H	H[d]	75,000	125,000
RC 11	Sokie, Michael	Town of Norway	Irrigation	G	1	BD325	H	H[d]	576,000	768,000
RC 12	Wind Lake Produce Corporation	Town of Norway	Irrigation	G	4	BD321 BD322 BD323 BD333	H	H[d] H[d] H[d] H[d]	500,000 500,000 360,000 75,000	1,000,000 1,000,000 720,000 125,000
RC 13	Stever Turf Farm	Town of Raymond	Irrigation	G	4	LK585 - - - - - -	H	H[d] L[d] L[d] H[d]	108,000 24,000 - - 40,000	216,000 30,000 1,000 275,000
RC 14	Stefanik, John	Town of Waterford	Irrigation	G	1	BD327	H	H[d]	1,080,000	2,160,000
RC 15	Moyer, James	Town of Yorkville	Irrigation	G	2	BD334 BD335	H	H[d] H[d]	100,000 100,000	300,000 300,000
Racine County: 15 Systems		- -	- -	- -	29	- -	- -	- -	- -	- -
Walworth County										
WL 01	Speckman Seed Farm	Town of Bloomfield	Irrigation	G	1	- -	H	H[d]	720,000	1,440,000
WL 02	Kincaid Farms	Town of Darien	Irrigation	G	1	- -	H	H[d]	864,000	1,728,000
WL 03	Reum, Merlyn	Town of Darien	Irrigation	G	1	- -	H	H[d]	720,000	1,440,000
WL 04	Michael Fields Agricultural Institute	Town of East Troy	Miscellaneous (April to October)	G	2	CS687 CS688	H	L[d] L[d]	25,000 25,000	72,000 72,000
WL 05	Dow, Angus	Town of LaGrange	Irrigation	G	1	BD660	H	H[d]	600,000	1,440,000
WL 06	Pope Farms	Town of LaGrange	Irrigation	G	1	- -	H	H[d]	864,000	1,728,000
WL 07	Rainbow Springs Aquaculture	Town of LaGrange	Miscellaneous	G	4	BH160 BH162 BH163 BH164	H	L[d] H[d] H[d] H[d]	58,000 100,000 100,000 1,080,000	58,000 100,000 100,000 1,080,000
WL 08	Big Foot Farms	Town of Linn	Irrigation	G	1	EM218	H	H[d]	180,000	360,000
WL 09	Merry Water Farms, Inc.	Town of Linn	Irrigation	G	2	QL742 QL770	H	L[d] L[d]	40,000 40,000	72,000 72,000
WL 10	Leedle, William	Town of Linn	Irrigation	G	2	OT683 RB747	H	H[d] H[d]	720,000 720,000	1,440,000 1,440,000
WL 11	Schwind, Dennis	Town of Lyons	Irrigation	G	1	FN862	H	H[d]	720,000	1,440,000
WL 12	Boss, Daniel	Town of Richmond	Irrigation	G	1	BD661	H	H[d]	720,000	864,000
WL 13	Great Lakes Agricultural Research Services, Inc.	Town of Richmond	Irrigation	G	1	CI268	H	H[d]	72,000	158,000

Table D-5 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Walworth County (continued)										
WL 14	Van Der Veen Farms, Inc.	Town of Sugar Creek	Irrigation	G	2	BD658 BD663	H	H[d] H[d]	1,440,000 612,000	1,440,000 1,224,000
WL 15	Scurek Farms, LLC	Town of Troy	Irrigation	G	3	IK724 - - - -	H	H[d] L[d] H[d]	100,000 - - 1,080,000	200,000 1,000 1,440,000
WL 16	Lurvey Sod Farms	Town of Whitewater	Irrigation	G	4	VL796 - - OH445 TR214	H	H[d] H[d] H[d] H[d]	720,000 15,000 1,080,000 641,000	1,440,000 144,000 2,160,000 1,282,000
Walworth County: 16 Systems		- -	- -	- -	28	- -	- -	- -	- -	- -
Washington County										
WS 01	Minor's Garden Center, Inc.	Village of Germantown	Irrigation	G	1	LN975	H	H[d]	144,000	288,000
WS 02	Gieringer, Robert H & Sons	Town of Barton	Irrigation	G	1	BD690	H	H[d]	97,000	195,000
WS 03	Minor's Garden Center, Inc.	Town of Jackson	Irrigation	G	1	EM109	H	H[d]	360,000	720,000
WS 04	L. Teweles Seed Company	Town of Richfield	Irrigation	G	1	BD689	H	H[d]	173,000	216,000
Washington County: 4 Systems		- -	- -	- -	4	- -	- -	- -	- -	- -
Waukesha County										
WK 01	Rieger, Wallace	City of Muskego	Irrigation	G	1	BD699	H	H[d]	210,000	630,000
WK 02	Pabst Farms, Inc. (many of these wells are no longer in use, as the property is being developed as of 2005)	City of Oconomowoc	Irrigation	G	14	BD710 BD711 BD712 BD713 BD715 BD730 BD734 CO549 AY374 BD716 BD717 BD725 BD727 BD710	H	H[d] H[d] H[d] H[d] H[d] H[d] H[d] H[d] H[d] H[d] H[d] H[d] H[d] H[d]	504,000 504,000 504,000 504,000 504,000 576,000 504,000 504,000 576,000 504,000 504,000 540,000 504,000 504,000	1,008,000 1,008,000 1,008,000 1,152,000 1,152,000 1,152,000 1,008,000 1,000,000 1,152,000 1,152,000 1,152,000 1,080,000 1,008,000 1,008,000
WK 03	Johnsons Nursery, Inc.	Village of Menomonee Falls	Irrigation	G	4	- - WG228 GZ644 - -	H	L[d] H[d] H[d] H[d]	1,000 40,000 40,000 40,000	1,000 110,000 110,000 110,000
WK 04	Shady Lane Greenhouses, Inc.	Village of Menomonee Falls	Irrigation	G	3	IB764 - - - -	H	H[d] L[d] L[d]	50,000 15,000 22,000	100,000 30,000 44,000

Table D-5 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[b]	Well Capacity[b]	Approved Normal Daily Pumpage (gallons per day)[c]	Approved Maximum Daily Pumpage (gallons per day)[c]
Waukesha County (continued)										
WK 05	Fronczak, Anthony and Christine	Town of Delafield	Miscellaneous	G	2	RP369 - -	H	L[d] L[d]	10,000 20,000	25,000 60,000
WK 06	Stowe, Jon	Town of Genesee	Irrigation	G	2	RR345 - -	H	H[d] L[d]	50,000 1,000	216,000 2,000
WK 07	Lied's Nursery	Town of Lisbon	Miscellaneous Miscellaneous (April to October)	G	2	- - - -	H	L[d] L[d]	5,000 46,000	15,000 93,000
WK 08	Schuett, Rob	Town of Mukwonago	Irrigation	G	1	BD733	H	H[d]	864,000	1,728,000
WK 09	Koepke Farms, Inc.	Town of Oconomowoc	Irrigation	G	3	BD700 BD724 - -	H	H[d] H[d] H[d]	720,000 432,000 576,000	1,440,000 864,000 1,152,000
WK 10	Runyard Farms, Inc.	Town of Oconomowoc	Irrigation	G	1	BD722	H	H[d]	720,000	1,440,000
WK 11	Kincaid (Dean) Farms, Inc.	Town of Ottawa	Irrigation	G	1	BD731	H	H[d]	720,000	1,440,000
WK 12	Lurvey Sod Farms	Town of Summit	Irrigation	G	3	DN599 BD737 BD739	H	H[d] H[d] H[d]	864,000 1,080,000 864,000	1,728,000 2,160,000 1,728,000
Waukesha County: 12 Systems		- -	- -	- -	37	- -	- -	- -	- -	- -
Region: 54 Systems		- -	- -	- -	111	- -	- -	- -	- -	- -

[a] *G = Groundwater*
S = Surface Water

[b] *H = High-Capacity (70 gallons per minute or greater, or greater than 100,000 gallons per day)*
L = Low-Capacity (less than 70 gallons per minute capacity, or less than 100,000 gallons per day)

[c] *Normal daily and maximum pumpage is as listed as being approvted in the WDNR Drinking Water System database. These amounts may be pumped intermittently.*

[d] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System database.*

Source: Wisconsin Department of Natural Resources.

Table D-6

SELECTED CHARACTERISTICS OF SELF-SUPPLIED IRRIGATION[a] WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2005

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Approved Normal Daily Pumpage (gallons per day) [d]	Approved Maximum Daily Pumpage (gallons per day)
Kenosha County										
KN 01	Big Oaks Country Club	Village of Pleasant Prairie	Irrigation	G	3	- - - - - -	H	H[e] H[e] H[e]	58,000 86,000 432,000	115,000 173,000 864,000
KN 02	Brightondale County Park	Town of Brighton	Irrigation	G	3	BC297 BC298	H	H[e] H[e]	143,000 14,000	990,000 14,000
KN 03	Bristol Oakes Golf Course & Country Club	Town of Bristol	High Capacity, Miscellaneous Irrigation	G	5	- - - - - - - - - -	H	H[e] H[e] H[e] H[e] H[e]	- - - - 144,000 54,000 75,000	1,000 1,000 288,000 55,000 125,000
KN 04	Kenosha County Public Works	Town of Bristol	Irrigation	G	1	- -	H	H[e]	- -	- -
KN 05	Strawberry Creek of Kenosha	Town of Bristol	Irrigation	G	1	- -	H	H[e]	720,000	1,440,000
KN 06	Spring Valley Country Club	Town of Salem	Irrigation	G	1	EI434	H	H[e]	90,000	- -
KN 07	Maplecrest Country Club	Town of Somers	Miscellaneous Miscellaneous (April to October)	G G	2	BG068 - -	H	H[e] H[e]	108,000 36,000	216,000 72,000
Kenosha County: 7 Systems		- -	- -	G	15	- -	- -	- -	- -	- -
Milwaukee County										
MK 01	Forest Park Middle School	City of Franklin	Irrigation	G	1	BH785	H	H[e]	11,000	23,000
MK 02	Oakwood Park Golf Course	City of Franklin	Irrigation Miscellaneous	G	2	BG417 AY348	H	H[e] H[e]	576,000 54,000	1,152,000 216,000
MK 03	Tuckaway Country Club	City of Franklin	Irrigation	G	2	BC540 BC541	H	H[e] H[e]	193,000 3,000	720,000 6,000
MK 04	Whitnall Park Golf Course	City of Franklin	Irrigation	G	1	BG422	H	H[e]	5,000	10,000
MK 05	Brown Deer Park and Golf Course	City of Milwaukee	Irrigation	G	2	BC543 CO092	H	H[e] H[e]	50,000 325,000	80,000 420,000
MK 06	Brynwood Country Club	City of Milwaukee	Irrigation	G	1	- -	H	H[e]	- -	- -
MK 07	Robert J. Uihlein Estate	City of Milwaukee	Irrigation	G	1	BC535	H	H[e]	92,000	92,000
MK 08	Tehan Bros., Inc.	City of Oak Creek	Irrigation	G	2	MX935 BC536	H	H[e] H[e]	144,000 72,000	288,000 72,000
MK 09	Bluemound Country Club	City of Wauwatosa	Irrigation	G	3	- - - - HJ146	H	H[e] H[e] H[e]	324,000 129,000 96,000	648,000 258,000 192,000
MK 10	Pinelawn Memorial Park	City of Wauwatosa	Miscellaneous (April to November)	G	1	BG405	H	H[e]	75,000	150,000
MK 11	Trammel Crow	City of Wauwatosa	Irrigation	G	1	BC545	H	H[e]	39,000	290,000
MK 12	Tripoli Country Club	Village of Brown Deer	Irrigation	G	1	BC544	H	H[e]	180,000	432,000

Table D-6 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Approved Normal Daily Pumpage (gallons per day) [d]	Approved Maximum Daily Pumpage (gallons per day)
Milwaukee County (continued)										
MK 13	Boerner Botanical Gardens	Village of Hales Corners	Irrigation	G	1	BG423	H	H[e]	50,000	75,000
MK 14	Milwaukee County Country Club	Village of River Hills	Irrigation	G	3	CY291 BC539 BC542	H	H[e] H[e] H[e]	144,000 288,000 40,000	720,000 300,000 370,000
Milwaukee County: 14 Systems		- -	- -	G	21	- -	- -	- -	- -	- -
Ozaukee County										
OZ 01	Mee Kwon Park Golf Course	City of Mequon	Irrigation	G	1	QQ608	H	H[e]	20,000	100,000
OZ 02	Mequon Country Club	City of Mequon	Irrigation	G	1	- -	H	H[e]	300,000	576,000
OZ 03	North Shore Country Club	City of Mequon	Irrigation	G	1	BC624	H	H[e]	96,000	288,000
OZ 04	Ozaukee Country Club	City of Mequon	Miscellaneous (April to October)	G	2	BG595 BG594	H	H[e] H[e]	329,000 50,000	615,000 75,000
OZ 05	Squires Country Club	Town of Belgium	Irrigation	G	2	BC623 MK418	H	H[e] H[e]	175,000 150,000	224,000 288,000
OZ 06	Country Club of Wisconsin	Town of Grafton	Irrigation	G	1	EM234	H	H[e]	360,000	720,000
OZ 07	The Bog Golf Course	Town of Saukville	Irrigation	G	2	EQ945 EM233	H	H[e] H[e]	230,000 360,000	460,000 720,000
Ozaukee County: 7 Systems		- -	- -	G	10	- -	- -	- -	- -	- -
Racine County										
RC 01	South Hills Country Club	Village of Caledonia	Transient, Non-Community, Irrigation	G	1	JE637	L	L	500	- -
RC 02	Rivermoor Country Club	Town of Waterford	Irrigation	G	2	- - - -	H	L[e] H[e]	25,000 50,000	50,000 100,000
RC 03	Ives Grove Golf Course	Town of Yorkville	Irrigation	G	2	BD339 - -	H	L[e] H[e]	30,000 342,000	50,000 427,000
Racine County: 3 Systems		- -	- -	G	5	- -	- -	- -	- -	- -
Walworth County										
WL 01	Abbey Springs Condo Association	Village of Fontana-on-Geneva Lake	Irrigation	G	2	- - EQ928	H	L[e] H[e]	47,000 240,000	94,000 576,000
WL 02	Big Foot Country Club	Village of Fontana-on-Geneva Lake	Irrigation	G	1	AU058	H	H[e]	325,000	500,000
WL 03	Hillmoor Golf Club	City of Lake Geneva	Irrigation	G	2	MU167 - -	H	H[e] L[e]	35,000 20,000	70,000 40,000
WL 04	Thunderbird Club	Town of Bloomfield	Irrigation	G	1	- -	H	H[e]	100,000	300,000
WL 05	Dreamfield, LLC	Town of Geneva	Irrigation	G	2	KQ027 OS500	H	L[e] H[e]	30,000 108,000	94,000 216,000
WL 06	Geneva National Golf Club	Town of Geneva	Irrigation	G	2	CO552 - -	H	H[e] H[e]	216,000 720,000	432,000 1,440,000
WL 07	Hawks View Golf Course	Town of Geneva	Irrigation	G	2	- - SA442	H	- -[e] H[e]	- - 864,000	- - 1,000,000

Table D-6 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Approved Normal Daily Pumpage (gallons per day) [d]	Approved Maximum Daily Pumpage (gallons per day)
Walworth County (continued)										
WL 08	Evergreen Country Club	Town of LaFayette	Transient, Non-Community, Irrigation Irrigation	G	4	SS448 DN374 - - - -	H	L[e] L[e] H[e] H[e]	10,000 10,000 300,000 288,000	25,000 15,000 500,000 500,000
WL 09	Grand Geneva Resort: Mountain Top Ski area	Town of Lyons	Miscellaneous (November to March)	G	1	OG484	H	H[e]	72,000	144,000
WL 10	Nippersink Country Club	Town of Randall	Miscellaneous (April to October)	G	3	BF082 BF084 BF083	H	H[e] H[e] L[e]	75,000 90,000 32,000	100,000 120,000 32,000
Walworth County: 10 Systems		- -	- -	G	20	- -	- -	- -	- -	- -
Washington County										
WS 01	W & E Radtke, Inc.	Village of Germantown	Irrigation	G	2	- - - -	H	L[e] H[e]	20,000 125,000	92,000 288,000
WS 02	Lang Golf Company, LLC	Town of Erin	Irrigation	G	2	QN788 SV487	H	L[e] H[e]	25,000 300,000	50,000 720,000
WS 03	Stoneridge Golf Course	Town of Farmington	Irrigation	G	2	OI196 - -	H	H[e] L[e]	90,000 10,000	105,000 20,000
WS 04	Hartford Country Club	Town of Hartford	Irrigation	G	1	AE217	H	H[e]	460,000	460,000
WS 05	Washington County Family Park	Town of Hartford	Transient, Non-Community, Irrigation	G	2	KZ130 EM256	H	H[e] H[e]	20,000 144,000	100,000 576,000
WS 06	Hidden Glen Golf Club	Town of Jackson	Irrigation	G	1	IU045	H	H[e]	288,000	576,000
WS 07	Kettle Moraine Lutheran High School	Town of Jackson	School	G	1	RA583	H	H[e]	15,000	35,000
WS 08	Sunburst Ski Area: Summit Ski Corporation	Town of Kewaskum	Miscellaneous (November to March)	G	2	AA063 TH819	H	H[e] H[e]	144,000 432,000	288,000 720,000
WS 09	Michael's Pipeline Construction	Town of Polk	Irrigation	G	1	- -	H	H[e]	144,000	288,000
WS 10	Zimmermans Kettle Hills Golf Course	Town of Richfield	Irrigation	G	1	BD691	H	H[e]	202,000	403,000
Washington County: 10 Systems		- -	- -	G	15	- -	- -	- -	- -	- -
Waukesha County										
WK 01	Glacier Ridge Partnership	City of Brookfield	Irrigation	G	1	NQ273	H	H[e]	250,000	432,000
WK 02	Great Lakes Partners, Inc.	City of Brookfield	Irrigation	G	2	BD732 - -	H	L[e] H[e]	75,000 75,000	94,000 432,000
WK 03	Mound Zion Cemetery	City of Brookfield	Irrigation	G	1	BD695	H	H[e]	14,000	19,000
WK 04	Westmoor Country Club	City of Brookfield	Irrigation	G	1	BD729	H	H[e]	108,000	216,000
WK 05	Wisconsin Memorial Park	City of Brookfield	Miscellaneous	G	1	BH355	H	H[e]	21,000	21,000
WK 06	Nagawaukee Park	City of Delafield	Irrigation	G	3	- - - - - -	H	L[e] L[e] L[e]	14,000 14,000 3,000	28,000 28,000 7,000
WK 07	Muskego Lakes Country Club	City of Muskego	Irrigation	G	1	SW940	H	H[e]	150,000	500,000

Table D-6 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Approved Normal Daily Pumpage (gallons per day) [d]	Approved Maximum Daily Pumpage (gallons per day)
Waukesha County (continued)										
WK 08	New Berlin Parks and Recreation Department	City of New Berlin	Irrigation	G	2	HY611 - -	H	- -[e] - -[e]	- - - -	- - - -
WK 09	Continental Properties, Inc.	City of Oconomowoc	Irrigation	G	1	BD726	H	H[e]	840,000	1,008,000
WK 10	Willow Run Golf Club	City of Pewaukee	Irrigation	G	2	FN651	H	H[e] L[e]	324,000 18,000	648,000 36,000
WK 11	Moor Downs Golf Course	City of Waukesha	Irrigation	G	2	BD723 BD735	H	H[e] H[e]	119,000 100,000	144,000 150,000
WK 12	Chenequa Country Club	Village of Chenequa	Irrigation	G	3	AE213 - - - -	H	H[e] - -[e] - -[e]	324,000 - - - -	648,000 - - - -
WK 13	Lake Lynn-Louise	Village of Dousman	Irrigation	G	2	NI309 RS700	H	L[e] H[e]	- - 97,000	1,000 194,000
WK 14	Malec Holdings II	Village of Hartland	Irrigation	G	3	IF657 IK767 IK783	H	H[e] H[e] H[e]	350,000 350,000 150,000	430,000 430,000 180,000
WK 15	Lac La Belle Country Club and Golf Course	Village of Lac La Belle	Irrigation	G	3	- - MK429 - -	H	- -[e] H[e] H[e]	- - 420,000 420,000	- - 720,000 720,000
WK 16	Kuhlman Industries	Village of Menomonee Falls	Irrigation	G	2	NY877 VM076	H	H[e] H[e]	260,000 260,000	720,000 720,000
WK 17	North Hills Country Club	Village of Menomonee Falls	Irrigation	G	2	BD697 BD696	H	H[e] H[e]	124,000 76,000	223,000 137,000
WK 18	Silver Spring Country Club	Village of Menomonee Falls	Irrigation	G	5	- - - - - - - - - -	H	L[e] L[e] L[e] H[e] H[e]	14,000 1,000 1,000 432,000 100,000	29,000 12,000 14,000 864,000 195,000
WK 19	Strong-Corneliuson Management	Village of Menomonee Falls	Irrigation	G	3	- - KP768 - -	H	L[e] H[e] L[e]	43,000 360,000 24,000	86,000 720,000 48,000
WK 20	Wanaki Golf Course	Village of Menomonee Falls	Irrigation	G	1	- -	H	H[e]	120,000	300,000
WK 21	Harmony Homes Broadlands	Village of North Prairie	Irrigation	G	1	MQ041	H	H[e]	360,000	720,000
WK 22	Kettle Moraine School District	Village of Wales	Irrigation	G	1	SY398	H	L[e]	20,000	40,000
WK 23	Ausblick, Inc.	Town of Lisbon	Miscellaneous (November to March)	G	1	BH301	H	H[e]	216,000	360,000
WK 24	Ironwood Golf Course	Town of Lisbon	Irrigation	G	1	KY555	H	H[e]	540,000	720,000
WK 25	Songbird Hills Golf Course	Town of Lisbon	Irrigation	G	2	LX252 - -	H	H[e] L[e]	144,000 36,000	288,000 72,000
WK 26	Arrowhead School District	Town of Merton	Irrigation	G	2	- - - -	H	H[e] H[e]	18,000 18,000	20,000 20,000
WK 27	Oconomowoc Golf Club	Town of Oconomowoc	Irrigation	G	1	KT593	H	L[e]	- -	10,000

Table D-6 (continued)

Number in SEWRPC GIS File	System Name	Municipality	WDNR System Classification	Water Supply Source[a]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Approved Normal Daily Pumpage (gallons per day) [d]	Approved Maximum Daily Pumpage (gallons per day)
Waukesha County (continued)										
WK 28	Oconomowoc, Town of	Town of Oconomowoc	Irrigation	G	2	- - - -	H	H[e] L[e]	37,000 1,000	130,000 1,000
WK 29	Kettle Moraine State Forest Puchners Pond	Town of Ottawa	Miscellaneous	G	1	JB832	H	- -[e]	- -	- -
WK 30	Oconomowoc Development Training Center	Town of Summit	Irrigation	G	1	EP128	H	L[e]	1,000	2,000
WK 31	Paganica Golf Course	Town of Summit	Irrigation	G	3	BD704 BD705 BD706	H	H[e] H[e] H[e]	30,000 20,000 8,000	90,000 60,000 15,000
WK 32	Edgewood Golf Course	Town of Vernon	Irrigation	G	3	- - - - - -	H	L[e] L[e] H[e]	1,000 5,000 80,000	1,000 20,000 192,000
WK 33	Merrill Hills Country Club	Town of Waukesha	Irrigation	G	3	BD718 BD719 BD720	H	L[e] L[e] H[e]	59,000 2,000 155,000	59,000 2,000 155,000
Waukesha County: 33 Systems		- -	- -	- -	63	- -	- -	- -	- -	- -
Region: 84 Systems		- -	- -	- -	149	- -	- -	- -	- -	- -

[a] *Irrigation system other than those serving agricultural uses.*

[b] *G = Groundwater*
S = Surface Water

[c] *H = High-Capacity (70 gallons per minute or greater, or greater than 100,000 gallons per day)*
L = Low-Capacity (less than 70 gallons per minute capacity, or less than 100,000 gallons per day)

[d] *Normal and maximum daily pumpage in gallons as listed as being approved in the WDNR Drinking Water System database. These amounts may be pumped intermittently.*

[e] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System database.*

Source: Wisconsin Department of Natural Resources and SEWRPC.

Appendix E

GROUNDWATER CONTAMINATION SPECIAL WELL CASING AREAS CONSIDERED FOR ADDITION TO WATER SUPPLY SERVICE AREAS

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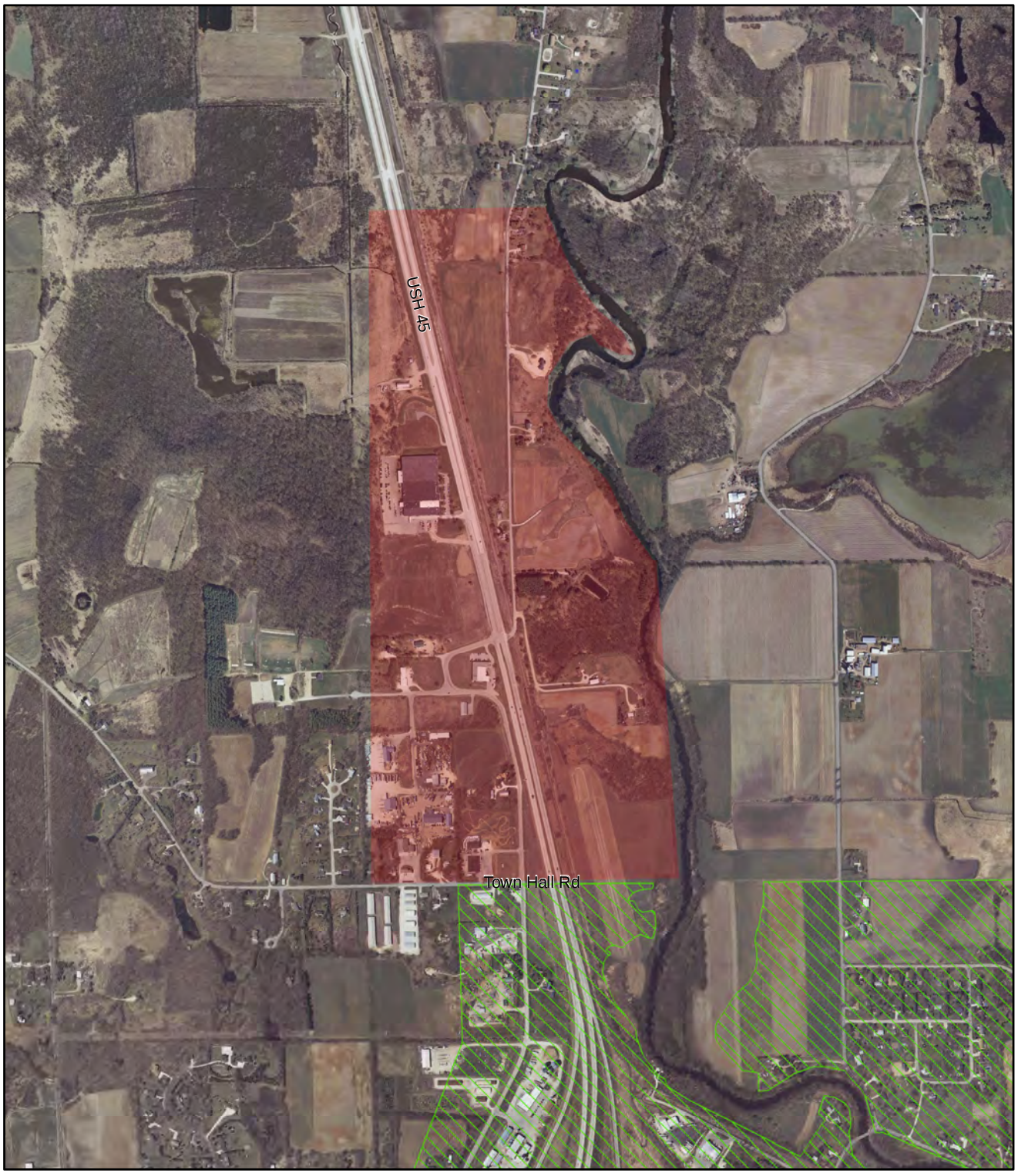
AREA 1

TOWN OF BARTON
SPECIAL DRILLING AREA #40 (METAL WORKING SITE)



LEGEND

CITY OF WEST BEND WATER UTILITY: PROJECTED 2035

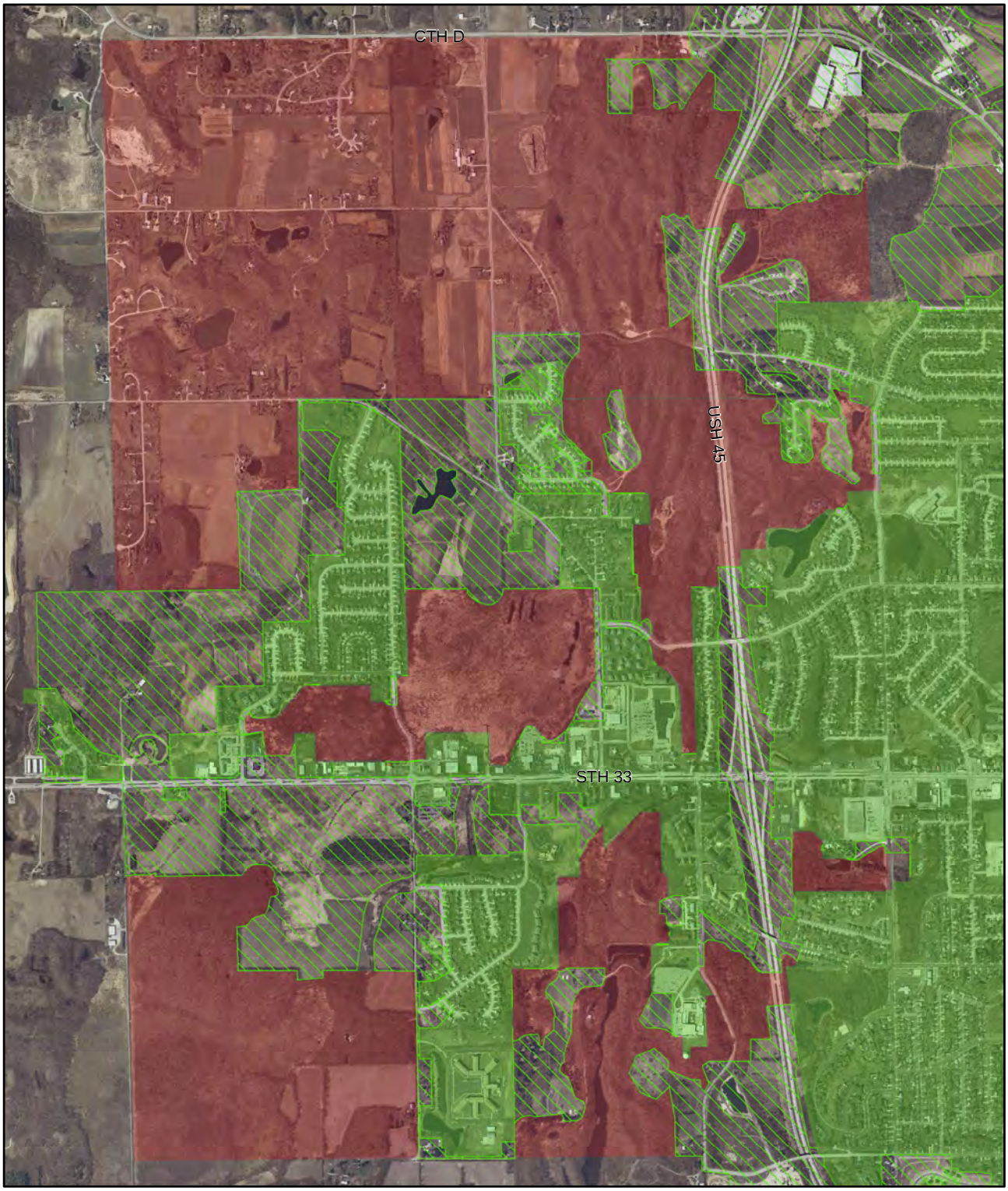
POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 2

CITY OF WEST BEND/TOWN OF BARTON/TOWN OF WEST BEND
SPECIAL DRILLING AREAS #41a&b



LEGEND

- CITY OF WEST BEND WATER UTILITY: 2005
- CITY OF WEST BEND WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 500 1,000 2,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 3

TOWN OF POLK (LANDFILL SITES)
SPECIAL DRILLING AREA #47

LEGEND

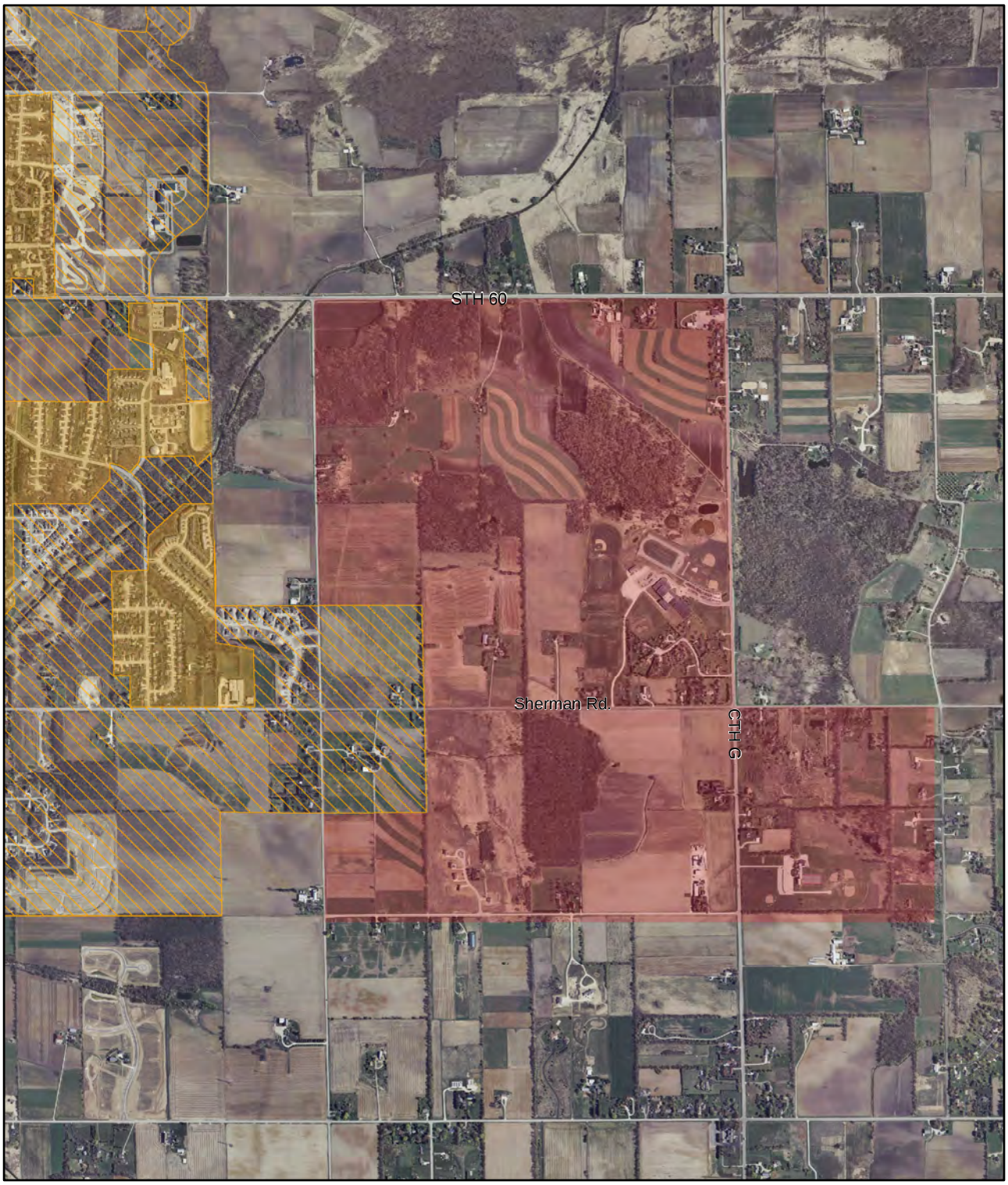
- SLINGER WATER UTILITY: 2005
- SLINGER WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 4

TOWN OF JACKSON
SPECIAL DRILLING AREAS #46a,b&c



LEGEND

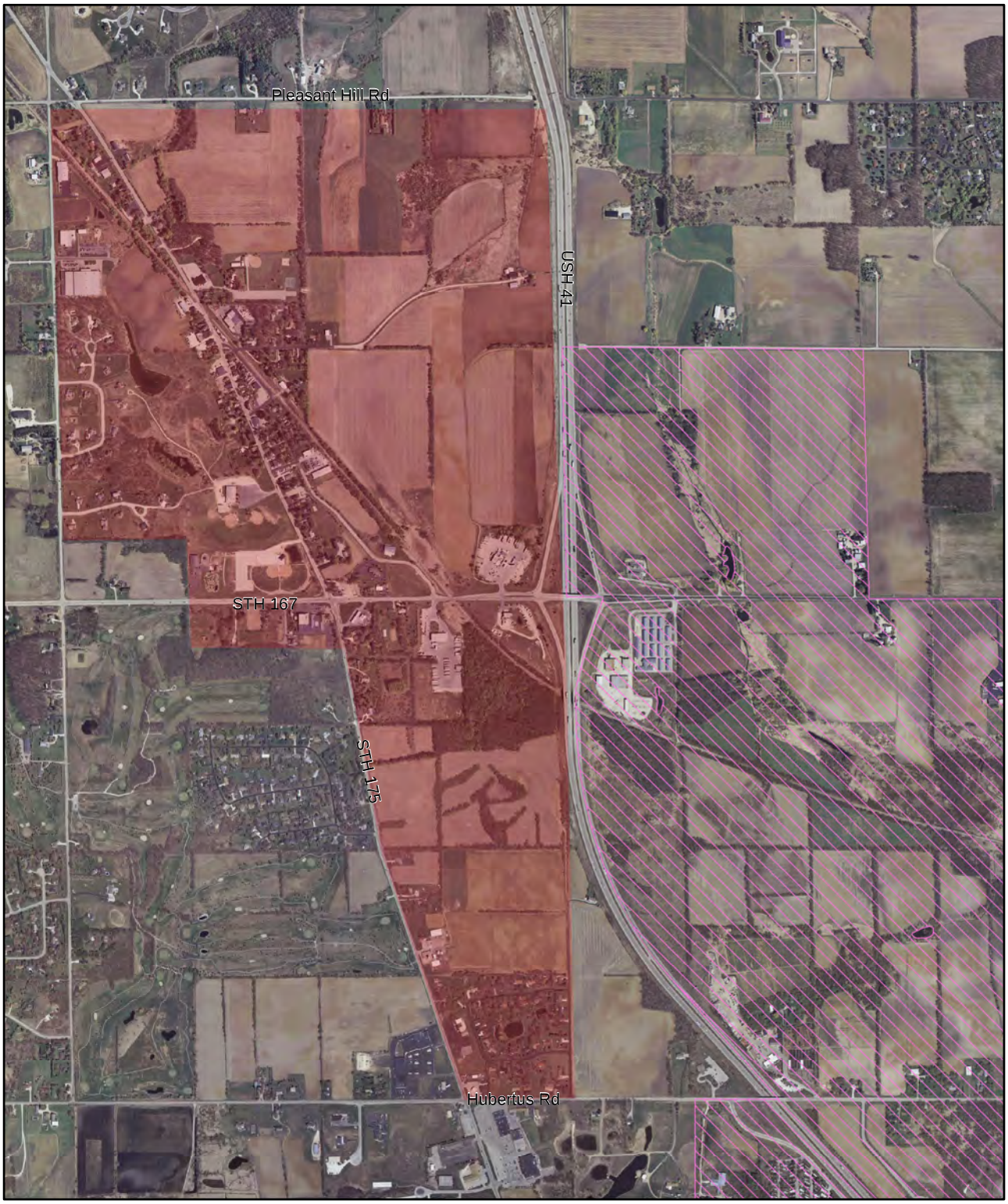
- VILLAGE OF JACKSON WATER UTILITY: 2005
- VILLAGE OF JACKSON WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 500 1,000 2,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 5

VILLAGE OF RICHFIELD
SPECIAL DRILLING AREAS #45



LEGEND

VILLAGE OF GERMANTOWN WATER UTILITY: PROJECTED 2035

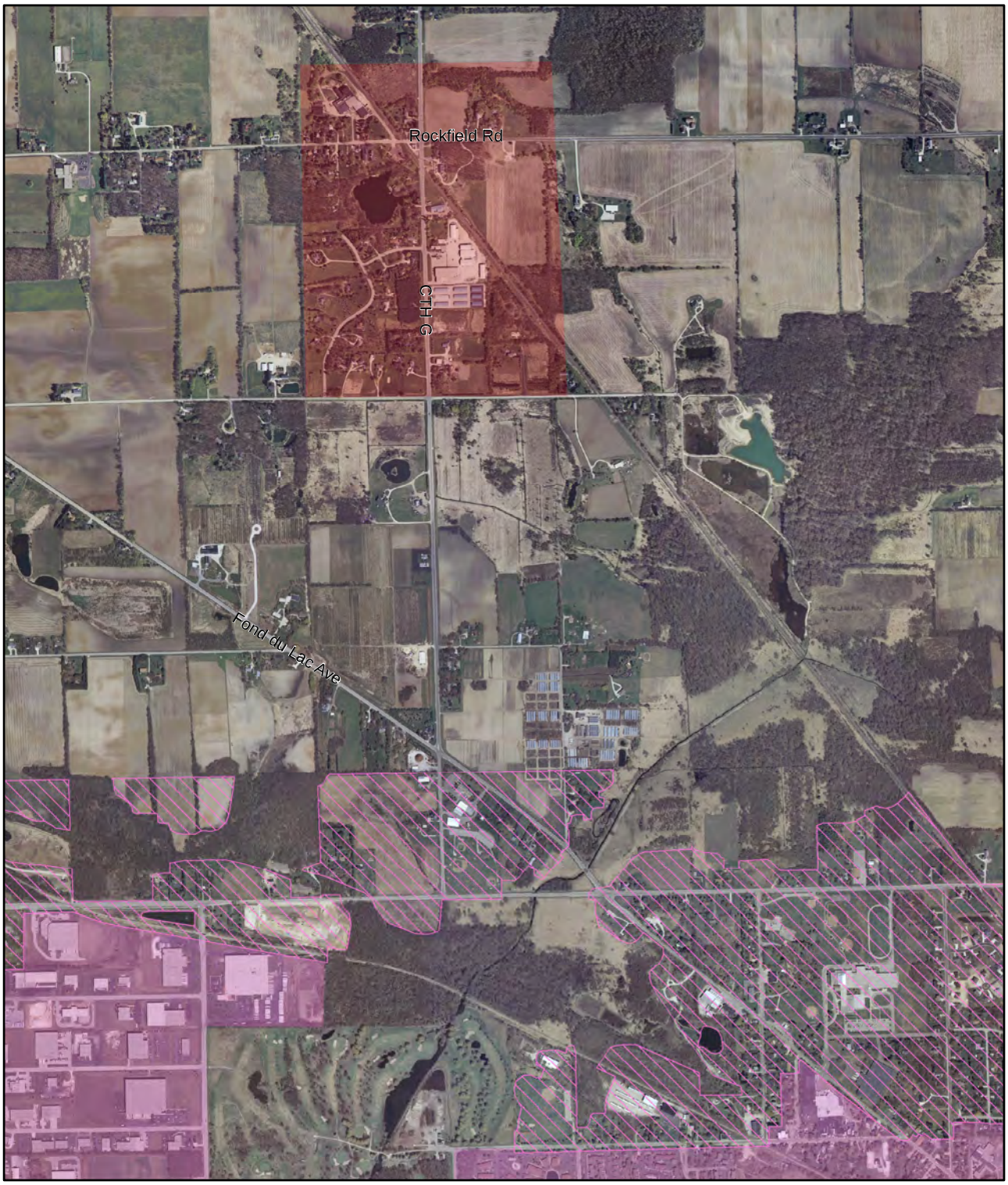
POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 6

VILLAGE OF GERMANTOWN (ROCKFIELD AREA)
SPECIAL DRILLING AREAS #42 a&b



LEGEND

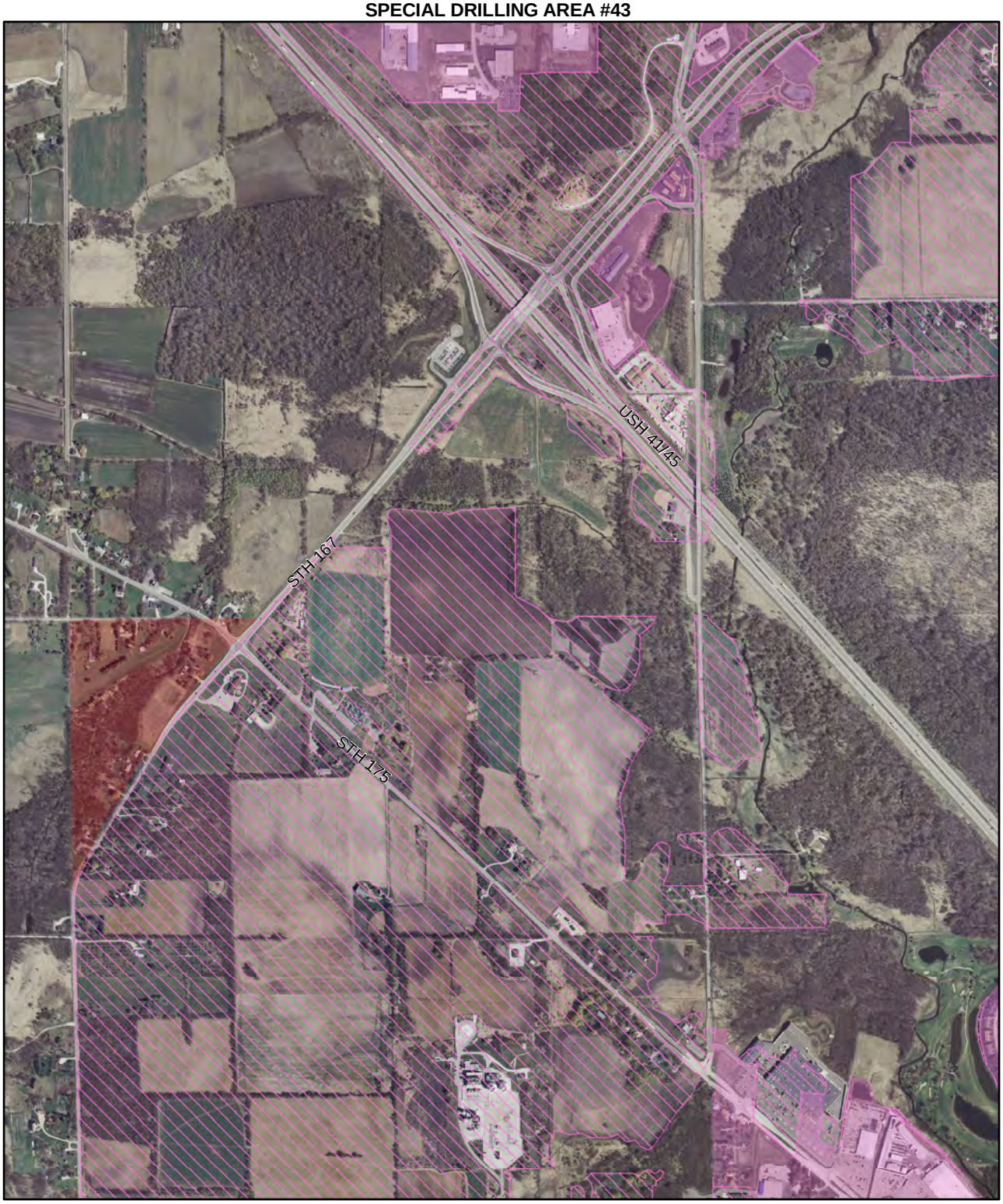
- VILLAGE OF GERMANTOWN WATER UTILITY: 2005
- VILLAGE OF GERMANTOWN WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 7

VILLAGE OF GERMANTOWN
SPECIAL DRILLING AREA #43



LEGEND

- VILLAGE OF GERMANTOWN WATER UTILITY: 2005
- VILLAGE OF GERMANTOWN UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

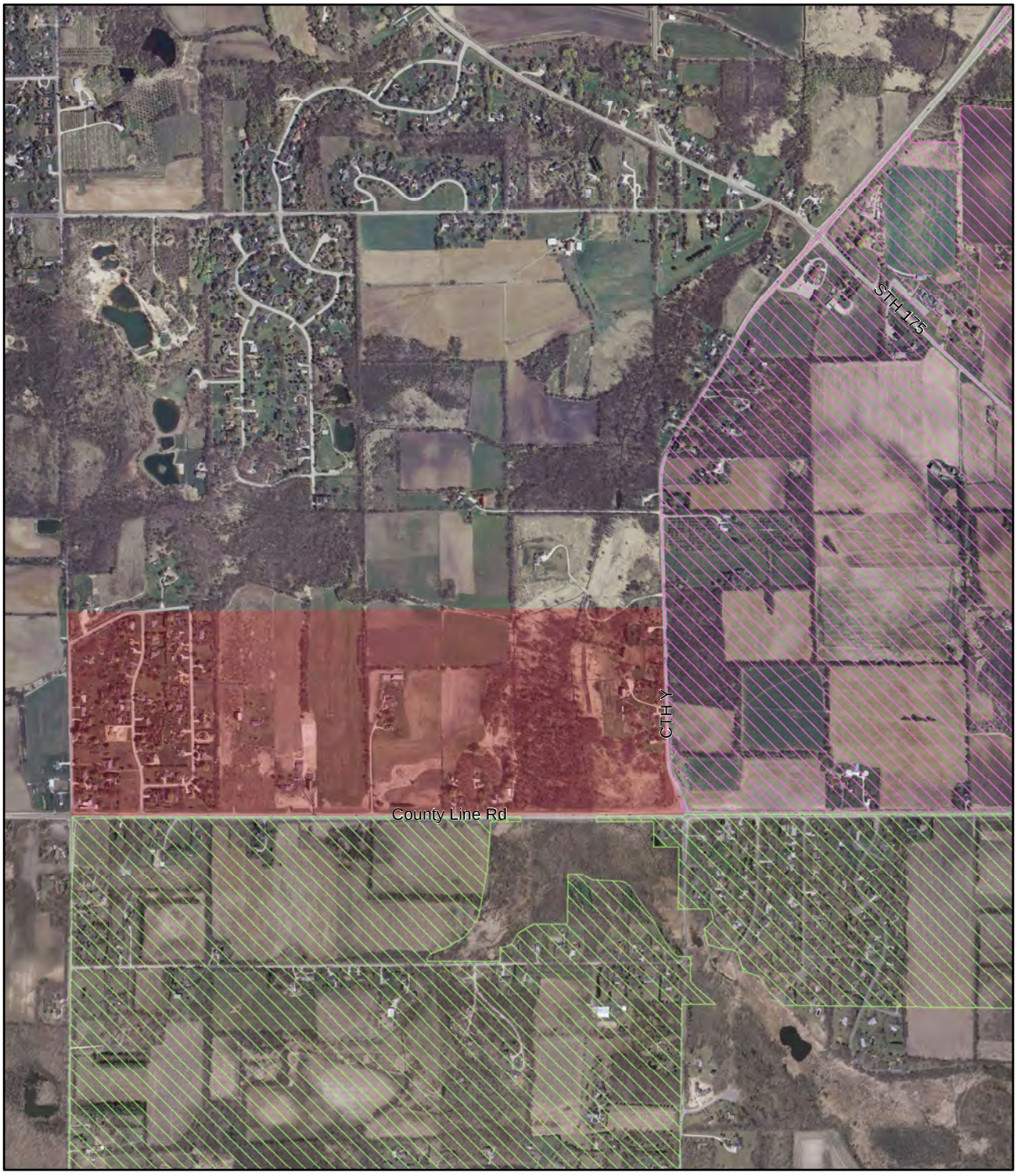
GRAPHIC SCALE

0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 8

VILLAGE OF GERMANTOWN
SPECIAL DRILLING AREAS #44/55



LEGEND

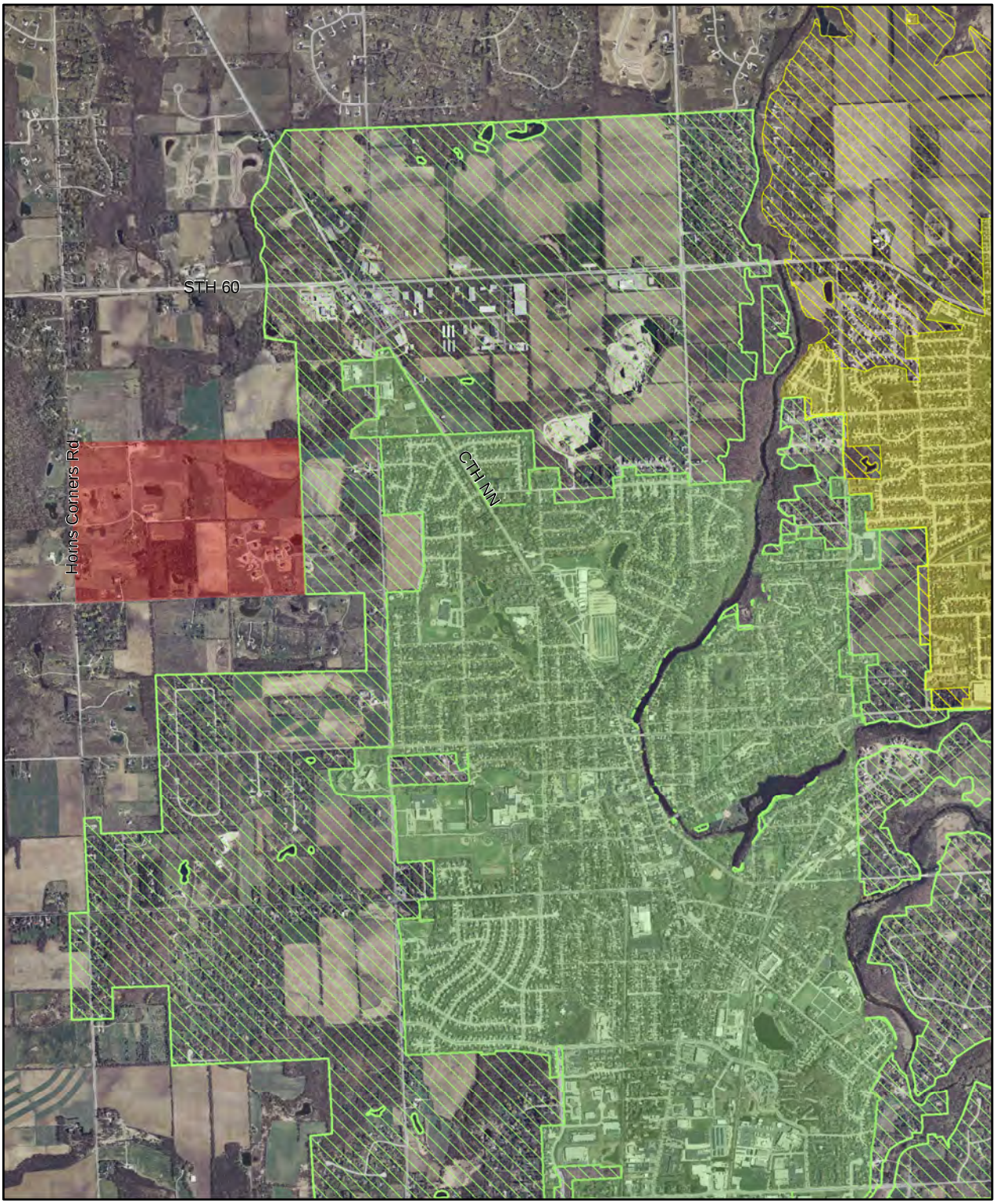
- VILLAGE OF GERMANTOWN WATER UTILITY: PROJECTED 2035
- VILLAGE OF MENOMONEE FALLS WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 9

TOWN OF CEDARBURG (PROCHNOW LANDFILL)
SPECIAL DRILLING AREA #27



LEGEND

- VILLAGE OF GRAFTON WATER AND WASTEWATER COMMISSION: 2005
- VILLAGE OF GRAFTON WATER AND WASTEWATER COMMISSION: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION
- CITY OF CEDARBURG LIGHT AND WATER COMMISSION: 2005
- CITY OF CEDARBURG LIGHT AND WATER COMMISSION: PROJECTED 2035

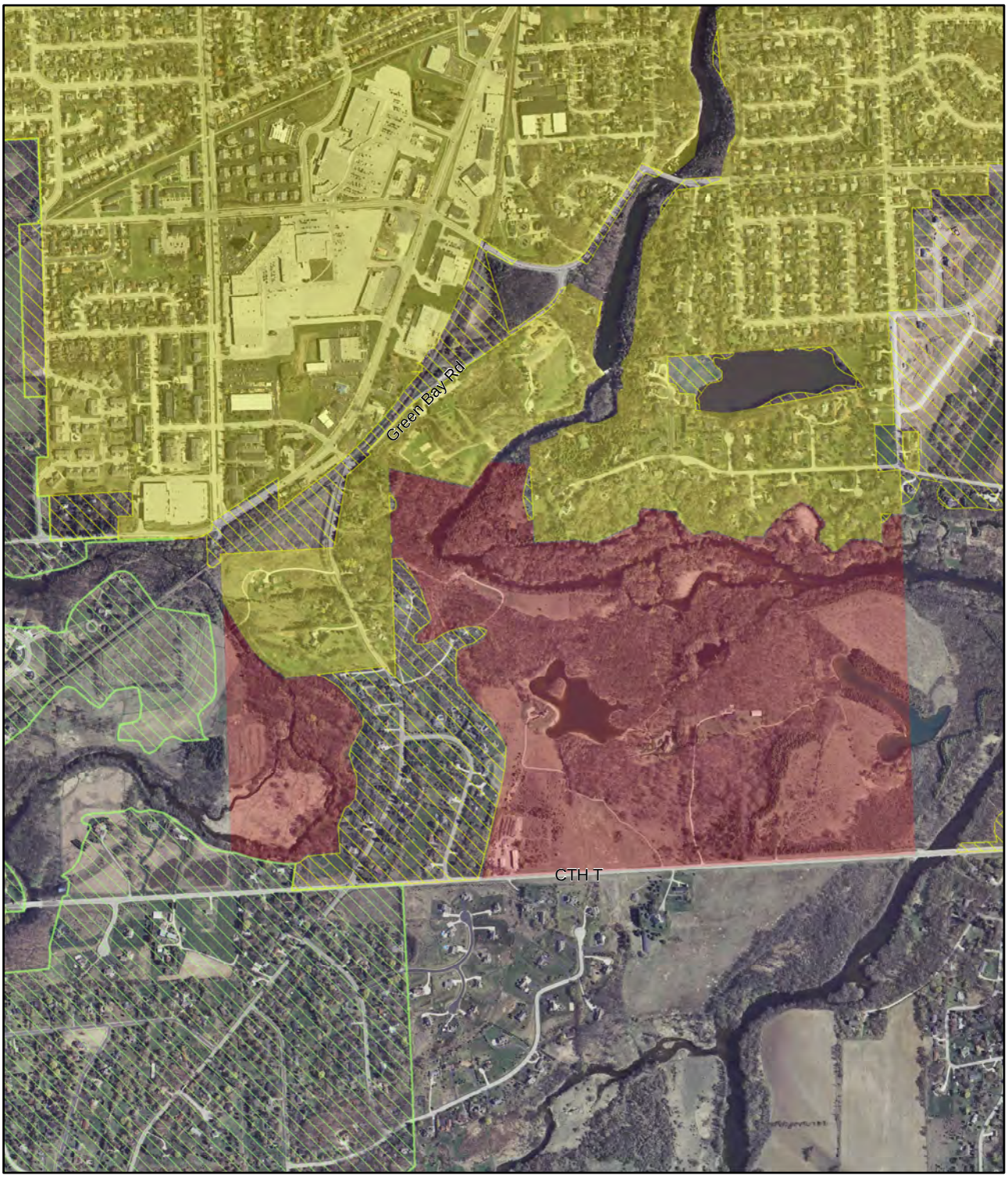
GRAPHIC SCALE

0 500 1,000 2,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 10

LIME KILN LANDFILL AND QUARRY
SPECIAL DRILLING AREA #28



LEGEND

- VILLAGE OF GRAFTON WATER AND WASTEWATER COMMISSION: 2005
- VILLAGE OF GRAFTON WATER AND WASTEWATER COMMISSION: PROJECTED 2035
- CITY OF CEDARBURG LIGHT AND WATER COMMISSION: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXTENSION

GRAPHIC SCALE
0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 11

CITY OF MEQUON/VILLAGE OF THIENSVILLE
(ICKE & BUBLITZ LANDFILLS)

LEGEND

WE ENERGIES-MEQUON: PROJECTED 2035 SERVICE AREA

POTENTIAL 2035 SERVICE AREA EXPANSION

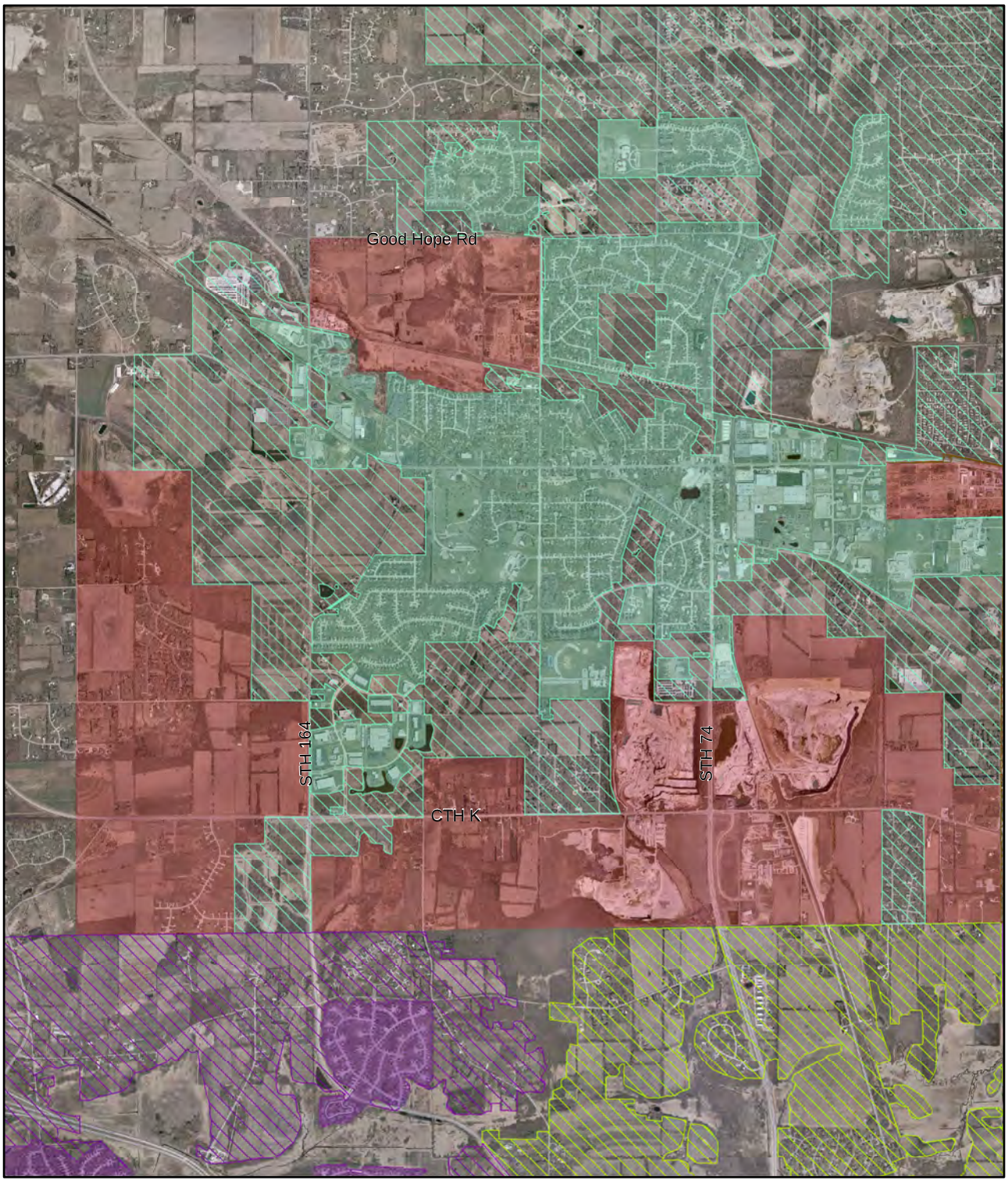
GRAPHIC SCALE

0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 12

TOWN OF LISBON
SPECIAL DRILLING AREAS #53a&b AND 54/55



LEGEND

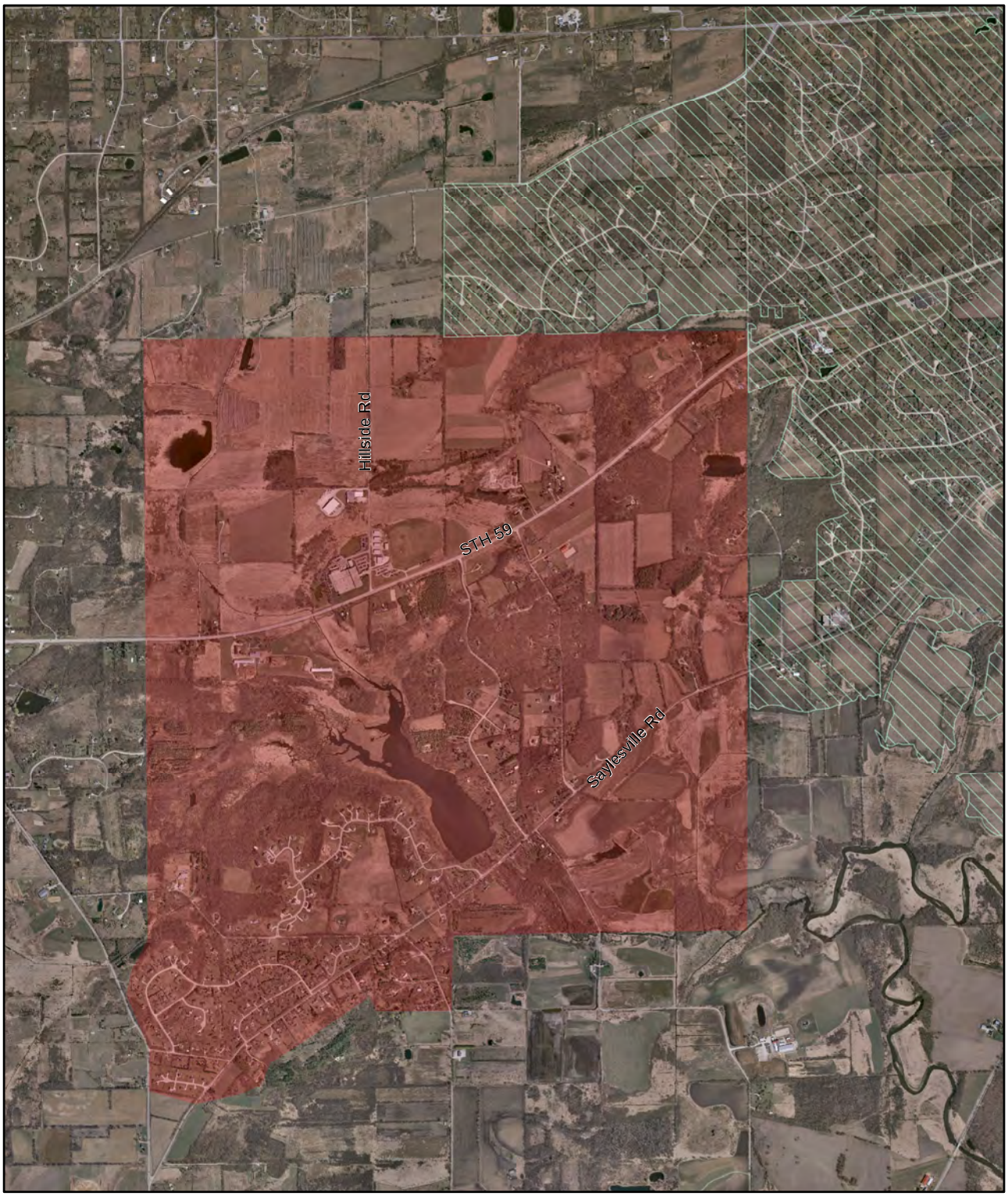
- SUSSEX WATER UTILITY: 2005
- SUSSEX WATER UTILITY: PROJECTED 2035
- VILLAGE OF PEWAUKEE WATER UTILITY: 2005
- VILLAGE OF PEWAUKEE WATER UTILITY: PROJECTED 2035
- CITY OF PEWAUKEE WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 625 1,250 2,500
Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 13

TOWN OF GENESEE
SPECIAL DRILLING AREAS #52a&b



LEGEND

CITY OF WAUKESHA WATER UTILITY: PROJECTED 2035

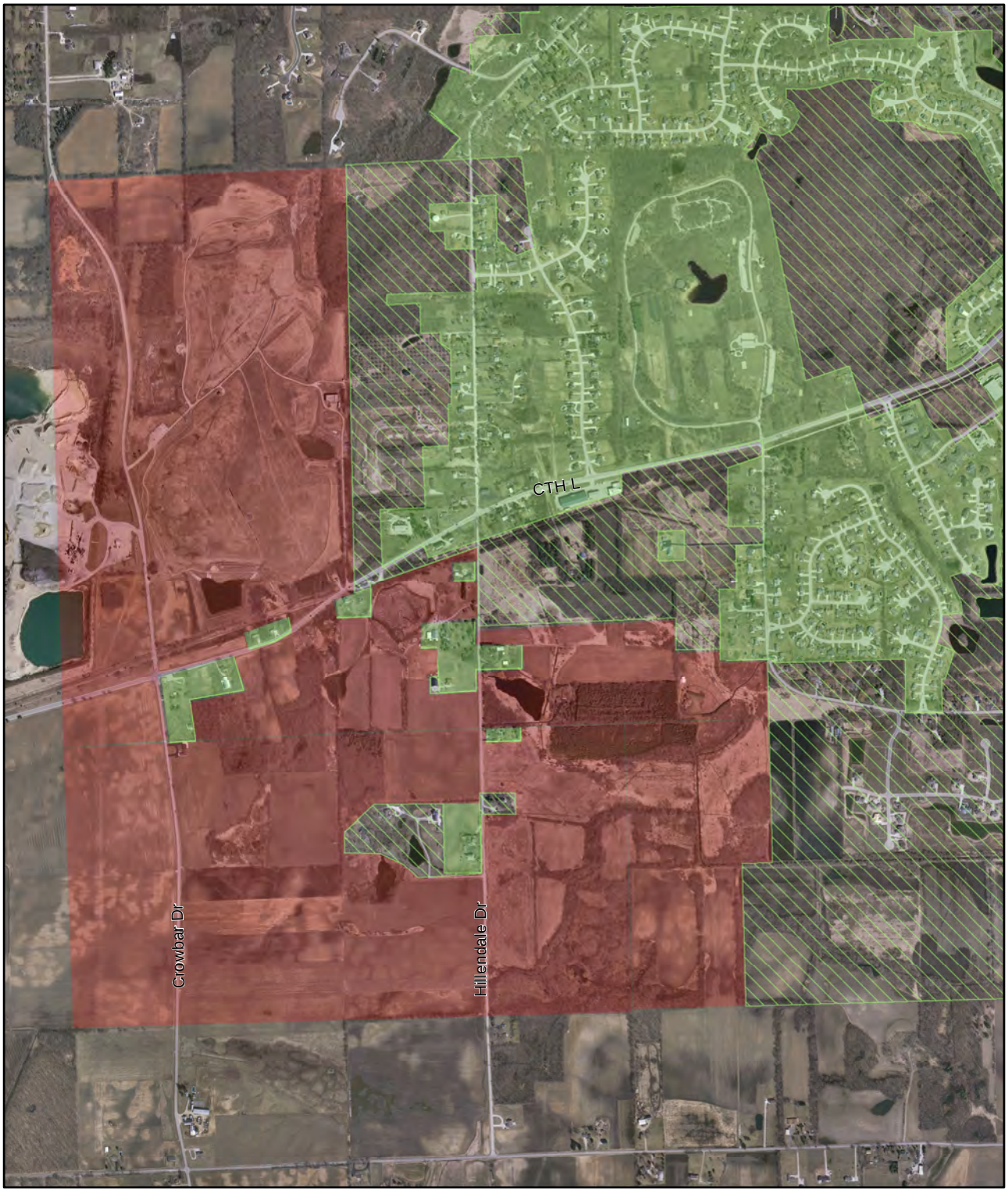
POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 500 1,000 2,000
Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 14

CITY OF MUSKEGO
SPECIAL DRILLING AREAS #67a&b



LEGEND

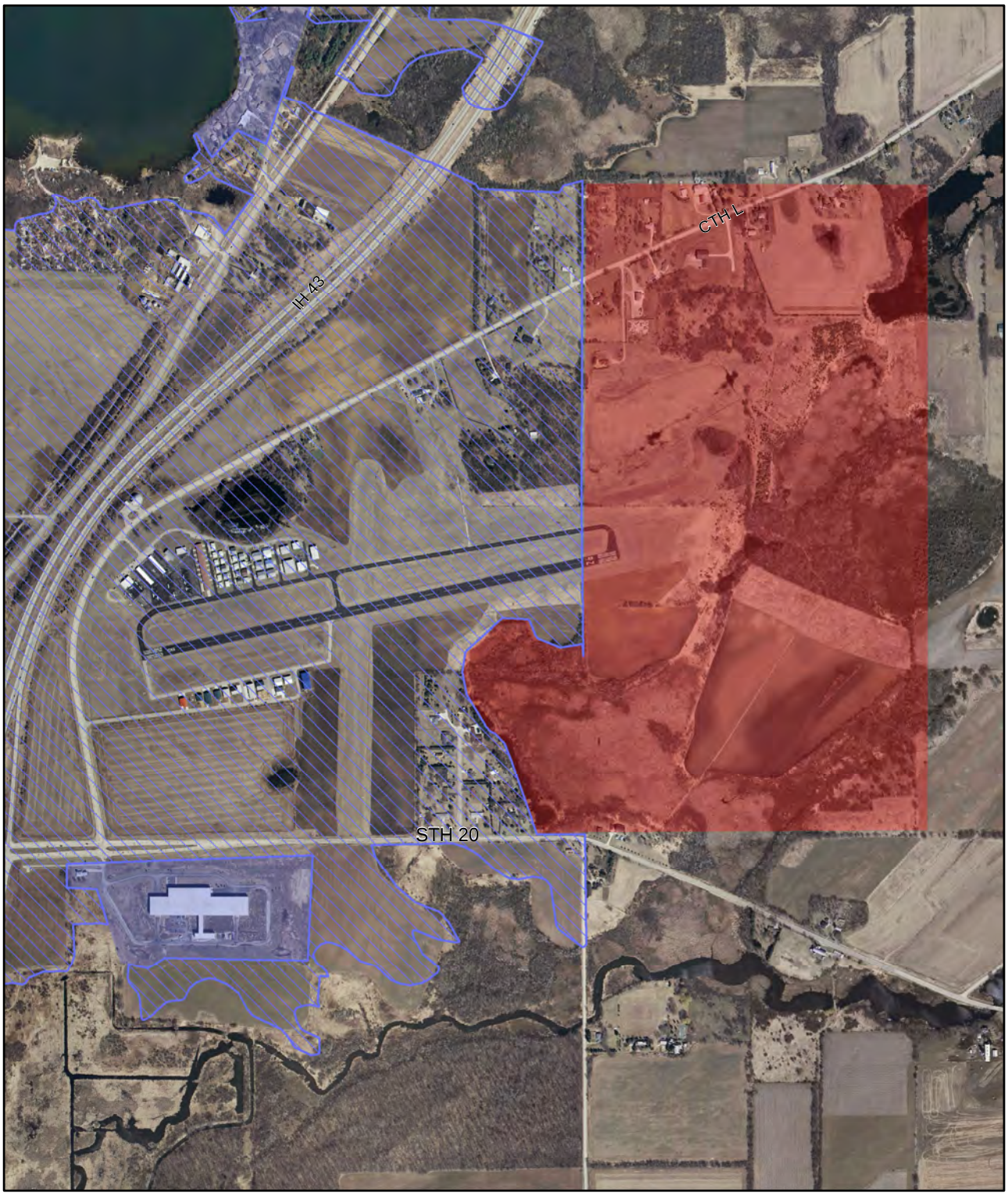
- CITY OF MUSKEGO WATER UTILITY: 2005
- CITY OF MUSKEGO WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 250 500 1,000
Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 15

TOWN OF EAST TROY LANDFILL
SPECIAL DRILLING AREA #39



LEGEND

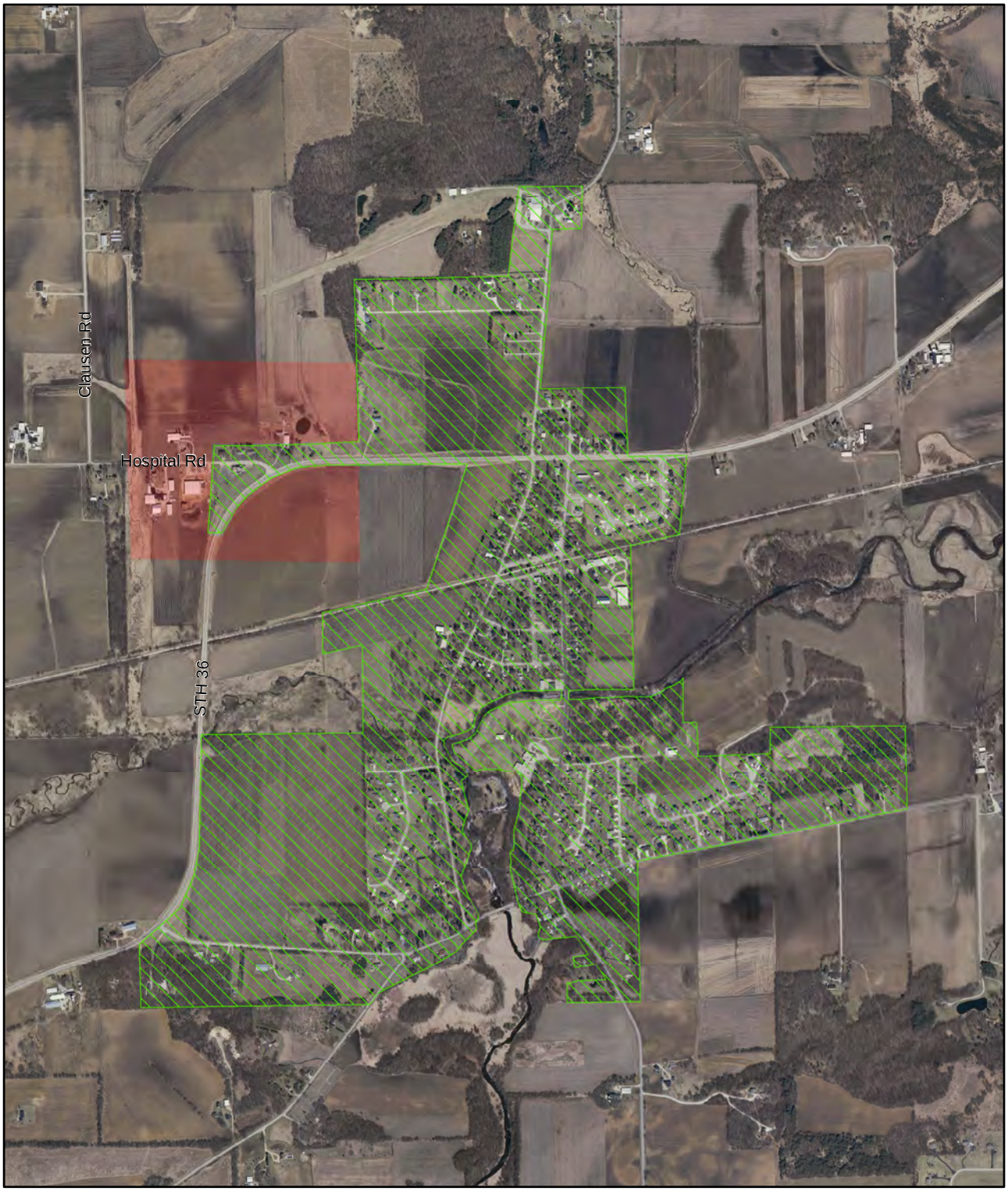
- VILLAGE OF EAST TROY MUNICIPAL WATER UTILITY: 2005
- VILLAGE OF EAST TROY MUNICIPAL WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 250 500 1,000 Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 16

TOWN OF LYONS
(CORRIDOR BETWEEN LYONS AND SPRINGFIELD)



LEGEND

TOWN OF LYONS AREA: PROJECTED 2035

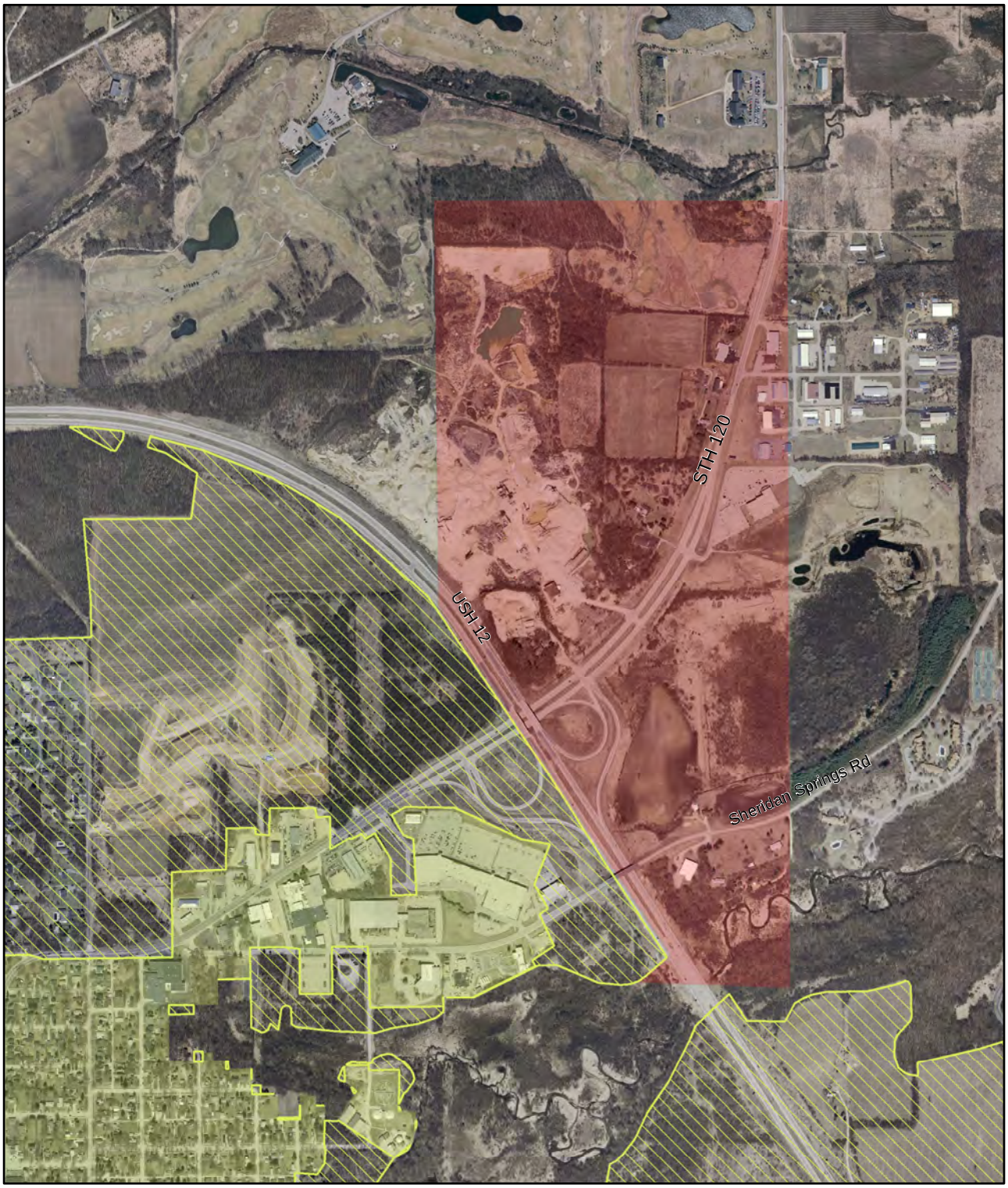
PROPOSED 2035 SERVICE AREA EXPANSION

GRAPHIC SCALE
0 250 500 1,000
Feet

Source: Wisconsin Department of Natural Resources and SEWRPC.

AREA 17

CITY OF LAKE GENEVA/TOWN OF LYONS
(SPECIAL DRILLING AREA UNDER DEVELOPMENT)



LEGEND

- LAKE GENEVA MUNICIPAL WATER UTILITY: 2005
- LAKE GENEVA MUNICIPAL WATER UTILITY: PROJECTED 2035
- POTENTIAL 2035 SERVICE AREA EXPANSION

Source: Wisconsin Department of Natural Resources and SEWRPC.

GRAPHIC SCALE
0 250 500 1,000
Feet

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Appendix F

MUNICIPAL WATER SUPPLY UTILITY WATER DEMAND AND RELATED PUMPAGE DATA: 2000 AND 2035

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Table F-1

MUNICIPAL WATER SERVICE AREA WATER DEMAND AND RELATED PUMPAGE DATA FOR KENOSHA COUNTY: 2000 AND 2035

Utility	Current 2000 Water Use			Estimated Water Use Increase 2000 to 2035								Planned Year 2035 Water Use and Pumpage			
				Residential Water Use		Industrial Water Use		Commercial and Institutional Water Use		Other Municipal Uses					
	Average Day Water Use[a] (gallons per day X 1,000)	Average Day Pumpage[a] (gallons per day X 1,000)	Maximum Day Pumpage[a] (gallons per day X 1,000)	Increase in Population Served	Average Day Water Use[b] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[c] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[d] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[e] (gallons per day X 1,000)	Calculated Average Day Water Use[f] (gallons per day X 1,000)	Average Day Water Use Adjusted for Water Conservation[g] (gallons per day X 1,000)	Average Day Pumpage[h] (gallons per day X 1,000)	Maximum Day Pumpage[i] (gallons per day X 1,000)
Kenosha Water Utility[j]	9,071	12,460	19,188[j]	11,100	777	108	162	753	602	421	42	10,655	10,228	14,050	21,186[k]
Paddock Lake Water Utility	57	72	181	4,000	280	6	9	95	76	257	26	448	421	532	1,458
Pleasant Prairie Water Utility[j]	1,382	1,703	1,822	22,650	1,586	473	710	571	457	1,808	181	4,315	4,142	5,104	6,947
Town of Bristol Utility District No. 1	193	226	346	3,900	273	46	69	75	60	151	15	610	573	672	1,239
Town of Bristol Utility District No. 3[l]	13	15	26	0	0	501	752	75	60	244	24	849	815	940	1,814
Town of Somers Water Utility	295	371	608	13,250	928	89	134	360	288	1,240	124	1,768	1,697	2,135	3,428
Powers-Benedict-Tombeau Lakes Area[l,m]	- -	- -	- -	2,950	207	2	3	39	31	427	43	283	261	352	527
Village of Silver Lake[m]	- -	- -	- -	4,900	343	45	68	71	57	574	57	525	483	652	976
Village of Twin Lakes[m]	- -	- -	- -	9,400	658	36	54	140	112	757	76	900	828	1,117	1,673
Town of Salem[m]	- -	- -	- -	17,900	1,253	96	144	272	218	1,834	183	1,798	1,654	2,233	3,344
Total	11,011	14,847	22,171	90,050	6,304	1,402	2,103	2,451	1,961	7,713	771	22,150	21,102	27,790	42,592

[a] *Data based upon year 2000 Public Service Commission Reports data for water sales, except for Paddock Lake Water Utility and Town of Bristol Utility Districts No. 1 and 3 data which are based upon year 2005 reports.*

[b] *Based upon 70 gallons per capita per day.*

[c] *Based upon 1,500 gallons per acre per day.*

[d] *Based upon 800 gallons per acre per day.*

[e] *Based upon 100 gallons per acre of urban services area per day.*

[f] *The sum of the existing average 2000 water use and the expected incremental average day water use through 2035.*

[g] *Adjustment varies from 4 to 10 percent reduction based upon utility. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[h] *Based upon same ratio of average day pumpage to average day water use as in 2000.*

[i] *Based upon a three year average (2000, 2001, and 2002) ratio of maximum day pumpage to average day pumpage, and adjusted by from 2 to 8 percent for additional water conservation measure impacts over and above the adjustment for average day water use. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[j] *The City of Kenosha Water Utility provides water to its retail service area and to the Village of Pleasant Prairie Water Utility, Town of Bristol Utility District No. 3, and Town of Somers Water Utility.*

[k] *Maximum daily pumpage value for the Kenosha Water Utility was calculated by multiplying the reported 2000 average day pumpage by the three year (2000, 2001, and 2002) average ratio of maximum day pumpage to average day pumpage for the utility's total pumpage values.*

[l] *Includes the portion of proposed Powers-Benedict-Tombeau Lakes service area within Walworth County.*

[m] *Relationship of average day and maximum day pumpage for the Powers-Benedict-Tombeau Lakes Area, Town of Salem, Village of Silver Lake, and Village of Twin Lakes service area is based upon the average of the other Kenosha County utilities ratio of maximum day pumpage to average day pumpage.*

Source: SEWRPC.

Table F-2

MUNICIPAL WATER SERVICE AREA WATER DEMAND AND RELATED PUMPAGE DATA FOR MILWAUKEE COUNTY: 2000 AND 2035

Utility	Current 2000 Water Use			Estimated Water Use Increase 2000 to 2035								Planned Year 2035 Water Use and Pumpage			
				Residential Water Use		Industrial Water Use		Commercial and Institutional Water Use		Other Municipal Uses					
	Average Day Water Use[a] (gallons per day X 1,000)	Average Day Pumpage[a] (gallons per day X 1,000)	Maximum Day Pumpage[a] (gallons per day X 1,000)	Increase in Population Served	Average Day Water Use[b] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[c] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[d] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[e] (gallons per day X 1,000)	Calculated Average Day Water Use[f] (gallons per day X 1,000)	Average Day Water Use Adjusted for Water Conservation[g] (gallons per day X 1,000)	Average Day Pumpage[h] (gallons per day X 1,000)	Maximum Day Pumpage[i] (gallons per day X 1,000)
City of Cudahy Water Utility	4,416	4,800	6,565	400	28	15	23	161	129	-177	-18	4,578	4,394	4,777	6,010
City of Franklin Water Utility[j]	1,618	1,797	4,686[k]	33,250	2,328	329	494	772	618	1,799	180	5,514	5,294	5,947	12,795[k]
City of Glendale Water Utility[l]	2,013	2,092	3,860	4,000	280	-41	-62	179	143	-188	-19	2,356	2,262	2,350	4,725
City of Milwaukee Water Works[m]	92,916	103,023	147,014[k]	13,800	966	1,114	1,671	2,883	2,306	-4,001	-400	97,459	93,561	103,738	145,074[k]
City of Oak Creek Water and Sewer Utility[j]	3,969	4,755	9,510[k]	24,850	1,740	339	509	697	558	1,511	151	6,648	6,382	7,646	14,973[k]
City of South Milwaukee Water Utility	2,003	2,666	3,635	600	42	0	0	0	0	0	0	2,045	1,963	2,613	4,251
City of Wauwatosa Water Utility[m]	5,699	6,243	8,148	3,450	242	-68	-102	555	444	-487	-49	6,234	5,984	6,556	10,997
City of West Allis Water Utility[m]	6,307	6,948	9,082	3,400	238	-157	-236	292	234	-185	-19	6,525	6,264	6,900	10,009
We Energies-Water Services[l] (Village of Bayside)	46	67	171[n]	3,650	256	0	0	37	30	177	18	349	335	488	793[n]
Village of Brown Deer Public Water Utility[m]	1,417	1,545	2,561	-400	-28	23	35	149	119	-186	-19	1,524	1,463	1,595	2,979
Village of Fox Point Water Utility[j]	753	764	1,680[n]	-900	-63	0	0	36	29	-37	-4	715	686	697	1,117[n]
Village of Greendale Water Utility[m]	1,265	1,338	2,550	-900	-63	10	15	118	94	-128	-13	1,299	1,247	1,319	3,527
Village of Shorewood Municipal Water Utility[m]	1,116	1,253	2,080[o]	1,100	77	8	12	10	8	-84	-8	1,205	1,156	1,298	2,110[o]
Village of Whitefish Bay Water Utility[l]	1,294	1,321	2,280	600	42	0	0	62	50	-47	-5	1,381	1,326	1,353	3,012
Total	124,832	138,612	203,822	86,900	6,083	1,572	2,358	5,951	4,761	-2,033	-203	137,832	132,317	147,277	222,372

[a] *Data based upon year 2000 Public Service Commission Reports data for water sales, except for We Energies-Water Services, which are based upon year 2001 reports, and the City of Glendale Water Utility and Village of Fox Point Water Utility data, which are based upon year 1999 reports.*

[b] *Based upon 70 gallons per capita per day.*

[c] *Based upon 1,500 gallons per acre per day.*

[d] *Based upon 800 gallons per acre per day.*

[e] *Based upon 100 gallons per acre of urban services area per day.*

[f] *The sum of the existing average 2000 water use and the expected incremental average day water use through 2035.*

[g] *Adjustment varies from 4 to 10 percent reduction based upon utility. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[h] *Based upon same ratio of average day pumpage to average day water use as in 2000.*

[i] *Based upon a three year average (2000, 2001, and 2002) ratio of maximum day pumpage to average day pumpage, and adjusted by from 2 to 8 percent for additional water conservation measure impacts over and above the adjustment for average day water use. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[j] *The City of Oak Creek Water Utility provides service to its retail service area and the City of Franklin Water Utility, the Caddy Vista Sanitary District, the Crestview Sanitary District, and a portion of the North Park Sanitary District No. 1.*

[k] *Maximum daily pumpage values for the City Milwaukee Water Works and the City of Oak Creek Water and Sewer Utility were calculated by multiplying the reported 2000 average day pumpage by the three year (2000, 2001, and 2002) average ratio of maximum day pumpage to average day pumpage for each utilities' total pumpage values.*

[l] *The North Shore Water Commission provides water to the City of Glendale Water Utility, the Village of Fox Point Water Utility, the Village of Whitefish Bay Water Utility, and a portion of the Village of Bayside provided by the We Energies-Water Services.*

[m] *The City of Milwaukee Water Works provides service to its retail service area, and the Village of West Milwaukee, City of West Allis Water Utility, City of Wauwatosa Water Utility, Village of Greendale Water Utility, Village of Shorewood Municipal Water Utility, a portion of the City of New Berlin Water Utility, the Village of Butler, a portion of the Village of Menomonee Falls Utility, and a portion of the City of Mequon and Village of Thiensville provided by We Energies-Water Services.*

[n] *Maximum daily pumpage values as reported by Fox Point Water Utility includes water provided to We Energies-Water Services.*

[o] *Maximum daily pumpage value not reported by Shorewood Municipal Water Utility, estimate based on three year (2000, 2001, and 2002) average ratio of maximum day pumpage to average day pumpage for Milwaukee County utilities.*

Source: SEWRPC.

Table F-3

MUNICIPAL WATER SERVICE AREA WATER DEMAND AND RELATED PUMPAGE DATA FOR OZAUKEE COUNTY: 2000 AND 2035

Utility	Current 2000 Water Use			Estimated Water Use Increase 2000 to 2035								Planned Year 2035 Water Use and Pumpage			
				Residential Water Use		Industrial Water Use		Commercial and Institutional Water Use		Other Municipal Uses					
	Average Day Water Use[a] (gallons per day X 1,000)	Average Day Pumpage[a] (gallons per day X 1,000)	Maximum Day Pumpage[a] (gallons per day X 1,000)	Increase in Population Served	Average Day Water Use[b] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[c] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[d] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[e] (gallons per day X 1,000)	Calculated Average Day Water Use[f] (gallons per day X 1,000)	Average Day Water Use Adjusted for Water Conservation[g] (gallons per day X 1,000)	Average Day Pumpage[h] (gallons per day X 1,000)	Maximum Day Pumpage[i] (gallons per day X 1,000)
City of Cedarburg Light and Water Commission	1,256	1,418	2,150	3,650	255	75	112	181	145	336	34	1,802	1,694	1,913	2,937
We Energies-Water Services	464	672	1,727	23,500	1,645	272	408	728	582	1,716	172	3,271	3,140	4,547	6,352
City of Port Washington Water Utility	1,151	1,334	1,702	4,400	308	96	144	135	108	395	39	1,751	1,681	1,947	3,127
Village of Belgium Water Utility	221	267	605	600	42	23	34	44	35	137	14	346	325	393	1,107
Village of Fredonia Municipal Water Utility	144	171	398	1,100	77	44	66	63	50	100	10	347	326	388	825
Village of Grafton Water and Wastewater Commission	1,130	1,420	2,043	5,950	417	111	166	303	242	488	49	2,004	1,884	2,366	3,833
Village of Saukville Municipal Water Utility	1,207	1,261	1,737	1,500	105	104	156	119	95	460	46	1,609	1,513	1,580	2,071
Town of Fredonia-Waubeka Area	- -	- -	- -	500	35	2	3	29	23	97	10	71	65	76[j]	104
Total	5,573	6,543	10,362	41,200	2,884	727	1,089	1,602	1,280	3,729	374	11,202	10,629	13,210	20,356

[a] *Data based upon year 2000 Public Service Commission Reports data for water sales, except for We Energies-Water Services data which are based upon 2001 reports*

[b] *Based upon 70 gallons per capita per day.*

[c] *Based upon 1,500 gallons per acre per day.*

[d] *Based upon 800 gallons per acre per day.*

[e] *Based upon 100 gallons per acre of urban services area per day.*

[f] *The sum of the existing average 2000 water use and the expected incremental average day water use through 2035.*

[g] *Adjustment varies from 4 to 10 percent reduction based upon utility. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July2007, Chapter VII.*

[h] *Based upon same ratio of average day pumpage to average day water use as in 2000.*

[i] *Based upon the three-year average (2000, 2001, and 2002) ratio of maximum day pumpage to average day pumpage, adjusted by from 2 to 8 percent for additional water conservation measure impacts over and above the adjustment for average day water use. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[j] *Relationship of average day and maximum day pumpage for the Town of Fredonia-Waubeka Area is based upon the average of the other Ozaukee County utilities.*

Source: SEWRPC.

Table F-4

MUNICIPAL WATER SERVICE AREA WATER DEMAND AND RELATED PUMPAGE DATA FOR RACINE COUNTY: 2000 AND 2035

Utility	Current 2000 Water Use			Estimated Water Use Increase 2000 to 2035								Planned Year 2035 Water Use and Pumpage			
				Residential Water Use		Industrial Water Use		Commercial and Institutional Water Use		Other Municipal Uses					
	Average Day Water Use[a] (gallons per day X 1,000)	Average Day Pumpage[a] (gallons per day X 1,000)	Maximum Day Pumpage[a] (gallons per day X 1,000)	Increase in Population Served	Average Day Water Use[b] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[c] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[d] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[e] (gallons per day X 1,000)	Calculated Average Day Water Use[f] (gallons per day X 1,000)	Average Day Water Use Adjusted for Water Conservation[g] (gallons per day X 1,000)	Average Day Pumpage[h] (gallons per day X 1,000)	Maximum Day Pumpage[i] (gallons per day X 1,000)
City of Burlington Water Utility	1,576	1,884	2,892	5,350	375	57	86	296	237	414	41	2,314	2,129	2,545	4,508
City of Racine Water and Wastewater Utility[j]	18,513	22,763	35,510[k]	9,700	679	289	434	809	647	86	9	20,281	19,470	23,940	36,568[k]
Caddy Vista Sanitary District[l]	42	50	199	450	32	0	0	12	10	89	9	92	88	105	317
Village of Caledonia Utility District No. 1[j]	276	613	698	8,250	578	199	299	272	218	1,350	135	1,505	1,444	3,208	4,366
Crestview Sanitary District[l]	233	270	836	450	32	16	24	29	23	174	17	313	300	348	835
North Park Sanitary District (Oak Creek)[j]	135	177	290[m]	100	7	0	0	12	10	-16	-2	150	144	189	303
North Park Sanitary District (Racine)[j]	601	789	1,294[m]	900	63	0	0	11	9	-46	-5	668	641	842	1,352
Village of Sturtevant Water and Sewer Utility[j]	580	595	1,103[k]	1,250	88	116	174	112	90	131	13	944	906	930	1,493
Village of Union Grove Municipal Water Utility	678	716	1,359	1,600	112	87	131	188	150	158	16	1,087	1,000	1,056	1,841
Village of Waterford Water Utility	320	391	698	1,350	95	21	32	114	91	140	14	551	507	620	1,228
Village of Wind Point Municipal Water Utility[j]	231	254	417[m]	500	35	0	0	4	3	35	4	273	262	288	462
North Cape Sanitary District	10	11	15	50	4	5	8	0	0	-3	0	21	19	21	26
Yorkville Utility District No. 1	57	71	115	350	25	66	99	107	86	237	24	290	267	332	530
Town of Burlington-Bohner Lake Area[n]	- -	- -	- -	2,200	154	3	5	16	13	210	21	192	177	237	355
Town of Dover-Eagle Lake Area[n]	- -	- -	- -	2,000	140	19	29	49	39	232	23	231	212	285	426
Town of Caledonia-Northwest Area[n]	- -	- -	- -	200	14	25	38	24	19	66	7	77	71	95	143
Town of Norway-Wind Lake Area[n]	- -	- -	- -	7,150	501	1	2	56	45	544	54	601	553	741	1,110
Village of Rochester[n]	- -	- -	- -	1,250	88	1	2	11	9	90	9	107	98	132	197
Town of Rochester Area[n]	- -	- -	- -	1,300	91	0	0	18	14	230	23	128	118	158	237
Town of Waterford Area[n]	- -	- -	- -	6,700	469	7	11	65	52	654	65	597	549	736	1,102
Total	23,252	28,584	45,426	51,100	3,577	912	1,368	2,205	1,764	4,775	478	30,422	28,955	36,808	57,399

Footnotes to Table F-4

[a] *Data based upon year 2000 Public Service Commission Reports data for water sales, except for the City of Racine Water and Wastewater data which uses year 2001 reports.*

[b] *Based upon 70 gallons per capita per day.*

[c] *Based upon 1,500 gallons per acre per day.*

[d] *Based upon 800 gallons per acre per day.*

[e] *Based upon 100 gallons per acre of urban services area per day.*

[f] *The sum of the existing average 2000 water use and the expected incremental average day water use through 2035.*

[g] *Adjustment varies from 4 to 10 percent reduction based upon utility. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[h] *Based upon same ratio of average day pumpage to average day water use as in 2000.*

[i] *Based upon a three year average (2000, 2001, and 2002) ratio of maximum day pumpage to average day pumpage, and adjusted by from 2 to 8 percent for additional water conservation measure impacts over and above the adjustment for average day water use. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[j] *The City of Racine Water and Wastewater Utility provides service to it retail service area and the Village of Sturtevant Water and Sewer Utility, the Village of Wind Point Municipal Water Utility, the Village of Caledonia Utility District No. 1, and a portion of the North Park Sanitary District.*

[k] *Maximum daily pumpage value for the City of Racine Water and Wastewater Utility was calculated by multiplying the reported 2000 average day pumpage by the two year (2001 and 2002) average ratio of maximum day pumpage to average day pumpage for that utility's total pumpage values.*

[l] *The City of Oak Creek Water Utility provides water service to its retail service area and the City of Franklin Water Utility, the Caddy Vista Sanitary District, the Crestview Sanitary District, and a portion of the North Park Sanitary District.*

[m] *Maximum daily pumpage value not reported by utility; estimate based on three year (2000, 2001, and 2002) average ratio of maximum day pumpage to average day pumpage for Racine County.*

[n] *Relationship of average day and maximum day pumpage for the Town of Burlington - Bohner Lake Area, Town of Dover – Eagle Lake Area, Town of Caledonia – Northwest Area, Town of Norway – Wind Lake Area, Village of Rochester, Town of Rochester Area, and Town of Waterford Area is based upon the average of the other Racine County utilities three year (2000, 2001, and 2002) average ratio of maximum day pumpage to average day pumpage.*

Source: SEWRPC.

Table F-5

MUNICIPAL WATER SERVICE AREA WATER DEMAND AND RELATED PUMPAGE DATA FOR WALWORTH COUNTY: 2000 AND 2035

Utility	Current 2000 Water Use			Estimated Water Use Increase 2000 to 2035								Planned Year 2035 Water Use and Pumpage			
				Residential Water Use		Industrial Water Use		Commercial and Institutional Water Use		Other Municipal Uses					
	Average Day Water Use[a] (gallons per day X 1,000)	Average Day Pumpage[a] (gallons per day X 1,000)	Maximum Day Pumpage[a] (gallons per day X 1,000)	Increase in Population Served	Average Day Water Use[b] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[c] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[d] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[e] (gallons per day X 1,000)	Calculated Average Day Water Use[f] (gallons per day X 1,000)	Average Day Water Use Adjusted for Water Conservation[g] (gallons per day X 1,000)	Average Day Pumpage[h] (gallons per day X 1,000)	Maximum Day Pumpage[i] (gallons per day X 1,000)
City of Delavan Water and Sewerage Commission	808	898	1,552	11,700	819	148	222	319	255	1,261	126	2,230	2,052	2,280	4,019
City of Elkhorn Light and Water	838	1,208	1,714	7,300	511	166	249	289	231	773	77	1,907	1,754	2,528	3,324
City of Lake Geneva Municipal Water Utility	1,049	1,289	1,965	6,400	448	32	48	189	151	950	95	1,791	1,648	2,025	3,587
City of Whitewater Municipal Water Utility	1,567	1,888	3,276	4,750	333	80	120	172	138	29	3	2,160	1,987	2,394	3,979
Village of Darien Water Works and Sewer System	96	110	281	1,150	81	73	110	38	30	130	13	329	303	347	789
Village of East Troy Municipal Water Utility	510	569	904	5,700	399	76	114	128	102	716	72	1,197	1,101	1,229	2,030
Village of Fontana Municipal Water Utility	388	513	1,090	300	21	-1	-2	26	21	166	17	445	409	541	716
Village of Genoa City Municipal Water Utility	144	280	485	2,400	168	89	134	74	59	198	20	525	483	938	1,414
Village of Sharon Waterworks and Sewer System	102	132	727	950	67	10	15	3	2	25	3	188	173	224	682
Village of Walworth Municipal Water and Sewer Utility	320	489	655	2,350	165	75	113	49	39	189	19	655	603	921	1,253
Village of Williams Bay Municipal Water Utility	220	320	728	3,400	238	24	36	86	69	783	78	641	590	858	1,762
Pell Lake Sanitary District No. 1	190[j]	230[j]	400[j]	2,250	158	4	6	12	10	189	19	383	350	423	735
Town of East Troy Sanitary District No. 3	4	4	13	50	4	0	0	0	0	13	1	9	8	9	22
Lake Como Sanitary District No. 1	86	131	294	1,050	74	2	3	18	14	266	27	204	187	285	568
Country Estates Sanitary District	20	23	42	650	46	4	6	8	6	62	6	84	77	89	152
Troy Sanitary District No. 1	4	4	40	0	0	0	0	0	0	11	1	5	4	5	16
Town of Lyons Area	- -	- -	- -	1,700	119	5	8	29	23	315	32	181	167	215	351
Town of East Troy-Potter Lake Area	- -	- -	- -	1,200	84	21	32	27	22	139	14	151	139	179	293
Total	6,346	8,088	14,166	53,300	3,731	808	1,212	1,467	1,174	6,215	622	13,085	12,035	15,490	25,692

Footnotes to Table F-5

[a] *Data based upon year 2000 Public Service Commission Reports data for water sales with the exception of Country Estates Sanitary District which uses year 2001 data reports.*

[b] *Based upon 70 gallons per capita per day.*

[c] *Based upon 1,500 gallons per acre per day.*

[d] *Based upon 800 gallons per acre per day.*

[e] *Based upon 100 gallons per acre of urban services area per day.*

[f] *The sum of the existing average 2000 water use and the expected incremental average day water use through 2035.*

[f] *The sum of the existing average 2000 water use and the expected incremental average day water use through 2035.*

[g] *Adjustment varies from 4 to 10 percent reduction based upon utility. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[h] *Based upon same ratio of average day pumpage to average day water use as in 2000.*

[i] *Based upon the three-year average (2000, 2001, and 2002) ratio of maximum day pumpage to average day pumpage, adjusted by from 2 to 8 percent for additional water conservation measure impacts over and above the adjustment for average day water use. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[j] *Current water use and pumpage were adjusted to 2005 values since the water distribution system was under construction in 2000.*

Source: SEWRPC.

Table F-6

MUNICIPAL WATER SERVICE AREA WATER DEMAND AND RELATED PUMPAGE DATA FOR WASHINGTON COUNTY: 2000 AND 2035

Utility	Current 2000 Water Use			Estimated Water Use Increase 2000 to 2035								Planned Year 2035 Water Use and Pumpage			
				Residential Water Use		Industrial Water Use		Commercial and Institutional Water Use		Other Municipal Uses					
	Average Day Water Use[a] (gallons per day X 1,000)	Average Day Pumpage[a] (gallons per day X 1,000)	Maximum Day Pumpage[a] (gallons per day X 1,000)	Increase in Population Served	Average Day Water Use[b] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[c] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[d] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[e] (gallons per day X 1,000)	Calculated Average Day Water Use[f] (gallons per day X 1,000)	Average Day Water Use Adjusted for Water Conservation[g] (gallons per day X 1,000)	Average Day Pumpage[h] (gallons per day X 1,000)	Maximum Day Pumpage[i] (gallons per day X 1,000)
City of Hartford Water Utilities	1,204	1,497	2,424	7,300	511	120	180	230	184	740	74	2,153	1,981	2,463	3,703
City of West Bend Water Utility	2,665	2,908	4,070	16,350	1,145	272	408	588	470	1,003	100	4,788	4,405	4,807	6,470
Village of Germantown Water Utility	1,363	1,786	2,924	8,400	588	272	408	442	354	903	90	2,803	2,523	3,305	5,452
Village of Jackson Water Utility	467	494	986	5,050	354	116	174	198	158	400	40	1,193	1,097	1,161	2,096
Village of Kewaskum Municipal Water Utility	377	473	907	2,150	151	28	42	66	53	269	27	649	597	749	1,358
Slinger Utilities	283	327	604	4,450	312	36	54	141	113	453	45	807	742	857	1,598
Allenton Sanitary District	67	92	159	800	56	5	8	27	22	115	12	164	147	202	677
Village of Newburg	- -	- -	- -	2,000	140	10	15	38	30	202	20	206	189	223	345
Total	6,426	7,577	12,074	46,500	3,255	859	1,289	1,730	1,384	4,085	409	12,762	11,681	13,767	21,699

[a] *Data based upon year 2000 Public Service Commission Reports data for water sales with the exception of Slinger Utilities and Allenton Sanitary District which use year 2001 data reports.*

[b] *Based upon 70 gallons per capita per day.*

[c] *Based upon 1,500 gallons per acre per day.*

[d] *Based upon 800 gallons per acre per day.*

[e] *Based upon 100 gallons per acre of urban services area per day.*

[f] *The sum of the existing average 2000 water use and the expected incremental average day water use through 2035.*

[g] *Adjustment varies from 4 to 10 percent reduction based upon utility. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[h] *Based upon same ratio of average day pumpage to average day water use as in 2000.*

[i] *Based upon the three-year average (2000, 2001, and 2002) ratio of maximum day pumpage to average day pumpage, adjusted by from 2 to 8 percent for additional water conservation measure impacts over and above the adjustment for average day water use. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

Source: SEWRPC.

Table F-7

MUNICIPAL WATER SERVICE AREA WATER DEMAND AND RELATED PUMPAGE DATA FOR WAUKESHA COUNTY: 2000 AND 2035

Utility	Current 2000 Water Use			Estimated Water Use Increase 2000 to 2035								Planned Year 2035 Water Use and Pumpage			
				Residential Water Use		Industrial Water Use		Commercial and Institutional Water Use		Other Municipal Uses					
	Average Day Water Use[a] (gallons per day X 1,000)	Average Day Pumpage[a] (gallons per day X 1,000)	Maximum Day Pumpage[a] (gallons per day X 1,000)	Increase in Population Served	Average Day Water Use[b] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[c] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[d] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[e] (gallons per day X 1,000)	Calculated Average Day Water Use[f] (gallons per day X 1,000)	Average Day Water Use Adjusted for Water Conservation[g] (gallons per day X 1,000)	Average Day Pumpage[h] (gallons per day X 1,000)	Maximum Day Pumpage[i] (gallons per day X 1,000)
City of Brookfield Municipal Water Utility	2,971	3,659	4,545	20,950	1,467	39	59	1,084	867	906	91	5,454	4,908	6,045	9,374
Delafield Municipal Water Utility	85	95	218	12,300	861	42	63	419	335	1,496	150	1,494	1,344	1,503	2,982
City of Muskego Public Water Utility	525	586	1,075	20,850	1,460	102	153	315	252	1,389	139	2,528	2,276	2,540	5,400
City of New Berlin Water Utility (east)	1,527	1,777	2,547	2,900	203	48	72	168	134	486	49	1,985	1,906	2,218	3,824
City of New Berlin Water Utility (west)	1,279	1,488	2,133	8,300	581	334	501	498	398	119	12	2,771	2,494	2,902	4,656
City of Oconomowoc Utilities	1,296	1,562	2,609	9,800	686	357	536	453	362	1,471	147	3,027	2,785	3,356	5,790
City of Pewaukee Water and Sewer Utility	889	1,150	1,793	8,150	571	224	336	371	297	614	61	2,154	1,938	2,507	4,935
City of Waukesha Water Utility	7,356	7,770	10,147	23,500	1,645	371	557	783	626	1,451	145	10,329	9,296	9,819	13,437
Village of Butler Public Water Utility	363	404	670	0	0	60	90	11	9	-64	-6	455	437	487	782
Dousman Water Utility	133	148	234	3,150	221	14	21	72	58	353	35	467	430	479	811
Village of Eagle Municipal Water Utility	130	145	566	200	14	51	77	37	30	-51	-5	245	230	257	775
Hartland Municipal Water Utility	801	923	1,472	3,650	256	69	104	174	139	459	46	1,345	1,237	1,426	2,617
Village of Menomonee Falls Water Utility (east)	2,779	3,565	5,293	4,650	326	389	584	657	526	522	52	4,266	4,095	5,253	8,935
Village of Menomonee Falls Water Utility (west)	140	180	267	6,650	466	94	141	71	57	518	52	855	787	1,011	1,604
Mukwonago Municipal Water Utility	520	636	896	5,350	375	120	180	289	231	627	63	1,368	1,232	1,506	2,217
Village of Pewaukee Water Utility	655	849	1,220	3,450	242	23	35	192	154	298	30	1,114	1,003	1,300	1,977
Village of Sussex Water Utility	836	996	1,812	7,950	557	179	269	210	168	532	53	1,882	1,694	2,018	3,692
Brookfield Sanitary District No. 4	819	1,029	1,392	200	14	42	63	228	182	-240	-24	1,054	970	1,219	1,689
Village of Big Bend	- -	- -	- -	2,200	154	106	159	171	137	258	26	476	438	512	807
Village of Elm Grove	- -	- -	- -	6,650	466	0	0	210	168	508	51	684	657	769	1,299
Village of Lannon	- -	- -	- -	1,700	119	95	143	66	53	341	34	348	321	375	591
Village of North Prairie	- -	- -	- -	2,900	203	58	87	91	73	295	30	392	361	422	665
Village of Wales	- -	- -	- -	1,600	112	12	18	110	88	48	5	223	205	240	378

Table F-7 (continued)

Utility	Current 2000 Water Use			Estimated Water Use Increase 2000 to 2035								Planned Year 2035 Water Use and Pumpage			
				Residential Water Use		Industrial Water Use		Commercial and Institutional Water Use		Other Municipal Uses					
	Average Day Water Use[a] (gallons per day X 1,000)	Average Day Pumpage[a] (gallons per day X 1,000)	Maximum Day Pumpage[a] (gallons per day X 1,000)	Increase in Population Served	Average Day Water Use[b] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[c] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[d] (gallons per day X 1,000)	Increase in Area Served (acres)	Average Day Water Use[e] (gallons per day X 1,000)	Calculated Average Day Water Use[f] (gallons per day X 1,000)	Average Day Water Use Adjusted for Water Conservation[g] (gallons per day X 1,000)	Average Day Pumpage[h] (gallons per day X 1,000)	Maximum Day Pumpage[i] (gallons per day X 1,000)
Town of Eagle-Eagle Spring Lake Area	- -	- -	- -	450	32	2	3	6	5	0	0	39	36	42	67
Town of Oconomowoc-Okauchee Lake Area-	- -	- -	- -	7,250	508	5	8	124	99	825	83	697	641	750	1,182
Town of Ottawa-Pretty Lake Area	- -	- -	- -	250	18	1	2	1	1	24	2	22	20	24	38
Town of Summit-Golden Lake Area	- -	- -	- -	200	14	0	0	1	1	8	1	16	14	17	26
Total	23,104	26,962	38,889	165,200	11,564	2,837	4,256	6,812	5,450	13,193	1,319	45,692	41,755	48,997	80,550

[a] *Data based upon year 2000 Public Service Commission Reports data for water sales, except the City of New Berlin Water Utility data which is based upon estimated year 2006 data provided by the City of New Berlin Water Utility.*

[b] *Based upon 70 gallons per capita per day.*

[c] *Based upon 1,500 gallons per acre per day.*

[d] *Based upon 800 gallons per acre per day.*

[e] *Based upon 100 gallons per acre of urban services area per day.*

[f] *The sum of the existing average 2000 water use and the expected incremental average day water use through 2035.*

[g] *Adjustment varies from 4 to 10 percent reduction based upon utility. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

[h] *Based upon same ratio of average day pumpage to average day water use as in 2000.*

[i] *Based upon the three-year average (2000, 2001, and 2002) ratio of maximum day pumpage to average day pumpage, adjusted by from 2 to 8 percent for additional water conservation measure impacts over and above the adjustment for average day water use. See SEWRPC Technical Report No. 43,* State-of-the-Art of Water Supply Practices, *dated July 2007, Chapter VII.*

Source: SEWRPC.

Appendix G

SELECTED CHARACTERISTICS OF OTHER-THAN-MUNICIPAL, SELF-SUPPLIED RESIDENTIAL, INDUSTRIAL, COMMERCIAL, AGRICULTURAL, AND IRRIGATION WATER SUPPLY SYSTEMS IN THE SOUTHEASTERN WISCONSIN REGION: 2035

NOTE: The data presented in this appendix are derived largely from the Wisconsin Department of Natural Resources data bases. Some of the data lack currency since no periodic reporting was required as of 2006 for the self-supplied water systems. As of 2008, the Wisconsin Department of Natural Resources was in the process of updating the data base concerned. Updated information on the self-supplied public and nonpublic water supply systems can be obtained from the WDNR staff as this information becomes available.

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Table G-1

SELECTED CHARACTERISTICS OF PRIVATE RESIDENTIAL COMMUNITY WATER SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2035

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Watershed Location[b]	Type of Development[c]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[d]	Well Capacity[d]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Approved Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage[f] (gallons per day)	Comments
Kenosha County															
KN 15a	OTM	Rainbow Lake Manor	Town of Bristol	DP	C	350	BO524	1976	132	L	L	- -	20,000[e]	- -	- -
							AY634	1988	148		L	- -		- -	- -
							HU154	1995	132		L	- -		- -	- -
KN 21	OTM	Oakdale Estates Mobile Home Park	Town of Somers	DP	C	220	BO531	- -	- -	L	L	- -	13,200[e]	- -	- -
							BO528	- -	300		L	- -			- -
							BO529	- -	- -		L	- -			- -
							BO530	- -	- -		L	- -			- -
KN 23	OTM	Wheatland Estates Mobile Home Court	Town of Wheatland	FX	C	450	BO519	- -	73	L	L	- -	27,000[e]	- -	- -
							BO520	1971	137		L	- -			- -
Kenosha County: 3 Systems			- -	- -	- -	1,020	- -	- -	- -	- -	9 Wells	- -	- -	- -	- -
Milwaukee County															
MK 10	OHC	Private Residence	Village of River Hills	MK	E	- -	HM190	1993	145	H	H[g]	26	6,000[f]	37,000[f]	- -
							- -	- -	150		H[g]	37	22,000[f]	53,000[f]	- -
							LK026	1998	142		H[g]	30	30,000[f]	43,000[f]	- -
Milwaukee County: 1 System			- -	- -	- -	- -	- -	- -	- -	- -	3 Wells	- -	- -	- -	- -
Ozaukee County															
OZ 19	OHC	Estate of D. Pollack	City of Mequon	MK/MN	E	- -	BG598	1971	1,170	H	H[g]	200	72,000[f]	187,000[f]	- -
Ozaukee County: 1 System			- -	- -	- -	- -	- -	- -	- -	- -	1 Well	- -	72,000	- -	- -
Racine County															
RC 06	OTM	Hickory Haven	Town of Dover	DP	C	303	BO672	1969	179	L	L	- -	18,180[e]	- -	- -
							BO673	1972	194		L	- -			- -
RC 12	OTM	Harvest View Estates	Town of Yorkville	RT	C	400	FN162	1993	257	H	L[g]	- -	24,000[e]	- -	- -
							BO678	1978	133		L	- -			- -
							BO674	1942	190		L	- -			- -
							BO675	1956	223		L	- -			- -
							BO676	1974	300		L	- -			- -
							BO677	1974	344		L	- -			- -
Racine County: 2 Systems			- -	- -	- -	703	- -	- -	- -	- -	8 Wells	- -	- -	- -	- -
Walworth County															
WL 11	OHC	Dreamfield, LLC, Wrigley Development Corporation	Town of Geneva	FX	E	- -	BH126	1971	0	H	L[g]	- -	5,000[f]	20,000[f]	- -
WL 12	TNC	Sterlingworth Condominiums	Town of LaGrange	FX	A	25	IZ095	1959	197	L	L	- -	1,625[e]	- -	- -
WL 16	OTM	Harbor House	Town of Lyons	FX	D	26	DR206	1990	222	L	L	- -	1,560[e]	- -	Ion exchange
WL 16	OTM	Snug Harbor Inn Mobil Home Park	Town of Richmond	RC	C	55	BO710	1983	278	L	L	- -	3,300[e]	- -	Filtration, greensand, hypochlorination, post, hypochlori-nation, pre
WL 18	OHC	Shore Woods Subdivision	Town of Sugar Creek	FX	B	- -	BH143	1983	0	H	H[g]	120	43,000[f]	86,000[f]	- -

Table G-1 (continued)

Number in SEWRPC GIS File	Type[a]	System Name	Municipality	Watershed Location[b]	Type of Development[c]	WDNR Population Served	WDNR Well ID	Date of Well Construction	Depth of Well (feet)	System Capacity[d]	Well Capacity[d]	Approved Pump Capacity (gallons per minute)	Estimated Average Daily Water Use[d] or Approved Normal Pumpage[e] (gallons per day)	Approved Maximum Daily Water Pumpage[f] (gallons per day)	Comments
Walworth County (continued)															
WL 19	OTM	Vintage on the Ponds	Town of Sugar Creek and Town of Delavan	RC	E	28	KP008	1995	350	L	L	- -	1,680[e]	- -	Filtered, hypo-chlorination, pre, ion exchange
WL 21	OTM	Troy Terrace Mobile Home Park	Town of Troy	FX	C	180	BO689	1967	60	L	L	- -	10,800[f]	- -	- -
Walworth County: 7 Systems			- -	- -	- -	314	- -	- -	- -	- -	7 Wells	- -	- -	- -	- -
Washington County															
WS 10	OTM	Cedar Lake Home	Town of West Bend	MK	D	536	BO722 BH213	1978 1968	600 955	H	H[g] - -	100 - -	20,000[f] 50,000[f]	26,000[f] 70,000[f]	Ion exchange Ion exchange
Washington County: 1 System			- -	- -	- -	536	- -	- -	- -	- -	2 Wells	- -	- -	- -	- -
Waukesha County															
WK 32	OTM	Hills of Wales Apartments	Village of Wales	RC	A	50	BO777 BO778	1975 1976	220 220	L	L L	- - - -	3,000[e]	- -	Ion exchange Ion exchange
WK 33	OTM	The Arbors	Town of Delafield	FX/RC	B	280	BA125	1991	1,095	H	H[g]	250	180,000[f]	360,000[f]	- -
WK 33a	OTM	Ethan Allen School	Town of Delafield	RC	D	750	BH358 BH359	- - 1969	1,240 1,140	- - - -	L H	- - 390	24,000[e] 24,000[e]	- - - -	Hypochlorination, post Hypochlorination, post
WK 34	OTM	Oakton Beach Condominiums	Town of Delafield	FX	A	132	FX375 FX374	1982 1960	660 675	H	L[g] H[g]	60 75	14,000[f] 18,000[f]	28,000[f] 36,000[f]	Ion exchange Ion exchange
WK 35	OTM	Apartments of Stoneridge	Town of Genesee	RC	A	75	DE584 NZ381 NZ392	1990 1998 2000	685 340 735	H	- - - - - -	- - - - - -	4,500[e]	- -	Ion exchange - - - -
WK 38	OTM	The Evergreens	Town of Merton	RC	B	40	BO806	1980	565	H	H[g]	150	108,000[f]	216,000[f]	Ion exchange
WK 36	OTM	Brandybrook Subdivision	Town of Wales	FX	B	25	NY868	2001	1,210	H	L[g]	- -	1,500[e]	- -	- -
WK 43	OTM	Lad Lake Inc.	Town of Ottawa	RC	D	48	BO751 BO752	1978 1968	440 395	L	L L	- - - -	2,880[e]	- -	Ion exchange: reverse osmosis Ion exchange: reverse osmosis
WK 44	OTM	Oconomowoc Develop-ment Training Center	Town of Summit	RC	D	136	BO828 RH687	1976 2002	481 470	H	L[g] - -[g]	65 - -	36,000[f]	50,000[g] - -	Ion exchange Ion exchange
WK 46	OTM	Norris Adolescent Center	Town of Vernon	FX	D	120	BO782 GT011	1966 1920	80 277	L	L L	- - - -	7,200[e]	- -	Filtration, Pressure sand Filtration, pressure sand
Waukesha County: 10 Systems			- -	- -	- -	1,656	- -	- -	- -	- -	18 Wells	- -	- -	- -	- -
Regional Total: 25 Systems			- -	- -	- -	4,229	- -	- -	- -	- -	48 Wells	- -	- -	- -	- -

Footnotes to Table G-1

[a] *OTMs are classified by the Wisconsin Department of Natural Resources as "other-than-municipal community systems."*
OHC indicates residential use wells listed in the High Capacity Wells database by the Wisconsin Department of Natural Resources.
TNC indicates residential use wells designated as transient, non-community in the Public Water Supply Systems database.

[b]
DP = Des Plaines River Watershed
FX = Fox River Watershed
MN = Menomonee River Watershed
MK = Milwaukee River Watershed
RC = Rock River Watershed
RT = Root River Watershed

[c]
A = Apartment or condominium
B = Subdivision
C = Mobile Home Park
D = Institution
E = Private Residence

[d]
H = High-Capacity (70 gallons per minute or greater)
L = Low-Capacity (less than 70 gallons per minute capacity)

[e] *Average water use is estimated based upon review of population data available from the WDNR and SEWRPC and by using 60 gallons per day per capita, unless otherwise noted.*

[f] *Indicates that the approved normal and maximum daily pumpage in gallons is from the WDNR Drinking Water System database. These amounts may be pumped intermittently.*

[g] *Well is listed as a permitted high-capacity well in the WDNR Drinking Water System database.*

Source: Wisconsin Department of Natural Resources and SEWRPC.

Table G-2

SELECTED CHARACTERISTICS OF SELF-SUPPLIED INDUSTRIAL WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2035

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Capacity (individual)	Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day)[d]
Kenosha County											
KN 04	Mann Brothers, Inc.	Town of Brighton	FX	Miscellaneous	G	1	AG445	H	H[e]	135,000	135,000
KN 05	Kenosha Beef International and Birchwood Meats	Town of Paris	DP	Non-Transient, Non-Community	G	2	JF056 JF057	L	L L	5,280	- -
KN 06	Wisconsin Electric Power Company	Town of Paris	DP	Industrial	G	1	EQ940	H	H[e]	36,000	- -
KN 09	Amon, B.R. & Sons, Inc.	Town of Wheatland	FX	Industrial	G	2	KEN001 ES267	H	H[e] H[e]	90,000 180,000	360,000 360,000
KN 10	Meyer Material Corp	Town of Wheatland	FX	Industrial Private Potable	G	2	HJ174 HJ171	H	H[e] L[e]	72,000 1,000	144,000 7,000
Kenosha County: 5 Systems		- -	- -	- -	- -	8	- -	- -	- -	- -	- -
Milwaukee County											
MK 01	Metro Recycling and Disposal Facility	City of Franklin	FX	Non-Transient, Non-Community	G	1	EZ007	L	L	- -	- -
MK 02	Schmitz Ready Mix Inc.	City of Franklin	RT	Industrial	G	1	HU238	H	H[e]	135,000	288,000
MK 03	Waste Management, Southeast Wisconsin	City of Franklin	RT	Non-Transient, Non-Community	G	1	IW983	L	L	1,050	- -
MK 09	Briggs and Stratton Corporation	City of Wauwatosa	MN	Industrial Non-Transient, Non-Community	G	2	- - BE698	H	H[e] L	490,000 37,500	865,000 - -
MK 11	Wiscold	City of Wauwatosa	MN	Industrial	G	1	- -	H	H[e]	200,000	250,000
Milwaukee County: 5 Systems		- -	- -	- -	- -	6	- -	- -	- -	- -	- -
Ozaukee County											
OZ 09	Lakeside Foods Inc.	Village of Belgium	SH	Industrial	G	3	BE771 BE772 BE773	H	H[e] H[e] H[e]	60,000 165,000 225,000	72,000 198,000 270,000
OZ 11	Cook Composites and Polymers	Village of Saukville	MK	Industrial	G	1	MJ827	H	H[e]	360,000	720,000
OZ 12	Cedar Valley Cheese, Inc.	Town of Fredonia	SA	Industrial Non-Transient, Non-Community	G G G	3	OZKE003 DB579 OO332	H	L[e] L[e] H[e]	26,000 - - 35,000	43,000 72,000 2,888,000
OZ 13	Streu Construction	Town of Fredonia	MK	Industrial	G	1	QO904	H	H[e]	50,000	81,000
OZ 14	Simplicity Manufacturing Company	Town of Port Washington	SA	Irrigation	G	1	BC622	H	H[e]	100,000	150,000
Ozaukee County: 5 Systems		- -	- -	- -	- -	9	- -	- -	- -	- -	- -
Racine County											
RC 01	Echo Lake Farm Produce Co.	City of Burlington	FX	Industrial	G	4	BE843 BE844 BE845 BE846	H	L[e] L[e] L[e] L[e]	14,000 14,000 14,000 41,000	16,000 16,000 16,000 50,000
RC 02	Foster-Forbes Glass Company	City of Burlington	FX	Industrial	G	1	BE840	H	H[e]	576,000	576,000
RC 03	Lavelle Industries	City of Burlington	FX	Industrial	G	1	BE832	H	H[e]	144,000	192,000
RC 04	Nestle Chocolate	City of Burlington	FX	Industrial	G	1	BE839	H	H[e]	388,000	388,000

Table G-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Capacity (individual)	Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day)[d]
Racine County (continued)											
RC 06	Tuscarora Inc.	City of Burlington	FX	Industrial	G	1	BE842	H	H[e]	136,000	190,000
RC 07	S.C. Johnson & Son	City of Racine	DD	Miscellaneous Industrial	G	4	CQ254 BG728 BE830 BE831	H	H[e] L[e] H[e] H[e]	20,000 36,000 132,000 158,000	108,000 42,000 132,000 158,000
RC 08	Sekao Inc.	Town of Burlington	FX	Industrial	G	2	TU471 TT794	H	H[e] H[e]	40,000 40,000	60,000 60,000
RC 13	American Champion Aircraft	Town of Rochester	FX	Non-Transient, Non-Community	G	1	CS700	L	L	900	- -
RC 14	Maple Leaf Farms, Inc.	Town of Yorkville	RT	Industrial Non-Transient, Non-Community	G	11	NO432 BE835 BE834 RAC015 BE847 BE848 LW496 RAC014 IY924 ES809 IY923	H	L[e] L[e] L[e] L[e] L[e] L[e] L H[e] H[e] L L	5,000 16,000 20,000 24,000 50,000 50,000 86,000 479,000 479,000 - - - -	20,000 16,000 20,000 24,000 50,000 70,000 - - 479,000 479,000 - - - -
Racine County: 9 Systems		- -	- -	- -	- -	26	- -	- -	- -	- -	- -
Walworth County											
WL 01	Robinson Wholesale Inc.	Village of Genoa City	FX	Industrial	G	3	- - - - - -	H	H[e] L - -	216,000 - - - -	216,000 1,000 - -
WL 02	Birds Eye Foods	Town of Darien	RC	Non-Transient, Non-Community	G	1	FH033	L	L	3,750	- -
WL 03	Larsen Company	Town of Darien	RC	Industrial	G	1	BF010	H	H[e]	986,000	2,304,000
WL 04	Walworth Foundries	Town of Darien	RC	Non-Transient, Non-Community	G	1	FG761	L	L	450	- -
WL 05	Amon, B.R. & Sons, Inc.	Town of LaFayette	FX	Industrial	G	2	FX503 FX501	H	H[e] H[e]	76,000 360,000	115,000 720,000
WL 06	Mann Brothers, Inc.	Town of LaFayette	FX	Industrial	G	6	- - QX797 QX796 CZ347 - - - -	H	H[e] H[e] H[e] H[e] H H	30,000 172,000 172,000 360,000 - - - -	110,000 285,000 285,000 720,000 110,000 110,000
WL 07	ITW Filtration	Town of Lyons	FX	Non-Transient, Non-Community	G	1	JD492	L	L	1,200	- -
WL 08	MGA Research Corp.	Town of Lyons	FX	Non-Transient, Non-Community	G	1	JF058	L	L	570	- -
WL 10	Debuck, David	Town of Richmond	RC	Industrial	G	2	BE520 BE519	H	L[e] L[e]	8,000 15,000	15,000 30,000
WL 11	Kikkoman Foods Inc.	Town of Walworth	RC	Non-Transient, Non-Community Industrial	G	4	RX240 FH031 FH032 AY373	H	H[e] H[e] H[e] H[e]	120,000 274,000 360,000 432,000	720,000 432,000 360,000 864,000

Table G-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Capacity (individual)	Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day)[d]
Walworth County (continued)											
WL 12	Tankcraft Corp.	Town of Walworth	RC	Non-Transient, Non-Community	G	2	BE517 BE518	H	L[e] L[e]	4,000 4,000	4,000 4,000
WL 13	Janesville Sand & Gravel Co.	Town of Whitewater	RC	Industrial	G	1	WAL049	H	L[e]	1,000	8,000
Walworth County: 12 Systems		- -	- -	- -	- -	25	- -	- -	- -	- -	- -
Washington County											
WS 02	Merget Sand & Gravel	Village of Germantown	MN	Industrial	G	1	BE964	H	H[e]	180,000	180,000
WS 04	WI Electric Power Co. Germantown	Village of Germantown	MN	Industrial	G	1	BE969	H	H[e]	100,000	100,000
WS 05	Northland Cranberry	Village of Jackson	MK	Industrial	G	1	WASH09	H	H[d]	56,000	175,000
WS 06	Fly, Bill	Town of Addison	RC	Industrial	G	2	IL295 EQ334	H	H[e] L	24,000 - -	100,000 22,000
WS 07	Sunset Farms	Town of Addison	RC	Industrial	G	4	MZ114 QW461 WASH13 IE882	H	L[e] L[e] L[e] L[e]	8,000 18,000 - - - -	10,000 25,000 1,000 1,000
WS 08	Weasler Engineering	Town of Barton	MK	Non-Transient, Non-Community	G	1	CW600	L	L	3,375	- -
WS 09	Wiedmeyer Service Center	Town of Barton	MK	Transient, Non-Community	G	1	BO730	L	L	465	- -
WS 10	Level Valley Dairy Company	Town of Jackson	MK	Industrial	G	1	BA132	H	H[e]	325,000	325,000
WS 11	Schreiber Foods Inc.	Town of Jackson	MK	Non-Transient, Non-Community	G	1	BO734	L	L	1,950	- -
WS 12	Quincy Resource Group	Town of Polk	MK	Non-Transient, Non-Community	G	1	LD596	L	L	990	- -
WS 13	Wissota Sand & Gravel Co, Inc.	Town of Polk	MK	Industrial	G	2	BE971 BE968	H	H[e] H[e]	240,000 270,000	300,000 432,000
WS 14	Yahara Materials, Inc.	Town of Polk	MK	Industrial	G	1	BE970	H	H[e]	20,000	40,000
WS 15	Strohwig Tool	Town of Richfield	MK	Non-Transient, Non-Community	G	1	FG550	L	L	2,400	- -
WS 16	Jack Walters & Sons Corp.	Town of Wayne	RC	Non-Transient, Non-Community	G	1	BO724	L	L	900	- -
Washington County: 14 Systems		- -	- -	- -	- -	19	- -	- -	- -	- -	- -
Waukesha County											
WK 03	Anamax Corporation	City of Muskego	FX	Industrial	G	1	BE994	H	H[e]	2,000	3,000
WK 05	New Berlin Redi-Mix Inc.	City of New Berlin	FX	Miscellaneous	G	2	BH293 SM393	H	H[e] L[e]	20,000 25,000	30,000 50,000
WK 06	Lake Country Foods Inc.	City of Oconomowoc	RC	Industrial Non-Transient, Non-Community Non-Transient, Non-Community	G	3	BE995 BO816 BO815	H	H[e] H[e] L	600,000 1,100,000 - -	700,000 1,300,000 - -
WK 08	Payne & Dolan, Inc.	City of Pewaukee	FX	Industrial	G	2	SY362 OD799	H	L[e] H[e]	5,000 30,000	10,000 432,000
WK 10	Wisconsin Electric Power Company	City of Pewaukee	FX	Industrial	G	2	BE989 BE990	H	L[e] H[e]	2,000 220,000	3,000 220,000

Table G-2 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Capacity (individual)	Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day)[d]
Waukesha County (continued)											
WK 11	Generac Power Systems Inc.	City of Waukesha	FX	Non-Transient, Non-Community	G	1	BO810	L	L	7,500	- -
WK 14	Dawson, Dale	Village of Lannon	FX	Industrial	G	1	BE972	H	H[e]	72,000	144,000
WK 18	Friday Canning Corporation	Village of Sussex	XF	Industrial	G	1	BE991	H	H[e]	200,000	300,000
WK 21	Central Ready Mixed Concrete	Town of Lisbon	RC	Industrial	G	1	BE986	H	H[e]	50,000	100,000
WK 22	Genesee Aggregate Corporation	Town of Lisbon	RC	Industrial	G	4	MK438 RX238 - - MK439	H	L[e] H[e] H[e] L	4,000 45,000 205,000 - -	22,000 90,000 410,000 1,000
WK 23	Halquist Stone Company Inc.	Town of Lisbon	FX	Industrial	G	13	- - - - - - - - - - - - - - TG861 - - - - GM120 IE600 CO705	H	L[e] L[e] L[e] L[e] L[e] L[e] L[e] L[e] L[e] H[e] H[e] L[e] H[e]	1,000 1,000 1,000 1,000 1,000 1,000 15,000 15,000 22,000 36,000 36,000 36,000 42,000	1,000 1,000 1,000 1,000 1,000 1,000 22,000 30,000 43,000 115,000 115,000 72,000 100,000
WK 24	LaFarge North America	Town of Lisbon	RC	Industrial	G	2	RS681 - -	H	H[e] - -[e]	600,000 - -	720,000 - -
WK 25	Balax Inc.	Town of Merton	RC	Non-Transient, Non-Community	G	1	JE594	L	L	1,200	- -
Waukesha County: 13 Systems		- -	- -	- -	- -	34	- -	- -	- -	- -	- -
Regional Total: 64 Systems		- -	- -	- -	- -	127	- -	- -	- -	- -	- -

[a] *DD = Direct Drainage Area Tributary to Lake Michigan*
DP = Des Plaines River Watershed
FX = Fox River Watershed
MN = Menomonee River Watershed
MK = Milwaukee River Watershed
RC = Rock River Watershed
RT = Root River Watershed
SA = Sauk Creek Watershed
SH = Sheboygan River Watershed

[b] *G = Groundwater*
S = Surface Water

[c] *H = High-Capacity (70 gallons per minute or greater)*
L = Low-Capacity (less than 70 gallons per minute capacity)

[d] *Estimated pumpage is typically based upon very limited data, where available. The values reported are the normal and maximum daily approved pumpage in gallons from the WDNR Drinking Water System database.*

[e] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System database.*

Source: Wisconsin Department of Natural Resources.

Table G-3

SELECTED CHARACTERISTICS OF SELF-SUPPLIED COMMERCIAL WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2035

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Kenosha County											
KN 025	Prairie Harbor Development Company	Village of Pleasant Prairie	DD	Miscellaneous	G	1	BG077	H	H[e]	11,000	110,000
KN 026	Prairie Harbor Yacht Club	Village of Pleasant Prairie	DD	Transient, Non-Community	G	1	ES700	H	L[e]	260	- -
KN 068	Jeddy's Bar	Town of Brighton	DP	Transient, Non-Community	G	1	KY602	L	L	540	- -
KN 079	Renaissance Entertainment Corp.	Village of Bristol	DP	Miscellaneous	G	1	OR823	H	H[e]	125,000	216,000
KN 088	The Tin Cup	Town of Paris	DP	Transient, Non-Community	G	1	GV839	L	L	1,000	- -
KN 083	Birchwood Transport Inc.	Town of Paris	DP	Transient, Non-Community Other High Capacity; Industrial	G	2	JF865 JF864	L	L L	600	- -
KN 084	Bristol Motel	Town of Paris	DP	Transient, Non-Community	G	1	GO772	L	L	1,755	- -
KN 085	Espositos	Town of Paris	DP	Transient, Non-Community	G	1	GT017	L	L	250	- -
KN 086	Great Lakes Dragaway	Town of Paris	DP	Transient, Non-Community	G	1	EZ871	L	L	1,500	- -
KN 087	Paris Motel	Town of Paris	DP	Transient, Non-Community	G	1	IX221	L	L	1,690	- -
KN 089	Whispering Oaks	Town of Paris	DP	Transient, Non-Community	G	1	HQ907	L	L	520	- -
KN 118	Silver Lake Marina	Town of Salem	FX	Transient, Non-Community	G	1	NT041	L	L	750	- -
KN 121	The Hideout	Town of Salem	DP	Transient, Non-Community	G	1	JD478	L	L	540	- -
KN 131	Easterday Motel	Town of Somers	DP	Transient, Non-Community	G	1	NO415	L	L	1,625	- -
KN 141	Star Bar Restaurant	Town of Somers	DP	Transient, Non-Community	G	1	JB892	L	L	500	- -
KN 143	B & D Village Inn	Town of Wheatland	FX	Transient, Non-Community	G	1	GV861	L	L	270	- -
KN 144	Change A Pace	Town of Wheatland	FX	Transient, Non-Community	G	1	IY997	L	L	540	- -
KN 146	Lily Lake Resort	Town of Wheatland	FX	Transient, Non-Community	G	1	JB880	L	L	1,625	- -
KN 147	Local Folks	Town of Wheatland	FX	Transient, Non-Community	G	1	JF863	L	L	540	- -
KN 149	Marino's Country Aire Banquet Hall	Town of Wheatland	FX	Transient, Non-Community	G	1	JF866	L	L	6,050	- -
Kenosha County: 20 Systems		- -	- -	- -	- -	22	- -	- -	- -	- -	- -
Milwaukee County											
MK 048	Milwaukee County Country Club	Village of River Hills	MK	Transient, Non-Community	G	2	IY958 IY959	L	L L	6,400	- -
MK 049	River Tennis Club	Village of River Hills	MK	Transient, Non-Community	G	1	GV029	L	L	270	- -
Milwaukee County: 2 Systems		- -	- -	- -	- -	3	- -	- -	- -	6,670	- -
Ozaukee County											
OZ 043	Missing Links Golf Range	City of Mequon	MK	Transient, Non-Community	G	1	GU217	L	L	500	- -
OZ 045	Nichol Park Golf Range	City of Mequon	MK	Transient, Non-Community	G	1	FE987	L	L	1,280	- -
OZ 053	Pigskin Inn	City of Mequon	ML	Transient, Non-Community	G	1	GU172	L	L	1,040	- -
OZ 063	The Landmark, Mequon	City of Mequon	ML	Transient, Non-Community	G	1	GU178	L	L	500	- -
OZ 100	Lake Church Inn	Town of Belgium	SK	Transient, Non-Community	G	1	IZ122	L	L	1,820	- -
OZ 101	Squires Country Club	Town of Belgium	DD	Transient, Non-Community	G	1	GV900	L	L	3,160	- -
OZ 108	Five Pillars Supper Club	Town of Fredonia	MK	Transient, Non-Community	G	1	GU229	L	L	1,030	- -

Table G-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Ozaukee County (continued)											
OZ 110	Little Kohler Haus	Town of Fredonia	MK	Transient, Non-Community	G	1	GU230	L	L	1,020	- -
OZ 111	Mueller's Sales & Service	Town of Fredonia	MK	Transient, Non-Community	G	1	FG540	L	L	250	- -
OZ 112	Runaways	Town of Fredonia	SA	Transient, Non-Community	G	1	IZ125	L	L	600	- -
OZ 113	Schwai's Meats and Sausage	Town of Fredonia	SA	Transient, Non-Community	G	1	IZ057	L	L	500	- -
OZ 115	Fire Ridge Golf Club	Town of Grafton	MK	Transient, Non-Community	G	1	EM229	L	L	500	- -
OZ 117	Rick's Pioneer Mobil	Town of Grafton	MK	Transient, Non-Community	G	1	ET898	L	L	260	- -
OZ 118	Driftwood Motel	Town of Port Washington	SA	Transient, Non-Community	G	1	GV060	L	L	1,625	- -
OZ 119	Memories	Town of Port Washington	SK	Transient, Non-Community	G	1	FH039	L	L	1,000	- -
OZ 121	R & R Bar & Grill	Town of Port Washington	SA	Transient, Non-Community	G	1	GT129	L	L	740	- -
OZ 122	McCarthy's	Town of Saukville	MK	Transient, Non-Community	G	1	GU681	L	L	500	- -
OZ 123	Riveredge Nature Center, Sugar Inn	Town of Saukville	MK	Transient, Non-Community	G	1	FG647	L	L	500	- -
OZ 125	The Bog Golf Course	Town of Saukville	MK	Transient, Non-Community	G	5	EM251 EM252 EM248 KO926 EM247	H	L L L L L	3,400	- -
Ozaukee County: 19 Systems		- -	- -	- -	- -	23	- -	- -	- -	- -	- -
Racine County											
RC 009	Billy Ds	Town of Burlington	FX	Transient, Non-Community	G	1	JE622	L	L	1,000	- -
RC 021	Dead End Saloon	Village of Caledonia	RT	Transient, Non-Community	G	1	JE633	L	L	1,000	- -
RC 023	Freudenwald Oldsmobile Dealership	Village of Caledonia	RT	Transient, Non-Community	G	1	FG809	L	L	320	- -
RC 025	Husher Pub & Grill	Village of Caledonia	RT	Transient, Non-Community	G	1	GT072	L	L	1,000	- -
RC 033	Shamrocks Pub & Grill	Village of Caledonia	RT	Transient, Non-Community	G	1	GT071	L	L	750	- -
RC 035	Swan Farms	Village of Caledonia	RT	Transient, Non-Community	G	1	GT077	L	L	1,040	- -
RC 036	The Depot Bar & Grill	Village of Caledonia	RT	Transient, Non-Community	G	1	GT110	L	L	1,040	- -
RC 038	Witts End	Village of Caledonia	RT	Transient, Non-Community	G	1	CU670	L	L	1,000	- -
RC 039	Auctioneers Inn	Town of Dover	FX	Transient, Non-Community	G	1	GS019	L	L	500	- -
RC 042	Dover Food Mart	Town of Dover	RT	Transient, Non-Community	G	1	FH027	L	L	270	- -
RC 043	Dover Inn	Town of Dover	FX	Transient, Non-Community	G	1	FD488	L	L	1,000	- -
RC 077	Blackhawk Corp Condos	Town of Raymond	RT	Non-Transient, Non-Community	G	1	KM454	L	L	3,840	- -
RC 078	Corner Pub & Grill	Town of Raymond	RT	Transient, Non-Community	G	1	GU164	L	L	1,040	- -
RC 079	Lady Luck	Town of Raymond	RT	Transient, Non-Community	G	1	GT073	L	L	500	- -
RC 080	Lolly's	Town of Raymond	RT	Transient, Non-Community	G	1	GP930	L	L	1,000	- -
RC 081	Metro Milwaukee Auto Auction	Town of Raymond	RT	Miscellaneous Non-Transient, Non-Community Miscellaneous Miscellaneous Non-Transient, Non-Community Non-Transient, Non-Community Non-Transient, Non-Community Transient, Non-Community	G G G G G G G G	8	- - DQ151 - - EZ973 LI567 AY636 CU276 EZ972	H	L[e] L[e] H[e] L[e] L L L L	- - 3,000 3,000 9,000 400 600 1,125 3,500	14,000 56,000 79,000 216,000 - - - - - - - -

Table G-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Racine County (continued)											
RC 082	North Shore WInchester Gun Club	Town of Raymond	RT	Transient, Non-Community	G	1	GP795	L	L	760	- -
RC 083	Raymond Heights Golf Center	Town of Raymond	RT	Transient, Non-Community	G	1	GU161	L	L	560	- -
RC 084	Roettger's Raymond Mobil	Town of Raymond	RT	Transient, Non-Community	G	1	FD485	L	L	500	- -
RC 085	Seven Mile Fair	Town of Raymond	RT	Transient, Non-Community: Miscellaneous Miscellaneous Non-Transient, Non-Community: Miscellaneous Non-Transient, Non-Community	G G G G	4	GT078 RAC017 HR225 GT079	H	L[e] L[e] L[e] L	4,000 10,000 10,000 1,500	14,000 19,000 86,000 - -
RC 086	Seven Mile Station	Town of Raymond	RT	Transient, Non-Community	G	1	ET797	L	L	270	- -
RC 087	The Hideout	Town of Raymond	RT	Transient, Non-Community	G	1	GT105	L	L	1,000	- -
RC 088	Welch's A & W	Town of Raymond	RT	Transient, Non-Community	G	1	GP757	L	L	1,000	- -
RC 090	Dales Bar	Village of Rochester	FX	Transient, Non-Community	G	2	IZ201 MA098	L L	L L	500	- -
RC 091	Hitch N' Post	Village of Rochester	FX	Transient, Non-Community	G	1	KL298	L	L	1,000	- -
RC 104	White Fox Den II	Town of Waterford	FX	Transient, Non-Community	G	1	GV868	L	L	500	- -
RC 105	Apple Holler Restaurant	Town of Yorkville	DP	Transient, Non-Community	G	1	EZ941	L	L	1,200	- -
RC 106	Country Rose Bakery Cafe	Town of Yorkville	RT	Transient, Non-Community	G	1	RO946	L	L	1,200	- -
RC 107	International Sports Complex	Town of Yorkville	DP	Transient, Non-Community	G	2	GQ564 IZ228	L	L L	6,000	- -
RC 110	Mike Ben-Ben Inc.	Town of Yorkville	DP	Non-Transient, Non-Community	G	1	ES812	L	L	250	- -
Racine County: 30 Systems		- -	- -	- -	- -	42	- -	- -	- -	- -	- -
Walworth County											
WL 008	Rote Oil & Lenon Bus Service	Town of Bloomfield	FX	Transient, Non-Community	G	1	II698	L	L	650	- -
WL 010	Corners Inn	Town of Darien	RC	Transient, Non-Community	G	1	CR551	L	L	500	- -
WL 011	Country Station	Town of Darien	RC	Transient, Non-Community	G	1	MX716	L	L	250	- -
WL 012	Countryside Family Restaurant	Town of Darien	RC	Transient, Non-Community	G	1	EZ887	L	L	2,000	- -
WL 013	Richmond House	Town of Darien	RC	Transient, Non-Community	G	1	CU191	L	L	800	- -
WL 014	The Show Palace Club	Town of Darien	RC	Transient, Non-Community	G	1	ME252	L	L	540	- -
WL 015	Vegas Gentleman's Club	Town of Darien	RC	Transient, Non-Community	G	1	GT109	L	L	3,100	- -
WL 040	Dockside Grog & Galley	Town of East Troy	FX	Transient, Non-Community	G	1	FG181	L	L	500	- -
WL 041	Double D's Pub and Eatery	Town of East Troy	FX	Transient, Non-Community	G	1	GU170	L	L	820	- -
WL 043	Lake Beulah Country Club	Town of East Troy	FX	Transient, Non-Community	G	1	GU729	L	L	1,500	- -
WL 044	Lake Beulah Yacht Club	Town of East Troy	FX	Transient, Non-Community	G	1	GO750	L	L	600	- -
WL 045	Lake House Beulah Pub	Town of East Troy	FX	Transient, Non-Community	G	1	GU194	L	L	6,000	- -
WL 048	Foley's Bar & Grill	Town of Geneva	FX	Transient, Non-Community	G	1	TT578	L	L	700	- -
WL 049	French Country Inn	Town of Geneva	FX	Transient, Non-Community	G	1	ET927	L	L	2,925	- -
WL 050	Mars Resort	Town of Geneva	FX	Transient, Non-Community	G	1	GS027	L	L	8,125	- -
WL 051	Alpine Valley Resort	Town of LaFayette	FX	Non-Transient, Non-Community Miscellaneous	G G G	3	RX227 BH131 WAL010	H	L[e] H[e] H[e]	6,000 33,000 33,000	12,000 47,000 47,000

Table G-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Walworth County (continued)											
WL 052	Crossroads Motel	Town of LaFayette	FX	Transient, Non-Community	G	1	IZ166	L	L	1,625	- -
WL 053	Kountry Inn	Town of LaFayette	FX	Transient, Non-Community	G	1	IZ070	L	L	2,000	- -
WL 054	La Grange General Store	Town of LaGrange	FX	Transient, Non-Community	G	1	GU162	L	L	1,020	- -
WL 055	Lauderdale Country Club	Town of LaGrange	FX	Transient, Non-Community	G	1	IZ073	L	L	1,500	- -
WL 056	Lauderdale Landing	Town of LaGrange	FX	Transient, Non-Community	G	1	IZ074	L	L	500	- -
WL 057	Elgin Club	Town of Linn	FX	Transient, Non-Community	G	1	FB337	L	L	1,625	- -
WL 059	Lake Geneva Country Club: Clubhouse	Town of Linn	FX	Non-Transient, Non-Community	G	1	DK985	L	L	2,500	- -
WL 060	Lake Geneva Highlands	Town of Linn	FX	Transient, Non-Community	G	1	GQ566	L	L	9,750	- -
WL 062	Lazy Cloud Inn	Town of Linn	FX	Transient, Non-Community	G	1	GT103	L	L	1,625	- -
WL 064	Owl Tavern	Town of Linn	FX	Transient, Non-Community	G	1	PT006	L	L	500	- -
WL 065	Pier LLC Grocery	Town of Linn	FX	Transient, Non-Community	G	1	GS084	L	L	260	- -
WL 071	Brute Golf Course Halfway House	Town of Lyons	FX	Transient, Non-Community	G	1	GM446	L	L	2,000	- -
WL 072	Grand Geneva Resort	Town of Lyons	FX	Miscellaneous	G	5	BH134 BH135 BH136 BH137 BH133	H	L[e] H[e] H[e] H[e] H[e]	48,000 82,000 403,000 288,000 288,000	72,000 164,000 403,000 576,000 576,000
WL 073	Highlands Golf Course Halfway House	Town of Lyons	FX	Transient, Non-Community	G	1	HL870	L	L	2,000	- -
WL 074	Showboat of Lyons	Town of Lyons	FX	Transient, Non-Community	G	2	LT438 LT437	L	L L	5,920	- -
WL 078	Duck Inn	Town of Richmond	RC	Transient, Non-Community	G	1	IZ170	L	L	600	- -
WL 079	Snug Harbor Inn	Town of Richmond	RC	Transient, Non-Community	G	1	PT489	L	L	5,300	- -
WL 080	The Real McCoy's	Town of Richmond	RC	Transient, Non-Community	G	1	JF854	L	L	600	- -
WL 081	Tubby's Too Bar & Grill	Town of Richmond	RC	Transient, Non-Community	G	1	PS842	L	L	540	- -
WL 082	Turtle Lake Inn	Town of Richmond	RC	Transient, Non-Community	G	1	GU688	L	L	1,250	- -
WL 083	Uncle Bucks	Town of Richmond	RC	Transient, Non-Community	G	1	JE514	L	L	1,500	- -
WL 084	The Boars Nest	Town of Sharon	RC	Transient, Non-Community	G	1	GT107	L	L	560	- -
WL 085	Meadowlark Acres Inc.	Town of Spring Prairie	FX	Transient, Non-Community	G	1	FG741	L	L	2,600	- -
WL 086	Shavers General Store	Town of Spring Prairie	FX	Transient, Non-Community	G	1	CP801	L	L	250	- -
WL 087	Stowell Catering Service Inc.	Town of Spring Prairie	FX	Transient, Non-Community	G	1	ES696	L	L	320	- -
WL 089	Blue Overall	Town of Sugar Creek	FX	Transient, Non-Community	G	1	LX620	L	L	500	- -
WL 090	Creek Mobil	Town of Sugar Creek	FX	Transient, Non-Community	G	1	AQ481	L	L	270	- -
WL 091	Delisles Steak Ranch	Town of Sugar Creek	FX	Transient, Non-Community	G	1	FD484	L	L	600	- -
WL 092	Sugar Creek Inn	Town of Sugar Creek	FX	Transient, Non-Community	G	1	PS841	L	L	500	- -
WL 093	Walworth Inn	Town of Sugar Creek	FX	Transient, Non-Community	G	1	GO744	L	L	500	- -
WL 094	Wandawega Country Club	Town of Sugar Creek	FX	Transient, Non-Community	G	1	FH025	L	L	4,000	- -
Walworth County: 47 Systems		- -	- -	- -	- -	54	- -	- -	- -	- -	- -

Table G-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Washington County											
WS 008	Kal's Service-Amoco	Village of Germantown	RC	Transient, Non-Community	G	1	FV780	L	L	500	- -
WS 009	KJ's Bar and Grill	Village of Germantown	MN	Transient, Non-Community	G	1	MN439	L	L	1,060	- -
WS 012	Sports Corner Bar & Grill	Village of Germantown	MN	Transient, Non-Community	G	1	ET659	L	L	840	- -
WS 017	Willow Creek Amoco	Village of Germantown	MN	Transient, Non-Community	G	1	GV810	L	L	2,060	- -
WS 025	Breakaway Bar & Grill	Town of Addison	RC	Transient, Non-Community	G	1	IZ373	L	L	560	- -
WS 026	Kreilkamp Trucking Inc.	Town of Addison	RC	Transient, Non-Community Non-Transient, Non-Community	G	2	SQ442 LI597	L	L L	400	- -
WS 027	Little Red Inn	Town of Addison	RC	Transient, Non-Community	G	1	PT220	L	L	2,060	- -
WS 028	M J Stevens	Town of Addison	RC	Transient, Non-Community	G	1	AP341	L	L	540	- -
WS 029	The Waterin Hole	Town of Addison	RC	Transient, Non-Community	G	1	GO751	L	L	600	- -
WS 030	Underground Saloon	Town of Addison	RC	Transient, Non-Community	G	1	SV807	L	L	12,120	- -
WS 034	Shlufty's Inn	Town of Barton	MK	Transient, Non-Community	G	1	GO659	L	L	500	- -
WS 035	Church Road Station Inc.	Town of Erin	RC	Transient, Non-Community	G	1	PT529	L	L	500	- -
WS 036	Down Slope Pub	Town of Erin	RC	Transient, Non-Community	G	1	PT224	L	L	600	- -
WS 037	Erin Inn	Town of Erin	RC	Transient, Non-Community	G	1	JE650	L	L	500	- -
WS 038	Erin Motel and Restaurant	Town of Erin	RC	Transient, Non-Community	G	1	ET660	L	L	3,575	- -
WS 039	Tally Ho Inn	Town of Erin	RC	Transient, Non-Community	G	1	AA206	L	L	560	- -
WS 040	Buddie's Place	Town of Farmington	MK	Transient, Non-Community	G	1	PT218	L	L	540	- -
WS 041	Dicks Club 144	Town of Farmington	MK	Transient, Non-Community	G	1	PT496	L	L	500	- -
WS 042	Enright's Tap	Town of Farmington	MK	Transient, Non-Community	G	1	GO666	L	L	540	- -
WS 043	Fire Escape	Town of Farmington	MK	Transient, Non-Community	G	1	PT228	L	L	800	- -
WS 044	Goeden's Auto Body	Town of Farmington	MK	Transient, Non-Community	G	1	FG566	L	L	540	- -
WS 045	Marshalls Country Corner	Town of Farmington	MK	Transient, Non-Community	G	1	AW103	L	L	560	- -
WS 046	Turner Hall	Town of Farmington	MK	Transient, Non-Community	G	1	DD465	L	L	500	- -
WS 047	Cody's	Town of Germantown	MK	Transient, Non-Community	G	1	PT222	L	L	680	- -
WS 048	Riteway Bus Service Germantown	Town of Germantown	MK	Transient, Non-Community	G	1	GV808	L	L	330	- -
WS 049	Snapper's Saloon	Town of Germantown	MK	Transient, Non-Community	G	1	GV871	L	L	1,020	- -
WS 051	Guerndt's Bar	Town of Hartford	RC	Transient, Non-Community	G	1	WASH05	L	L	520	- -
WS 059	St Lawrence C-Way	Town of Hartford	RC	Transient, Non-Community	G	1	JE534	L	L	800	- -
WS 060	Jail House Pub & Grill	Town of Jackson	MK	Transient, Non-Community	G	1	PT225	L	L	540	- -
WS 064	St. Michael's Tavern	Town of Kewaskum	MK	Transient, Non-Community	G	1	GO658	L	L	520	- -
WS 065	Sunburst Ski Area: Summit Ski Corp	Town of Kewaskum	MK	Transient, Non-Community	G	2	FG760 MO390	H	L[e] L[e]	1,000 1,000	5,000 5,000
WS 066	Cedar Lake Pub	Town of Polk	MK	Transient, Non-Community	G	1	GO628	L	L	500	- -
WS 067	Emily's	Town of Polk	MK	Transient, Non-Community	G	1	PT246	L	L	1,000	- -
WS 068	Harley's Steak House	Town of Polk	MK	Transient, Non-Community	G	1	GO626	L	L	270	- -
WS 071	Kruepke Trucking Inc.	Town of Polk	MK	Transient, Non-Community	G	1	BO735	L	L	525	- -

Table G-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Washington County (continued)											
WS 072	Pioneer Plaza	Town of Polk	MK	Transient, Non-Community	G	1	PT229	L	L	820	- -
WS 073	Richfield Pub	Town of Polk	MK	Transient, Non-Community	G	1	CV350	L	L	500	- -
WS 074	Scenic View Country Club	Town of Polk	RC	Transient, Non-Community	G	1	GV926	L	L	3,000	- -
WS 077	Springs Motel	Town of Polk	MK	Transient, Non-Community	G	1	EZ890	L	L	1,625	- -
WS 078	Wurth Adams Nuts and Bolts	Town of Polk	MK	Non-Transient, Non-Community	G	1	SK191	L	L	300	- -
WS 079	Advanced Health Care Hubertus Clinic	Village of Richfield	RC	Transient, Non-Community	G	1	LH768	L	L	4,150	- -
WS 080	Amici's	Village of Richfield	MK	Transient, Non-Community	G	1	KM079	L	L	270	- -
WS 081	Arrowhead Springs Golf Course	Village of Richfield	MK	Transient, Non-Community	G	1	PT216	L	L	500	- -
WS 082	Chalet Shopping Center	Village of Richfield	RC	Transient, Non-Community	G	1	AP342	L	L	740	- -
WS 083	Donna's Tavern	Village of Richfield	RC	Transient, Non-Community	G	1	GO664	L	L	620	- -
WS 084	Fox & Hounds Restaurant	Village of Richfield	RC	Transient, Non-Community	G	2	JE613 PT020	L	L L	4,200	- -
WS 085	Johnny Manhattan's	Village of Richfield	RC	Transient, Non-Community	G	1	PT494	L	L	1,000	- -
WS 086	Kaul Oil Mini Mart 66	Village of Richfield	MN	Transient, Non-Community	G	1	BO736	L	L	1,030	- -
WS 087	Lake Five Service	Village of Richfield	RC	Transient, Non-Community	G	1	IZ443	L	L	1,050	- -
WS 088	Little Red School House, Colgate	Village of Richfield	RC	Non-Transient, Non-Community	G	1	JE645	L	L	1,335	- -
WS 089	Loggers Park Club House, American Health & Fitness	Village of Richfield	MK	Transient, Non-Community	G	1	SS002	H	L[e]	3,000	28,000
WS 090	M & I Bank Menomonee Falls, Richfield	Village of Richfield	RC	Transient, Non-Community	G	1	FG684	L	L	250	- -
WS 091	Millis Transfer Inc.	Village of Richfield	MK	Transient, Non-Community	G	1	FE971	L	L	1,830	- -
WS 092	Piggly Wiggly Supermarket #84	Village of Richfield	RC	Non-Transient, Non-Community	G	1	KP280	L	L	5,850	- -
WS 093	Pioneer Bowl	Village of Richfield	MK	Transient, Non-Community	G	1	GO673	L	L	560	- -
WS 094	Pleasant Hill Inn	Village of Richfield	RC	Transient, Non-Community	G	1	GU745	L	L	540	- -
WS 095	Richfield Chalet	Village of Richfield	RC	Transient, Non-Community	G	1	GV804	L	L	3,200	- -
WS 096	Richfield Plaza	Village of Richfield	RC	Non-Transient, Non-Community	G	1	JE643	L	L	800	- -
WS 097	Richfield Truck Stop	Village of Richfield	MK	Transient, Non-Community	G	1	JE540	L	L	1,000	- -
WS 098	Sawmill Inn	Village of Richfield	MK	Transient, Non-Community	G	1	JE550	L	L	1,080	- -
WS 099	Sunset View Restaurant	Village of Richfield	RC	Transient, Non-Community	G	1	GU106	L	L	520	- -
WS 100	The Copper Dock	Village of Richfield	RC	Transient, Non-Community	G	1	GU744	L	L	500	- -
WS 101	The Country Mart	Village of Richfield	MK	Transient, Non-Community	G	1	FO635	L	L	520	- -
WS 102	Uncle Johnny's	Village of Richfield	RC	Transient, Non-Community	G	1	GV802	L	L	640	- -
WS 103	Wally & Bees	Village of Richfield	RC	Transient, Non-Community	G	1	FG190	L	L	500	- -
WS 104	Whiskey River	Village of Richfield	RC	Transient, Non-Community	G	1	BO739	L	L	1,020	- -
WS 105	Zimmerman's Kettle Hills Golf Course	Village of Richfield	MK	Transient, Non-Community	G	1	FG725	L	L	600	- -
WS 106	El Rey Mexican Restaurant West Bend	Town of Trenton	MK	Transient, Non-Community	G	1	PT247	L	L	250	- -
WS 109	West Bend Lakes Golf & Recreation	Town of Trenton	MK	Transient, Non-Community	G	1	PT202	L	L	500	- -
WS 110	C/W's Place	Town of Wayne	MK	Transient, Non-Community	G	1	PT492	L	L	520	- -

Table G-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Washington County (continued)											
WS 111	Cedar Valley Retreat Campus	Town of Wayne	RC	Transient, Non-Community	G	1	PT208	L	L	350	- -
WS 112	Cross Roads Tap	Town of Wayne	RC	Transient, Non-Community	G	1	FE978	L	L	540	- -
WS 113	Jugs Hitching Post	Town of Wayne	RC	Transient, Non-Community	G	1	ET691	L	L	540	- -
WS 114	Little Folks School House	Town of Wayne	MK	Non-Transient, Non-Community	G	1	FE975	L	L	420	- -
WS 115	Big Cedar Lake Resort	Town of West Bend	MK	Transient, Non-Community	G	1	PT221	L	L	3,575	- -
WS 116	House of Heilman	Town of West Bend	MK	Transient, Non-Community	G	1	FG726	L	L	500	- -
WS 117	JoJo's Bar & Grill	Town of West Bend	MK	Transient, Non-Community	G	1	PT207	L	L	1,000	- -
WS 118	Linden Inn	Town of West Bend	MK	Transient, Non-Community	G	1	AK549	L	L	1,500	- -
WS 119	Our Place	Town of West Bend	MK	Transient, Non-Community	G	1	PT205	L	L	500	- -
WS 120	Schultz's White Tail Inn	Town of West Bend	MK	Transient, Non-Community	G	1	SL318	L	L	2,000	- -
WS 122	Tri Par Oil Company West Bend	Town of West Bend	MK	Transient, Non-Community	G	1	GQ615	L	L	1,800	- -
WS 123	West Bend Country Club	Town of West Bend	MK	Transient, Non-Community	G	1	PT491	L	L	1,500	- -
Washington County: 82 Systems		- -	- -	- -	- -	85	- -	- -	- -	- -	- -
Waukesha County											
WK 003	Brookside Chevrolet	Town of Brookfield	FX	Non-Transient, Non-Community	G	1	FG610	L	L	1,000	- -
WK 009	Jack Safro Motor Used Car Store	Town of Brookfield	FX	Non-Transient, Non-Community	G	1	FG609	L	L	1,100	- -
WK 010	Jack Safro Toyota Inc.	Town of Brookfield	FX	Non-Transient, Non-Community	G	1	QS508	L	L	2,150	- -
WK 068	Deer Haven Golf Course	City of New Berlin	FX	Transient, Non-Community	G	1	HU344	L	L	2,200	- -
WK 089	Docs Dry Dock	City of Pewaukee	FX	Transient, Non-Community	G	1	PS994	L	L	1,560	- -
WK 093	Kahuna's	City of Pewaukee	FX	Transient, Non-Community	G	1	RY584	L	L	500	- -
WK 113	Mill Pond Tavern	Village of Big Bend	FX	Transient, Non-Community	G	1	- -	L	L	1,020	- -
WK 115	Chenequa Country Club	Village of Chenequa	RC	Transient, Non-Community	G	1	AT942	L	L	1,400	- -
WK 145	Lac La Belle Country Club and Golf Course	Village of Lac La Belle	RC	Transient, Non-Community: Irrigation	G	1	OT741	H	L[d]	4,400	1,000
WK 156	Bogeys on Main	Village of Merton	RC	Transient, Non-Community	G	1	PS972	L	L	560	- -
WK 157	Merton Custard Shoppe	Village of Merton	RC	Transient, Non-Community	G	1	QV033	L	L	270	- -
WK 158	Merton Sub Shop	Village of Merton	RC	Transient, Non-Community	G	1	MP508	L	L	270	- -
WK 159	Pistola Pete's Pizza	Village of Merton	RC	Transient, Non-Community	G	1	PS960	L	L	1,540	- -
WK 163	North Prairie Dental Clinic	Village of North Prairie	FX	Transient, Non-Community	G	1	JF895	L	L	1,350	- -
WK 164	Prairie Animal Hospital	Village of North Prairie	FX	Transient, Non-Community	G	1	GS003	L	L	1,700	- -
WK 165	The Flavour House	Village of North Prairie	FX	Transient, Non-Community	G	1	JF894	L	L	270	- -
WK 183	Airmans Sandtrap	Town of Delafield	FX	Transient, Non-Community	G	1	PS878	L	L	1,000	- -
WK 184	Buck Rub Outfitters	Town of Delafield	FX	Transient, Non-Community	G	1	OS037	L	L	540	- -
WK 185	Franks Tap	Town of Delafield	FX	Transient, Non-Community	G	1	PS992	L	L	1,000	- -
WK 186	Golden Anchor	Town of Delafield	FX	Transient, Non-Community	G	1	PS991	L	L	2,080	- -
WK 187	Lakeview Lodge	Town of Delafield	FX	Transient, Non-Community	G	1	PS989	L	L	1,000	- -
WK 189	Nagawaukee Golf Course	Town of Delafield	FX	Transient, Non-Community	G	1	ET905	L	L	1,000	- -

Table G-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Waukesha County (continued)											
WK 190	Pewaukee Yacht Club	Town of Delafield	FX	Transient, Non-Community	G	1	PS999	L	L	540	- -
WK 191	Western Lakes Golf Club	Town of Delafield	FX	Transient, Non-Community	G	1	PS990	L	L	4,240	- -
WK 192	Apron Annie's Enterprises	Town of Eagle	FX	Transient, Non-Community	G	1	KR360	L	L	1,030	- -
WK 195	Eagle Medical Center	Town of Eagle	FX	Transient, Non-Community	G	1	OG925	L	L	1,700	- -
WK 200	House in the Woods Auction Gallery	Town of Eagle	RC	Transient, Non-Community	G	1	FI403	L	L	250	- -
WK 201	Cornerstone Restaurant	Town of Genesee	FX	Transient, Non-Community	G	1	WAUK108	L	L	380	- -
WK 203	Genesee Family Care	Town of Genesee	FX	Transient, Non-Community	G	1	GQ805	L	L	1,550	- -
WK 204	Genesee Market	Town of Genesee	FX	Transient, Non-Community	G	1	GS004	L	L	250	- -
WK 205	In Cahoots	Town of Genesee	FX	Transient, Non-Community	G	1	ET590	L	L	600	- -
WK 209	Old Country Store	Town of Genesee	FX	Transient, Non-Community	G	1	PT520	L	L	350	- -
WK 210	Paisono's Pizzeria	Town of Genesee	FX	Transient, Non-Community	G	1	NN881	L	L	560	- -
WK 211	Reichert Enterprises LLC	Town of Genesee	FX	Transient, Non-Community	G	1	GI592	L	L	3,500	- -
WK 212	Saxes Restaurant	Town of Genesee	RC	Transient, Non-Community	G	1	PS883	L	L	830	- -
WK 213	The Legend at Brandybrook Golf Course	Town of Genesee	FX	Transient, Non-Community: Irrigation	G	1	RH480	H	L[e]	560	1,000
WK 214	Union House Inn	Town of Genesee	FX	Transient, Non-Community	G	1	ET583	L	L	1,100	- -
WK 215	Alstad's Turning Point (Citgo)	Town of Lisbon	RC	Transient, Non-Community	G	1	IA422	L	L	540	- -
WK 216	Fairways of Woodside	Town of Lisbon	FX	Transient, Non-Community	G	1	CP096	L	L	280	- -
WK 217	Halquist Stone Company Showroom	Town of Lisbon	FX	Transient, Non-Community	G	1	ON823	L	L	440	- -
WK 218	Ironwood Golf Course	Town of Lisbon	FX	Transient, Non-Community	G	1	GF735	L	L	2,300	- -
WK 219	Lied's Garden Center	Town of Lisbon	FX	Transient, Non-Community: Miscellaneous Transient, Non-Community	G	2	FX741 ES780	H	L[e] L	10,000	21,000
WK 220	Songbird Hill Golf Course	Town of Lisbon	RC	Transient, Non-Community	G	1	DT448	L	L	580	- -
WK 222	Chenequa Country Club	Town of Merton	RC	Transient, Non-Community	G	1	MK421	L	L	740	- -
WK 223	CJ's Daybreak III	Town of Merton	RC	Transient, Non-Community	G	1	PS957	L	L	280	- -
WK 228	Naylor's Bear Trap	Town of Merton	RC	Transient, Non-Community	G	1	PS953	L	L	1,080	- -
WK 229	North Lake Inn	Town of Merton	RC	Transient, Non-Community	G	1	PS952	L	L	2,600	- -
WK 230	Ox & Cats Sport Bar & Grill	Town of Merton	RC	Transient, Non-Community	G	1	PS958	L	L	560	- -
WK 232	Woody's Bar & Grill	Town of Merton	RC	Transient, Non-Community	G	1	PS954	L	L	1,100	- -
WK 249	Kenny's Killin' Time	Town of Oconomowoc	RC	Transient, Non-Community	G	1	GT059	L	L	540	- -
WK 256	Oconomowoc Golf Club	Town of Oconomowoc	RC	Transient, Non-Community	G	2	SK200 BD693	H	L[d] H[d]	1,000 28,000	2,000 55,000
WK 264	Tom & Di's Rustic Inn	Town of Oconomowoc	RC	Transient, Non-Community	G	1	PS825	L	L	1,000	- -
WK 268	Badger Raceway Park	Town of Ottawa	RC	Transient, Non-Community	G	1	TE673	L	L	250	- -
WK 269	Kettle Moraine Golf Club	Town of Ottawa	RC	Transient, Non-Community	G	1	PT483	L	L	1,100	- -
WK 270	We Energies Delafield Service Center	Town of Ottawa	RC	Non-Transient, Non-Community	G	1	EZ835	L	L	2,325	- -
WK 278	Edgewood Golf Course	Town of Vernon	FX	Transient, Non-Community	G	3	MP747 CT897 - -	H	L[e] L[e] L	1,000 1,000 - -	1,000 5,000 - -

Table G-3 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Waukesha County (continued)											
WK 279	Morningstar Golfers Club	Town of Vernon	FX	Transient, Non-Community	G	3	MW416 OH555 MW415	L	L L L	270 480 540	- - - - - -
WK 281	Woodland Dental Group	Town of Vernon	FX	Transient, Non-Community	G	1	AY453	L	L	2,050	- -
Waukesha County: 58 Systems		- -	- -	- -	- -	65	- -	- -	- -	- -	- -
Region: 258 Systems		- -	- -	- -	- -	294	- -	- -	- -	- -	- -

[a] *DD = Direct Drainage Area Tributary to Lake Michigan*
DP = Des Plaines River Watershed
FX = Fox River Watershed
MN = Menomonee River Watershed
MK = Milwaukee River Watershed
RC = Rock River Watershed
RT = Root River Watershed
SA = Sauk Creek Watershed
SK = Sucker Creek Watershed

[b] *G = Groundwater*
S = Surface Water

[c] *H = High-Capacity (70 gallons per minute or greater)*
L = Low-Capacity (less than 70 gallons per minute capacity)

[d] *Values are approved normal and maximum pumpage amounts reported taken from the WDNR Drinking Water System database, where available. Where not available, average daily pumpage was calculated utilizing standard unit values for the type of facility involved.*

[e] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System Database.*

Source: Wisconsin Department of Natural Resources and SEWRPC.

Table G-4

SELECTED CHARACTERISTICS OF SELF-SUPPLIED INSTITUTIONAL AND RECREATIONAL WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2035

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Kenosha County											
KN 018	Brighton No. 1 School District	Town of Brighton	DP	Non-Transient, Non-Community	G	1	GU728	H	L[e]	2,625	- -
KN 019	Brightondale County Park	Town of Brighton	DP	Transient, Non-Community	G	1	IZ250	L	L	500	- -
KN 020	Happy Acres Kamp Ground	Town of Brighton	DP	Transient, Non-Community	G	1	EZ870	L	L	10,000	- -
KN 021	St. Francis Church and Providence Catholic School	Town of Brighton	DP	Non-Transient, Non-Community	G	1	ES672	H	- -[e]	13,500	- -
KN 022	Union League Boys and Girls Club	Town of Brighton	DP	Miscellaneous - - Transient, Non-Community	G	5	QP015 - - EZ868 EZ865 EZ866	H	- -[e] - -[e] - -[e] L L	4,000 4,000 - - 7,250	- - - - - - - -
KN 023	Wisconsin Department of Natural Resources Bong Recreation Area	Town of Brighton	DP/FX	Transient, Non-Community	G	13	ES913 ES916 ES915 ES920 ES919 ES918 ES921 ES883 ES912 GF055 ES917 ES882 ES914	L	L L L L L L L L L L L L L	1,000 125 125 125 125 125 375 250 450 125 125 250 125	- -
KN 024	Bristol Woods Pringle Nature Center	Village of Bristol	DP	Transient, Non-Community	G	1	IZ252	L	L	125	- -
KN 026	First Christian Church	Village of Bristol	DP	Transient, Non-Community	G	1	MZ728	L	L	4,040	- -
KN 028	St. Scholastica Church	Village of Bristol	DP	Transient, Non-Community	G	1	GV771	L	L	260	- -
KN 029	Waukegan Bowman	Village of Bristol	DP	Transient, Non-Community	G	1	IX230	L	L	500	- -
KN 031	Paris School	Town of Paris	DP	Non-Transient, Non-Community	G	1	ES685	H	L[e]	7,000	7,000
KN 033	La Salette Missionaries	Town of Randall	FX	Transient, Non-Community	G	1	GV848	L	L	290	- -
KN 035	Westosha Baptist Church	Town of Randall	FX	Transient, Non-Community	G	1	GU134	L	L	250	- -
KN 036	Wilmot Mountain Ski Area	Town of Randall	FX	Transient, Non-Community	G	1	IZ236	L	L	250	- -
KN 038	Camp Crown	Town of Salem	FX	Transient, Non-Community	G	2	AX732 AX733	L	L L	1,250	- -
KN 041	Fox River Park	Town of Salem	FX	Transient, Non-Community	G	2	FG596 FG595	L	L L	500	- -
KN 056	Camp Oh Da Ko Ta	Town of Wheatland	FX	Transient, Non-Community	G	1	GV784	L	L	3,250	- -
KN 057	St. Alphonsus Catholic School	Town of Wheatland	FX	Non-Transient, Non-Community	G	1	ES673	H	- -[e]	9,465	- -
KN 058	Wheatland Center School Middle School	Town of Wheatland	FX	Non-Transient, Non-Community	G	1	MM540	H	L[e]	6,000	12,000
Kenosha County: 19 Systems		- -		- -	- -	37	- -	- -	- -	- -	- -
Milwaukee County											
MK 007	Wehr Nature Center	City of Franklin	RT	Miscellaneous Transient, Non-Community	G	2	BG424 IZ184	H	H[e] L	10,000 - -	15,000 - -
MK 013	Milwaukee County Zoo	City of Milwaukee	MN	Miscellaneous	G	1	BG407	H	H[e]	272,000	533,000

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Milwaukee County (continued)											
MK 016	UWM Geology Department	City of Milwaukee	MK	State Institution	G	1	CZ579	H	H[e]	72,000	144,000
MK 017	Wilson Park	City of Milwaukee	KK	Miscellaneous	G	1	BG412	H	H[e]	70,000	270,000
MK 018	Bender Park	City of Oak Creek	DD	Transient, Non-Community	G	1	MZ712	L	L	130	- -
MK 019	Falk Park Well	City of Oak Creek	OC	Transient, Non-Community	G	1	IZ282	L	L	500	- -
MK 021	Menomonee River Parkway Comfort House	City of Wauwatosa	MN	Transient, Non-Community	G	1	GV893	L	L	150	- -
MK 026	Hales Corners Park	Village of Hales Corners	RT	Miscellaneous	G	1	BG414	H	H[e]	86,000	138,000
MK 027	Whitnall Park Golf Course	Village of Hales Corners	RT	Transient, Non-Community	G	2	IZ187 IZ189	L	L L	3,080 500	- - - -
MK 029	Emanuel Bne Jeshrun Center	Village of River Hills	DD	Transient, Non-Community	G	1	IZ673	L	L	1,760	- -
MK 030	Hill Point Church	Village of River Hills	MK	Transient, Non-Community	G	1	IY956	L	L	2,520	- -
MK 031	Indian Hill School	Village of River Hills	MK	Non-Transient, Non-Community	G	1	IZ196	L	L	9,450	- -
MK 032	River Hills Village Hall	Village of River Hills	MK	Transient, Non-Community	G	1	IY895	L	L	460	- -
MK 033	St Christopher's Episcopal Church	Village of River Hills	MK	Transient, Non-Community	G	1	IY900	L	L	1,530	- -
MK 034	University School of Milwaukee	Village of River Hills	DD	Non-Transient, Non-Community School	G	3	EZ005 EZ006 RV874	H	H[e] H[e] H[e]	20,000 100,000 - -	72,000 150,000 3,000
Milwaukee County: 15 Systems		- -	- -	- -	- -	19	- -	- -	- -	- -	- -
Ozaukee County											
OZ 003	Concordia University	City of Mequon	MK	Other than Municipal	G	1	BO591	H	H	51,000	87,000
OZ 009	Crossroads Presbyterian Church	City of Mequon	MK	Transient, Non-Community	G	1	FH043	L	L	1,090	- -
OZ 014	House of Prayer Lutheran Church, Linsmeier School	City of Mequon	MK	Non-Transient, Non-Community	G	1	DK824	L	L	885	- -
OZ 019	Mee Kwon Park	City of Mequon	MK	Transient, Non-Community	G	2	IZ123 GU174	L	L L	250 3,080	- - - -
OZ 022	Mequon Rotary Park	City of Mequon	MK	Transient, Non-Community	G	2	HN488 MF201	L	L L	125 1,250	- - - -
OZ 028	Spirit Life Church	City of Mequon	MK	Transient, Non-Community	G	1	DT490	L	L	290	- -
OZ 034	Trinity Evangelical Lutheran Church and School	City of Mequon	MN	Non-Transient, Non-Community	G	3	GO813	H	L[e]	5,000	20,000
OZ 035	Unitarian Church North	City of Mequon	MK	Transient, Non-Community	G	1	SL308	H	H[e]	1,000	1,000
OZ 037	Virmond Park	City of Mequon	DD	Transient, Non-Community	G	1	FG648	L	L	1,000	- -
OZ 039	St. Mary's Parish Church and School	Village of Belgium	SK	Non-Transient, Non-Community	G	1	GP819	H	H[e]	- -	- -
OZ 040	Waubedonia County Park	Village of Fredonia	MK	Transient, Non-Community	G	1	DA648	L	L	125	- -
OZ 041	Lime Kiln Park	Village of Grafton	MK	Transient, Non-Community	G	1	FG729	L	L	125	- -
OZ 042	Little Red School House, Grafton	Village of Grafton	MK	Non-Transient, Non-Community	G	1	GP833	L	L	1,350	- -
OZ 043	Ozaukee Daycare Center, Ulao Center	Village of Grafton	MK	Non-Transient, Non-Community	G	1	IZ138	L	L	750	- -
OZ 054	Harrington Beach State Park	Town of Belgium	DD	Transient, Non-Community	G	5	BO645 KB622 IZ130 BO646 JE647	L	L L L L L	375 250 375 250 375	- - - - - - - - - -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Ozaukee County (continued)											
OZ 055	Holy Cross Catholic Church	Town of Belgium	SA	Transient, Non-Community	G	1	FG541	L	L	1,500	- -
OZ 058	Covered Bridge County Park	Town of Cedarburg	MK	Transient, Non-Community	G	1	GV875	L	L	1,000	- -
OZ 063	Badger Campsite	Town of Fredonia	SA	Transient, Non-Community	G	1	IF536	L	L	1,250	- -
OZ 064	Camp JCC	Town of Fredonia	MK	Transient, Non-Community	G	2	IZ058 IZ059	L	L L	15,000 9,150	- - - -
OZ 065	Jewish Community Center of Milwaukee	Town of Fredonia	MK	Miscellaneous (Apr to Oct)	G	1	NW682	H	H[e]	72,000	144,000
OZ 066	Ozaukee County Fish and Game	Town of Fredonia	MK	Transient, Non-Community	G	1	FG570	L	L	125	- -
OZ 067	St. Mary's Catholic Church	Town of Fredonia	SK	Transient, Non-Community	G	1	FG646	L	L	1,000	- -
OZ 070	Ozaukee Congregation Church	Town of Grafton	MK	Transient, Non-Community	G	2	NA713 ES868	L	L L	4,020	- -
OZ 071	St. John's Lutheran Church	Town of Grafton	MK	Transient, Non-Community	G	1	FG668	L	L	1,020	- -
OZ 072	Wisconsin Electric Power Company	Town of Grafton	MK	Industrial	G	1	BE776	H	L[e]	12,000	30,000
OZ 073	Faith Baptist Church, Port Washington	Town of Port Washington	SA	Transient, Non-Community	G	1	FG696	L	L	600	- -
OZ 075	Open Door Bible Church	Town of Port Washington	SA	Transient, Non-Community	G	1	GP892	L	L	250	- -
OZ 076	Portview Christian Center	Town of Port Washington	SA	Transient, Non-Community	G	1	FG690	L	L	3,080	- -
OZ 077	St. Simon the Fisherman Episcopal Church	Town of Port Washington	SA	Transient, Non-Community	G	1	FG704	L	L	500	- -
OZ 078	Camp Will-O-Rill	Town of Saukville	MK	Transient, Non-Community	G	5	FG714 FG716 FG717 FG713 FG715	L	L L L L L	1,250 1,250 1,750 1,250 2,000	- - - - - - - - - -
OZ 079	H H Peter's Youth Camp	Town of Saukville	MK	Transient, Non-Community	G	1	FG681	L	L	1,250	- -
OZ 080	Hawthorne Hills County Park	Town of Saukville	MK	Transient, Non-Community	G	2	GO767 GO766	L	L L	570	- -
OZ 081	Pioneer Village	Town of Saukville	MK	Transient, Non-Community	G	1	FG723	L	L	125	- -
OZ 082	Riveredge Nature Center	Town of Saukville	MK	Miscellaneous Transient, Non-Community	G	2	- - CB595	H	H[e] L	50,000 - -	100,000 - -
OZ 083	Saukville Town Hall	Town of Saukville	MK	Transient, Non-Community	G	1	FG547	L	L	2,250	- -
Ozaukee County: 35 Systems		- -	- -	- -	- -	49	- -	- -	- -	- -	- -
Racine County											
RC 003	Wisconsin Department of Natural Resources Root River Steelhead Facility	City of Racine	RT	Miscellaneous	G	4	DR537 DR538 - - - -	H	L[d] L[d] L[d] L[d]	86,000 86,000 86,000 86,000	- - - - - - 86,000
RC 006	Camp Maclean, YMCA of Chicago	Town of Burlington	FX	Transient, Non-Community Miscellaneous	G	7	OA136 KY640 IZ235 - - - - - - - -	H	L[e] L[e] L[e] - -[e] L[e] L[e] L[e]	2,000 5,000 15,000 - - - - - - - -	43,000 15,000 86,000 - - 11,000 15,000 11,000
RC 009	Riverwood Community Church	Town of Burlington	FX	Transient, Non-Community	G	1	FG793	L	L	1,250	- -
RC 014	Caledonia Town Hall	Village of Caledonia	RT	Non-Transient, Non-Community	G	1	FG806	L	L	400	- -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Racine County (continued)											
RC 016	Kingdom Hall of Jehovah's Witnesses	Village of Caledonia	RT	Transient, Non-Community	G	1	GO623	L	L	2,000	- -
RC 018	S.C. Johnson, Wingspread Conference Ctr	Village of Caledonia	RT	Miscellaneous	G	2	AE568 - -	H	- -[e] - -[e]	- - - -	- - - -
RC 019	St. Louis Church	Village of Caledonia	RT	Transient, Non-Community	G	1	ES820	H	- -[e]	3,000	- -
RC 020	Trinity Lutheran Church and School	Village of Caledonia	RT	Non-Transient, Non-Community	G	2	ES823 ES824	H	L[e] L	5,970 525	- - - -
RC 025	Lakeview Specialty Hospital	Town of Dover	FX	Non-Transient, Non-Community	G	1	BO679	L	L	1,250	- -
RC 031	Drought School	Town of Norway	FX	Non-Transient, Non-Community	G	1	GP875	H	- -[e]	2,250	- -
RC 036	North Cape Lutheran Church	Town of Raymond	FX	Transient, Non-Community	G	1	RS883	L	L	3,040	- -
RC 037	Raymond Baptist Church	Town of Raymond	RT	Transient, Non-Community	G	1	FG817	L	L	750	- -
RC 038	Raymond Community Church	Town of Raymond	RT	Transient, Non-Community	G	1	FG818	L	L	1,080	- -
RC 039	Raymond School	Town of Raymond	RT	Non-Transient, Non-Community	G	1	ES806	H	L[e]	6,000	12,000
RC 040	Raymond Seventh Adventist Church	Town of Raymond	RT	Transient, Non-Community	G	1	IZ223	L	L	1,000	- -
RC 041	Raymond Town Hall	Town of Raymond	RT	Transient, Non-Community	G	1	FG819	L	L	340	- -
RC 042	West Allis Bowmen	Town of Raymond	FX	Transient, Non-Community	G	1	FG810	L	L	250	- -
RC 043	English Settlement Church	Town of Rochester	FX	Transient, Non-Community	G	1	FG780	L	L	500	- -
RC 044	Honey Creek Community Baptist Church	Town of Rochester	FX	Transient, Non-Community	G	1	IZ211	L	L	500	- -
RC 045	Wadewitz Nature Camp	Town of Rochester	FX	Transient, Non-Community	G	3	IX228 IX227 IX226	L	L L L	1,350	- - - - - -
RC 046	Caldwell United Methodist Church	Town of Waterford	FX	Transient, Non-Community	G	1	FG828	L	L	740	- -
RC 047	Green Meadows Farm (4-H)	Town of Waterford	FX	Transient, Non-Community	G	1	EK253	L	L	780	- -
RC 050	Kingdom Hall of Jehovah's Witnesses	Town of Yorkville	RT	Transient, Non-Community	G	1	FG791	L	L	700	- -
RC 053	Yorkville School	Town of Yorkville	RT	Non-Transient, Non-Community	G	1	GP877	H	H[e]	5,000	10,000
Racine County: 24 Systems		- -	- -	- -	- -	37	- -	- -	- -	- -	- -
Walworth County											
WL 007	Wood School District 4	City of Lake Geneva	FX	Non-Transient, Non-Community	G	1	RH985	H	L[e]	2,000	3,000
WL 008	East Troy Municipal Airport	Village of East Troy	FX	Transient, Non-Community	G	1	II347	L	L	250	- -
WL 010	Berean Grace Church	Town of Bloomfield	FX	Transient, Non-Community	G	1	ET944	L	L	650	- -
WL 013	Christian Life Church	Town of Delavan	RC	Transient, Non-Community	G	1	GP867	L	L	1,270	- -
WL 017	Bnai Brith Beber Camp	Town of East Troy	FX	Miscellaneous Transient, Non-Community: Miscellaneous Transient, Non-Community	G G G G G G G	7	- - - - IZ157 IZ160 LZ776 IZ158 IZ159	H	L[e] L[e] L[e] L[e] L[e] L L	1,000 - - 1,000 4,000 5,000 - - - -	5,000 1,000 2,000 25,000 43,000 - - - -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Walworth County (continued)											
WL 018	Camp Alice Chester	Town of East Troy	FX	Miscellaneous Transient, Non-Community: Miscellaneous Transient, Non-Community	G	9	- - EZ849 EZ850 EZ847 ET751 EZ846 EZ848 ET753 ST942	H	L[e] L[e] L[e] L[e] L[e] L[e] L[e] L L	5,000 5,000 5,000 5,000 5,000 5,000 5,000 - - - -	10,000 10,000 10,000 10,000 10,000 10,000 10,000 - - - -
WL 019	Camp Edwards, YMCA	Town of East Troy	FX	Transient, Non-Community: Miscellaneous Miscellaneous	G G G G G G	6	GU682 NZ984 GU683 GU684 DR462 II396	H	L[e] L[e] L[e] L[e] - -[e] L[e]	1,000 1,000 1,000 3,000 - - - -	1,000 26,000 1,000 5,000 - - 17,000
WL 020	East Troy Town Hall	Town of East Troy	FX	Transient, Non-Community	G	1	FG750	L	L	300	- -
WL 021	Natures Classroom Montessori School, Bnai Brith Beber Camp	Town of East Troy	FX	Non-Transient, Non-Community	G	1	SG078	H	L[e]	20,000	40,000
WL 023	Salvation Army Lake Camp	Town of East Troy	FX	Miscellaneous Transient, Non-Community	G G G G G	5	BH145 BH144 GU168 GU167 GU166	H	H[e] H[e] L L L	8,000 8,000 - - - - - -	12,000 12,000 - - - - - -
WL 026	Lakeland Nursing Home	Town of Geneva	FX	State Institution	G G	2	- - - -	H	H[e] H[e]	80,000 80,000	100,000 100,000
WL 028	Church of Jesus Christ Latter Day Saints	Town of LaFayette	FX	Transient, Non-Community	G	1	PT511	L	L	2,010	- -
WL 029	Lafayette Town Hall	Town of LaFayette	FX	Transient, Non-Community	G	1	GS001	L	L	250	- -
WL 030	Price Park	Town of LaFayette	FX	Transient, Non-Community	G	1	QR013	L	L	250	- -
WL 031	Wisconsin Department of Transportation Rest Area 35, Lafayette	Town of LaFayette	FX	Transient, Non-Community	G	1	FG790	L	L	4,000	- -
WL 032	Wisconsin Department of Transportation Rest Area 36, Lafayette	Town of LaFayette	FX	Transient, Non-Community	G	1	FG789	L	L	4,000	- -
WL 033	Camp Juniper Knoll	Town of LaGrange	FX	Transient, Non-Community	G	1	GP863	L	L	20,000	- -
WL 034	Kettle Moraine State Forest La Grange Camp	Town of LaGrange	FX	Miscellaneous	G	1	JB836	H	- -[e]	- -	- -
WL 035	Kettle Moraine State Forest Muir Trail Head	Town of LaGrange	FX	Transient, Non-Community	G	1	NM160	H	L[e]	125	- -
WL 036	Kettle Moraine State Forest Nordic Lot	Town of LaGrange	FX	Transient, Non-Community	G	1	JB837	H	L[e]	125	- -
WL 037	Lauderdale Lakes Marina	Town of LaGrange	FX	Transient, Non-Community	G	1	OO998	L	L	1,625	- -
WL 038	Lutherdale Bible Camp	Town of LaGrange	FX	Transient, Non-Community	G	2	IZ076 JF853	L	L L	9,350	- -
WL 039	Pottawatomie Hills Girl Scout Camp	Town of LaGrange	FX	Transient, Non-Community	G	5	ET705 ET703 ET704 ET707 ET706	L	L L L L L	5,000	- -
WL 041	Linn United Presbyterian	Town of Linn	FX	Transient, Non-Community	G	1	EZ930	L	L	5,040	- -
WL 042	Reek School	Town of Linn	FX	Non-Transient, Non-Community	G	1	BO707	H	- -[e]	1,965	- -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Walworth County (continued)											
WL 043	Traver School	Town of Linn	FX	Non-Transient, Non-Community	G	1	ES828	H	L[e]	2,000	3,000
WL 048	Christus Evangelical Lutheran Church	Town of Richmond	RC	Transient, Non-Community	G	1	FG743	L	L	1,200	- -
WL 049	Scenic Ridge Campground	Town of Richmond	RC	Transient, Non-Community	G	3	GV781 GV782 GV783	L	L L L	3,000 250 5,000	- - - - - -
WL 050	Walworth County Natureland	Town of Richmond	RC	Transient, Non-Community	G	1	IZ100	L	L	125	- -
WL 051	Fontana-Walworth Water Pollution Control Commission	Town of Sharon	RC	Wastewater Treatment Plant	G	2	BG723 - -	H	L[e] L[e]	11,000 11,000	11,000 11,000
WL 052	Triune Lutheran Church	Town of Sharon	RC	Transient, Non-Community	G	1	ET930	L	L	750	- -
WL 053	Happy Hollow Program Center	Town of Spring Prairie	FX	Transient, Non-Community	G	2	AX538 IZ065	L	L L	4,000 6,250	- - - -
WL 054	Spring Prairie United Methodist Church	Town of Spring Prairie	FX	Transient, Non-Community	G	1	IZ093	L	L	420	- -
WL 055	Bethel United Methodist Church	Town of Sugar Creek	FX	Transient, Non-Community	G	1	EZ882	L	L	1,000	- -
WL 056	Kingdom Hall of Jehovah's Witnesses	Town of Sugar Creek	FX	Transient, Non-Community	G	1	GP785	L	L	1,000	- -
WL 057	Millard Church	Town of Sugar Creek	FX	Transient, Non-Community	G	1	EZ920	L	L	1,000	- -
WL 058	Sugar Creek Lutheran Church	Town of Sugar Creek	FX	Transient, Non-Community	G	1	EZ933	L	L	250	- -
WL 059	Booth Lake Memorial Park	Town of Troy	FX	Transient, Non-Community	G	2	GU165 II374	L	L L	750 125	- - - -
WL 060	Chapman Hills Girl Scout Camp	Town of Troy	FX	Transient, Non-Community	G	2	ET702 ET968	L	L L	5,000	- -
WL 061	Oakwood Knoll Girl Scouts	Town of Troy	FX	Transient, Non-Community	G	1	GO749	L	L	1,250	- -
WL 062	Timber Lee Christian Center	Town of Troy	FX	Miscellaneous Transient, Non-Community	G	17	BH119 BH138 BH115 BH116 BH117 BH118 NT048 MU129 GV832 GV834 GV837 GV836 RD181 GV831 GV838 KS785 GV835	H	L[e] L[e] L[e] L[e] L[e] L[e] L[e] - -[e] L L L L L L L L L	1,000 3,000 5,000 5,000 5,000 5,000 2,000 -	2,000 5,000 6,000 6,000 6,000 6,000 2,000 -
WL 064	First Baptist Church of Walworth	Town of Walworth	RC	Transient, Non-Community	G	1	EZ881	L	L	300	- -
WL 066	Camp Joy	Town of Whitewater	RC	Miscellaneous Transient, Non-Community: Miscellaneous EZ942	G	5	- - - - - - EZ943	H	L[e] L[e] H[e] L[e] L[e]	1,000 29,000 216,000 29,000 29,000	1,000 43,000 432,000 43,000 43,000
WL 067	Channing Well	Town of Whitewater	RC	Transient, Non-Community	G	1	PT515	L	L	125	- -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Walworth County (continued)											
WL 068	Kettle Moraine State Forest	Town of Whitewater	RC	Transient, Non-Community	G	6	JB842 DC763 OG944 JB841 JB839 JB840	H	- -[e] L[e] L[e] L[e] L[e] L[e]	125 125 125 125 125 125	- - - - - - - - - - - -
WL 069	Lakeview School, Walworth	Town of Whitewater	RC	Non-Transient, Non-Community	G	1	FA608	H	L[e]	4,000	9,000
Walworth County: 46 Systems		- -	- -	- -	- -	106	- -	- -	- -	- -	- -
Washington County											
WS 001	Regner Park	City of West Bend	MK	Miscellaneous Miscellaneous (April to October)	G	2	BH226 BH227	H	H[e] H[e]	200,000 200,000	200,000 200,000
WS 002	Ridge Run Park	City of West Bend	MK	Transient, Non-Community	G	2	GV818 LU438	L	L L	125	- -
WS 006	Germantown Public Works, Village Hall	Village of Germantown	MN	Transient, Non-Community	G	1	ET678	L	L	600	- -
WS 009	Kingdom Hall Jehovah's Witness	Village of Germantown	MN	Transient, Non-Community	G	1	FG698	L	L	250	- -
WS 010	Our Savior United Church of Christ	Village of Germantown	MN	Transient, Non-Community	G	1	FG548	L	L	1,090	- -
WS 015	Addison Elementary School	Town of Addison	RC	Non-Transient, Non-Community	G	1	RX237	H	H[e]	8,000	13,000
WS 016	St. Peter's Evangelical Lutheran Church	Town of Addison	RC	Transient, Non-Community	G	1	DR794	L	L	450	- -
WS 018	Timber Trail Recreation Area	Town of Barton	MK	Transient, Non-Community	G	2	FG710 FG705	L	L L	5,000 1,250	- - - -
WS 019	Discalced Carmelites and Holy Hill Café	Town of Erin	RC	Transient, Non-Community	G	1	JE535	L	L	2,180	- -
WS 020	Erin School	Town of Erin	RC	Non-Transient, Non-Community	G	1	ET994	H	- -[e]	6,000	- -
WS 021	Erin Town Hall and Erin Go Braugh Park	Town of Erin	RC	Transient, Non-Community	G	1	FH044	L	L	1,050	- -
WS 022	Heiliger Huegel Ski Club	Town of Erin	RC	Miscellaneous (Nov to Mar)	G	1	BH211	H	H[e]	90,000	180,000
WS 023	St. Mary of the Hill Parish	Town of Erin	RC	Transient, Non-Community	G	1	FG689	L	L	250	- -
WS 024	St. Paul's United Church of Christ	Town of Erin	RC	Transient, Non-Community	G	1	ET671	L	L	750	- -
WS 025	Camp Awana	Town of Farmington	MK	Miscellaneous	G	4	JA256 JA254 JA255 - -	H	L[e] L[e] L[e] L[e]	1,000 1,000 1,000 - -	5,000 5,000 5,000 1,000
WS 026	Farmington Elementary School	Town of Farmington	MK	Non-Transient, Non-Community	G	1	GP763	H	L[e]	4,200	- -
WS 027	Lazy Days Campground	Town of Farmington	MK	Transient, Non-Community	G	4	AE729 FG718 FG719 FG720	L	L L L L	12,500	- -
WS 028	St. Martin's United Church of Christ	Town of Farmington	MK	Transient, Non-Community	G	1	FG682	L	L	250	- -
WS 029	Rockfield School	Town of Germantown	MK	Non-Transient, Non-Community	G	1	ET675	H	- -[e]	3,750	- -
WS 032	St. Lawrence Church	Town of Hartford	RC	Transient, Non-Community	G	1	EZ001	H	- -[e]	1,040	- -
WS 034	Wisconsin Department of Natural Resources, Pike Lake	Town of Hartford	RC	Transient, Non-Community	G	3	PT217 EZ913 EZ918	L	L L L	285 1,075 700	- - - - - -
WS 035	David's Star Evangelical Lutheran School	Town of Jackson	MK	Miscellaneous Miscellaneous Non-Transient, Non-Community Miscellaneous	G	4	- - - - SN149 - -	H	L[e] L[e] H[e] L[e]	1,000 1,000 5,000 - -	1,000 2,000 10,000 - -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Washington County (continued)											
WS 036	Jackson Town Hall and Community Center	Town of Jackson	MK	Transient, Non-Community	G	1	GP820	L	L	250	- -
WS 037	Kettle Moraine Lutheran High School	Town of Jackson	MK	Non-Transient, Non-Community	G	1	GP871	H	H[e]	6,000	13,000
WS 038	New Hope United Church of Christ Jackson	Town of Jackson	MK	Transient, Non-Community	G	1	DQ143	L	L	800	- -
WS 040	St. John's Lutheran Church	Town of Jackson	MK	Transient, Non-Community	G	1	RM709	L	L	1,400	- -
WS 041	St. Peter's United Church of Christ	Town of Jackson	MK	Transient, Non-Community	G	1	FG701	L	L	800	- -
WS 042	Trinity Evangelical Lutheran Church and School, Jackson	Town of Jackson	MK	Non-Transient, Non-Community	G	1	SJ278	H	L[e]	1,000	1,000
WS 043	Kettle Moraine State Forest Glacial Trail Hwy H	Town of Kewaskum	MK	Transient, Non-Community: Miscellaneous	G	1	PT215	L	L	125	- -
WS 044	St. Michael's Catholic Church and School	Town of Kewaskum	MK	Transient, Non-Community	G	2	FG531 FG565	L	L L	550 5,030	- - - -
WS 045	Ackerman's Grove County Park	Town of Polk	MK	Transient, Non-Community	G	1	OC811	L	L	125	- -
WS 046	Faith United Church of Christ	Town of Polk	RC	Transient, Non-Community	G	1	FG700	L	L	1,000	- -
WS 047	Heritage Trails County Park	Town of Polk	RC	Transient, Non-Community	G	1	GG155	L	L	125	- -
WS 048	Still Waters Community United Methodist Church	Town of Polk	MK	Transient, Non-Community	G	1	OC037	L	L	300	- -
WS 049	Amy Belle School	Village of Richfield	RC	Non-Transient, Non-Community	G	1	ES903	H	- -[e]	6,405	- -
WS 050	Crown of Life Evangelical Lutheran School and Church	Village of Richfield	RC	Non-Transient, Non-Community	G	1	GU746	H	- -[e]	1,425	- -
WS 051	Daniel Boone Conservation League Club House	Village of Richfield	RC	Transient, Non-Community	G	1	FH021	L	L	4,530	- -
WS 052	Emmanuel United Methodist Church	Village of Richfield	MK	Transient, Non-Community	G	1	FG685	L	L	1,000	- -
WS 053	First Presbyterian Church	Village of Richfield	RC	Transient, Non-Community	G	1	FG686	L	L	350	- -
WS 054	Friess Lake School	Village of Richfield	RC	Non-Transient, Non-Community	G	1	TP217	H	L[e]	12,000	24,000
WS 055	Glacier Hills County Park	Village of Richfield	RC	Transient, Non-Community	G	2	FG693 RM058	L	L L	125 500	- - - -
WS 056	Loggers Park – American Health & Fitness	Village of Richfield	MK	Miscellaneous	G	2	FU986 MJ498	H	L[e] L[e]	1,000 1,000	5,000 5,000
WS 057	Minkani YMCA Camp	Village of Richfield	RC	Transient, Non-Community	G	3	GV928 GV929 GV801	L	L L L	15,450	- -
WS 058	Plat Elementary School	Village of Richfield	RC	Non-Transient, Non-Community	G	1	ES907	H	L[e]	2,000	3,000
WS 059	Richfield Elementary School	Village of Richfield	RC	Non-Transient, Non-Community	G	1	JE547	H	- -[e]	6,000[f]	6,000[f]
WS 060	Richfield Fireman's Park & Station No. 1	Village of Richfield	MK	Transient, Non-Community	G	1	ET619	L	L	200	- -
WS 061	Richfield Town Hall and Garage	Village of Richfield	RC	Transient, Non-Community	G	1	GQ611	L	L	310	- -
WS 062	Shepherd of the Hills Lutheran Church	Village of Richfield	MN	Transient, Non-Community	G	1	IZ375	L	L	3,020	- -
WS 063	St. Jacobi Congregational Church	Village of Richfield	MK	Transient, Non-Community	G	1	GO665	L	L	250	- -
WS 064	St. Augustine Inc.	Village of Richfield	RC	School	G	1	LV077	H	L[e]	3,000	13,000
WS 065	St. Gabriel Church and School	Village of Richfield	RC	School Non-Transient, Non-Community	G	2	SS051 DE637	H	L[e] L[e]	9,000 1,000	15,000 2,000
WS 066	Wooded Hills Bible Church	Village of Richfield	RC	Transient, Non-Community	G	1	GZ636	L	L	260	- -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Washington County (continued)											
WS 067	Zion United Methodist Church	Village of Richfield	RC	Transient, Non-Community	G	1	FG683	L	L	250	- -
WS 068	Goeden County Park	Town of Trenton	MK	Transient, Non-Community	G	1	GG154	L	L	125	- -
WS 069	Holy Trinity Congregation	Town of Trenton	MK	Non-Transient, Non-Community	G	1	ES902	H	- -[e]	3,500	- -
WS 070	Sandy Knoll	Town of Trenton	MK	Transient, Non-Community	G	2	IZ441 IZ442	L	L L	220 250	- - - -
WS 071	Salem United Church of Christ	Town of Wayne	MK	Transient, Non-Community	G	1	IZ557	L	L	1,000	- -
WS 072	St. John's United Church of Christ Kohlsville	Town of Wayne	RC	Transient, Non-Community	G	1	FG564	L	L	250	- -
WS 073	Wayne Elementary School	Town of Wayne	MK	Non-Transient, Non-Community	G	1	BH946	H	L[e]	2,000	5,000
WS 074	Zion Evangelical Lutheran Church	Town of Wayne	RC	Transient, Non-Community	G	1	GO653	L	L	1,000	- -
WS 075	Camp Silverbrook	Town of West Bend	MK	Transient, Non-Community	G	6	GU987 GU988 GU985 GU986 GU984 GU982	L	L L L L L L	7,500	- -
WS 076	Cedar Lake Wayside	Town of West Bend	MK	Transient, Non-Community	G	1	GV817	L	L	125	- -
WS 078	Silver Maple School	Town of West Bend	MK	Non-Transient, Non-Community	G	1	ES911	L	L	2,025	- -
WS 079	St. Paul's Evangelical Church	Town of West Bend	MK	Transient, Non-Community	G	1	FG533	L	L	250	- -
Washington County: 64 Systems		- -	- -	- -	- -	90	- -	- -	- -	- -	- -
Waukesha County											
WK 013	Cushing Park	City of Delafield	RC	Transient, Non-Community	G	1	TA552	L	L	125	- -
WK 020	Nagawaukee Park	City of Delafield	RC	Transient, Non-Community	G	5	ET903 ET901 ET906 ET908 ET909	L	L L L L L	1,250 500 250 125 125	- - - - - - - - - -
WK 021	Nagawaukee Group Campground	City of Delafield	RC	Transient, Non-Community	G	1	ET904	L	L	2,500	- -
WK 023	St. John's Military Academy	City of Delafield	RC	Non-Transient, Non-Community	G	2	IZ380 IZ283	H	H[e] L	70,000 6,000	118,000 - -
WK 031	Idle Isle Park	City of Muskego	FX	Transient, Non-Community	G	1	JF065	L	L	125	- -
WK 038	Muskego Park	City of Muskego	FX	Miscellaneous (April to October) Transient, Non-Community	G	3	BH306 EX926 EX927	H	L L L	2,000 125	5,000 - -
WK 039	Praise Fellowship Church	City of Muskego	FX	Transient, Non-Community	G	1	EZ831	L	L	870	- -
WK 042	Bethel Hill United Methodist	City of New Berlin	FX	Transient, Non-Community	G	1	JA341	L	L	1,860	- -
WK 051	New Berlin High School and Middle School	City of New Berlin	FX	Non-Transient, Non-Community	G	1	ES747	H	H[e]	22,500	- -
WK 053	Prospect Hill School	City of New Berlin	FX	Non-Transient, Non-Community	G	2	GS006 FG763	H	- -[e] L	19,000 7,500	19,000 - -
WK 063	New Vision Brethren in Christ Church	City of Pewaukee	FX	Transient, Non-Community	G	1	QP339	L	L	1,020	- -
WK 070	Menomonee Park, Waukesha Park	City of Waukesha	FX	Miscellaneous	G	1	WAUK068	H	L[d]	- -	1,000
WK 072	Big Bend Lions Club	Village of Big Bend	FX	Transient, Non-Community	G	1	JF828	L	L	250	- -
WK 077	Chenequa Village Hall	Village of Chenequa	RC	Transient, Non-Community	G	1	PS973	L	L	350	- -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Waukesha County (continued)											
WK 095	Menomonee Park	Village of Menomonee Falls	FX	Transient, Non-Community	G	4	BH310 PS918 PS917 PS919	L	L L L L	500 1,250 2,500 1,000	- - - - - - - -
WK 099	Merton Intermediate School	Village of Merton	RC	Non-Transient, Non-Community	G	1	ES792	H	- -	7,125	- -
WK 100	Merton Primary School	Village of Merton	RC	Non-Transient, Non-Community	G	1	TE752	H	H[e]	50,000	101,000
WK 101	Merton Village Hall	Village of Merton	RC	Transient, Non-Community	G	1	FE979	L	L	300	- -
WK 102	St. John's United Church of Christ	Village of Merton	RC	Transient, Non-Community	G	1	RY386	L	L	540	- -
WK 112	All Saints Lutheran Church	Village of Wales	FX	Transient, Non-Community	G	1	AF115	L	L	270	- -
WK 120	Wales-Genesee Fire Department	Village of Wales	FX	Transient, Non-Community	G	1	SP680	L	L	290	- -
WK 122	Brandy Brook Center	Town of Delafield	FX	Transient, Non-Community	G	1	PT470	L	L	250	- -
WK 125	Kettle Moraine State Forest Lapham Peak	Town of Delafield	RC	Transient, Non-Community: Miscellaneous Transient, Non-Community: Miscellaneous Miscellaneous	G	6	LK174 GU110 GQ577 GQ576 ID174 - -	H	L L L L L - -[e]	750 350 500 135 625 	- - - - - - - - - - - -
WK 128	St. Anthony's on the Lake School	Town of Delafield	FX	School Non-Transient, Non-Community	G	2	NG681 EX968	H	L[e] L[e]	2,000 5,000	5,000 5,000
WK 129	Zion Presbyterian Church	Town of Delafield	FX	Transient, Non-Community	G	1	PS998	L	L	300	- -
WK 131	Kettle Moraine Ranch	Town of Eagle	FX	Transient, Non-Community	G	1	JF893	L	L	1,100	- -
WK 132	Kettle Moraine State Forest	Town of Eagle	FX/RC	Transient, Non-Community Transient, Non-Community: Miscellaneous Miscellaneous	G	8	DC875 JB834 BO809 JB833 MM768 - - - - JB845	H	L L L[e] - - - - - - - - H[e] - -	125 500 1,000 - - - - - - - - 20,000	- - - - 2,000 - - - - - - - - 24,000 - -
WK 133	Love Laugh & Learn Day Care Center	Town of Eagle	FX	Non-Transient, Non-Community	G	1	ES852	H	- -[e]	600	- -
WK 134	Old World Wisconsin	Town of Eagle	FX	Miscellaneous Transient, Non-Community: Miscellaneous	G	14	- - BH314 - - - - LI448 NC857 GS025 KV542 PT487 GS023 GS024 GS021 GS022 GS026	H	L[e] L[e] L[e] L[e] L[e] L[e] L[e] L H[e] L L L L L	1,000 1,000 - - - - - - - - 7,000 125 3,000 500 150 500 500 2,000	3,000 1,000 - - - - - - - - 8,000 - - - - - - - - - - - - - -
WK 135	Bethesda Presbyterian Church	Town of Genesee	FX	Transient, Non-Community	G	1	PT472	L	L	330	- -
WK 136	First Congregational Church, Genesee	Town of Genesee	FX	Transient, Non-Community	G	1	EL660	L	L	940	- -
WK 137	Genesee Town Hall	Town of Genesee	FX	Transient, Non-Community	G	1	KL807	L	L	280	- -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Waukesha County (continued)											
WK 138	Genesee Town Park	Town of Genesee	FX	Transient, Non-Community	G	1	ET587	L	L	125	- -
WK 139	Montessori Methods School	Town of Genesee	FX	Non-Transient, Non-Community School	G	2	ES853 - -	H	L - -	1,350 - -	- - - -
WK 140	Reformation Evangelical Lutheran Church	Town of Genesee	FX	Transient, Non-Community	G	1	AG514	L	L	1,500	- -
WK 141	Riverglen Christian Church	Town of Genesee	FX	Transient, Non-Community	G	1	- -	L	L	2,060	- -
WK 142	St. Paul's Church and School	Town of Genesee	FX	Non-Transient, Non-Community	G	1	MZ719	H	- -	2,250	- -
WK 143	Sunset Park	Town of Genesee	FX	Transient, Non-Community	G	1	RY217	L	L	125	- -
WK 144	Ten Chimneys Program Center	Town of Genesee	FX	Transient, Non-Community	G	1	OJ903	L	L	990	- -
WK 145	Wales Genesee Lions Club Building	Town of Genesee	FX	Transient, Non-Community	G	1	ET588	L	L	500	- -
WK 146	Wee Know Nursery School, Wales	Town of Genesee	RC	Transient, Non-Community	G	1	PT486	L	L	600	- -
WK 147	Wern Valley Sportsmens Club	Town of Genesee	FX	Transient, Non-Community	G	1	CT447	L	L	280	- -
WK 149	Lisbon Community Park	Town of Lisbon	RC	Transient, Non-Community	G	1	HD974	L	L	125	- -
WK 150	Richmond School	Town of Lisbon	FX	Non-Transient, Non-Community	G	1	FB543	H	L[e]	6,000	10,000
WK 151	Lisbon Town Hall	Town of Lisbon	FX	Transient, Non-Community	G	1	- -	L	L	330	- -
WK 152	Camp Whitcomb	Town of Merton	RC	Miscellaneous Transient, Non-Community	G	14	- - - - - - - - - - - - - - GP895 GP899 GP898 PS962 GP893 GP896 GP897 PS938	H	L[e] L[e] L[e] L[e] L[e] L[e] - - L L L L L L L L	- - - - - - - - - - 43,000 - - 1,250 6,250 6,250 1,250 1,250 1,250 1,250	14,000 14,000 14,000 14,000 7,000 86,000 - - - - - - - - - - - - - - - -
WK 154	Kettle Moraine United Presbyterian Church	Town of Merton	RC	Transient, Non-Community	G	1	PS976	L	L	1,010	- -
WK 158	North Lake Elementary School	Town of Merton	RC	Non-Transient, Non-Community	G	1	ES793	H	- -	72,000	72,000
WK 155	Merton Town Hall and Shop	Town of Merton	RC	Transient, Non-Community	G	1	PS956	L	L	290	- -
WK 156	Merton Town Library	Town of Merton	RC	Transient, Non-Community	G	1	PS955	L	L	585	- -
WK 161	St. Anskar Episcopal Church	Town of Merton	RC	Transient, Non-Community	G	1	PS951	L	L	410	- -
WK 162	St. Clare Center	Town of Merton	RC	Transient, Non-Community	G	1	FI214	L	L	300	- -
WK 167	Valley Rod and Gun Club	Town of Merton	RC	Transient, Non-Community	G	1	- -	L	L	2,020	- -
WK 168	Mukwonago County Park	Town of Mukwonago	FX	Transient, Non-Community	G	3	JA327 JA328 JA329	L	L L L	135 500 530	- - - - - -
WK 169	Mukwonago Town Hall	Town of Mukwonago	FX	Transient, Non-Community	G	1	OG938	L	L	460	- -
WK 170	Mukwonago Town Park	Town of Mukwonago	FX	Transient, Non-Community	G	1	DD284	L	L	150	- -
WK 174	Prairie View Elementary School	Town of Mukwonago	FX	Non-Transient, Non-Community	G	1	AH905	H	L[e]	2,000	5,000
WK 175	Rolling Hills Elementary School	Town of Mukwonago	FX	Non-Transient, Non-Community	G	1	NN201	H	H[e]	10,000	20,000

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Waukesha County (continued)											
WK 176	Section Elementary School	Town of Mukwonago	FX	Non-Transient, Non-Community	G	1	EX969	H	L[e]	5,000	13,000
WK 184	Meadowview School	Town of Oconomowoc	RC	Non-Transient, Non-Community	G	1	BO817	H	- -[e]	35,000	50,000
WK 187	St. Catherine's Church	Town of Oconomowoc	RC	Transient, Non-Community	G	1	- -	L	L	270	- -
WK 188	First Presbyterian Church of Ottawa	Town of Ottawa	RC	Transient, Non-Community	G	1	MJ662	L	L	250	- -
WK 189	Kettle Moraine State Forest	Town of Ottawa	RC	Transient, Non-Community Miscellaneous Transient, Non-Community: Miscellaneous	G	17	JB831 DA860 JB844 ON988 JB825 JB829 JB830 JB828 LE133 JB826 NF777 CW683 AC345 JB823 JB821 GO785 NM159	H	L L[e] - - L[e] L[e] L[e] L[e] L[e] L[e] L[e] L[e] L[e] L[e] L[e] L[e] L[e] L	500 125 - - 300 70,000 1,000 1,000 2,500 125 125 6,000 125 125 125 125 2,000 125	- - - - - - 1,000 70,000 2,000 2,000 1,000 2,000 - - 12,000 - - - - - - - - 4,000 - -
WK 190	Ottawa Town Hall	Town of Ottawa	RC	Transient, Non-Community	G	1	PT484	L	L	330	- -
WK 191	Ottawa Town Park	Town of Ottawa	RC	Transient, Non-Community: Miscellaneous (April to October) Transient, Non-Community	G	2	ON987 AD926	H	H[e] L	87,000 - -	174,000 - -
WK 192	Pretty Lake Rehabilitation District	Town of Ottawa	RC	Miscellaneous (April to October)	G	1	DR425	H	H[e]	302,000	605,000
WK 193	Abundant Life Apostolic Church and School	Town of Summit	RC	Non-Transient, Non-Community	G	1	KT519	H	L[e]	1,000	3,000
WK 195	Faith Baptist Church, Oconomowoc	Town of Summit	RC	Transient, Non-Community	G	1	PS890	L	L	900	- -
WK 197	IMR Boy Scout Camp	Town of Summit	RC	Transient, Non-Community Transient, Non-Community: Miscellaneous	G	4	EZ789 EZ800 CP333 QQ237	H	L L L L[e]	10,000 10,000	- - - -
WK 198	Perpetual Help Retreat House	Town of Summit	RC	Transient, Non-Community	G	2	FO378 - -	L	L L	340	- -
WK 199	Redemptorist Fathers	Town of Summit	RC	Miscellaneous	G	1	BH278	H	L[e]	10,000	10,000
WK 200	Rogers Memorial Hospital	Town of Summit	RC	Transient, Non-Community: Miscellaneous Miscellaneous Non-Transient, Non-Community	G	10	HJ194 SP606 - - - - NM746 - - - - AH179 AP259 ES794	H	H[d] L[d] L[d] L[d] L[d] L[d] L[d] L[d] L L	300 2,000 8,000 8,000 - - - - - - - - 44,000	6,000 2,000 14,000 14,000 1,000 1,000 1,000 1,000 - - - -
WK 204	Country View Campground	Town of Vernon	FX	Transient, Non-Community	G	1	JF824	L	L	2,500	- -
WK 206	Vernon Evangelical Lutheran Church	Town of Vernon	FX	Transient, Non-Community	G	1	JF830	L	L	4,530	- -

Table G-4 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c] (individual)	Estimated or Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day[d]
Waukesha County (continued)											
WK 207	Vernon Town Hall	Town of Vernon	FX	Transient, Non-Community	G	1	CT259	L	L	300	- -
WK 213	Fox River Park	Town of Waukesha	FX	Transient, Non-Community	G	3	QR587 RZ131 RZ133	L	L L L	135	- -
Waukesha County: 76 Systems		- -	- -	- -	- -	162	- -	- -	- -	- -	- -
Region: 279 Total Systems		- -	- -	- -	- -	500	- -	- -	- -	- -	- -

[a] *DD = Direct Drainage Area Tributary to Lake Michigan*
DP = Des Plaines River Watershed
FX = Fox River Watershed
MN = Menomonee River Watershed
MK = Milwaukee River Watershed
RC = Rock River Watershed
RT = Root River Watershed
SA = Sauk Creek Watershed
SK = Sucker Creek Watershed

[b] *G = Groundwater*
S = Surface Water

[c] *H = High-Capacity (70 gallons per minute or greater)*
L = Low-Capacity (less than 70 gallons per minute capacity)

[d] *Values are approved normal or maximum pumpage taken from the WDNR Drinking Water System database, where available. Where not available, average daily pumpage was calculated utilizing standard unit values for the type of facility involved.*

[e] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System database.*

[f] *Estimated average water use during school days based upon 410 students and faculty at 15 gallons per occupant per day.*

Source: Wisconsin Department of Natural Resources and SEWRPC.

Table G-5

SELECTED CHARACTERISTICS OF SELF-SUPPLIED AGRICULTURAL WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2035

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Approved Normal Daily Pumpage (gallons per day) [d]	Approved Maximum Daily Pumpage (gallons per day)[d]
Kenosha County											
KN 01	Mariani Nursery	Town of Bristol	DP	Irrigation	G	2	- - DO116	H	H[e] H[e]	1,000 2,000	2,000 4,000
KN 02	Red Top Nursery	Town of Randall	FX	Irrigation	G	3	LZ002 LT445 - -	H	H[e] H[e] H[e]	1,000 1,000 - -	91,000 32,000 - -
KN 03	Vincent, Eugene C.	Town of Randall	FX	Irrigation	G	1	BC296	H	H[e]	212,000	440,000
KN 04	Breezy Hill Nursery	Town of Salem	FX	Irrigation	G	2	FN140 - -	H	H[d] H[d]	43,000 36,000	86,000 72,000
Kenosha County: 4 Systems		- -	- -	- -	- -	8	- -	- -	- -	- -	- -
Ozaukee County											
OZ 01	Hahm, Harold & Son	City of Mequon	MK	Irrigation	G	1	BC621	H	H[e]	1,171,000	316,000
OZ 02	Minor's Garden Center, Inc.	City of Mequon	MN	Irrigation	G	1	TQ428	H	H[e]	288,000	324,000
OZ 03	Wayside Nurseries, Inc.	City of Mequon	MK	Irrigation	G	3	RG103 BC625 - -	H	H[e] H[e] H[e]	180,000 75,000 216,000	360,000 298,000 432,000
Ozaukee County: 3 Systems		- -	- -	- -	- -	5	- -	- -	- -	- -	- -
Racine County											
RC 01	Gresls Sod Ranch	Town of Dover	FX	Irrigation	G	2	BD326 BD330	H	H[e] H[e]	144,000 500,000	500,000 800,000
RC 02	Borzynski Farms, Inc.	Village of Mt. Pleasant	RT	Irrigation	G	4	BD342 ES291 GK726 - -	H	H[e] H[e] H[e] H[e]	576,000 432,000 288,000 360,000	1,152,000 864,000 576,000 720,000
RC 03	Burmeister & Son	Town of Norway	FX	Irrigation	G	1	BD319	H	H[e]	600,000	1,200,000
RC 04	Deak Sod Farms	Town of Norway	FX	Irrigation	G	1	BD340	H	H[e]	116,000	576,000
RC 05	Horner Sod Farms LTD	Town of Norway	FX	Irrigation	G	3	BD320 BD316 BD318	H	H[e] H[e] H[e]	750,000 360,000 720,000	750,000 720,000 1,440,000
RC 06	Jasperson Sod Farm	Town of Norway	FX	Irrigation	G	1	- -	H	H[e]	720,000	1,440,000
RC 07	Jasperson, Lyle and Buster	Town of Norway	FX	Irrigation	G	1	BD328	H	H[e]	360,000	720,000
RC 08	Klitz Brothers Sod Farm Inc.	Town of Norway	FX	Irrigation	G	2	BD329 BD341	H	H[e] L[e]	79,000 39,000	158,000 86,000
RC 09	Kuehne, Thomas	Town of Norway	FX	Irrigation	G	1	BD317	H	H[e]	720,000	1,440,000
RC 10	Rosemont Sod Growers	Town of Norway	FX	Irrigation	G	1	BD332	H	H[e]	75,000	125,000
RC 11	Sokie, Michael	Town of Norway	FX	Irrigation	G	1	BD325	H	H[e]	576,000	768,000
RC 12	Wind Lake Produce Corporation	Town of Norway	FX	Irrigation	G	4	BD321 BD322 BD323 BD333	H	H[e] H[e] H[e] H[e]	500,000 500,000 360,000 75,000	1,000,000 1,000,000 720,000 125,000
RC 13	Stever Turf Farm	Town of Raymond	FX	Irrigation	G	4	LK585 - - - - - -	H	H[e] L[e] L[e] H[e]	108,000 24,000 - - 40,000	216,000 30,000 1,000 275,000

Table G-5 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Approved Normal Daily Pumpage (gallons per day) [d]	Approved Maximum Daily Pumpage (gallons per day)[d]
Racine County (continued)											
RC 14	Stefanik, John	Town of Waterford	FX	Irrigation	G	1	BD327	H	H[e]	1,080,000	2,160,000
RC 15	Moyer, James	Town of Yorkville	RT	Irrigation	G	2	BD334 BD335	H	H[e] H[e]	100,000 100,000	300,000 300,000
Racine County: 15 Systems		- -	- -	- -	- -	29	- -	- -	- -	- -	- -
Walworth County											
WL 01	Speckman Seed Farm	Town of Bloomfield	FX	Irrigation	G	1	- -	H	H[e]	720,000	1,440,000
WL 02	Kincaid Farms	Town of Darien	RC	Irrigation	G	1	- -	H	H[e]	864,000	1,728,000
WL 03	Reum, Merlyn	Town of Darien	RC	Irrigation	G	1	- -	H	H[e]	720,000	1,440,000
WL 04	Michael Fields Agricultural Institute	Town of East Troy	FX	Miscellaneous (April to October)	G	2	CS687 CS688	H	L[e] L[e]	25,000 25,000	72,000 72,000
WL 05	Dow, Angus	Town of LaGrange	FX	Irrigation	G	1	BD660	H	H[e]	600,000	1,440,000
WL 06	Pope Farms	Town of LaGrange	FX	Irrigation	G	1	- -	H	H[e]	864,000	1,728,000
WL 07	Rainbow Springs Aquaculture	Town of LaGrange	RC	Miscellaneous	G	4	BH160 BH162 BH163 BH164	H	L[e] H[e] H[e] H[e]	58,000 100,000 100,000 1,080,000	58,000 100,000 100,000 1,080,000
WL 08	Big Foot Farms	Town of Linn	FX	Irrigation	G	1	EM218	H	H[e]	180,000	360,000
WL 09	Merry Water Farms Inc.	Town of Linn	FX	Irrigation	G	2	QL742 QL770	H	L[e] L[e]	40,000 40,000	72,000 72,000
WL 10	Leedle, William	Town of Linn	FX	Irrigation	G	2	OT683 RB747	H	H[e] H[e]	720,000 720,000	1,440,000 1,440,000
WL 11	Schwind, Dennis	Town of Lyons	FX	Irrigation	G	1	FN862	H	H[e]	720,000	1,440,000
WL 12	Boss, Daniel	Town of Richmond	RC	Irrigation	G	1	BD661	H	H[e]	720,000	864,000
WL 13	Great Lakes Agricultural Research Services Inc.	Town of Richmond	RC	Irrigation	G	1	CI268	H	H[e]	72,000	158,000
WL 14	Van Der Veen Farms Inc.	Town of Sugar Creek	RC	Irrigation	G	2	BD658 BD663	H	H[e] H[e]	1,440,000 612,000	1,440,000 1,224,000
WL 15	Scurek Farms LLC	Town of Troy	FX	Irrigation	G	3	IK724 - - - -	H	H[e] L[e] H[e]	100,000 - - 1,080,000	200,000 1,000 1,440,000
WL 16	Lurvey Sod Farms	Town of Whitewater	RC	Irrigation	G	4	VL796 - - OH445 TR214	H	H[e] H[e] H[e] H[e]	720,000 15,000 1,080,000 641,000	1,440,000 144,000 2,160,000 1,282,000
Walworth County: 16 Systems		- -	- -	- -	- -	28	- -	- -	- -	- -	- -
Washington County											
WS 01	Minor's Garden Center, Inc.	Village of Germantown	MN	Irrigation	G	1	LN975	H	H[e]	144,000	288,000
WS 02	Gieringer, Robert H & Sons	Town of Barton	MK	Irrigation	G	1	BD690	H	H[e]	97,000	195,000
WS 03	Minor's Garden Center, Inc.	Town of Jackson	MK	Irrigation	G	1	EM109	H	H[e]	360,000	720,000
WS 04	L. Teweles Seed Company	Town of Richfield	RC	Irrigation	G	1	BD689	H	H[e]	173,000	216,000
Washington County: 4 Systems		- -	- -	- -	- -	4	- -	- -	- -	- -	- -

Table G-5 (continued)

Number in SEWRPC GIS File	System Name	Municipality	Watershed Location[a]	WDNR System Classification	Water Supply Source[b]	Number of Wells	WDNR Well Number	System Capacity[c]	Well Capacity[c]	Approved Normal Daily Pumpage (gallons per day)[d]	Approved Maximum Daily Pumpage (gallons per day)[d]
Waukesha County											
WK 01	Rieger, Wallace	City of Muskego	FX	Irrigation	G	1	BD699	H	H[e]	210,000	630,000
WK 03	Johnsons Nursery Inc.	Village of Menomonee Falls	FX	Irrigation	G	4	- - WG228 GZ644 - -	H	L[e] H[e] H[e] H[e]	1,000 40,000 40,000 40,000	1,000 110,000 110,000 110,000
WK 04	Shady Lane Greenhouses, Inc.	Village of Menomonee Falls	MN	Irrigation	G	3	IB764 - - - -	H	H[e] L[e] L[e]	50,000 15,000 22,000	100,000 30,000 44,000
WK 05	Fronczak, Anthony and Christine	Town of Delafield	FX	Miscellaneous	G	2	RP369 - -	H	L[e] L[e]	10,000 20,000	25,000 60,000
WK 06	Stowe, Jon	Town of Genesee	FX	Irrigation	G	2	RR345 - -	H	H[e] L[e]	50,000 1,000	216,000 2,000
WK 07	Lied's Nursery	Town of Lisbon	FX	Miscellaneous Miscellaneous (April to October)	G	2	- - - -	H	L[e] L[e]	5,000 46,000	15,000 93,000
WK 08	Schuett, Rob	Town of Mukwonago	FX	Irrigation	G	1	BD733	H	H[e]	864,000	1,728,000
WK 09	Koepke Farms Inc.	Town of Oconomowoc	RC	Irrigation	G	3	BD700 BD724 - -	H	H[e] H[e] H[e]	720,000 432,000 576,000	1,440,000 864,000 1,152,000
WK 10	Runyard Farms Inc.	Town of Oconomowoc	RC	Irrigation	G	1	BD722	H	H[e]	720,000	1,440,000
WK 11	Kincaid (Dean) Farms, Inc.	Town of Ottawa	RC	Irrigation	G	1	BD731	H	H[e]	720,000	1,440,000
WK 12	Lurvey Sod Farms	Village of Summit	RC	Irrigation	G	3	DN599 BD737 BD739	H	H[e] H[e] H[e]	864,000 1,080,000 864,000	1,728,000 2,160,000 1,728,000
Waukesha County: 11 Systems		- -	- -	- -	- -	23	- -	- -	- -	- -	- -
Region: 53 Systems		- -	- -	- -	- -	97	- -	- -	- -	- -	- -

[a] *DP = Des Plaines River Watershed*
FX = Fox River Watershed
MN = Menomonee River Watershed
MK = Milwaukee River Watershed
RC = Rock River Watershed
RT = Root River Watershed

[b] *G = Groundwater*
S = Surface Water

[c] *H = High-Capacity (70 gallons per minute or greater, or greater than 100,000 gallons per day)*
L = Low-Capacity (less than 70 gallons per minute capacity, or less than 100,000 gallons per day)

[d] *Estimated daily water use is typically based upon very limited data, where available. Normal daily and maximum pumpage in gallons is as reported in the WDNR Drinking Water System database. These amounts may be pumped intermittently.*

[e] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System database.*

Source: Wisconsin Department of Natural Resources.

Table G-6

SELECTED CHARACTERISTICS OF SELF-SUPPLIED IRRIGATION[a] WATER SUPPLY SYSTEMS WITHIN SOUTHEASTERN WISCONSIN: 2035

Number In SEWRPC GIS File	System Name	Municipality	Watershed Location[b]	WDNR System Classification	Water Supply Source[c]	Number of Wells	WDNR Well Number	System Capacity[d]	Well Capacity[d]	Approved Normal Daily Pumpage (gallons per day)[e]	Approved Maximum Daily Pumpage (gallons per day)[e]
Kenosha County											
KN 01	Big Oaks Country Club	Village of Pleasant Prairie	DP	Irrigation	G	3	- - - - - -	H	H[f] H[f] H[f]	58,000 86,000 432,000	115,000 173,000 864,000
KN 02	Brightondale County Park	Town of Brighton	DP	Irrigation	G	2	BC297 BC298	H	H[f] H[f]	143,000 14,000	990,000 14,000
KN 03	Bristol Oakes Golf Course & Country Club	Village of Bristol	DP	High Capacity, Miscellaneous Irrigation	G	5	- - - - - - - - - -	H	H[f] H[f] H[f] H[f] H[f]	- - - - 144,000 54,000 75,000	1,000 1,000 288,000 55,000 125,000
KN 04	Kenosha County Public Works	Village of Bristol	DP	Irrigation	G	1	- -	H	H[f]	- -	- -
KN 05	Strawberry Creek of Kenosha	Village of Bristol	DP	Irrigation	G	1	- -	H	H[e]	720,000	1,440,000
KN 06	Spring Valley Country Club	Town of Salem	FX	Irrigation	G	1	EI434	H	H[f]	90,000	- -
KN 07	Maplecrest Country Club	Town of Somers	PK	Miscellaneous Miscellaneous (April to October)	G G	2	BG068 - -	H	H[f] H[f]	108,000 36,000	216,000 72,000
Kenosha County: 7 Systems		- -	- -	- -	G	15	- -	- -	- -	- -	- -
Milwaukee County											
MK 02	Oakwood Park Golf Course	City of Franklin	RT	Irrigation Miscellaneous	G	2	BG417 AY348	H	H[f] H[f]	576,000 54,000	1,152,000 216,000
MK 03	Tuckaway Country Club	City of Franklin	RT	Irrigation	G	2	BC540 BC541	H	H[f] H[f]	193,000 3,000	720,000 6,000
MK 04	Whitnall Park Golf Course	City of Franklin	RT	Irrigation	G	1	BG422	H	H[f]	5,000	10,000
MK 05	Brown Deer Park and Golf Course	City of Milwaukee	MK	Irrigation	G	2	BC543 CO092	H	H[f] H[f]	50,000 325,000	80,000 420,000
MK 06	Brynwood Country Club	City of Milwaukee	MK	Irrigation	G	1	- -	H	H[f]	- -	- -
MK 07	Robert J. Uihlein Estate	City of Milwaukee	MN	Irrigation	G	1	BC535	H	H[f]	92,000	92,000
MK 08	Tehan Bros., Inc.	City of Oak Creek	OC	Irrigation	G	2	MX935 BC536	H	H[f] H[f]	144,000 72,000	288,000 72,000
MK 09	Bluemound Country Club	City of Wauwatosa	MN	Irrigation	G	3	- - - - HJ146	H	H[f] H[f] H[f]	324,000 129,000 96,000	648,000 258,000 192,000
MK 10	Pinelawn Memorial Park	City of Wauwatosa	MN	Miscellaneous (April to November)	G	1	BG405	H	H[f]	75,000	150,000
MK 11	Trammel Crow	City of Wauwatosa	MN	Irrigation	G	1	BC545	H	H[f]	39,000	290,000
MK 12	Tripoli Country Club	Village of Brown Deer	MK	Irrigation	G	1	BC544	H	H[f]	180,000	432,000
MK 13	Boerner Botanical Gardens	Village of Hales Corners	RT	Irrigation	G	1	BG423	H	H[f]	50,000	75,000
MK 14	Milwaukee County Country Club	Village of River Hills	MK	Irrigation	G	3	CY291 BC539 BC542	H	H[f] H[f] H[f]	144,000 288,000 40,000	720,000 300,000 370,000
Milwaukee County: 13 Systems		- -	- -	- -	G	21	- -	- -	- -	- -	- -

Table G-6 (continued)

Number In SEWRPC GIS File	System Name	Municipality	Watershed Location[b]	WDNR System Classification	Water Supply Source[c]	Number of Wells	WDNR Well Number	System Capacity[d]	Well Capacity[d]	Approved Normal Daily Pumpage (gallons per day)[e]	Approved Maximum Daily Pumpage (gallons per day)[e]
Ozaukee County											
OZ 01	Mee Kwon Park Golf Course	City of Mequon	MK	Irrigation	G	1	QQ608	H	H[f]	20,000	100,000
OZ 02	Mequon Country Club	City of Mequon	MK	Irrigation	G	1	- -	H	H[f]	300,000	576,000
OZ 03	North Shore Country Club	City of Mequon	MK	Irrigation	G	1	BC624	H	H[f]	96,000	288,000
OZ 04	Ozaukee Country Club	City of Mequon	MK	Miscellaneous (April to October)	G	2	BG595 BG594	H	H[f] H[r]	329,000 50,000	615,000 75,000
OZ 05	Squires Country Club	Town of Belgium	DD	Irrigation	G	2	BC623 MK418	H	H[f] H[r]	175,000 150,000	224,000 288,000
OZ 06	Country Club of Wisconsin	Town of Grafton	MK	Irrigation	G	1	EM234	H	H[f]	360,000	720,000
OZ 07	The Bog Golf Course	Town of Saukville	MK	Irrigation	G	2	EQ945 EM233	H	H[f] H[r]	230,000 360,000	460,000 720,000
Ozaukee County: 7 Systems		- -	- -	- -	G	10	- -	- -	- -	2,070,000	- -
Racine County											
RC 01	South Hills Country Club	Village of Caledonia	RT	Transient, Non-Community, Irrigation	G	1	JE637	L	L	500	- -
RC 02	Rivermoor Country Club	Town of Waterford	FX	Irrigation	G	2	- - - -	H H	L[f] H[r]	25,000 50,000	50,000 100,000
RC 03	Ives Grove Golf Course	Town of Yorkville	RT	Irrigation	G	1	BD339	H	L[f]	30,000	50,000
Racine County: 3 Systems		- -	- -	- -	G	4	- -	- -	- -	- -	- -
Walworth County											
WL 01	Abbey Springs Condo Association	Village of Fontana on Geneva Lake	FX	Irrigation	G	2	- - EQ928	H	L[f] H[r]	47,000 240,000	94,000 576,000
WL 02	Big Foot Country Club	Village of Fontana on Geneva Lake	FX	Irrigation	G	1	AU058	H	H[f]	325,000	500,000
WL 03	Hillmoor Golf Club	City of Lake Geneva	FX	Irrigation	G	2	MU167 - -	H	H[f] L[r]	35,000 20,000	70,000 40,000
WL 04	Thunderbird Club	Town of Bloomfield	FX	Irrigation	G	1	- -	H	H[f]	100,000	300,000
WL 05	Dreamfield LLC	Town of Geneva	FX	Irrigation	G	2	KQ027 OS500	H	L[f] H[r]	30,000 108,000	94,000 216,000
WL 06	Geneva National Golf Club	Town of Geneva	FX	Irrigation	G	2	CO552 - -	H	H[f] H[r]	216,000 720,000	432,000 1,440,000
WL 07	Hawks View Golf Course	Town of Geneva	FX	Irrigation	G	2	- - SA442	H	- -[f] H[r]	- - 864,000	- - 1,000,000
WL 08	Evergreen Country Club	Town of LaFayette	FX	Transient, Non-Community, Irrigation Irrigation	G	4	SS448 DN374 - - - -	H	L[f] L[r] H[r] H[r]	10,000 10,000 300,000 288,000	25,000 15,000 500,000 500,000
WL 09	Grand Geneva Resort: Mountain Top Ski area	Town of Lyons	FX	Miscellaneous (November to March)	G	1	OG484	H	H[f]	72,000	144,000
WL 10	Nippersink Country Club	Town of Randall	FX	Miscellaneous (April to October)	G	3	BF082 BF084 BF083	H	H[f] H[r] L[r]	75,000 90,000 32,000	100,000 120,000 32,000
Walworth County: 10 Systems		- -	- -	- -	G	20	- -	- -	- -	- -	- -
Washington County											
WS 01	W & E Radtke Inc.	Village of Germantown	MN	Irrigation	G	2	- - - -	H	L[f] H[r]	20,000 125,000	92,000 288,000
WS 02	Lang Golf Company LLC	Town of Erin	RC	Irrigation	G	2	QN788 SV487	H	L[f] H[r]	25,000 300,000	50,000 720,000

Table G-6 (continued)

Number In SEWRPC GIS File	System Name	Municipality	Watershed Location[b]	WDNR System Classification	Water Supply Source[c]	Number of Wells	WDNR Well Number	System Capacity[d]	Well Capacity[d]	Approved Normal Daily Pumpage (gallons per day)[e]	Approved Maximum Daily Pumpage (gallons per day)[e]
Washington County (continued)											
WS 03	Stoneridge Golf Course	Town of Farmington	MK	Irrigation	G	2	OI196 - -	H	H[f] L[T]	90,000 10,000	105,000 20,000
WS 04	Hartford Country Club	Town of Hartford	RC	Irrigation	G	1	AE217	H	H[f]	460,000	460,000
WS 05	Washington County Family Park	Town of Hartford	RC	Transient, Non-Community, Irrigation	G	2	KZ130 EM256	H	H[f] H[T]	20,000 144,000	100,000 576,000
WS 06	Hidden Glen Golf Club	Town of Jackson	MK	Irrigation	G	1	IU045	H	H[f]	288,000	576,000
WS 07	Kettle Moraine Lutheran High School	Town of Jackson	MK	School	G	1	RA583	H	H[f]	15,000	35,000
WS 08	Sunburst Ski Area: Summit Ski Corp.	Town of Kewaskum	MK	Miscellaneous (November to March)	G	2	AA063 TH819	H	H[f] H[T]	144,000 432,000	288,000 720,000
WS 09	Michael's Pipeline Construction	Town of Polk	MK	Irrigation	G	1	- -	H	H[f]	144,000	288,000
WS 10	Zimmermans Kettle Hills Golf Course	Town of Richfield	MK	Irrigation	G	1	BD691	H	H[f]	202,000	403,000
Washington County: 10 Systems		- -	- -	- -	G	15	- -	- -	- -	- -	- -
Waukesha County											
WK 01	Glacier Ridge Partnership	City of Brookfield	FX	Irrigation	G	1	NQ273	H	H[f]	250,000	432,000
WK 02	Great Lakes Partners, Inc.	City of Brookfield	FX	Irrigation	G	2	BD732 - -	H	L[f] H[T]	75,000 75,000	94,000 432,000
WK 03	Mound Zion Cemetery	City of Brookfield	MN	Irrigation	G	1	BD695	H	H[f]	14,000	19,000
WK 04	Westmoor Country Club	City of Brookfield	FX	Irrigation	G	1	BD729	H	H[f]	108,000	216,000
WK 05	Wisconsin Memorial Park	City of Brookfield	MN	Miscellaneous	G	1	BH355	H	H[f]	21,000	21,000
WK 06	Nagawaukee Park	City of Delafield	RC	Irrigation	G	3	- - - - - -	H	L[f] L[T] L[T]	14,000 14,000 3,000	28,000 28,000 7,000
WK 07	Muskego Lakes Country Club	City of Muskego	FX	Irrigation	G	1	SW940	H	H[f]	150,000	500,000
WK 08	New Berlin Parks and Recreation Department	City of New Berlin	FX	Irrigation	G	2	HY611 - -	H	- -[f] - -[T]	- - - -	- - - -
WK 09	Continental Properties, Inc.	City of Oconomowoc	RC	Irrigation	G	1	BD726	H	H[f]	840,000	1,008,000
WK 10	Willow Run Golf Club	City of Pewaukee	FX	Irrigation	G	2	FN651	H	H[f] L[T]	324,000 18,000	648,000 36,000
WK 11	Moor Downs Golf Course	City of Waukesha	FX	Irrigation	G	2	BD723 BD735	H	H[f] H[T]	119,000 100,000	144,000 150,000
WK 12	Chenequa Country Club	Village of Chenequa	RC	Irrigation	G	3	AE213 - - - -	H	H[f] - -[T] - -[T]	324,000 - - - -	648,000 - - - -
WK 13	Lake Lynn-Louise	Village of Dousman	RC	Irrigation	G	2	NI309 RS700	H	L[f] H[T]	- - 97,000	1,000 194,000
WK 14	Malec Holdings II	Village of Hartland	RC	Irrigation	G	3	IF657 IK767 IK783	H	H[f] H[T] H[T]	350,000 350,000 150,000	430,000 430,000 180,000
WK 15	Lac La Belle Country Club and Golf Course	Village of Lac La Belle	RC	Irrigation	G	3	- - MK429 - -	H	- -[f] H[T] H[T]	- - 420,000 420,000	- - 720,000 720,000
WK 16	Kuhlman Industries	Village of Menomonee Falls	FX	Irrigation	G	2	NY877 VM076	H	H[f] H[T]	260,000 260,000	720,000 720,000
WK 17	North Hills Country Club	Village of Menomonee Falls	MN	Irrigation	G	2	BD697 BD696	H	H[f] H[T]	124,000 76,000	223,000 137,000

Table G-6 (continued)

Number In SEWRPC GIS File	System Name	Municipality	Watershed Location[b]	WDNR System Classification	Water Supply Source[c]	Number of Wells	WDNR Well Number	System Capacity[d]	Well Capacity[d]	Approved Normal Daily Pumpage (gallons per day)[e]	Approved Maximum Daily Pumpage (gallons per day)[e]
Waukesha County (continued)											
WK 18	Silver Spring Country Club	Village of Menomonee Falls	FX	Irrigation	G	5	- - - - - - - - - -	H	L[f] L[f] L[f] H[f] H[f]	14,000 1,000 1,000 432,000 100,000	29,000 12,000 14,000 864,000 195,000
WK 19	Strong - Corneliuson Management	Village of Menomonee Falls	MN	Irrigation	G	3	- - KP768 - -	H	L[f] H[f] L[f]	43,000 360,000 24,000	86,000 720,000 48,000
WK 20	Wanaki Golf Course	Village of Menomonee Falls	FX	Irrigation	G	1	- -	H	H[f]	120,000	300,000
WK 21	Harmony Homes Broadlands	Village of North Prairie	FX	Irrigation	G	1	MQ041	H	H[f]	360,000	720,000
WK 23	Ausblick Inc	Town of Lisbon	FX	Miscellaneous (November to March)	G	1	BH301	H	H[f]	216,000	360,000
WK 24	Ironwood Golf Course	Town of Lisbon	FX	Irrigation	G	1	KY555	H	H[f]	540,000	720,000
WK 25	Songbird Hills Golf Course	Town of Lisbon	RC	Irrigation	G	2	LX252 - -	H	H[f] L[f]	144,000 36,000	288,000 72,000
WK 235	Rainbow Springs Golf Course	Town of Mukwonago	FX	Transient, Non-Community: Miscellaneous	G	1	BH287	H	H[f]	100,000	200,000
WK 27	Oconomowoc Golf Club	Town of Oconomowoc	RC	Irrigation	G	1	KT593	H	L[f]	- -	10,000
WK 29	Kettle Moraine State Forest Puchners Pond	Town of Ottawa	RC	Miscellaneous	G	1	JB832	H	- -[f]	- -	- -
WK 30	Oconomowoc Development Training Center	Town of Summit	RC	Irrigation	G	1	EP128	H	L[f]	1,000	2,000
WK 31	Paganica Golf Course	Town of Summit	RC	Irrigation	G	3	BD704 BD705 BD706	H	H[f] H[f] H[f]	30,000 20,000 8,000	90,000 60,000 15,000
WK 32	Edgewood Golf Course	Town of Vernon	FX	Irrigation	G	3	- - - - - -	H	L[f] L[f] H[f]	1,000 5,000 80,000	1,000 20,000 192,000
WK 33	Merrill Hills Country Club	Town of Waukesha	FX	Irrigation	G	3	BD718 BD719 BD720	H	L[f] L[f] H[f]	59,000 2,000 155,000	59,000 2,000 155,000
Waukesha County: 30 Systems		- -	- -	- -	- -	58	- -	- -	- -	- -	- -
Region: 80 Systems		- -	- -	- -	- -	143	- -	- -	- -	- -	- -

[a] *Irrigation system other than those serving agricultural uses.*

[b] *DP = Des Plaines River Watershed*
FX = Fox River Watershed
MN = Menomonee River Watershed
MK = Milwaukee River Watershed
PK = Pike River Watershed
OC = Oak Creek Watershed
RC = Rock River Watershed
RT = Root River Watershed

[c] *G = Groundwater*
S = Surface Water

[d] *H = High-Capacity (70 gallons per minute or greater, or greater than 100,000 gallons per day)*
L = Low-Capacity (less than 70 gallons per minute capacity, or less than 100,000 gallons per day)

[e] *Estimated daily water use is typically based upon very limited data, where available. Normal and maximum daily pumpage in gallons as reported in the WDNR Drinking Water System database. These amounts may be pumped intermittently.*

[f] *Well is listed as an approved high-capacity well in the WDNR Drinking Water System database.*

Source: Wisconsin Department of Natural Resources and SEWRPC.

Appendix H

STATE OF WISCONSIN DRINKING WATER STANDARDS

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Table H-1

MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER

Contaminant	MCL (mg/l)
Inorganic Compounds	
Arsenic	0.010[a]
Asbestos	7 Million fibers/liter (longer than 10 um)
Barium	2
Cadmium	0.005
Chromium	0.1
Fluoride	4.0
Mercury	0.002
Nitrate	10 (as Nitrogen)
Nitrite	1 (as Nitrogen)
Total Nitrate Nitrite	10 (as Nitrogen)
Selenium	0.05
Antimony	0.006
Beryllium	0.004
Cyanide (as free Cyanide)	0.2
Nickel	0.1
Thallium	0.002

Contaminant	MCL (mg/l)
Synthetic Organic Compounds	
Alachlor	0.002
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
Dibromochloropropane	0.0002
2,4-D	0.07
Endrin	0.002
Ethylene Dibromide	0.00005
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Polychlorinated biphenyls (PCBs)	0.0005
Pentachlorophenol	0.001
Toxaphene	0.003
2,4,5-TP	0.05
Benzo[a]pyrene	0.0002
Dalapon	0.2
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.006
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Glyphosate	0.7
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Oxamyl	0.2
Picloram	0.5
Simazine	0.004
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$

Table H-1 (continued)

Contaminant	MCL (mg/l)
Volatile Organic Contaminants	
Benzene	0.005
Vinyl chloride	0.0002
Carbon tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
para-Dichlorobenzene	0.075
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
Dichloromethane	0.005
1,2-Dichloropropane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
o-Dichlorobenzene	0.6
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
1,2,4-Trichlorobenzene	0.07
1,1,2-Trichloroethane	0.005
Xylenes (total)	10

Contaminant	MCL
Radionuclides	
Combined radium-226 and radium-228	5 pCi/l
Gross alpha particle activity, including radium-226, but excluding radon and uranium	15 pCi/l
Uranium	30 µg/l

[a]*The MCL of 0.010 mg/L for arsenic became effective January 23, 2006. Until then, the MCL for arsenic was 0.05 mg/L.*

Source: Wisconsin Department of Natural Resources.

Table H-2

MAXIMUM CONTAMINANT LEVEL GOALS FOR DRINKING WATER

Contaminant	MCLG (mg/l)
Contaminants for Which MCLGs Are Zero	
Giardia lamblia	- -
Cryptosporidium	- -
Legionella	- -
Total Coliforms	- -
Fecal Coliforms	- -
Escherichia coli	- -
Lead	- -

Contaminant	MCLG (mg/l)
Contaminants for Which MCLGs Are Less than the MCLs	
Acrylamide	0.00001
Alachlor	0.0004
Arsenic	Zero[a]
Benzene	0.001
Benzo[a]pyrene	0.000002
Carbon tetrachloride	0.0003
Chlordane	0.00003
Dibromochloropropane	0.00003
Di(2-ethylhexyl)phthalate	0.003
1,2-Dichloroethane	0.0004
1,2-Dichloropropane	0.0005
Epichlorohydrin	0.004
Ethylene Dibromide	0.0000004
Heptachlor	0.000008
Heptachlor Epoxide	0.000004
Hexachlorobenzene	0.00002
Pentachlorophenol	0.0003
Polychlorinated biphenyls (PCBs)	0.000005
2,3,7,8-TCDD (Dioxin)	2×10^{-10}
Tetrachloroethylene	0.0007
Thallium	0.0005
Toxaphene	0.00003
1,1,2-Trichloroethane	0.003
Trichloroethylene	0.003
Vinyl chloride	0.000015

Contaminant	MCL (mg/l)
Contaminants for Which MCLGs Are Equal to the MCLs	
Atrazine, total chlorinated residue[b]	0.003
Antimony	0.006
Asbestos	7 million fibers/L (longer than 10 micrometers)
Barium	2
Beryllium	0.004
Cadmium	0.005
Carbofuran	0.04
Chromium	0.1
Copper	1.3
Cyanide (as free Cyanide)	0.2
2,4-D	0.07

Table H-2 (continued)

Contaminant	MCL (mg/l)
Contaminants for Which MCLGs Are Equal to the MCLs (continued)	
Dalapon	0.2
o-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
Dichloromethane	0.005
Di(2-ethylhexyl)adipate	0.4
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Ethylbenzene	0.7
Fluoride	4.0
Glyphosate	0.7
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Mercury	0.002
Methoxychlor	0.04
Monochlorobenzene	0.1
Nickel	0.1
Nitrate	10 (as Nitrogen)
Nitrite	1 (as Nitrogen)
Nitrate+Nitrite	10 (as Nitrogen)
Oxamyl	0.2
Picloram	0.5
Selenium	0.05
Simazine	0.004
Styrene	0.1
Toluene	1
1,2,4-Trichlorobenzene	0.07
1,1,1-Trichloroethane	0.2
2,4,5-TP	0.05
Xylenes (Total)	10

[a]*This value for arsenic became effective January 23, 2006. Until then, there was no MCLG for arsenic.*

[b]*Atrazine, total chlorinated residue includes atrazine and its metabolites, diaminoatrazine, diethylatrazine and deisopropylatrazine.*

Source: Wisconsin Department of Natural Resources.

Table H-3

MAXIMUM CONTAMINANT LEVELS, MAXIMUM CONTAMINANT LEVEL GOALS, MAXIMUM RESIDUAL DISINFECTANT LEVELS AND MAXIMUM RESIDUAL DISINFECTANT LEVEL GOALS FOR RESIDUAL DISINFECTANTS AND DISINFECTION BYPRODUCTS IN DRINKING WATER[a]

Disinfection Byproduct	MCLG (mg/l)
Disinfection byproducts with MCLGs	
Chloroform	Zero
Bromodichloromethane	Zero
Bromoform	Zero
Bromate	Zero
Dichloroacetic acid	Zero
Trichloroacetic acid	0.3
Chlorite	0.8
Dibromochloromethane	0.06

Disinfection Byproduct	MCL (mg/l)
Disinfection byproducts with MCLs	
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060
Bromate	0.010
Chlorite	1.0

Residual Disinfectant	MRDL (mg/l)
Disinfectants with MRDLs	
Chlorine (as Cl_2)	4.0
Chloramines (as Cl_2)	4.0
Chlorine dioxide (as ClO_2)	0.8

Residual Disinfectant	MRDLG (mg/l)
Disinfectants with MRDLGs	
Chlorine (as Cl_2)	4.0
Chloramines (as Cl_2)	4.0
Chlorine dioxide (as ClO_2)	0.8

[a]*As set forth in Chapter NR 809.561 of the* Wisconsin Administrative Code*.*

Source: Wisconsin Department of Natural Resources.

Table H-4

SECONDARY CHEMICAL AND PHYSICAL STANDARDS FOR DRINKING WATER

Parameter	Standard (mg/l, except as noted)
Aluminum	0.05 to 0.2
Chloride	250
Color	15 units
Copper	1.0
Corrosivity	Noncorrosive
Fluoride	2.0
Foaming Agents MBAS (methylene-blue active substances	0.5
Hydrogen Sulfide	Not detectable
Iron	0.3
Manganese	0.05
Odor	3 (threshold no.)
Silver	0.1
Sulfate	250
Total Residue	500
Zinc	5.0

Source: Wisconsin Department of Natural Resources.

Appendix I

STATE OF WISCONSIN GROUNDWATER STANDARDS

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Table I-1

PREVENTIVE ACTION LIMITS FOR INDICATOR PARAMETERS FOR GROUNDWATER QUALITY[a,b,c]

Parameter	Minimum Increase (milligrams per liter, except as noted)
Alkalinity	100
Biochemical Oxygen Demand (BOD_5)	25
Calcium	25
Chemical Oxygen Demand (COD)	14
Magnesium	25
Ammonia Nitrogen	2
Organic Nitrogen	2
Total Nitrogen	5
pH (standard units)[d]	1
Potassium	5
Sodium	10
Field Specific Conductance (micromohs per centimeter)	200
Temperature (^{O}F)[e]	10
Total Dissolved Solids (TDS)	200
Total Hardness	100
Total Organic Carbon (TOC)	1
Total Organic Halogen (TOX)	0.25

[a] *As set forth in Section NR 140.20 of the* Wisconsin Administrative Code.

[b] *Except as noted, the preventive action limit is calculated by adding whichever is greater, the value in the table or three times the standard deviation, to a value for background groundwater quality established by averaging a minimum of eight samples from each well.*

[c] *The preventive action limit is intended to inform the WDNR of potential groundwater contamination problems, establish levels of contamination at which the WDNR is required to commence efforts to control contamination, and provide a basis for the design of management criteria in administrative rules*

[d] *The preventive action limit for pH is set at 1 standard unit above or below the background pH.*

[e] *For field temperature, the preventive action limit shall be three standard deviations or 10^{O}F, whichever is greater, above or below the temperature of the background water quality.*

Source: Wisconsin Department of Natural Resources.

Table I-2

GROUNDWATER QUALITY STANDARDS FOR SUBSTANCES OF PUBLIC HEALTH CONCERN[a]

Substance	Chemical Abstract Service Registry Number[b]	Enforcement Standard (micrograms per liter, except as noted)	Preventive Action Limit (micrograms per liter, except as noted)[c]
Acetone	67-64-1	1,000	200
Alachlor	15972-60-8	2	0.2
Alachlor ethanesultonic acid (Alachlor-EsA)	- -	20	4
Aldicarb	116-06-3	10	2
Antimony	- -	6	1.2
Anthracene	120-12-7	3,000	600
Arsenic		10	1
Asbestos (million fibers per liter)	12001-29-5	7	0.7
Atrazine, total chlorinated residues[d]	- -	3	0.3
Bacteria, total coliform (number per 100 milliliters)[e]	- -	0	0
Barium (milligrams per liter)	- -	2	0.4
Bentazon	25057-89-0	300	60
Benzene	71-43-2	5	0.5
Benzo(b)fluoranthene	205-99-2	0.2	0.02
Benzo(a)pyrene	50-32-8	0.2	0.02
Beryllium	- -	4	0.4
Boron	7440-42-8	960	190
Bromodichloromethane	75-27-4	0.6	0.06
Bromoform	75-25-2	4.4	0.44
Bromomethane	74-83-9	10	1
Butylate	2008-41-5	400	80
Cadmium	- -	5	0.5
Carbaryl	63-25-2	960	192
Carbofuran	1563-66-2	40	8
Carbon disulfide	75-15-0	1,000	200
Carbon tetrachloride	56-23-5	5	0.5
Chloramben	133-90-4	150	30
Chlordane	57-74-9	2	0.2
Chloroethane	75-00-3	400	80
Chloroform	67-66-3	6	0.6
Chloromethane	74-87-3	3	0.3
Chromium	- -	100	10
Chrysene	218-01-9	0.2	0.02
Cobalt	7440-48-4	40	8
Copper	- -	1,300	130
Cyanazine	21725-46-2	1	0.1
Cyanide	57-12-5	200	40
Dacthal	1861-32-1	70	14
1,2-Dibromoethane (EDB)	106-93-6	0.05	0.005
Dibromochloromethane	124-48-1	60	6
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.2	0.02
Dibutyl phthalate	84-74-2	100	20
Dicamba	1918-00-9	300	60
1,2-Dichlorobenzene	95-50-1	600	60
1,3-Dichlorobenzene	541-73-1	1,250	125
1,4-Dichlorobenzene	106-46-7	75	15
Dichlorodifluoromethane	75-71-8	1,000	200
1,1-Dichloroethane	75-34-3	850	85
1,2-Dichloroethane	107-06-2	5	0.5
1,1-Dichloroethylene	75-35-4	7	0.7
1,2-Dichloroethylene (cis)	156-59-2	70	7
1,2-Dichloroethylene (trans)	156-60-5	100	20
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	70	7

Table I-2 (continued)

Substance	Chemical Abstract Service Registry Number[b]	Enforcement Standard (micrograms per liter, except as noted)	Preventive Action Limit (micrograms per liter, except as noted)[c]
1,2-Dichloropropane	78-87-5	5	0.5
1,3-Dichloropropene (cis/trans)	- -[f]	0.2	0.02
Di(2-ethylhexyl) phthalate	117-81-7	6	0.6
Dimethoate	60-51-5	2	0.4
2,4-Dinitrotoluene	121-14-2	0.05	0.005
2,6-Dinitrotoluene	606-20-2	0.05	0.005
Dinoseb	88-85-7	7	1.4
Dioxin (2,3,7,8-TCDD)	1746-01-6	0.00003	0.000003
Endrin	72-20-8	2	0.4
EPTC (*S*-ethyl dipropylcarbamothioate)	759-94-4	250	50
Ethylbenzene	100-41-4	700	140
Ethylene glycol (milligrams per liter)	107-21-1	7	0.7
Fluoranthene	206-44-0	400	80
Fluorene	86-73-7	400	80
Fluoride (milligrams per liter)	16984-48-8	4	0.8
Fluorotrichloromethane	75-69-4	3,490	698
Formaldehyde	50-00-0	1,000	100
Heptachlor	76-44-8	0.4	0.04
Heptachlor epoxide	1024-57-3	0.2	0.02
Hexachlorobenzene	118-74-1	1	0.1
N-Hexane	110-54-3	600	120
Hydrogen sulfide	7783-06-4	30	6
Lead	- -	15	1.5
Lindane	58-89-9	0.2	0.02
Mercury	7439-97-6	2	0.2
Methanol	67-56-1	5,000	1,000
Methoxychlor	72-43-5	40	4
Methylene chloride	75-09-2	5	0.5
Methyl ethyl ketone (MEK)	79-93-3	460	90
Methyl isobutyl ketone (MIBK)	108-10-1	500	50
Methyl tert-butyl ether (MTBE)	1634-04-4	60	12
Metolachlor	51218-45-2	15	1.5
Metribuzin	21087-64-9	250	50
Molybdenum	- -	40	8
Monochlorobenzene	108-90-7	100	20
Naphthalene	91-20-3	100	10
Nickel	- -	100	20
Nitrate (as milligrams N per liter)	- -	10	2
Nitrate + Nitrite (as milligrams N per liter)	- -	10	2
Nitrite (as milligrams N per liter)	- -	1	0.2
N-Nitrosodiphenylamine	86-30-6	7	0.7
Pentachlorophenol (PCP)	87-86-5	1	0.1
Phenol (milligrams per liter)	108-95-2	6	1.2
Picloram	1918-02-1	500	100
Polychlorinated biphenyls (PCBs)[g]	1336-36-3	0.03	0.003
Prometon	1310-18-0	90	18
Pyrene	129-00-0	250	50
Pyridine	110-86-1	10	2
Selenium	- -	50	10
Silver	- -	50	10
Simazine	122-34-9	4	0.4
Styrene	100-42-5	100	10
1,1,1,2-Tetrachloroethane	630-20-6	70	7
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.02
Tetrachloroethylene	127-18-4	5	0.5
Tetrahydrofuran	109-99-9	50	10

Table I-2 (continued)

Substance	Chemical Abstract Service Registry Number[b]	Enforcement Standard (micrograms per liter, except as noted)	Preventive Action Limit (micrograms per liter, except as noted)[c]
Thallium	- -	2	0.4
Toluene (milligrams per liter)	108-88-3	1	0.2
Toxaphene	8001-35-2	3	0.3
1,2,4-Trichlorobenzene	120-82-1	70	14
1,1,1-Trichloroethane	71-55-6	200	40
1,1,2-Trichloroethane	79-00-5	5	0.5
Trichloroethylene	79-01-6	5	0.5
2,4,5-Trichlorophenoxy-propionic acid (2,4,5-TP)	93-72-1	50	5
1,2,3-Trichloropropane	98-18-4	60	12
Trifluralin	1582-09-8	7.5	0.75
Trimethylbenzenes (1,2,4- and 1,2,5- combined)	- -[h]	480	96
Vanadium	- -	30	6
Vinyl chloride	75-01-4	0.2	0.02
Xylene (milligrams per liter)[i]	1330-20-7	10	1

[a] *As set forth in Section NR 140.10 of the* Wisconsin Administrative Code.

[b] *The Chemical Abstract Service registry numbers are unique numbers assigned to chemical substances.*

[c] *The preventive action limit is intended to inform the Wisconsin Department of Natural Resources of potential groundwater contamination problems, establish levels of contamination at which the WDNR is required to commence efforts to control contamination, and provide a basis for the design of management criteria in administrative rules.*

[d] *Total chlorinated atrazine residues includes parent compound and the following metabolites of health concern: 2-chloro-4-amino-6-isopropylamino-s-triazine (formerly deethylatrazine), 2-chloro-4-amino-6-ethylamino-s-triazine (formerly deisopropylatrazine), and 2-chloro-4,6-diamino-s-triazine (formerly diaminoatrazine).*

[e] *Total coliform bacteria may not be present in any 100 ml sample using either the membrane filter technique, the presence-absence coliform test, the minimal medium ONPG-MUG test or not present in any 10 ml portion of the 10-tube multiple tube fermentation technique.*

[f] *This is a combined chemical substance which includes cis 1,3-dichloropropene (CAS RN 10061-01-5) and trans 1,3-dichloropropene (CAS RN 10061-02-6).*

[g] *Polychlorinated biphenyls is a class of 209 compounds, each with its own Chemical Abstract Service registry number.*

[h] *This is a combined chemical substance which includes 1,2,4-trimethylbenzene (CAS RN 95-63-6) and 1,3,5-trimethylbenzene (CAS RN 108-67-8).*

[i] *Xylene includes meta-xylene (CAS RN 108-38-3), ortho-xylene (CAS RN 95-47-6), and para-xylene (CAS RN 106-42-3) combined. The preventative action limit has been set at a concentration that is intended to address taste and odor concerns associated with this substance.*

Source: Wisconsin Department of Natural Resources.

Table I-3

GROUNDWATER QUALITY STANDARDS FOR SUBSTANCES OF PUBLIC WELFARE[a]

Substance	Enforcement Standard (milligrams per liter, except as noted)	Preventive Action Limit (milligrams per liter, except as noted)[b]
Chloride	250	125
Color (color units)	15	7.5
Foaming agents (methylene-blue active substances)	0.50	0.25
Iron	0.30	0.25
Manganese	0.050	0.025
Odor (threshold odor number)	3	1.5
Sulfate	250	125
Zinc	5	2.5

[a]*As set forth in Chapter NR 140.12 of the* Wisconsin Administrative Code*.*

[b]*The preventive action limit is intended to inform the WDNR of potential groundwater contamination problems, establish levels of contamination at which the WDNR is required to commence efforts to control contamination, and provide a basis for the design of management criteria in administrative rules.*

Source: Wisconsin Department of Natural Resources.

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Appendix J

SURFACE WATER QUALITY STANDARDS (CRITERIA) AND GUIDELINES

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Table J-1

APPLICABLE WATER USE OBJECTIVES AND WATER QUALITY STANDARDS (CRITERIA) AND GUIDELINES FOR LAKES AND STREAMS WITHIN THE SOUTHEASTERN WISCONSIN REGION

Water Quality Parameter	Combinations of Water Use Objectives Adopted for Planning Purposes[a]						Source
	Coldwater Community	Warmwater Sportfish and Forage Fish Communities	Limited Forage Fish Community (variance category)	Limited Aquatic Life (variance category)	Special Variance Category A[b]	Special Variance Category B[c]	
Recreational use	Full	Full	Full	Full	Limited	Limited	- -
Maximum Temperature (^{o}F)[d]	Background	89.0	89.0	- -	89.0[e]	89.0	NR 102.04 (4)[f]
Dissolved Oxygen (mg/l)[d]	6.0 minimum 7.0 minimum during spawning	5.0 minimum	3.0 minimum	1.0 minimum	2.0 minimum	2.0 minimum	NR 102.04 (4) NR 104.02 (3)
pH Range (S.U.)	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0[e]	6.0-9.0[e]	NR 102.04 (4)[g] NR 104.02 (3)
Fecal Coliform (MFFCC)[h]	- -	- -	- -	- -	- -	- -	NR 102.04 (5) NR 104.06 (2)
Mean	200	200	200	200	1,000	1,000	
Maximum	400	400	400	400	2,000	- -	
Ammonia Nitrogen (mg/l)	- -[i]	- -[i]	- -[i]	- -[i]	- -[i]	- -[i]	NR 105 Tables 2c and 4b
Total Phosphorus (mg/l)	- -	- -	- -	- -	- -	- -	Regional water quality management plan[j]
Maximum for streams	0.1	0.1	0.1	0.1	0.1[e]	0.1[e]	- -
Maximum for lakes during spring turnover	0.02	0.02	0.02	0.02	- -	- -	- -
Chloride (mg/l)	1,000 maximum	1,000 maximum	1,000 maximum	1,000 maximum	1,000 maximum[e]	1,000 maximum[e]	Regional water quality management plan

[a] *NR 102.04(1) All waters shall meet the following minimum standards at all times and under all flow conditions: substances that will cause objectionable deposits on the shore or in the bed of a body of water, floating or submerged debris, oil, scum, or other material, and material producing color, odor, taste, or unsightliness shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant, or aquatic life.*

[b] *As set forth in Chapter NR 104.06(2)(a) of the* Wisconsin Administrative Code.

[c] *As set forth in Chapter NR 104.06(2)(b) of the* Wisconsin Administrative Code.

[d] *Dissolved oxygen and temperature standards apply to continuous streams and the upper layers of stratified lakes and to unstratified lakes; the dissolved oxygen standard does not apply to the hypolimnion of stratified inland lakes. However, trends in the period of anaerobic conditions in the hypolimnion of deep inland lakes should be considered important to the maintenance of their natural water quality.*

[e] *Not specifically addressed within the* Wisconsin Administrative Code*. For planning purposes only, these values are considered to apply.*

[f] *NR 102.04(4) There shall be no temperature changes that may adversely affect aquatic life. Natural daily and seasonal temperature fluctuations shall be maintained. The maximum temperature rise at the edge of the mixing zone above the natural temperature shall not exceed 5^{o}F for streams. There shall be no significant artificial increases in temperature where natural trout reproduction is to be maintained.*

[g] *The pH shall be within the stated range with no change greater than 0.5 unit outside the estimated natural seasonal maximum and minimum.*

[h] *NR 102.04(5)(a) The membrane filter fecal coliform count may not exceed 200 per 100 ml as a geometric mean based on not less than five samples per month, nor exceed 400 per 100 ml in more than 10 percent of all samples during any month.*

[i] *J.E. McKee and M.W. Wolf,* Water Quality Criteria, 2nd edition, *California State Water Quality Control Board, Sacramento, California, 1963. The standards for ammonia nitrogen are set forth in Table IV-8.*

[j] *U.S. Environmental Protection Agency,* Quality Criteria for Water, *EPA-440/9-76-023, 1976.*

Source: Wisconsin Department of Natural Resources and SEWRPC.

Table J-2

HUMAN THRESHOLD CRITERIA FOR PUBLIC HEALTH AND WELFARE FOR WATER QUALITY[a,b]

Substance	Water Use Objectives				
	For Use As a Water Supply		Not Intended for Use As a Water Supply		
	Warmwater Sportfish Communities (microgram per liter, except as noted)	Coldwater Communities[c] (microgram per liter, except as noted)	Warmwater Forage, Limited Forage, and Warmwater Sportfish Communities (microgram per liter, except as noted)	Coldwater Communities (microgram per liter, except as noted)	Limited Aquatic Life (microgram per liter, except as noted)
Arcolein	7.2	3.4	15	4.4	2,800
Antimony	5.6	5.6	373	373	1,120
Benzene	5	5	610	260	4,000
Bis(2-chloroisopropyl) ether	1,100	1,100	55,000	34,000	220,000
Cadmium	4.4	4.4	370	370	880
Chlordane[d] (nanogram per liter)	2.4	0.70	2.4	0.70	310,000
Chlorobenzene	100	100	1,210	400	28,000
Chromium (+3)	41,750	41,750	3,818,000	3,818,000	8,400,000
Chromium (+6)	83.5	83.5	7,636	7,636	16,800
Cyanide, total	138.6	138.6	9,300	9,300	28,000
4,4'-DDT[d] (nanogram per liter)	3.0	0.88	3.0	0.88	2,800,000
1,2-Dichlorobenzene	446	273	1,509	481	126,000
1,3-Dichlorobenzene	1,400	710	3,300	1,000	500,000
cis-1,2-Dichloroethene	70	70	14,000	9,000	56,000
trans-1,2-Dichloroethene	100	100	24,000	13,000	110,000
Dichloromethane (methylene chloride)	5	5	95,000	72,000	328,000
2,4-Dichlorophenol	74	58	580	180	17,000
Dichloropropenes[e]	8.3	8.2	420	260	1,700
Dieldrin[d] (nanogram per liter)	0.59	0.17	0.59	0.17	280,000
2,4-Dimethylphenol	450	430	11,000	4,500	94,000
Diethyl phthalate	5,000	5,000	68,000	21,000	4,500,000
Dimethyl phthalate (milligram per liter)	241	184	1,680	530	56,000
4,6-Dinitro-o-cresol	100	96	1,800	640	22,000
Dinitrophenols[e]	55	55	2,800	1,800	11,000
2,4-Dinitrotoluene	0.51	0.48	13	5.3	110
Endosulfan	87	41	181	54	33,600
Ethylbenzene	567	401	2,920	931	140,000
Fluoranthene	890	610	4,300	1,300	220,000
Hexachlorobenzene[d]	0.075	0.022	0.075	0.022	4,500
Hexachlorocyclopentadiene	34.7	25.6	195	65.3	8,400
Hexachloroethane	8.7	3.3	13	3.7	5,600
γ-BHC (Lindane)[d]	0.20	0.20	0.84	0.25	1,900
Isophorone	5,500	5,300	180,000	80,000	1,100,000
Lead	10	10	140	140	2,240
Mercury[d]	0.0015	0.0015	0.0015	0.0015	336
Nickel	100	100	43,000	43,000	110,000
Pentachlorobenzene[d]	0.46	0.14	0.47	0.14	4,500
Selenium	50	50	2,600	2,600	28,000
Silver	140	140	28,000	28,000	28,000
2,3,7,8-TCDD[d] (picogram per liter)	0.11	0.032	0.11	0.032	7,300
1,2,4,5-Tetrachlorobenzene[d]	0.54	0.17	0.58	0.17	1,700
Toluene	1,000	1,000	15.539	5,201	280,000
1,1,1-Trichloroethane	200	200	270,000	110,000	2,000,000
2,4,5-Trichlorophenol	1,600	830	3,900	1,200	560,000

[a] *Values set forth in Chapter NR 105 of the* Wisconsin Administrative Code.

[b] *All surface waters shall meet the human threshold and human cancer criteria specified in or developed pursuant to* Wisconsin Administrative Code *NR 105.08 and 105.09, respectively.*

[c] *For bioaccumulative chemicals of concern pursuant to NR 105.03 (9), criteria apply to all waters of the Great Lakes system.*

[d] *Indicates a bioaccumulative chemical of concern.*

[e] *The human threshold criteria for this chemical are applicable to each isomer.*

Source: Wisconsin Department of Natural Resources.

Table J-3

HUMAN CANCER CRITERIA FOR PUBLIC HEALTH AND WELFARE FOR WATER QUALITY[a,b]

Substance	Water Use Objectives				
	For Use As a Water Supply		Not Intended for Use As a Water Supply		
	Warmwater Sportfish Communities (microgram per liter, except as noted)	Coldwater Communities[c] (microgram per liter, except as noted)	Warmwater Forage, Limited Forage, and Warmwater Sportfish Communities (microgram per liter, except as noted)	Coldwater Communities (microgram per liter, except as noted)	Limited Aquatic Life (microgram per liter, except as noted)
Acrylonitrile	0.57	0.45	4.6	1.5	130
Arsenic	0.2	0.2	13.3	13.3	40
α-BHC[d]	0.012	0.0037	0.013	0.0039	11
γ-BHC (Lindane)[d]	0.052	0.018	0.064	0.019	54
BHC, technical grade[d]	0.038	0.013	0.047	0.014	39
Benzene	5	5	140	45	1,300
Benzidine (nanogram per liter)	1.5	1.5	81	55	300
Beryllium	0.054	0.054	0.33	0.33	16
Bis(2-chloroethyl) ether	0.31	0.29	7.6	3.0	64
Bis(chloromethyl) ether (nanogram per liter)	1.6	1.6	96	79	320
Carbon tetrachloride	2.5	2.1	29	9.5	540
Chlordane[d] (nanogram per liter)	0.41	0.12	0.41	0.12	54,000
Chloroethene (vinyl chloride)	0.18	0.18	10	6.8	37
Chloroform (trichloromethane)	55	53	1,960	922	11,200
4,4'-DDT[d] (nanogram per liter)	0.22	0.065	0.22	0.065	206,000
1,4-Dichlorobenzene	14	12	163	54	2,940
3,3'-Dichlorobenzidine	0.5	0.3	1.3	0.4	140
1,2-Dichloroethane	3.8	3.8	217	159	770
Dichloromethane (methylene chloride)	5	5	2,700	2,100	9,600
1,3-Dichloropropene	3.4	3.4	173	1-8	700
Dieldrin[d] (nanogram per liter)	0.0091	0.0027	0.0091	0.0027	4,400
2,4-Dinitrotoluene	0.51	0.48	13	5.3	110
1,2-Diphenylhydrazine	0.38	0.31	3.3	1.04	88
Halomethanes[e]	55	53	1,960	922	11,200
Hexachlorobenzene[d] (nanogram per liter)	0.73	0.22	0.73	0.22	44,000
Hexachlorobutadiene[d]	0.59	0.19	0.69	0.2	910
Hexachloroethane	7.7	2.9	11	3.3	5,000
N-Nitrosodiethylamine (nanogram per liter)	2.3	2.3	150	140	460
N-Nitrosodimethylamine	0.0068	0.0068	0.46	0.46	1.4
N-Nitrosodi-n-butylamine	0.063	0.062	2.5	1.3	13
N-Nitrosodiphenylamine	44	23	116	34	13,000
N-Nitrosopyrrolidine	0.17	0.17	11	11	34
Polychlorinated biphenyls[d] (nanogram per liter)	0.01	0.003	0.01	0.003	9,100
2,3,7,8-TCDD[d] (picogram per liter)	0.014	0.0041	0.014	0.0041	930
1,1,2,2-Tetrachloroethane	1.7	1.6	52	22	350
Tetrachloroethene	5.8	4.6	46	15	1,300
Toxaphene[d] (nanogram per liter)	0.11	0.034	0.14	0.034	63,600
1,1,2-Trichloroethane	6.0	6.0	195	87	1,200
Trichlororethene	5	5	539	194	6,400
2,4,6-Trichlorophenol	29	24	300	97	6,400

[a] *Values set forth in Chapter NR 105 of the* Wisconsin Administrative Code.

[b] *All surface waters shall meet the human threshold and human cancer criteria specified in or developed pursuant to NR 105.08 and NR 105.09, respectively.*

[c] *For bioaccumulative chemicals of concern pursuant to NR 105.03 (9), criteria apply to all waters of the Great Lakes system.*

[d] *Indicates a bioaccumulative chemical of concern.*

[e] *Human cancer criteria for halomethanes are applicable to any combination of the following chemicals: bromomethane (methyl bromide), chloromethane (methyl chloride), tribromomethane (bromoform), bromodichloromethane (dichloromethyl bromide), dichlorodifluoromethane (fluorocarbon 12), and trichlorofluoromethane (fluorocarbon 11).*

Source: Wisconsin Department of Natural Resources.

Table J-4

THRESHOLD CONCENTRATIONS FOR PUBLIC HEALTH AND WELFARE FOR SUBSTANCES CAUSING TASTE AND ODOR IN WATER[a,b]

Substance	Threshold Concentration (microgram per liter)
Acenaphthene	20.00
Chlorobenzene	20.00
2-Chlorophenol	0.10
3-Chlorophenol	0.10
4-Chlorophenol	0.10
Copper	1,000.00
2,3-Dichlorophenol	0.04
2,4-Dichlorophenol	0.30
2,5-Dichlorophenol	0.50
2,6-Dichlorophenol	0.20
3,4-Dichlorophenol	0.30
2,4-Dimethylphenol	400.00
Hexachloropentiadiene	1.00
2-Methyl-4-Chlorophenol	1,800.00
3-Methyl-4-Chlorophenol	3,000.00
3-Methyl-6-Chlorophenol	20.00
Nitrobenzene	30.00
Pentachlorophenol	30.00
Phenol	300.00
2,3,4,6-Tetrachlorophenol	1.00
2,4,5-Trichlorophenol	1.00
2,4,6-Trichlorophenol	2.00
Zinc	5,000.00

[a] *Values set forth in Chapter NR 102 of the* Wisconsin Administrative Code.

[b] *All surface waters providing public drinking water supplies or classified as Coldwater or warmwater sportfish communities shall meet the taste and odor criteria specified in or developed pursuant to Section NR 102.14. For substances imparting tastes or odors to water, the criteria are the concentrations listed in the table. For substances imparting tastes or odors to aquatic organisms, the criteria is computed by dividing the concentration listed in the table (converted to mg/l) by the aquatic life bioaccumulation factor as derived in Section NR 105.10.*

Source: Wisconsin Department of Natural Resources.

Appendix K

METHODOLOGY FOR ANALYZING WATER SUPPLY SYSTEM CAPACITIES AND FOR DEVELOPING SYSTEM-LEVEL ALTERNATIVE PLANS

INTRODUCTION

This appendix provides a description of the methodology used for analyzing the capacities of municipal water supply facilities in the Region. The capacities of the facilities were compared to existing and forecast water use demands under year 2000 and design year 2035 conditions. Those water use demands are presented in Chapter IV, "Anticipated Growth and Change Affecting Water Supply in the Region," of SEWRPC Planning Report No. 52, *A Regional Water Supply Plan for Southeastern Wisconsin*. In addition, this appendix provides information on the methodology used for the system-level design of the facilities needed to meet the existing and the forecast water demands under each of the 2035 alternative plans considered. The results of the capacity evaluation are summarized in Table K-1.

METHODOLOGY FOR ANALYZING CAPACITIES OF GROUNDWATER SUPPLIED SYSTEMS

Four criteria are used to assess the adequacy of existing groundwater-supplied water supply systems: 1) well pump capacity; 2) peak hour storage capacity; 3) fire flow storage capacity; and 4) emergency supply capacity.

The criteria were selected and applied in accordance with typical water industry standards, including those of the American Water Works Association (AWWA), the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health, and Environmental Managers, sound engineering practice, and the applicable State and Federal regulations. The adequacy of the capacities are determined by comparing average day and peak day pumpage volumes against combinations of well, pumping, and storage volumes. An example of the calculation involved follows.

In the example, the projected average day and peak day pumpages were assumed to be 0.50 million gallons (MG) and 0.90 MG, respectively. The recommended fire flow supply was assumed to be 3,500 gpm, or 5.04 million gallons per day (MGD), for three hours.

- Unit Well 1
  Includes a 500 gallons per minute (gpm) well pump which discharges directly to the distribution system. A natural gas-fueled engine and right-angle drive unit can operate the well pump during electric power outages.

Table K-1

COMPARISON OF CURRENT AND FORECAST FUTURE WATER SUPPLY PUMPAGE DEMAND TO THE CAPACITY OF THE SOURCES OF SUPPLY FOR WATER SUPPLY UTILITIES IN THE SOUTHEASTERN WISCONSIN REGION

Utility	2000						2035					
	Average Day Pumpage (mgd)	Peak Day Pumpage (mgd)	Surplus Maximum Day Supply Capacity[a] (mgd)	Surplus Peak Hour Storage Capacity (MG)	Surplus Fire Flow Capacity (MG)	Surplus Emergency Supply Capacity (mgd)	Average Day Pumpage (mgd)	Peak Day Pumpage (mgd)	Surplus Maximum Day Supply Capacity[a] (mgd)	Surplus Peak Hour Storage Capacity (MG)	Surplus Fire Flow Capacity (MG)	Surplus Emergency Supply Capacity (mgd)
Kenosha County												
Kenosha Water Utility[b]	14.55	21.64	15.36	9.26	18.23	32.94	22.23	33.38	3.63	6.21	13.34	25.26
Village of Paddock Lake Municipal Water Utility	0.07	0.18	0.06	-0.02	-0.32	0.48	0.54	1.46	-1.22	-0.45	-1.23	0.02
Village of Pleasant Prairie Water Utility	1.70	1.82	--[b]	--[b]	--[b]	--[b]	5.10	6.95	--[b]	--[b]	--[b]	--[b]
Town of Bristol Utility District No. 1	0.23	0.35	0.95	0.18	-0.03	2.31	0.67	1.24	0.06	0.04	-0.73	1.87
Town of Bristol Utility District No. 3	0.02	0.03	--[b]	--[b]	--[b]	--[b]	0.94	1.81	--[b]	--[b]	--[b]	--[b]
Town of Somers Water Utility	0.37	0.61	--[b]	--[b]	--[b]	--[b]	2.14	3.43	--[b]	--[b]	--[b]	--[b]
Milwaukee County												
City of Cudahy Water Utility[c]	2.63	4.13	-4.13	0.24	-0.90	1.02	2.62	3.78	-3.78	0.20	-0.76	1.03
City of Franklin Water Utility	1.80	4.69	--[d]	--[d]	--[d]	--[d]	5.95	12.80	--[d]	--[d]	--[d]	--[d]
City of Glendale Water Utility[e]	4.24	7.99	6.41	3.94	5.76	6.89	4.89	9.65	4.75	3.52	5.14	6.24
City of Milwaukee Water Works[f]	126.77	181.67	60.83	62.38	53.63	--[g]	133.91	213.05	29.45	53.21	40.34	--[g]
City of Oak Creek Water and Sewer Utility[d]	7.05	15.52	-3.52[d]	3.16[d]	3.33[d]	15.92[d]	14.24	29.22	-17.22[d]	-0.84[d]	-2.39[d]	8.74[d]
City of South Milwaukee Water Utility	2.67	3.64	2.37	0.46	0.51	4.23	2.61	4.25	1.75	0.28	0.25	4.29
City of Wauwatosa Water Utility[f]	6.24	8.15	--[f]	--[f]	--[f]	--[f]	6.56	11.00	--[f]	--[f]	--[f]	--[f]
City of West Allis Water Utility[f]	6.95	9.08	--[f]	--[f]	--[f]	--[f]	6.90	10.01	--[f]	--[f]	--[f]	--[f]
Village of Brown Deer Public Water Utility[f]	1.55	2.56	--[f]	--[f]	--[f]	--[f]	1.60	2.98	--[f]	--[f]	--[f]	--[f]
Village of Fox Point Water Utility[e]	0.76	1.68	--[e]	--[e]	--[e]	--[e]	0.70	1.12	--[e]	--[e]	--[e]	--[e]
Village of Greendale Water Utility[f]	1.34	2.55	--[f]	--[f]	--[f]	--[f]	1.32	3.53	--[f]	--[f]	--[f]	--[f]
Village of Shorewood Municipal Water Utility[f]	1.25	2.08	--[f]	--[f]	--[f]	--[f]	1.30	2.11	--[f]	--[f]	--[f]	--[f]
Village of Whitefish Bay Water Utility[e]	1.32	2.28	--[e]	--[e]	--[e]	--[e]	1.35	3.01	--[e]	--[e]	--[e]	--[e]
We Energies-Water Services[e]	0.07	0.17	--[e]	--[e]	--[e]	--[e]	0.49	0.79	--[e]	--[e]	--[e]	--[e]
Ozaukee County												
City of Cedarburg Light and Water Commission	1.42	2.15	1.54	0.79	0.63	2.40	1.91	2.94	0.75	0.56	0.30	1.90
City of Port Washington Water Utility	1.33	1.70	2.30	0.88	1.00	4.67	1.95	3.13	-1.13	0.62	0.52	2.05
Village of Belgium Municipal Water Utility	0.27	0.61	0.62	0.27	-0.21	1.29	0.39	1.11	0.12	0.10	-0.44	1.17
Village of Fredonia Municipal Water Utility	0.17	0.40	0.25	0.17	-0.03	0.75	0.39	0.83	-0.18	0.03	-0.55	0.53
Village of Grafton Water and Wastewater Utility	1.42	2.04	1.36	0.44	0.16	1.19	2.37	3.83	-0.43	-0.15	-0.66	0.24
Village of Saukville Municipal Water Utility	1.26	1.74	0.54	0.60	0.35	2.83	1.58	2.07	0.21	0.49	0.19	2.51
We Energies-Water Services[f]	0.67	1.73	--[f]	--[f]	--[f]	--[f]	4.55	6.35	--[f]	--[f]	--[f]	--[f]
Racine County												
City of Burlington Municipal Waterworks	1.88	2.89	3.37	0.98	1.29	3.97	2.55	4.51	1.76	0.44	0.55	3.31
City of Racine Water and Wastewater Utility[h]	25.01	39.02	5.98	2.97	8.12	30.25	29.21	44.24	0.76	1.66	6.16	26.05
Village of Union Grove Municipal Water Utility	0.72	1.36	0.82	0.31	-0.06	-0.16	1.06	1.84	0.33	0.15	-0.28	-0.50
Village of Waterford Water and Sewer Utility	0.39	0.70	0.06	0.29	-0.19	1.84	0.62	1.23	-0.47	0.11	-0.43	1.61
Village of Wind Point Municipal Water Utility[h]	0.25	0.42	--[h]	--[h]	--[h]	--[h]	2.88	0.46	--[h]	--[h]	--[h]	--[h]
Village of Caledonia West Utility District (Oak Creek)[d]	0.05	0.20	--[d]	--[d]	--[d]	--[d]	0.11	0.32	--[d]	--[d]	--[d]	--[d]

Table K-1 (continued)

Utility	2000						2035					
	Average Day Pumpage (mgd)	Peak Day Pumpage (mgd)	Surplus Maximum Day Supply Capacity[a] (mgd)	Surplus Peak Hour Storage Capacity (MG)	Surplus Fire Flow Capacity (MG)	Surplus Emergency Supply Capacity (mgd)	Average Day Pumpage (mgd)	Peak Day Pumpage (mgd)	Surplus Maximum Day Supply Capacity[a] (mgd)	Surplus Peak Hour Storage Capacity (MG)	Surplus Fire Flow Capacity (MG)	Surplus Emergency Supply Capacity (mgd)
Racine County (continued)												
Village of Caledonia West Utility District (Racine)[h]	0.61	0.70	--[h]	--[h]	--[h]	--[h]	3.21	4.37	--[h]	--[h]	--[h]	--[h]
Crestview Sanitary District	0.27	0.84	--[d]	--[d]	--[d]	--[d]	0.35	0.84	--[d]	--[d]	--[d]	--[d]
Village of Caledonia East Utility District (Oak Creek)[d]	0.18	0.29	--[d]	--[d]	--[d]	--[d]	0.19	0.30	--[d]	--[d]	--[d]	--[d]
Village of Caledonia East Utility District (Racine)[h]	0.79	1.29	--[h]	--[h]	--[h]	--[h]	0.84	1.35	--[h]	--[h]	--[h]	--[h]
North Cape Sanitary District	0.01	0.02	-0.02	0.00	-0.13	-0.01	0.02	0.03	0.03	0.00	-0.13	-0.02
Town of Yorkville Water Utility District No. 1	0.07	0.12	-0.12	0.34	-0.01	1.90	0.33	0.53	-0.53	0.20	-0.20	1.64
Walworth County												
City of Delavan Water and Sewerage Commission	0.90	1.55	1.38	1.30	1.88	5.09	2.28	4.02	-1.09	0.48	0.75	3.70
City of Elkhorn Light and Water	1.21	1.71	1.63	0.65	0.50	3.53	2.53	3.32	0.02	0.11	-0.24	2.21
City of Lake Geneva Municipal Water Utility	1.29	1.97	2.59	1.61	1.93	3.81	2.03	3.59	0.96	1.07	1.18	3.07
City of Whitewater Municipal Water Utility	1.89	3.28	2.66	0.83	0.86	5.66	2.39	3.98	1.95	0.59	0.53	5.16
Village of Darien Water Works and Sewer System	0.11	0.28	0.91	0.43	0.33	2.50	0.35	0.79	0.40	0.26	-0.20	2.26
Village of East Troy Municipal Water Utility	0.57	0.90	-0.11	0.39	-0.05	1.96	1.23	2.03	-1.24	0.01	-0.57	1.30
Village of Fontana Municipal Water Utility	0.51	1.09	0.87	0.43	0.15	2.65	0.54	0.72	1.24	0.56	0.32	2.63
Village of Genoa City Municipal Water Utility	0.28	0.49	0.38	0.35	0.25	0.68	0.94	1.41	-0.55	0.04	-0.49	0.03
Village of Sharon Waterworks and Sewer System	0.13	0.73	-0.15	0.03	-0.57	0.38	0.22	0.68	-0.11	0.04	-0.55	0.29
Village of Walworth Municipal Water and Sewer Utility	0.49	0.66	0.52	0.27	-0.14	1.38	0.92	1.25	-0.08	0.07	-0.41	0.95
Village of Williams Bay Municipal Water Utility	0.32	0.73	1.17	0.74	0.49	1.44	0.86	1.76	0.14	0.40	0.02	0.90
Town of East Troy Sanitary District No. 3	0.01	0.01	-0.01	0.00	-0.13	0.60	0.01	0.02	-0.02	-0.01	-0.13	0.59
Town of Troy Sanitary District No. 1	0.01	0.04	-0.04	-0.01	-0.32	0.00	0.01	0.02	-0.02	-0.01	-0.31	-0.01
Country Estates Sanitary District	0.02	0.04	0.53	0.09	-0.16	0.59	0.09	0.15	0.42	0.06	-0.20	0.52
Lake Como Sanitary District No. 1	0.13	0.29	0.43	0.17	-0.06	1.56	0.29	0.57	0.15	0.08	-0.50	1.41
Pell Lake Sanitary District No. 1	0.18	0.47	0.11	0.14	-0.08	0.66	0.52	0.96	-0.38	-0.03	-0.63	0.33
Washington County												
City of Hartford Water Utility[i]	1.50	2.42	-0.61[i]	-0.16	-0.25	2.61	2.46	3.70	-1.89[i]	-0.58	-0.84	1.65
City of West Bend Water Utility	2.91	4.07	3.69	1.87	3.47	8.98	4.81	6.47	1.29	1.17	2.47	7.09
Village of Germantown Water Utility	1.79	2.92	0.94	0.91	1.08	4.09	3.31	5.45	-1.59	0.17	0.02	2.57
Village of Jackson Water Utility	0.49	0.99	2.55	0.70	0.58	5.13	1.16	2.10	1.44	0.33	0.07	4.47
Village of Kewaskum Municipal Water Utility	0.47	0.91	0.88	0.47	0.02	1.71	0.75	1.36	0.43	0.32	-0.19	1.43
Village of Slinger Utilities	0.33	0.60	-0.10	0.34	-0.14	1.10	0.86	1.60	-1.10	0.01	-0.59	0.57
Allenton Sanitary District No. 1	0.09	0.16	0.31	0.22	0.02	0.65	0.20	0.68	-0.21	0.05	-0.53	0.54
Waukesha County												
City of Brookfield Municipal Water Utility (east and west)	3.66	4.55	8.98	3.50	5.22	1.69	6.05	9.37	4.15	2.10	3.21	-0.70
City of Delafield Municipal Water Utility	0.10	0.22	-0.22	0.63	0.45	1.47	1.50	2.98	-2.98	-0.29	-1.15	0.06
City of Muskego Public Water Utility	0.59	1.08	3.61	0.97	1.14	3.83	2.54	5.40	-0.72	-0.48	-0.84	0.43
City of New Berlin Water Utility-East[f]	1.78	2.55	2.24	0.43	0.23	3.54	2.22	3.82	0.97	0.05	-0.30	3.10
City of New Berlin Water Utility-Central	1.49	2.13	2.62	2.39	2.58	2.16	2.90	4.66	0.10	1.66	1.52	0.75

Table K-1 (continued)

Utility	2000						2035					
	Average Day Pumpage (mgd)	Peak Day Pumpage (mgd)	Surplus Maximum Day Supply Capacity[a] (mgd)	Surplus Peak Hour Storage Capacity (MG)	Surplus Fire Flow Capacity (MG)	Surplus Emergency Supply Capacity (mgd)	Average Day Pumpage (mgd)	Peak Day Pumpage (mgd)	Surplus Maximum Day Supply Capacity[a] (mgd)	Surplus Peak Hour Storage Capacity (MG)	Surplus Fire Flow Capacity (MG)	Surplus Emergency Supply Capacity (mgd)
Waukesha County (continued)												
City of Oconomowoc Utilities	1.56	2.61	4.97	1.55	2.36	5.24	3.36	5.79	1.78	0.62	1.04	3.44
City of Pewaukee Water and Sewer Utility	1.15	1.79	3.41	1.10	1.30	2.84	2.51	4.94	0.26	0.05	-0.14	1.48
City of Waukesha Water Utility	7.77	10.15	-4.93	5.46	7.74	1.72	9.82	13.44	-8.22	4.50	6.37	-0.33
Village of Butler Public Water Utility[f]	0.40	0.67	0.11	0.21	-0.25	0.95	0.49	0.78	0.00	0.18	-0.30	0.86
Village of Dousman Water Utility	0.15	0.23	0.17	0.19	-0.17	0.53	0.48	0.81	-0.41	-0.01	-0.61	0.19
Village of Eagle Municipal Water Utility	0.15	0.57	0.06	0.03	-0.50	1.29	0.26	0.78	-0.15	-0.04	-0.59	1.18
Village of Hartland Municipal Water Utility	0.92	1.47	3.24	1.09	1.20	4.82	1.43	2.62	2.09	0.71	0.68	4.31
Village of Menomonee Falls Water Utility (west)	0.18	0.27	0.31	0.48	0.40	2.92	1.01	1.60	-1.03	0.26	-0.40	2.09
Village of Menomonee Falls Water Utility (east)[f]	3.57	5.29	4.79	2.27	3.47	9.06	5.25	8.94	1.15	1.20	1.95	7.37
Village of Mukwonago Municipal Water Utility	0.64	0.90	-0.10	0.65	0.32	3.44	1.51	2.22	-1.43	0.21	-0.29	2.57
Village of Pewaukee Water Utility	0.85	1.22	0.29	0.58	0.57	1.29	1.30	1.98	-0.47	0.33	0.22	0.84
Town of Brookfield Sanitary District No. 4	1.03	1.39	0.91	0.36	-0.10	1.55	1.22	1.69	0.61	0.26	-0.24	1.36

[a] *The surplus maximum day supply capacity is based on a comparison of the 2000 and estimated 2035 maximum day pumpage to the "reliable capacity" of the facility defined as the capacity with one unit of any major component out of service. This "reliable capacity" is different than the requirements of NR 811 which requires duplicate units for most facilities, but when duplicate units exist, it does not require redundant units.*

[b] *Average and peak day pumpages for the indicated customer utilities are included in the volumes listed for Kenosha. Surplus capacity was evaluated for the City of Kenosha Water Utility water supply facilities.*

[c] *The year 2000 and 2035 pumpage amounts are those associated with the City of Cudahy Water Utility municipal system and exclude water provided directly to industrial users.*

[d] *Average and peak day pumpages for the indicated customer utilities are included in the volumes listed for Oak Creek Water and Sewer Utility. Surplus capacity was evaluated for the Oak Creek Water and Sewer Utility water supply facilities. During 2009, the City of Oak Creek Sewer and Water Utility initiated construction of a water treatment plant expansion designed to bring the plant capacity up to 28.0 mgd. The Utility is also considering preparation of a rerating analysis of the water treatment plant which could result in a rerated plant capacity of 35.0 mgd upon completion of the 2009 plant expansion. Upon completion of these projects in 2010, the Utility would have surplus maximum day supply capacity of 11.5 mgd under year 2000 demand pumpage conditions, and the reliable capacity. Under 2035 demand, pumpage conditions will exceed the estimated maximum day demand with modest changes to the low lift pumping capacity.*

[e] *Average and peak day pumpages listed for Glendale include the other indicated customer utilities and We Energies for use in the Village of Bayside. North Shore Water Commission provides service to all indicated utilities. Surplus capacity was evaluated for the North Shore Water Commission water supply facilities.*

[f] *Average and peak day pumpages for the indicated customer utilities are included in the volumes listed for Milwaukee Water Works. Surplus capacity was evaluated for the Milwaukee Water Works water supply facilities.*

[g] *Emergency supply capacity is being evaluated by the utility.*

[h] *Average and peak day pumpages for the indicated customer utilities are included in the volumes listed for Racine Water and Wastewater Utility.*

[i] *During 2009, the City of Hartford Water Utility began development of a new shallow well and elevated storage tank and related facilities. These facilities are expected to be in service during 2010. Once these facilities are in place, the Utility will have a surplus maximum day supply capacity of 1.70 mgd under year 2000 demand pumpage conditions, and 0.4 mgd under estimated year 2035 pumpage conditions.*

Source: Ruekert & Mielke, Inc., and SEWRPC.

- Unit Well 2
  Includes a 300 gpm well pump which discharges into an onsite reservoir having a gross storage volume of 400,000 gallons. Three 400 gpm service pumps draw water from the reservoir and discharge to the distribution system. An onsite diesel-fueled engine-generator set has enough capacity to operate the entire facility during electric power outages.

- Unit Well 3
  Includes a 750 gpm well pump which discharges directly to the distribution system. No equipment is onsite to operate the pump during electric power outages.

- Elevated Storage
  A spheroid-style storage tank has a gross capacity of 250,000 gallons.

Well Pump Capacity
For system-level planning purposes, well pump capacity must be adequate to supply the peak day pumpage volume with the largest capacity well pump inoperable. Many utilities have distribution systems which are separated into pressure zones. Transfer stations are required to allow controlled transfer of water between pressure zones. Transfer stations may include pumps, meters, and controllable valves. Without transfer stations, excess well capacity within one pressure zone would not be available to satisfy water demands in other pressure zones. It was, therefore, assumed that transfer stations exist or will be constructed to allow transferring water between pressure zones at rates sufficient to allow continuous operation of all well pumps.

Example Calculation. There are a total of three wells having capacities of 300 gpm, 500 gpm and 750 gpm. Assuming the 750 gpm pump is inoperable, the remaining capacity is 300 + 500 = 800 gpm = 1.15 MGD. If the needed peak day pumpage is 0.90 MG, the surplus available is 1.15 - 0.90 = 0.25 MGD.

Peak Hour Storage Capacity
A major purpose of storage is to have water available to meet limited duration peak water demand rates. Storage can be provided by an elevated tank, in which case it may be assumed that the rate at which the tank can supply water would meet or exceed any anticipated demand. Repump storage refers to tanks from which pumps can draw stored water and deliver it to the distribution system. For repump storage, the rate at which water can be delivered to the distribution system is determined by the aggregate capacity of the pumps. The volume a repump storage tank can provide is determined by the aggregate pump-out rate and the time period during which the pumps operate.

Water demand typically varies over any 24-hour-long period, with higher demand rates normally occurring during the day and lower rates at night. This means that on the day of peak demand for the year, there will be time periods during which the demand rate exceeds the average rate for the peak day. The storage volume needed to satisfy the peak hour demand is the difference between the peak hour rate and the peak day rate for a duration of four hours. A peak hour rate of 2.0 times the peak day rate may be assumed for small systems. A peak hour rate of 1.75 times the peak day rate was used for larger systems identified as Class AB by the Wisconsin Public Service Commission.

Example Calculation. In the example, the peak hour rate would be two times peak day rate, or 2 x 0.90 MGD = 1.80 MGD. The difference between the peak hour rate and the peak day rate is 1.80 - 0.90 = 0.90 MGD. The needed volume is determined by the four-hour duration or 0.90 x 4/24 = 0.15 MG.

If the aggregate well capacity exceeds the peak day demand rate, the surplus well capacity is available to satisfy the peak hour storage needs. In the example, there is a surplus 0.25 MGD of well capacity. The volume available over a four-hour period is 0.25 MG x 4/24 = 0.04 MG.

Usable storage volume for a repump tank is assumed to be 75 percent of gross volume. For Unit Well 2, the aggregate service pump rate is 3 x 400 gpm = 1,200 gpm. The input rate is 300 gpm, so the net pump-out rate is

1,200 - 300 = 900 gpm. The net pump-out volume over a four-hour period is 900 gpm x (4 hr. x 60 min/hr.) = 0.22 MG. The usable storage volume is 0.40 MG x 0.75 = 0.30 MG. The usable storage volume exceeds the net volume which can be pumped from the reservoir during the four-hour time period. The lesser of these volumes (0.22 MG) can be assigned to meet the peak hour storage need.

For elevated storage tanks, it has been assumed that the available storage volume is that contained in the top 20 feet of the tank head range less 10 percent.

For the example 250,000 gallon spheroid tank, the volume contained in the top 20 feet of head range is 0.19 MG. Ninety percent of this volume is 0.17 MG.

In the example, the total volume available to satisfy the peak hour storage need is therefore 0.04 + 0.22 + 0.17 = 0.43 MG. The needed volume is 0.15 MG, so the available surplus is 0.43 - 0.15 = 0.28 MG.

Fire Flow Storage Capacity

To calculate the needed fire flow storage volume, it was assumed that a four-hour-long peak hour demand rate is followed by a fire flow demand. During the fire flow demand period, the assumed concurrent demand will be the peak day demand rate. In the example, the needed fire flow storage volume is calculated as follows:

(Peak Hour Rate x 4/24) + (Fire Flow Rate x Fire Flow Duration) + (Peak Day Rate x Fire Flow Duration) = (1.80 x 4/24) + (5.04 x 3/24) + (0.90 x 3/24) = 1.04 MG.

The volume available to satisfy the needed fire flow storage includes pumpage from wells, pumpage from repump storage tanks, and flows from elevated tanks. For wells, it is assumed that the largest capacity well is inoperable. For elevated tanks, the usable volume is that contained in the top 55 feet of head range less 10 percent. In the example, the usable elevated tank storage volume would be 0.25 x 0.90 = 0.22 MG.

Similar to the calculations for repump storage for the peak hour storage criteria, available repump storage may be limited by either the usable storage volume or by the ability of the pumps to empty the tank within the available time period. The usable volume is 75 percent of the gross volume. In the example, the aggregate repump capacity is 1,200 - 300 = 900 gpm = 1.30 MGD. The time duration is seven hours, so the pump-out capacity is 1.30 x 7/24 = 0.38 MG. Since the usable tank volume is only 0.30 MG, this smaller volume is the quantity available.

In the example, the total available fire flow storage volume is calculated as follows:

Aggregate well pump capacity + repump storage volume + elevated tank volume

(0.72 + 0.43) x 7/24 + 0.30 + 0.22 = 0.86 MG

Surplus fire flow storage volume = 0.86 - 1.04 = -0.18 MG.

Emergency Supply Capacity

The needed emergency supply capacity is assumed to be an average day pumpage. Only gravity storage, treatment, and pumping facilities having electric service from two independent substations or equipped with auxiliary power are assumed available to satisfy the emergency supply capacity criteria. In the example, Unit Wells 1 and 2 are equipped with auxiliary power. Unit 1 is simply an engine directly driving the well pump which discharges into the distribution system. Its capacity is the well capacity of 500 gpm = 0.72 MGD.

At Unit Well 2, an engine-generator set has sufficient capacity to power the entire station. The station capacity available to satisfy the emergency supply need is the well capacity—300 gpm = 0.43 MGD—plus the available storage volume. The available storage volume is the lesser of the usable volume or the net pump-out volume, which is the aggregate pump-out capacity minus the well capacity over the one day duration. In the example, the

usable volume is 75 percent of the gross volume (0.40 MG x 0.75 = 0.30 MG) or 1,200 - 300 = 900 gpm = 1.30 MG.

Elevated storage available to satisfy the emergency supply need is that contained in the top 55 feet of head range less 10 percent. In the example, this is 0.25 x 0.90 = 0.22 MG.

In the example, the available emergency supply is then 0.72 + 0.43 + 0.30 + 0.22 = 1.67

The surplus capacity = 1.67 - 0.50 = 1.17 MG.

METHODOLOGY FOR ANALYZING CAPACITIES OF SURFACE WATER SUPPLIED SYSTEMS

Five criteria are used to assess the capacity of surface water treatment plant supplied water systems: 1) normal supply capacity; 2) reliable supply capacity; 3) peak hour storage capacity; 4) fire flow storage capacity; and 5) emergency supply capacity.

As previously noted, the criteria were selected and applied in accordance with typical water industry standards, sound engineering practice, and the applicable State and Federal regulations. These capacities are determined by comparing average and peak day pumpage volumes against plant production, pumping and storage volumes. A description of each criteria and an example calculation follow. The following water demands and facility capacities were used in the example calculations.

Average Day Pumpage:	2.63
Peak Day Pumpage:	4.13
Peak Hour/Peak Day:	2.00
Recommended Fire Flow Volume:	3,500 gpm for three hours (5.04 MGD rate)

Treatment Plant Process Capacities

For purposes of this example calculation, the following listed surface water treatment units were assumed. It is recognized that these treatment units are representative of those found in older treatment plants and that in the design of new or expanded water treatment plants consideration would likely be given to the use of membrane filtration processes in lieu of flocculation, sedimentation, and gravity filtration.

	Normal Capacity (MGD)	Reliable Capacity (MGD)	Capacity in Electric Power Outages (MGD)
Intake	30.0	10.0	N/A
Raw Water Pumping	14.4	10.3	4.0
Coagulant Addition	6.0	6.0	6.0
Rapid Mix	6.0	0.0	6.0
Flocculation	9.0	6.0	6.0
Sedimentation	9.0	6.0	6.0
Filtration	6.0	5.2	6.0
Disinfectant Addition	6.0	6.0	6.0
Finished Water Pumping	10.3	6.9	3.2

	Total Capacity (MG)
Finished Water Storage	2.0

Elevated Storage
The example utility also has a 0.50 MG spheroid-type elevated tank.

Normal Supply Capacity
Normal supply capacity was evaluated by comparing minimum normal process capacity to peak day pumpage. Normal process capacity is defined as the rated capacity for each process when functioning normally. In the example, the minimum normal process capacity is the 6.0 MGD associated with either filtration or disinfectant addition. Peak day pumpage is 4.13 MGD, so surplus = 6.0 - 4.13 = 1.87 MGD.

Reliable Supply Capacity
Reliable supply capacity was evaluated by comparing minimum reliable process capacity to peak day pumpage. Reliable capacity for an individual process is defined as that remaining when the largest or most critical unit is out of service. In the example, the minimum reliable capacity is zero because the plant includes only one rapid mix facility. Surplus capacity is 0 - 4.13 = -4.13 MGD.

Peak Hour Storage Capacity
As already noted, a major purpose of storage is to have water available to meet limited duration peak water demand rates. Storage can be provided by an elevated tank, in which case it may be assumed that the rate at which the tank can supply water would meet or exceed any anticipated demand. Repump storage refers to tanks from which pumps can draw stored water and deliver it to the distribution system. For repump storage, the rate at which water can be delivered to the distribution system is determined by the aggregate capacity of the pumps. The volume a repump storage tank can provide is determined by either the tank volume or by the aggregate pump-out rate and the time period during which the pumps operate.

Water demand typically varies over any 24-hour-long period, with higher demand rates normally occurring during the day and lower rates at night. This means that on the day of peak demand for the year, there will be time periods during which the demand rate exceeds the average rate for the peak day. The storage volume needed to satisfy the peak hour storage criteria has been defined as the difference between the peak hour rate and the peak day rate for a duration of four hours. A peak hour rate of 2.0 times the peak day rate may be assumed for small systems. A peak hour rate of 1.75 times peak day rate has been used for larger systems identified as Class AB by the Public Service Commission of Wisconsin.

In a number of cases, a utility which owns and operates a surface water treatment facility also sells treated water to downstream customer utilities. In these cases, storage facility volumes in the downstream utilities must be included when performing capacity analysis calculations.

For elevated storage tanks, the usable storage volume may be defined as that contained in the top 20 feet of tank head range, less 10 percent.

For repump storage tanks, the usable storage volume may be defined as 50 percent of gross volume for treatment plant clearwell storage and 75 percent of gross volume for repump tanks located in the distribution system. The lower percentage usable volume for clearwell storage reflects the need to reserve some clearwell volume to allow flexibility in the finished water production process.

In the example, the peak hour rate would be 2 x peak day rate or 2 x 4.13 MGD = 8.26 MGD. The difference between the peak hour rate and the peak day rate is 8.26 - 4.13 = 4.13 MGD. The needed volume is determined by the four-hour duration or 4.13 x 4/24 = 0.69 MG.

The volume available from a repump tank is the lesser of available tank volume or the aggregate capacity of the pumps drawing water from the tank. The available tank volume is 2.00 MG x 0.50 = 1.00 MG. The aggregate pump capacity is 10.3 MGD. In a four-hour period these pumps could withdraw 10.3 x 4/24 = 1.72 MG from the tank. Since the available tank volume is only 1.00 MG, this smaller value has been used in the calculations.

The volume contained in the top 20 feet of a 0.50 MG spheroid-type elevation tank is 0.33 MG. Ninety percent of this volume is 0.33 x 0.90 = 0.30 MG.

In the example, the surplus peak hour storage capacity is therefore:

1.0 + 0.30 - 0.69 = 0.61 MG

Fire Flow Storage Capacity

To calculate the needed fire flow storage volume, it has been assumed that a four-hour-long peak hour demand rate is followed by a fire flow demand. During the fire flow demand period, the assumed concurrent demand is the peak day demand rate. For the example, the needed fire flow storage volume is calculated as follows:

(Peak Hour Rate x 4/24) + (Fire Flow Rate x Fire Flow Duration) + (Peak Day Rate x Fire Flow Duration) = (8.26 x 4/24) + (5.04 x 3/24) + (4.13 x 3/24) = 2.52 MG.

The volume available to satisfy the needed fire flow storage includes pumps drawing from repump storage tanks and elevated tanks. For elevated tanks, the usable volume has been defined as that contained in the top 55 feet of head range, less 10 percent. For the example, the total tank head range is less than 55 feet, so the usable elevated tank storage volume would be 0.50 x 0.90 = 0.45 MG.

Similar to the calculations for repump storage for the peak hour storage criteria, available repump storage may be limited by the usable storage volume or by the ability of the pumps to empty the tank within the available time period. The usable volume is 50 percent of gross volume for treatment plant clearwell storage and 75 percent of gross volume for distribution system repump tanks.

Treatment plant finished water production adds to the volume available from the plant. The total volume available is defined as 50 percent of the clearwell volume plus the plant capacity to produce finished water during the time period. The volume available may be limited by aggregate finished water pumping capacity.

In the example, the clearwell volume available is 2.00 x 0.50 = 1.00 MG. Plant capacity to produce finished water is 6 MGD. The volume produced during the seven-hour duration is therefore 6.00 x 7/24 = 1.75 MG. Total available volume is therefore 1.00 + 1.75 = 2.75 MG. Aggregate pumping capacity is 10.3 MGD. The pumping capacity over the seven-hour duration is 10.3 x 7/24 = 3.00 MG. Since pumping capacity exceeds the available volume, pumping capacity does not limit the volume of water available from the clearwell and production.

Total volume available is therefore:

0.45 + 2.75 = 3.20 MG

Surplus volume = 3.20 - 2.52 = 0.68 MG

Emergency Supply Capacity

The needed emergency supply capacity has been defined as an average day pumpage volume. Only gravity storage, treatment, and pumping facilities having electric service from two independent substations or equipped with auxiliary power are available to satisfy emergency supply capacity criteria.

In the example, water available from the treatment plant is limited to 3.2 MGD based on the finished water pumping capacity.

Elevated storage available to satisfy the emergency supply capacity is that contained in the top 55 feet of the tank head range, less 10 percent. For the example, this is 0.50 x 0.90 = 0.45 MG.

In the example, the emergency supply available is 3.20 + 0.45 = 3.65 MGD.

Surplus Emergency Supply Capacity = 3.65 - 2.63 = 1.02 MGD.

In the table below is a summary of the example capacity analysis calculation results. The use of a negative value indicates an inadequacy in the facilities capacity.

	Surplus Capacity
Normal Supply Capacity	1.87 MGD
Reliable Supply Capacity	-4.13 MGD
Peak Hour Storage Capacity	0.60 MG
Fire Flow Storage Capacity	0.68 MG
Emergency Supply Capacity	1.02 MGD

METHODOLOGY FOR DETERMINING ALTERNATIVE AND RECOMMENDED PLAN FACILITIES FOR WATER SUPPLY SYSTEMS

In the system-level design of alternative and recommended plans, facilities were added for each water utility as needed to alleviate any shortfall in capacity identified in the capacity assessments described above. Some areas not currently served by a community water system are projected to develop to the extent that a new community water system is recommended for providing water service. The facilities needed to provide service to these new areas has been determined by applying a similar capacity analysis methodology used to evaluate existing water systems.

Groundwater Systems Supply

Each new well was assumed to have a capacity of 0.50 MGD. A sufficient number of new wells were assumed to provide the projected peak day pumpage, with one of the wells assumed to be out of service. For example, if a peak day pumpage of 1.7 MG is projected, five new wells would be required. The number of new wells required may be adjusted downward if the resulting total capacity would exceed the projected peak day pumpage by less than 0.10 MG. For example, if the projected peak day pumpage were 2.08 MG, a total of five wells would be recommended. In most cases at least two wells were recommended because the capacity analysis assumes that one well is inoperable. For utilities having peak day pumpages of 0.10 MG or less, only one well was assumed, normally with an onsite reservoir.

Storage

Storage is needed to satisfy limited duration high demand rates, such as water used for fighting fires. The following fire flow demands were used in the designs:

Peak Day Pumpage (MGD)	Fire Flow
Less than 0.10	1,000 gpm for two hours
0.10 to 0.50	2,500 gpm for two hours
Greater than 0.50	3,500 gpm for three hours

Elevated storage tanks were included in the systems for all but the smallest systems. For larger systems, an additional elevated tank was assumed, allowing one tank to remain operational while the second was drained for inspection, painting, or repairs. The number of elevated tanks included in a system was assumed to be as follows:

Peak Day Pumpage (MGD)	Number of Elevated Tanks
Less than 0.10	0
0.10 to 1.00	1
Greater than 1.00	2

Gross elevated tank storage volume was assumed to be 25 to 100 percent of peak day pumpage, with a minimum volume of 0.10 MG. Single pedestal-style tanks were assumed.

In most cases, the elevated storage tank volume alone will not be sufficient to satisfy the peak hour storage and fire flow storage capacity criteria. Needed additional storage was provided in the form of poured-in-place concrete repump reservoirs located at well pumping stations. Minimum gross tank volume was assumed to be 0.10 MG. The needed additional volume was distributed evenly among the well pumping stations unless the minimum individual tank volume of 0.10 MG would result in excessive storage volumes. Sufficient service pumping capacity was assumed at each facility to assure that all available repump storage could be used.

Surface Water Treatment Plant Capacity with Respect to Reliability

The capacity of a surface water plant is determined by the reliability of the unit processes. A typical conventional plant will have the following nine unit processes. Other plants will have membrane filter processes. For purposes of the example, the following processes were used. Similar analyses would apply to membrane filter plants.

- Intake
- Raw Water Pumping
- Coagulant Addition
- Rapid Mix
- Flocculation
- Sedimentation
- Filtration
- Disinfectant Addition
- Finished Water Pumping

Some of these processes may be combined, such as coagulant addition with rapid mix or flocculation with sedimentation. Additional processes could include powdered activated carbon addition or ultraviolet inactivation.

To help assure reliability, Wisconsin Administrative Code NR 811 Requirements for the Operation and Design of Community Water Systems requires duplicate units for certain critical processes including coagulant addition (NR 811.40(1)), rapid mix, flocculation and sedimentation (NR 811.43(1)), filtration (NR 811.45(1)(b)) and disinfectant addition (NR 811.40(1) and NR 811.44(1)(c)). Water treatment plants with multiple units may meet this requirement by providing a total capacity in the plant components that is equal to the expected maximum day demand. However, for purposes of regional water supply planning, the reliable capacity was defined as the capacity with one unit out of service regardless of the number of units. The reliable capacity was used as the basis for comparison to the expected maximum day pumpage demand.

The manager of each surface water plant operating within the Region in 2006 was asked to fill out a table summarizing plant and unit process capacities. Shown below is an example response.

Unit Process	Total Capacity (MGD)	Capacity with Largest Unit Out of Service (MGD)	Capacity in Electric Power Outages (MGD)
Intake	20.0	14.0	N/A
Raw Water Pumping	14.4	10.3	4.0
Coagulant Addition	6.0	6.0	6.0
Rapid Mix	6.0	6.0	6.0
Flocculation	9.0	6.0	6.0
Sedimentation	9.0	6.0	6.0
Filtration	6.0	5.2	6.0
Disinfectant Addition	6.0	6.0	6.0
Finished Water Pumping	10.3	6.9	3.2

	Total Capacity (MG)
Clearwell Volume	2.0

Reliable plant capacity is determined by examining the entries in the column titled "Capacity with Largest Unit Out of Service" and selecting the minimum entered value. For the example above, filters limit the plant reliable capacity to 5.2 MGD. The new facilities needed were determined by comparing the reliable plant capacity to the maximum day water pumpage demand under 2035 conditions, as set forth in Chapter IV of SEWRPC Planning Report No. 52, *A Regional Water Supply Plan for Southeastern Wisconsin*. Treatment units were added as needed to provide a reliable plant capacity equaling the 2035 maximum day pumpage demand.

COST ANALYSIS

Estimates of the capital operation and maintenance costs for all new facilities were developed based upon the procedures and cost data set forth in SEWRPC Technical Report No. 43, *State-of-the-Art of Water Supply Practices*, July 2007. The costs were expressed in terms of capital cost, average annual operation and maintenance cost, and the present worth and equivalent annual cost. An example calculation illustrating the present worth cost calculation procedure is included in Table K-2. Similar present worth calculations were made for all utilities under all alternatives and are filed in the SEWRPC project files.

Table K-2

NET PRESENT VALUE ANALYSIS: ALTERNATIVE 1
REGIONAL WATER SUPPLY PLAN

System Name: Slinger Utilities Capital Item Description	Current Construction	Asset Life	Construction Year	Net Present Value Construction	20-Year Replacement	30-Year Replacement	40-Year Replacement	50-Year Salvage	Annual Operation and Maintenance	Net Present Value Total Operation and Maintenance
New Well 1	$ 90,000	50	2007	$ 90,000	$ 0	$ 0	$ 0	$ 0	$ 2,526	$ 39,814
New Pump Station 1 Building	250,000	50	2007	250,000	0	0	0	0	10,526	165,909
New Pump Station 1 Electrical	125,000	30	2007	125,000	0	21,764	0	(2,262)	- -	- -
New Pump Station 1 Pumps/Equipment	125,000	20	2007	125,000	38,976	0	12,153	(3,393)	- -	- -
New Pump Station 1 Chlorination-Mechanical	26,250	20	2007	26,250	8,185	0	2,552	(713)	- -	- -
New Pump Station 1 Chlorination-Electrical	8,750	30	2007	8,750	0	1,523	0	(158)	- -	- -
New Pump Station 1 Reservoir	287,000	50	2007	287,000	0	0	0	0	- -	- -
New Well 2	90,000	50	2023	35,428	0	0	0	(1,564)	2,526	14,287
New Pump Station 2 Building	250,000	50	2023	98,412	0	0	0	(4,343)	10,526	59,535
New Pump Station 2 Electrical	125,000	30	2023	49,206	0	8,567	0	(5,881)	- -	- -
New Pump Station 2 Pumps/Equipment	125,000	20	2023	49,206	15,343	0	0	(2,036)	- -	- -
New Pump Station 2 Chlorination-Mechanical	26,250	20	2023	10,333	3,222	0	0	(428)	- -	- -
New Pump Station 2 Chlorination-Electrical	8,750	30	2023	3,444	0	600	0	(412)	- -	- -
New Pump Station 2 Reservoir	287,000	50	2023	112,976	0	0	0	(4,986)	- -	- -
Total Costs	$1,824,000	- -	- -	$1,271,005	$65,725	$32,454	$14,705	($26,175)	$26,104	$279,545
Current Year: 2007										
Assumed Discount Rate	6 percent	- -	- -	- -	- -	- -	- -	- -	- -	- -
Present Value of Construction	$1,271,005	- -	- -	- -	$65,725	$32,454	$14,705	($26,175)	- -	- -
Present Value Totals										
Net Present Value of Construction and Replacement	$1,357,715									
Present Value of 50 Years Operation and Maintenance	$ 279,545									
Net Present Value of Facilities	$1,637,260									
Net Present Value of Water Conservation Measures ($5,900 per year)	$ 93,000									
Total Net Present Value	$1,730,260									
Total Equivalent Annual Cost	$ 109,800									

Source: Ruekert & Mielke, Inc., and SEWRPC.

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Appendix L

ESTIMATES OF ELECTRICITY REQUIREMENTS FOR WATER TREATMENT AND SUPPLY FOR ALTERNATIVE WATER SUPPLY PLANS

INTRODUCTION

As a part of the regional water supply planning program, six alternative system-level water supply plans for the Southeastern Wisconsin Region were prepared and evaluated. Four of these alternative plans examined the potential impacts of a wide range of water supply measures. Based upon a comparative evaluation of these plans, it was concluded that a carefully constructed composite plan that incorporated components from each of these alternative plans would be more capable of meeting the agreed-upon water supply development objectives than any of the four alternative plans considered. Two subalternatives of such a composite plan were prepared. Comparative evaluation of these two subalternatives led to Subalternative 2 being selected as the preliminary recommended water supply plan for the Southeastern Wisconsin Region.

Commission staff sought comment on this preliminary recommended plan from interested members of the public during a public information and comment period that began on January 12, 2009, and extended through March 16, 2009. Among the comments received was a request that Commission staff evaluate the electric power requirements for treating and transporting water under each of the four alternative plans and the two subalternatives to the composite plan that were considered in developing the preliminary recommended plan.

This appendix documents the methodology used to estimate the electric power requirements of the various alternative plans considered and sets forth the findings of comparative evaluations carried out. The power requirement analyses were accomplished at a systems level of planning. The analyses address only the electric power requirements attendant to the operation of the water supply systems proposed by the various alternatives considered and do not address the energy expenditures entailed in the construction of these systems. More detailed analyses of the power requirements will be required at the preliminary and final engineering steps of plan implementation.

METHODOLOGY

The methodology selected for use in estimating the electric power requirements of the various alternative plans prepared under the regional water supply planning program involved the following four steps:

1. Inventory of actual unit electric power utilization by utilities operating within the planning area by four categories of water supply:

    - Utilities utilizing self-supplied Lake Michigan surface water,
    - Utilities utilizing purchased Lake Michigan surface water,
    - Utilities utilizing deep aquifer groundwater, and
    - Utilities utilizing shallow aquifer groundwater.

2. For each of the four categories of water supply, a composite electric power requirement was calculated by averaging the values revealed in the inventory step.

3. Calculation of utility base operation electric power requirement estimates for the alternative plans considered under the regional water supply planning program based upon the composite values calculated and anticipated 2035 pumpage from each water supply category.

4. Adjustment of the utility base operation electric power requirement estimates for the alternative plans to account for the power requirements associated with potential plan elements not currently utilized by water utilities operating in Southeastern Wisconsin. These potential plan elements include:

    - The additional electric power requirements associated with transmitting purchased surface water to those utilities in Waukesha and Racine Counties recommended for conversion from a groundwater to a Lake Michigan source of water supply under some alternative plans,
    - The additional electric power requirements associated with providing return flow to Lake Michigan for those utilities recommended for conversion from a groundwater to a Lake Michigan source of water supply under some alternative plans,
    - The additional electric power requirements associated with pumping water into the deep injection wells in Alternative Plan 3, and
    - The electric power cogeneration potential associated with return flow under some alternative plans.

INVENTORY FINDINGS

The estimates of electric power requirements of the alternative water supply plans considered were based upon utility reports of the amounts of water pumped and electric power used in actual existing utility operations. Twenty-seven water utilities were selected for these analyses: six utilities utilizing self-supplied surface water from Lake Michigan, seven utilities utilizing surface water from Lake Michigan purchased from a primary supplier, seven utilities utilizing groundwater from the deep aquifer, and seven utilities utilizing groundwater from the shallow aquifer. With two exceptions, only utilities that primarily utilized a single source of water supply were selected.[1] The utilities selected are listed in Table L-1.

[1]*In 2008, the Village of Pewaukee Water Utility and the Village of Sussex Water Public Utility utilized both deep and shallow groundwater wells; however, the majority of the pumpage for both utilities was from deep wells and the electric power requirements were within the range of those utilities that utilized only deep wells. Based on this, it was determined to include these utilities in the inventories among those utilities utilizing deep aquifer groundwater.*

Table L-1

REPRESENTATIVE SOUTHEASTERN WISCONSIN WATER UTILITIES SELECTED FOR ANALYSES OF ELECTRIC POWER UTILIZATION: 2008

Utilities Utilizing Self-Supplied Lake Michigan Surface Water	Utilities Utilizing Purchased Lake Michigan Surface Water
City of Kenosha Water Utility	Village of Brown Deer Public Water Utility
City of Milwaukee Water Works	Village of Caledonia Water Utility
City of Oak Creek Water and Sewer Utility	Village of Greendale Water Utility
City of Port Washington Water Utility	Village of Pleasant Prairie Water Utility
City of Racine Water and Wastewater Utility	City of Wauwatosa Water Utility
City of South Milwaukee Water Utility	City of West Allis Water Utility
	Village of Whitefish Bay Water Utility
Utilities Utilizing Deep Aquifer Groundwater	**Utilities Utilizing Shallow Aquifer Groundwater**
Town of Allenton Sanitary District	Village of Belgium Water Utility
City of Burlington Water Utility	Village of Hartland Municipal Water Utility
City of Delafield Municipal Water Utility	Village of Kewaskum Municipal Water Utility
City of Elkhorn Light and Water	City of Lake Geneva Municipal Water Utility
Lake Como Sanitary District No. 1	Village of Saukville Municipal Water Utility
Village of Pewaukee Water Utility[a]	Village of Walworth Municipal Water and Sewer Utility
Village of Sussex Water Public Utility[a]	City of West Bend Water Utility

[a]*In 2008, the Village of Pewaukee Water Utility and the Village of Sussex Water Public Utility utilized both deep and shallow wells; however, the majority of pumpage for both utilities was from the deep aquifer and the electric power requirements for these utilities were within the range of other utilities utilizing deep wells. Because of this, it was determined to include these utilities in the inventories among those utilities utilizing deep aquifer groundwater.*

Source: SEWRPC.

Total annual water pumped and total electric power used by the utility for all operations including water pumping, water treatment, and other utility operations were obtained from the reports of the utilities to the Public Service Commission of Wisconsin for the year ending December 31, 2008. This year was chosen because it was the only year in which the utilities were required to report the total electric power used for utility operations. In previous years, the utilities were required to report the electric power used for pumping.[2] The amount of electric power used per 1,000 gallons of water supplied was calculated for each of the utilities. Average values were calculated for each source of water supply.

Table L-2 presents composite average, minimum, and maximum electric power requirements reported by the selected water utilities by the four types of sources of the water supply. The actual values reported are presented in Table L-3. These averages range from about 0.8 kilowatt-hours per 1,000 gallons of water pumped for utilities purchasing surface water from another utility with a Lake Michigan water treatment plant to about 3.8 kilowatt-hours per 1,000 gallons of water pumped for utilities relying on groundwater from deep wells. Two features of these averages should be noted. First, the average electric power requirements for producing 1,000 gallons of

[2]*For most of the selected utilities, comparisons of the electric power used relative to the water pumped in 2008 to that in 2007 showed only minor differences, suggesting that the utilities might not be able to separate the electric power usage attributable to pumping from the total electric power usage. At least one utility, however, showed a major increase in electric power usage between 2007 and 2008, possibly indicating that additional utility operations were included in the 2008 figures. To ensure consistency, it was decided to use only the data reported for 2008 to estimate energy requirements related to different sources of water supply.*

Table L-2

COMPOSITE ELECTRIC POWER REQUIREMENTS FOR SELECTED SOUTHEASTERN WISCONSIN WATER TREATMENT FACILITIES: 2008

Water Supply Source	Electric Power Use per 1,000 Gallons Pumped (kilowatt-hour/1,000 gal)		
	Average	Minimum	Maximum
Deep Groundwater	3.756	2.700	4.818
Shallow Groundwater	1.643	1.225	1.900
Surface Water – Self-Supplied	1.837	1.558	2.347
Surface Water – Purchased	0.779	0.083	2.321

Source: Public Service Commission of Wisconsin and SEWRPC.

Table L-3

PUMPAGE, TOTAL ELECTRIC POWER USE, AND UNIT ELECTRIC POWER USAGE FOR SELECTED REPRESENTATIVE SOUTHEASTERN WISCONSIN WATER UTILITIES: 2008

Water Supply Category	Pumpage (gallons)	Total Electric Power Usage (kilowatt hours)	Unit Electric Power Usage (kwh per 1,000 gal)
Self-Supplied Lake Michigan Surface Water			
City of Kenosha Water Utility	5,137,531,000	8,716,788	1.697
City of Milwaukee Water Works	40,847,940,000	69,843,745	1.710
City of Oak Creek Water and Sewer Utility	2,889,535,000	5,997,257	2.076
City of Port Washington Water Utility	479,234,000	1,124,840	2.347
City of Racine Water and Wastewater Utility	8,064,010,000	13,168,540	1.633
City of South Milwaukee Water Utility	780,871,000	1,216,486	1.558
Purchased Lake Michigan Surface Water			
Village of Brown Deer Public Water Utility	498,290,000	44,223	0.089
Village of Caledonia Water Utility	91,224,000	76,000	0.083
Village of Greendale Water Utility	511,321,000	224,128	0.438
Village of Pleasant Prairie Water Utility	745,566,000	1,099,640	1.475
City of Wauwatosa Water Utility	1,826,166,000	990,684	0.543
City of West Allis Water Utility	2,322,908,000	1,169,460	0.503
Village of Whitefish Bay Water Utility	479,200,000	1,111,997	2.321
Deep Aquifer Groundwater			
Town of Allenton Sanitary District	31,543,000	85,160	2.700
City of Burlington Water Utility	643,587,000	2,217,363	3.445
City of Delafield Municipal Water Utility	55,541,000	214,042	3.860
City of Elkhorn Light and Water	373,576,000	1,799,840	4.818
Lake Como Sanitary District No. 1	51,772,000	185,600	3.585
Village of Pewaukee Water Utility	298,718,000	1,210,193	4.051
Village of Sussex Water Public Utility	335,975,000	1,288,168	3.834
Shallow Aquifer Groundwater			
Village of Belgium Water Utility	110,040,000	189,311	1.720
Village of Hartland Municipal Water Utility	402,461,000	568,530	1.413
Village of Kewaskum Municipal Water Utility	115,343,000	215,262	1.866
City of Lake Geneva Municipal Water Utility	507,926,000	964,423	1.899
Village of Saukville Municipal Water Utility	427,286,000	706,210	1.653
Village of Walworth Municipal Water and Sewer Utility	158,053,000	272,170	1.722
City of West Bend Water Utility	1,025,977,000	1,256,557	1.225

Source: Public Service Commission of Wisconsin and SEWRPC.

water for utilities relying on shallow ground water and for utilities relying on self-supplied Lake Michigan water as sources of water supply differ by only about 12 percent. Second, the variability associated with the averages among utilities relying upon shallow groundwater, deep groundwater, and self-supplied surface water is similar. The coefficients of variation for these three sources of supply are all about 0.17. Much higher variability is associated with the average value for utilities that purchase surface water from another utility. The coefficient of variation for this source of supply is about 1.1. These differences in variability can also be seen by comparing the maximum value for each source of supply to the minimum value, as set forth in Table L-2. It is likely that the relatively low average electric power requirements and associated high variability for utilities purchasing water result from the fact that some of the energy required for transmission of the purchased water was, in some cases, being supplied by the utilities that are selling the water.

The average electric power requirements listed in Table L-2 are consistent with other estimates of water utility electric power requirements. Tables 57 and 58 in SEWRPC Technical Report No. 43, *State-of-the-Art of Water Supply Practices*, July 2007 (TR 43) set forth estimates of electric power requirements for surface water treatment facilities and groundwater treatment facilities, respectively. These estimates were derived from several sources including a report from the Electric Power Research Institute. Based on the information presented in TR 43, the electric power requirement for a surface water treatment facility utilizing raw water pumping, rapid mixing, flocculation, sedimentation, an alum feed system, filter surface washing pumps, backwash pumps, treated water pumping, chlorination, and residual pumping approximates 1.420 kilowatt-hours per 1,000 gallons. The difference between this figure and the value given in Table L-2 is about 29 percent. If ozonation is substituted for chlorination, the electric power requirement based on the information presented in TR 43 increases to 1.687 kilowatt-hours per 1,000 gallons and the difference between this estimate and the value given in Table L-2 becomes about 9 percent. Adding microfiltration to a system using chlorination would have an effect on energy requirements similar to the effect of replacing chlorination with ozonation. Based on the information presented in TR 43, the electric power requirement for a shallow groundwater system utilizing well pumping, booster pumping, and chlorination would be about 1.824 kilowatt-hours per 1,000 gallons. The difference between this amount and the value given in Table L-2 is about 11 percent.

Because the values presented in Table L-2 are derived from actual data specific to water utilities operating in Southeastern Wisconsin and because they are consistent with other estimates of electric power requirements for water treatment facilities, it was determined to use the attached data as a basis for the estimates of the electric power requirements attendant to the alternative water supply plans considered in the regional water supply planning effort.

BASIC ORDINARY OPERATION ESTIMATES

Estimates of the electric power utilization of the alternative water supply plans examined during the preparation of the regional water supply plan were calculated using the method described under each of the alternative plans considered. These volumes are listed in Table L-4. Two features of Table L-4 should be noted. First, surface water that a utility purchases from another utility is listed twice—both as self-supplied surface water and as purchased surface water. This reflects the fact that both the utility selling the water and the utility purchasing the water are expending energy to capture, treat, and pump the water. Second, under Alternative Plan 3, the water associated with the proposed deep aquifer injection wells that would provide enhanced recharge to the deep aquifer is treated as purchased surface water.

Estimates of the electric power utilized in the basic utility operations under each of the alternative water supply plans considered during the preparation of the regional water supply plan are presented in Table L-5. These estimates range from about 632,000 kilowatt hours per day for Alternative Plan 2 to about 657,000 kilowatt hours per day for Alternative Plan 1. For the Region, the differences in energy-related costs and impacts among the six alternative plans examined are within about 4 percent of one another.

Table L-4

COMPOSITE VOLUME OF WATER PRODUCED AND DELIVERED UNDER EACH OF THE FOUR CATEGORIES OF WATER SUPPLY UTILIZED IN THE ALTERNATIVE PLANS CONSIDERED IN PREPARING THE REGIONAL WATER SUPPLY PLAN: 2035

Alternative Plan	Water Supply Source (million gallons per day)			
	Shallow Groundwater	Deep Groundwater	Self-Supplied Surface Water	Purchased Surface Water
Alternative Plan 1	53	36	214	54
Alternative Plan 2	58	18	227	67
Alternative Plan 3	58	18	236	76
Alternative Plan 4	36	11	255	91
Composite Plan Subalternative 1	47	24	232	69
Composite Plan Subalternative 2	42	19	242	78

Source: SEWRPC.

Table L-5

ELECTRIC POWER REQUIREMENTS ASSOCIATED WITH THE BASE UTILITY OPERATIONS UNDER EACH OF THE FOUR CATEGORIES OF WATER SUPPLY IN KILOWATT HOURS PER DAY FOR THE ALTERNATIVE PLANS CONSIDERED DURING THE PREPARATION OF THE REGIONAL WATER SUPPLY PLAN: 2035

Alternative Plan	Shallow Groundwater	Deep Groundwater	Self-Supplied Surface Water	Purchased Surface Water	Total
Alternative Plan 1	87,079	135,216	393,118	42,066	657,479
Alternative Plan 2	95,294	67,608	416,999	51,193	632,094
Alternative Plan 3	95,294	67,608	433,532	59,204	655,638
Alternative Plan 4	59,148	41,316	468,435	70,889	639,788
Composite Plan Subalternative 1	77,221	90,144	426,184	53,751	647,300
Composite Plan Subalternative 2	69,006	71,364	444,554	60,762	645,686

Source: SEWRPC.

ADJUSTMENTS TO BASE ESTIMATES

Because the range of potential plan elements examined in the six alternative plans considered includes elements not currently utilized by water utilities operating in Southeastern Wisconsin, the base operation estimates do not fully reflect the electric power requirements associated with some of the alternative water supply plans. To remedy this, the base estimates were adjusted in order to incorporate the electric power requirements of certain features of some of the plans. Adjustments were made for:

- The additional electric power requirements associated with transmitting purchased surface water to those utilities in Waukesha and Racine Counties that are recommended for conversion from a groundwater to a Lake Michigan source of water supply under Alternative Plan 4 and Subalternative 2 of the Composite Plan,

- The electric power requirements associated with providing return flow to the Lake Michigan watershed for those utilities recommended for conversion from groundwater to Lake Michigan water as a source of water supply under Alternative Plan 4 and Subalternative 2 of the Composite Plan for which provision of return flow is not currently in place, and

- The electric power requirements associated with pumping water into the deep aquifer using injection wells under Alternative Plan 3.

In addition, the potential energy available from the return flow could potentially be captured and converted into electric power using an in-line turbine generator system. The preliminary recommended plan envisions that this power generation potential be evaluated. Because this could improve the sustainability of this plan component, an adjustment was also calculated to represent the electrical cogeneration potential associated with return flow in Alternative Plan 4 and Subalternative 2 of the Composite Plan.

Adjustment for Transmission Requirements
The adjustment for the transmission facilities associated with Alternative Plan 4 and Subalternative 2 of the Composite Plan was based upon consideration of:

- The head loss within the water transmission mains resulting from frictional forces evaluated, and

- The energy required to pump the water through the change in elevation associated with the transmission mains.

Head loss estimates were calculated using the Hazen-Williams formula, assuming a roughness coefficient of 130. For Alternative Plan 4, the water transmission main configuration shown in Subalternative 1 was assumed (see Map 96 in Chapter VIII of SEWRPC Planning Report No. 52). For both Alternative Plan 4 and Subalternative 2 of the Composite Plan, the distances and elevation changes for transmission mains in eastern Waukesha County were computed from the Milwaukee-Waukesha County Line. For Alternative Plan 4, the distance and elevation change for the transmission main to Union Grove were computed from the proposed pumping station in the Town of Yorkville (see Map 96 in Chapter VIII and Map 116 in Chapter IX of SEWRPC PR 52).

Adjustment for Return Flow Requirements
This adjustment was computed based upon consideration of:

- The head loss within the water transmission mains resulting from the frictional forces evaluated, and

- The energy required to pump the water through the change in elevation associated with the transmission mains.

Head loss estimates were calculated using the Hazen-Williams formula, assuming a roughness coefficient of 130. Energy costs were computed for those sections of return flow main for which the sum of head loss and elevation change indicated that energy inputs would be required for transmission of return flow. (The energy gains in those return flow main sections in which elevation decreases were not subtracted from these energy costs.) For Alternative Plan 4, energy impacts were estimated for return flow from eastern Waukesha County to Lake Michigan. For Subalternative 2 of the Composite Plan, energy impacts were calculated for all four return flow subalternatives.

Adjustment for Energy Costs of Injection Wells
An element included in Alternative Plan 3 is artificial recharge of the deep aquifer through a series of injection wells. No data were available on the electric power requirements associated with this practice. The most similar practice used by a water utility in Southeastern Wisconsin is aquifer storage and recover. One utility in the Region, the City of Oak Creek Water and Sewer Utility, operates an aquifer storage and recovery system. This

system utilizes a reconstructed 1,800-foot deep well and was operated on a pilot basis between 1999 and 2004 and on a regular basis since 2004. The utility has not collected data on the electric power required to place water into storage in the aquifer; however, it has indicated that this is accomplished using the pressure levels within its water distribution system.[3] Because of this the electric power requirements of operating the injection wells were estimated as being equivalent to the costs of pumping water from wells. The electricity requirements for well pumping of 0.605 kilowatt hours per 1,000 gallons given in SEWRPC TR 43 were used to estimate the costs of injection.

Adjustment for Electrical Cogeneration Potential

The potential energy available within sections of the return flow mains that run through decreases in elevation was calculated by subtracting the head loss within those water mains from the energy available due to the decrease in elevation. It was assumed that half of this potential energy could be captured in the form of electrical cogeneration.

Adjustments and Adjusted Estimates

The base estimates, adjustments to the base estimates, and the adjusted estimates for the energy-related costs and impacts of the alternative water supply plans examined during the preparation of the regional water supply plan are given in Table L-6. Adjusted estimates range from about 632,000 kilowatt hours per day for Alternative Plan 2 to about 661,000 kilowatt hours per day for Alternative Plan 3. For the Region, the differences in energy-related costs and impacts among the six alternative plans examined are within about 5 percent of one another.

The adjusted estimates reflect adjustments to the energy-related costs and impacts associated with three alternative plans. The impacts of Alternative Plan 4 and Subalternative 2 to the Composite Plan were each adjusted for additional transmission costs, return flow, and the electricity cogeneration potential associated with return flow. The impact of Alternative Plan 3 was adjusted for the cost of injecting water into the deep aquifer.

Relative to energy-related costs and impacts, the alternative plans that were examined fall into three groups. The lowest impact group consists solely of Alternative Plan 2. The relatively low impacts of this alternative result from substituting a combination of shallow aquifer pumping and purchased surface water for deep aquifer pumping. The intermediate impact group consists of Alternative Plan 4 and Subalternatives 1 and 2 of the Composite Plan. Given the approximate nature of this analysis, the electric power requirements of these three alternative plans are roughly the same. The similarity in electric power use of these alternative plans is, in part, the result of the cogeneration potential associated with return flow. Finally, the highest impact group consists of Alternative Plans 1 and 3. Alternative Plan 1 has relatively high energy costs due to the high reliance it places upon pumping from the deep aquifer. The relatively high impacts associated with Alternative 3 result from the costs associated with pumping, treating, and injecting nine million gallons per day of water into the deep aquifer.

IMPACTS OF THE ALTERNATIVE PLANS ASSOCIATED WITH THE NINE COMMUNITIES RECOMMENDED FOR CONVERSION TO A LAKE MICHIGAN WATER SUPPLY IN THE PRELIMINARY RECOMMENDED PLAN

Under the preliminary recommended plan (Subalternative 2 of the Composite Plan), nine utilities service areas are recommended for conversion to a Lake Michigan source of water supply. Eight of these service areas—the eastern portion of the City of Brookfield Municipal Water Utility service area; the City of Cedarburg Light & Water Commission; the Village of Germantown Water Utility; the Village of Grafton Water and Wastewater Commission; the City of Muskego Public Water Utility; the central portion of the City of New Berlin Water Utility service area; the Village of Saukville Municipal Water Utility; and the Town of Yorkville Utility District No. 1—currently have provisions for return flow to Lake Michigan in place. The ninth service area, the City of Waukesha Water Utility, would require the provision of return flow of water to Lake Michigan.

[3]*Steve Yttri, City of Oak Creek Water Utility, personal communication.*

Table L-6

ADJUSTED ESTIMATES OF ELECTRIC POWER REQUIREMENTS IN KILOWATT HOURS PER DAY ASSOCIATED WITH ALTERNATIVE PLANS CONSIDERED DURING THE PREPARATION OF THE REGIONAL WATER SUPPLY PLAN

Alternative Plan	Base Operation Estimate (kwh per day)	Additional Transport (kwh per day)	Return Flow (kwh per day)	Injection Wells (kwh per day)	Subtotal (kwh per day)	Cogeneration Potential (kwh per day)	Total (kwh per day)
Alternative Plan 1	657,479	0	0	0	657,479	0	657,479
Alternative Plan 2	632,094	0	0	0	632,094	0	632,094
Alternative Plan 3	655,638	0	0	5,445	661,083	0	661,083
Alternative Plan 4	639,788	11,307	8,694	0	659,083	(11,181)	648,608
Composite Plan Subalternative 1	647,300	0	0	0	647,300	0	647,300
Composite Plan Subalternative 2	645,686	3,068	3,287[a]	0	652,041	(2,549)[b]	649,492

[a]*This assumes return flow to Underwood Creek. Energy impacts of return flow to the Root River or to Lake Michigan would be about 3,605 kwh per day and 4,503 kwh per day, respectively. The energy impacts of dividing return flow equally between Underwood Creek and the Root River would be about 3,216 kwh per day.*

[b]*This assumes return flow to Underwood Creek. The cogeneration potential of return flow to the Root River or to Lake Michigan would be about 2,468 kwh per day and 5,212 kwh per day, respectively. The cogeneration potential of dividing return flow equally between Underwood Creek and the Root River would be about 2,531 kwh per day.*

Source: SEWRPC.

Table L-7

ADJUSTED ESTIMATES OF ELECTRIC POWER REQUIREMENTS ASSOCIATED WITH ALTERNATIVE PLANS CONSIDERED DURING THE PREPARATION OF THE REGIONAL WATER SUPPLY PLAN ATTRIBUTABLE TO THE UTILITIES RECOMMENDED FOR CONVERSION TO A LAKE MICHIGAN SOURCE OF WATER SUPPLY IN THE PRELIMINARY RECOMMENDED PLAN[a]

Alternative Plan	Base Estimate (kwh per day)	Additional Transport (kwh per day)	Return Flow (kwh per day)	Injection Wells (kwh per day)	Subtotal (kwh per day)	Cogeneration Potential (kwh per day)	Total (kwh per day)
Alternative Plan 1	74,983	0	0	0	74,983	0	74,983
Alternative Plan 2	60,231	0	0	0	60,231	0	60,231
Alternative Plan 3	83,775	0	0	5,445	89,220	0	89,220
Alternative Plan 4	69,634	6,304	4,895	0	80,833	(6,295)	74,538
Composite Plan Subalternative 1	70,442	0	0	0	70,442	0	70,442
Composite Plan Subalternative 2	69,634	3,068	3,287[b]	0	75,989	(2,549)[b]	73,440

[a]*The utility service areas recommended for conversion from groundwater to a Lake Michigan source of water supply in the preliminary recommended plan (Composite Plan Subalternative 2) are: the eastern portion of the City of Brookfield Municipal Water Utility, City of Cedarburg Light and Water Commission, Village of Germantown Water Utility, Village of Grafton Water and Wastewater Commission, City of Muskego Public Water Utility, the central portion of City of New Berlin Water Utility, Village of Saukville Municipal Water Utility, City of Waukesha Water Utility, and the Town of Yorkville Utility District No. 1.*

[b]*This assumes return flow to Underwood Creek.*

Source: SEWRPC.

Table L-7 shows the portions of the base estimates, adjustments, and adjusted estimates for the energy-related costs and impacts of the alternative water supply plans examined during the preparation of the regional water supply plan that are attributable to these nine service areas. These estimates were prepared using the methods described above for preparing the estimates for the entire Southeastern Wisconsin Region. Three elements of the calculations used to derive these estimates should be noted. First, the entire impact of the injection wells in Alternative Plan 3 was attributed to these nine communities. Second, the values of the adjustments for the

communities that would draw water from the transmission system through eastern Waukesha County in Alternative Plan 4 were calculated by prorating of the electric power requirements of operating this transmission system based upon the fraction of the water transmitted by this system that would be used to supply these communities. Third, since all of the adjustments to the base estimate for Subalternative 2 of the Composite Plan in the Regional estimate are related to providing a Lake Michigan source of water supply to the City of Waukesha, the entire value of each of the adjustments was used in calculating the adjustment in Table L-7.

The electric power requirements attributable to the nine water utility service areas that would be converted to a Lake Michigan source of water supply range from about 60,000 kilowatt hours per day for Alternative Plan 2 to about 89,000 kilowatt hours per day for Alternative Plan 3 (see Table L-7). The impacts of the other four alternatives are relatively close to one another, only varying by about 7 percent from one another. The costs and impacts under the preliminary recommended plan (Subalternative 2 of the Composite Plan) that are attributable to these nine service areas are estimated to be about 73,000 kilowatt hours per day.

Relative to these nine communities, the values in Table L-7 most likely overestimate the difference in electric power requirements between Subalternatives 1 and 2 of the Composite Plan. This overestimate occurs because the electric power requirements associated with the deep aquifer wells operated by the City of Waukesha Water Utility are higher than the average for deep wells given in Table L-2. In 2006, the last year in which this utility operated only deep aquifer wells, the unit electric power requirement for this utility was 4.310 kilowatt hours per 1,000 gallons, 0.554 kilowatt hours per 1,000 gallons higher than the average.[4] Taking the higher than average electric power requirements associated with operating Waukesha's deep wells into account is important because the only difference between these two alternative plans is the source of water supply for the City of Waukesha Water Utility. Under Subalternative 1 to the Composite Plan, Waukesha's supply is provided through a combination of shallow and deep groundwater. Under Subalternative 2 to the Composite Plan, Waukesha's supply is provided through purchased Lake Michigan surface water. When the higher than average power requirements associated with Waukesha's deep wells are included, the total estimated daily electric power requirement associated with the utilities recommended for conversion to a Lake Michigan water supply in the preliminary recommended plan for Subalternative 1 of the Composite Plan becomes 73,157 kilowatt hours per day. The difference between this and the electric power requirement for these nine utilities associated with Subalternative 2 of the Composite Plan is less than 0.4 percent. Given the approximate nature of this analysis, the electric power requirements of these two alternative plans are roughly the same.

It is important to note that, relative to the utilities recommended for conversion to a Lake Michigan water supply in the preliminary recommended plan, taking the higher than average electric power requirements associated with the City of Waukesha Water Utility's deep wells into account would also increase the total electric power requirements associated with Alternative Plan 1, from 74,983 kilowatt hours per day to 79,227 kilowatt hours per day. This would result in no change to the total electric power requirements associated with Alternative Plan 4 and only slight increases to those associated with Alternative Plans 2 and 3.

[4]*Total 2006 electricity usage and pumpage were 11,294,463 kilowatt hours per 1,000 gallons and 2,620,450,000 gallons, respectively, for the City of Waukesha Water Utility.*

Appendix M

SUPPLEMENTARY ANALYSES FOR COMPARING ALTERNATIVE WATER SUPPLY PLANS

INTRODUCTION

This appendix provides documentation of additional analyses that were performed as a part of the comparative evaluation of the alternative water supply plans considered utilizing the agreed-upon planning objectives and supporting standards and during formulation of the initially preferred plan. The objectives and the supporting standards are set forth in Chapter V of this report.

ANALYSES COMPARING ALTERNATIVE PLANS RELATIVE TO STANDARDS

Level of the Potentiometric Surface of the Sandstone Aquifer under Alternative Plan Conditions
The first standard supporting Planning Objective No. 2 states that the use of the deep sandstone aquifer should be managed so that the potentiometric surface of the aquifer is sustained at current levels or raised under use and recharge conditions within the Southeastern Wisconsin Region. In Chapter VIII, the potential impacts of the alternative plans considered upon the potentiometric surface of the sandstone aquifer were presented by maps showing the distribution of drawdowns and drawups in the aquifer, and as summary statistics indicating the percentage of model cells in each county experiencing drawdowns and drawups together with the average and maximum drawdowns and drawups in each county. Two additional analyses were performed to determine the potential impacts of the alternative plans upon the potentiometric surface of the sandstone aquifer.

Table M-1 summarizes the simulated changes in the height of the potentiometric surface anticipated to occur under the conditions associated with each of the four alternative plans described in Chapter VIII as county and regional averages. The county averages shown were calculated from the results presented in Tables 89, 102, 117, and 133. The regional averages represent weighted averages of the county averages using the number of model cells used in the Regional Aquifer Simulation Model as the weighting factor. On a regional basis, the greatest average rise in the potentiometric surface may be expected to occur under Alternative Plan 3 conditions, followed by Alternative Plans 4 and 2. The average height of the potentiometric surface may be expected to decrease under Alternative Plan 1 conditions. A similar pattern was seen in the relationships among potentiometric surfaces projected to be associated with the alternative plans when the results were reduced to county averages.

Figure M-1 shows the potentiometric surfaces in the upper sandstone aquifer as estimated by the Regional Aquifer Simulation Model that may be anticipated under each of the alternative water supply plans considered. In general, the highest elevations of the potentiometric surface were projected to occur under Alternative Plan 3 conditions, followed in decreasing order by Alternative Plans 4, 2, and 1. Several features of the projected surfaces are worth noting. Under Alternative Plan 1 conditions, the model projects the presence of a large cone of

Table M-1

PROJECTED AVERAGE CHANGES IN THE POTENTIOMETRIC SURFACE IN THE UPPER SANDSTONE AQUIFER ASSOCIATED WITH ALTERNATIVE WATER SUPPLY PLANS: 2005-2035

County	Average Change in Potentiometric Surface (feet)[a]			
	Alternative Plan 1	Alternative Plan 2	Alternative Plan 3	Alternative Plan 4
Kenosha	-21.8	19.7	45.4	32.2
Milwaukee	-22.2	91.7	211.8	135.9
Ozaukee	-14.5	65.5	122.5	91.4
Racine	-17.3	42.8	91.9	68.6
Walworth	-10.2	5.8	12.5	9.6
Washington	-19.3	49.5	96.6	77.9
Waukesha	-21.5	78.1	149.9	125.0
Region	-17.7	47.6	96.8	73.9

[a]*A positive average change indicates a rise in the average height of the potentiometric surface, a negative average change indicates a lowering in the average height of the potentiometric surface.*

Source: SEWRPC.

depression centered on eastern Waukesha County. This cone of depression is not present in the surfaces associated with the other three alternative plans. Under Alternative Plan 3 conditions, the model projects the presence of a ridge of high groundwater elevations along the Milwaukee-Waukesha County line. This ridge is a result of the proposed injection wells envisioned under Alternative Plan 3. Comparison of the surface associated with Alternative Plan 3 to that associated with Alternative Plan 2 indicates that the recharge provided by the injection wells accounts for the higher groundwater elevations in the deep aquifer under Alternative Plan 3 conditions. Figure M-1 also indicates a cone of depression centered in northeastern Illinois. While this cone of depression is present under the conditions associated with each of the alternative plans, the magnitudes of the drawdowns associated with this cone of depression differ among the alternative plans. The greatest drawdowns associated with this cone of depression are associated with Alternative Plan 1, followed in decreasing order by Alternative Plans 2, 4, and 3.

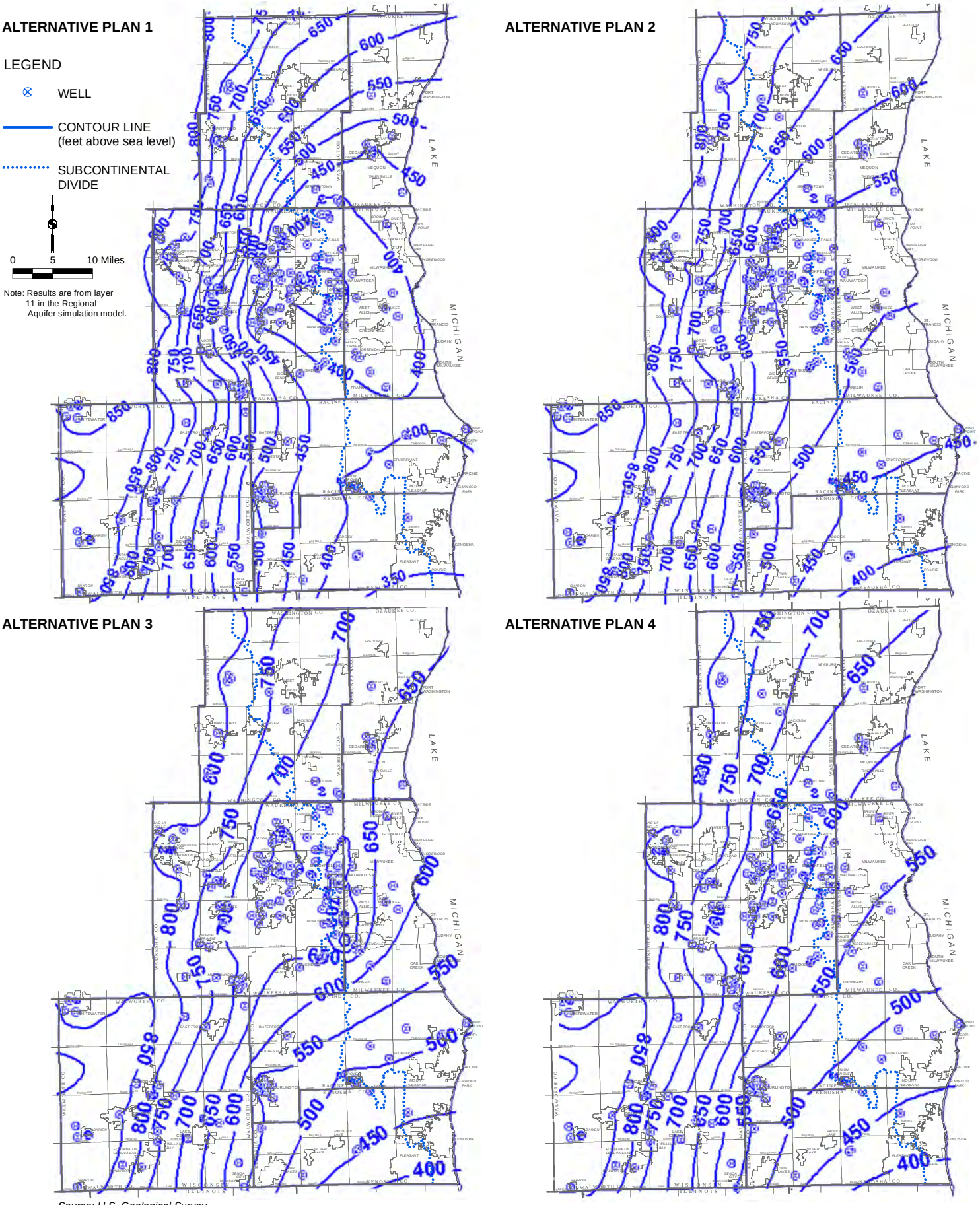
The conclusions that may be drawn from the additional analyses concerning the anticipated potentiometric surfaces are identical to the conclusion drawn from the drawdown maps: Alternative Plan 3 has the greatest ability to achieve this standard followed, in decreasing order, by Alternative Plans 4, 2, and 1.

Impacts of the Alternative Water Supply Plans upon the Shallow Groundwater System

The impacts of the alternative water supply plans considered upon the quantity of water in the shallow groundwater system are relevant to three of the standards used to comparatively evaluate the alternative plans. The second standard supporting Planning Objective No. 2 states that the uses of the shallow aquifer should be managed so that aquifer yields are sustainable. The third standard supporting Planning Objective No. 2 states that the uses of the deep and shallow aquifers should be managed so as to minimize the ecological impacts on the surface water system of the Region. The fifth standard supporting Planning Objective No. 2 states that the use of groundwater and surface water for water supply purposes should be carried out in a manner which minimizes adverse impacts to the water resources system. The water quantity impacts of the alternative plans were the major factor considered in the evaluation of the plans on the basis of the first of these three standards. Water quality impacts of the alternative plans were also considered in the evaluation of the alternative plans relative to the other two standards.

Figure M-1

SIMULATED POTENTIOMETRIC LEVELS IN THE UPPER SANDSTONE AQUIFER: 2035



Source: U.S. Geological Survey.

As described in Chapter VIII, the major effect of pumping from shallow wells on the shallow groundwater system is a reduction in the amount of groundwater discharge to local surface water features. Because of this, the projected baseflow depletion from surface waterbodies was considered a better measure of the impacts of an alternative plan on the shallow groundwater system than water table levels. Table M-2 summarizes comparisons of the impacts of the alternative plans on the shallow groundwater system based on four measures that were assessed on a Regional scale. The conclusions that may be drawn based upon consideration of these four measures are identical. The smallest impacts to water quantity in the shallow aquifer may be expected to occur under Alternative Plan 4, followed in order of increasing impacts by Alternative Plans 3, 2, and 1.

Use of Existing and Committed Infrastructure under Alternative Water Supply Plans

The second standard supporting Planning Objective No. 4 states that maximum feasible use should be made of all existing and committed water supply facilities. The four alternative water supply plans considered differ from one another in two respects relative to how they use existing and committed infrastructure. First, as described in Chapter VII, the water treatment plants of three of the eight water utilities in the Region that utilize Lake Michigan water as a source of public water supply have treatment capacity considerably in excess of that needed to serve existing and planned development in their service areas. This represents an underutilization of the existing infrastructure. Those alternative plans that make greater use of this capacity would more fully achieve this standard than those alternative plans that make lesser use of it. Second, a change in the source of water supply by a utility from the deep aquifer to the shallow aquifer, or from groundwater to Lake Michigan water, would involve the utility abandoning existing wells. While some of these wells might be maintained in order to provide backup or emergency capacity, these shifts in source of supply would result in an abandonment of existing infrastructure and its replacement with new infrastructure associated with the shift in source of supply.

The ability of the alternative plans set forth in Chapter VIII to achieve this standard was evaluated by comparing net change in the amount of existing and committed infrastructure utilized that may be expected to occur under each of the alternative plans. For an alternative plan, this net change was calculated by subtracting the capacities of the existing wells that would be abandoned under the plan from the amount of additional Lake Michigan treatment plant capacity that would be utilized under the plan. The capacities of wells to be abandoned were estimated as the maximum daily pumpage of the wells. For those wells for which these data were unavailable, the maximum daily pumpage was estimated by multiplying the fraction of the wells that would be abandoned, by the maximum daily pumpage for a utility in the year 2000. The additional use of capacity from Lake Michigan water treatment plants was estimated on the basis of maximum daily pumpage.

Table M-3 summarizes the comparison of the anticipated use of existing infrastructure among the four alternative plans considered. Under Alternative Plan 1, it is envisioned that two additional utilities would utilize water produced by Lake Michigan treatment plants, resulting in the use of an additional 12.8 million gallons per day (mgd) of Lake Michigan water treatment plant capacity. This alternative plan also envisions that three utilities would abandon wells representing about 8.2 mgd capacity. This represents a net increase in the amount of existing infrastructure used under Alternative Plan 1 of 4.6 mgd. Under Alternative Plans 2 and 3, it is envisioned that seven additional utilities would utilize water produced by Lake Michigan treatment plants, resulting in the use of an additional 32.4 mgd of Lake Michigan water treatment plant capacity. Alternative Plans 2 and 3 also envision that 21 utilities would abandon wells representing about 39.0 mgd capacity. This represents a net increase in the amount of existing infrastructure used under Alternative Plans 2 and 3 of 6.6 mgd. Under Alternative Plan 4, it is envisioned that 17 additional utilities would utilize water produced by Lake Michigan treatment plants, resulting in the use of an additional 81.2 mgd of Lake Michigan water treatment plant capacity. Alternative Plan 4 also envisions that 22 utilities would abandon wells representing about 70.0 mgd capacity. This represents a net increase in the amount of existing infrastructure used under the Alternative Plan 4 of 11.2 mgd.

These calculations indicate that the fullest use of existing and committed infrastructure may be expected to be made under Alternative Plan 4. While Alternative Plan 1 would also result in a net increase in the amount of existing and committed infrastructure utilized, the expected increase would not be as great as that expected under Alternative Plan 4. Under Alternative Plans 2 and 3, the net amount of existing and committed infrastructure

Table M-2

REGIONAL MEASURES OF THE IMPACTS OF ALTERNATIVE WATER SUPPLY PLANS UPON THE SHALLOW GROUNDWATER SYSTEM

Alternative Plan	Demand to Supply Ratio[a]		Human Impact Ratio[b]		Baseflow Reduction (million gallons per day)		Baseflow Reduction Index (percent)[c]	
	Value	Rank	Value	Rank	Value	Rank	Value	Rank
1	0.113	3	-0.110	3	-15.89	3	-4.66	3
2	0.121	4	-0.117	4	-18.70	4	-4.76	4
3	0.098	2	-0.093	2	-6.16	2	-1.67	2
4	0.084	1	-0.083	1	-2.62	1	-0.49	1

[a]*The demand to supply ratio is defined as the ratio of net pumping demand on an aquifer to that aquifer's sustainable, or natural, supply. Generally, this indicator ranges from 0—representing no human impact—upward. Values over 1.0 indicate that more groundwater is being extracted than can be replaced in a long-term, sustainable fashion. The year 2035 conditions for this indicator are compared to predevelopment conditions.*

[b]*The human impact ratio, is defined as the ratio of human-induced groundwater inflows to total inflows minus the ratio of human-induced groundwater outflows to total outflows. This indicator is an expression of the relative magnitude of human alteration of the groundwater system. Values range from minus 1.0 in areas where wells have become the only discharge from an aquifer by stopping all other groundwater discharges, through 0 representing no net human impact, to plus 1.0 representing situations where human additions are the only inputs to the aquifer. The year 2035 conditions for this indicator are compared to predevelopment conditions.*

[c]*The baseflow reduction index is defined as the percentage of the reduction of groundwater-derived baseflow discharge due to pumping to the groundwater-derived baseflow at a defined base time. The year 2035 conditions for this indicator are compared to year 2005 conditions.*

Source: U.S. Geological Survey, University of Wisconsin-Milwaukee, and SEWRPC.

Table M-3

COMPARISON OF USAGE OF EXISTING AND COMMITTED INFRASTRUCTURE AMONG ALTERNATIVE WATER SUPPLY PLANS FOR DESIGN YEAR 2035

Alternative Plan	Additional Lake Michigan Treatment Plant Capacity Used[a] (million gallons per day)	Capacity of Wells Abandoned[b] (million gallons per day)	Net Change (million gallons per day)
1	12.8	8.2	4.6
2	32.4	39.0	-6.6
3	32.4	39.0	-6.6
4	81.2	70.0	11.2

[a]*Estimated as maximum daily pumpage of those utilities being provided with Lake Michigan water as a source of public water supply.*

[b]*Estimated as maximum daily pumpage of wells abandoned. In instances where these data were not available, this was set equal to the 2000 maximum daily pumpage for the utility multiplied by the fraction of the utilities wells that would be abandoned under the alternative plan.*

Source: SEWRPC.

utilized would be less than under Alternative Plan 4. Therefore, Alternative Plan 4 was given the best rank, followed by Alternative Plan 1. Because the net change in the amount of existing and committed infrastructure used is expected to be the same under Alternative Plans 2 and 3, these plans were give equal ranks.

ADDITIONAL ANALYSES

This section documents additional analyses that were performed as part of formulating the initially preferred plan.

Spatial Distributions of the Demand to Supply Ratio (DSR) in the Deep Aquifer
Figure M-2 shows the spatial distribution of the demand to supply ratio (DSR) in the deep sandstone aquifer under the conditions associated with each of the four alternative plans considered. These distributions were generated by calculating the 2035 value DSR relative to predevelopment conditions for each community, placing these values at the centroid of each community, and constructing a system of iso-lines depicting the DSR around the centroids. The maps are intended to be illustrative of the general patterns of expected distribution of the DSR and not of specific values at given locations.

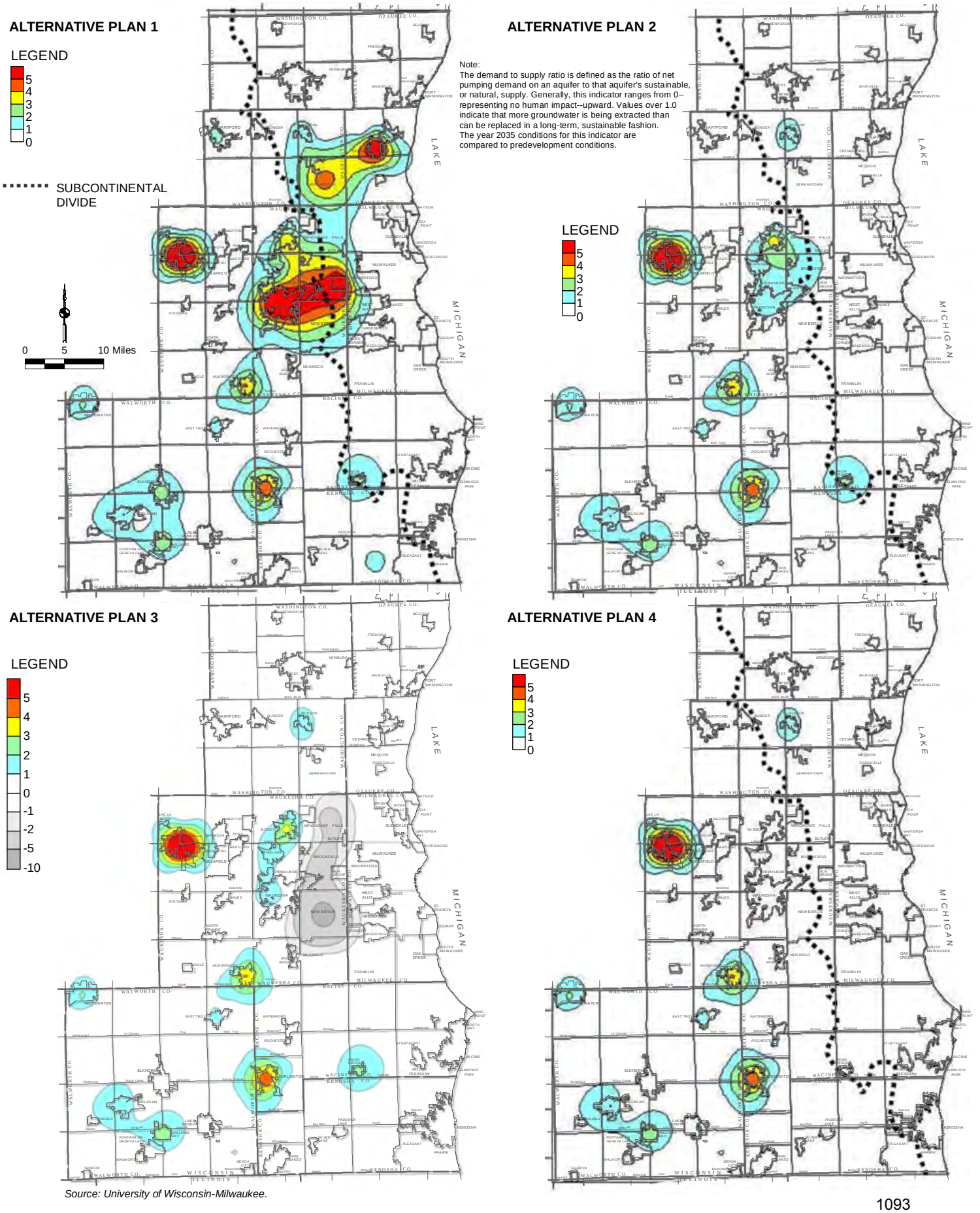
As shown in Figure M-2, both differences and similarities are evident in the patterns of the distribution of the DSR associated with the alternative plans. The greatest differences are shown in southern Ozaukee County, southeastern Washington County, and eastern and central Waukesha County. Smaller differences are seen around the Cities of Elkhorn and Hartford and the Village of Union Grove. Three factors account for these differences. First, the alternative plans differ in the relative reliance that they place on the use of the deep aquifer and of Lake Michigan as sources of public water supply. As the source of supply changes from the deep aquifer to Lake Michigan water, the DSR decreases. This is reflected in the changes in the DSR from 2005 to 2035 for the conditions associated with the alternative plans shown in Figure M-3. This partially accounts the differences in the DSR shown in southern Ozaukee County, southeastern Washington County, and eastern and central Waukesha County and accounts for the differences in the DSR shown around the Village of Union Grove. Second, the alternative plans differ in the relative reliance placed upon the use of the deep aquifer and the shallow aquifer as sources of public water supply. As the source of supply changes from the deep aquifer to the shallow aquifer, the DSR decreases. This partially accounts for the differences in the DSR shown in southern Ozaukee County, southeastern Washington County, and eastern and central Waukesha County and accounts for the differences in the DSR shown around the Cities of Elkhorn and Hartford. Third, the injection well component of Alternative Plan 3 provides enhanced recharge to the deep aquifer along the Milwaukee-Waukesha County line. This accounts for the differences between the patterns of distribution of the DSR in eastern Waukesha County shown to be associated with Alternative Plans 2 and 3.

Spatial Distributions of the Baseflow Reduction Index (BRI) in the Shallow Aquifer
Figure M-4 shows the spatial distribution of the baseflow reduction index (BRI) in the shallow aquifer under the conditions associated with each of the four alternative plans described in Chapter VIII. These distributions were generated by calculating the 2035 value BRI relative to 2005 conditions for each community, placing these values at the centroid of each community, and constructing a system of iso-lines depicting the BRI around the centroids. The maps are intended to be illustrative of the general patterns of expected distribution of the BRI and not of specific values at given locations.

Several general features in the distribution of BRI values are common to all four alternative plans. For example, values of the BRI less than -10 would be expected to occur in central Washington County under all four of the alternative plans. While there are differences among the alternative plans in the extent of this area of low BRI values in Washington County, under each of the alternative plans low BRIs are projected to be centered around the Villages of Slinger and Jackson. Similarly, under all four alternative plans areas with low values of the BRI are projected to occur in southeastern Walworth County, with the lowest values centered to the west of the Village of Walworth. In addition, under all four alternative plans, high values of the BRI occur in northeastern Milwaukee and southeastern Ozaukee Counties.

Figure M-2

PROJECTED DEMAND TO SUPPLY RATIO (DSR) FOR THE DEEP AQUIFER: 2035

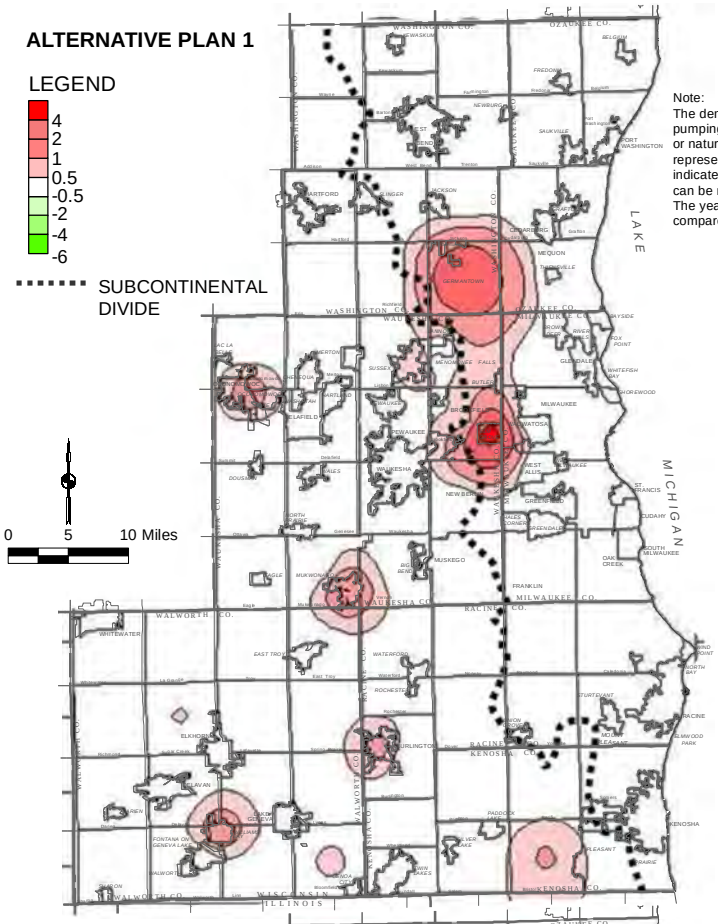


Source: University of Wisconsin-Milwaukee.

Figure M-3

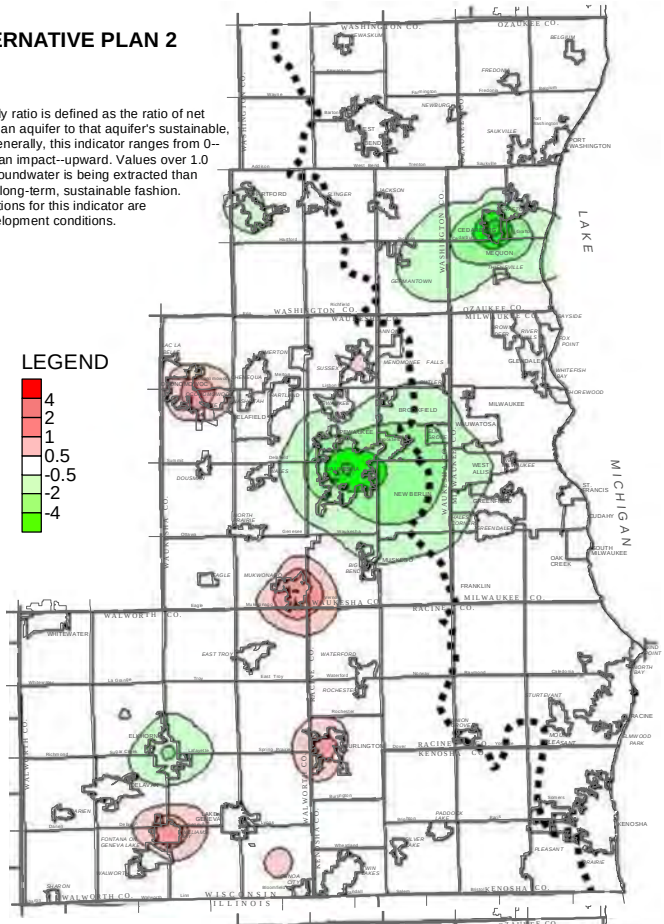
PROJECTED CHANGES IN THE DEMAND TO SUPPLY RATIO (DSR) FOR THE DEEP AQUIFER: 2005-2035

ALTERNATIVE PLAN 1

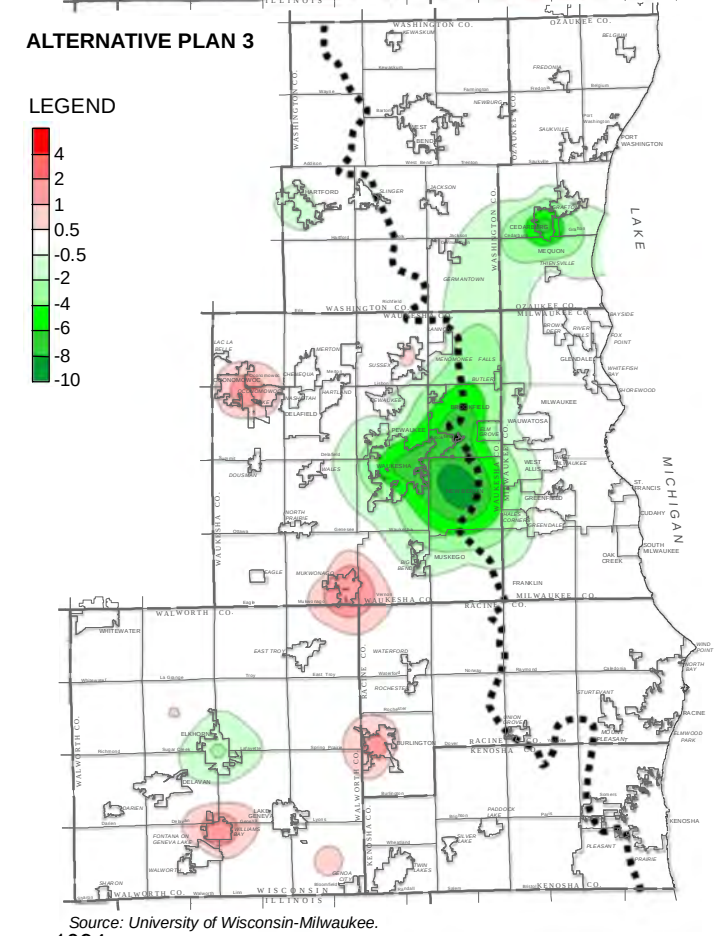


ALTERNATIVE PLAN 2

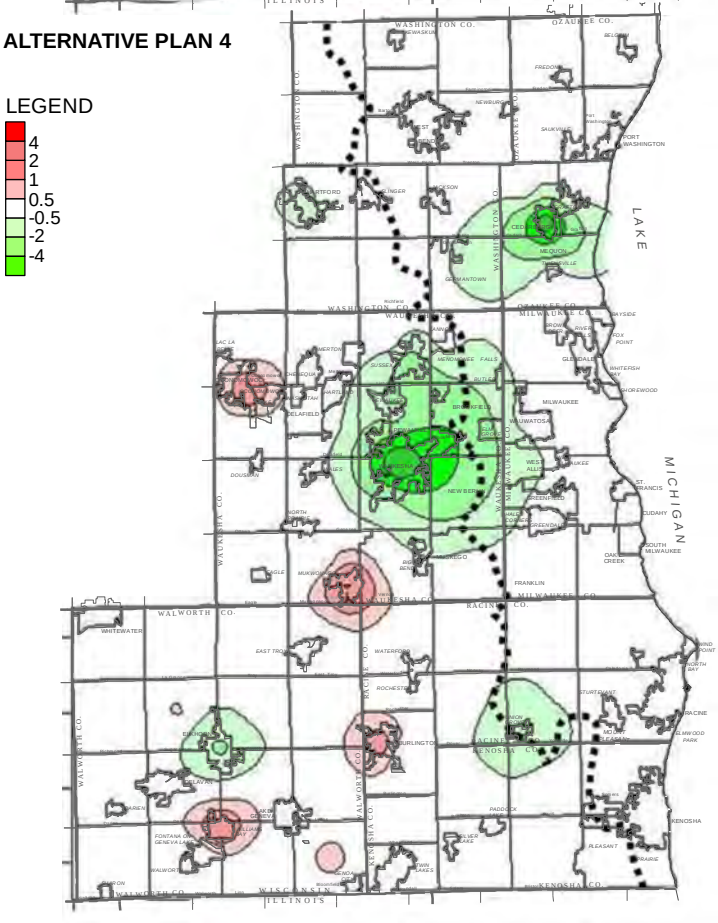
Note:
The demand to supply ratio is defined as the ratio of net pumping demand on an aquifer to that aquifer's sustainable, or natural, supply. Generally, this indicator ranges from 0--representing no human impact--upward. Values over 1.0 indicate that more groundwater is being extracted than can be replaced in a long-term, sustainable fashion. The year 2035 conditions for this indicator are compared to predevelopment conditions.



ALTERNATIVE PLAN 3



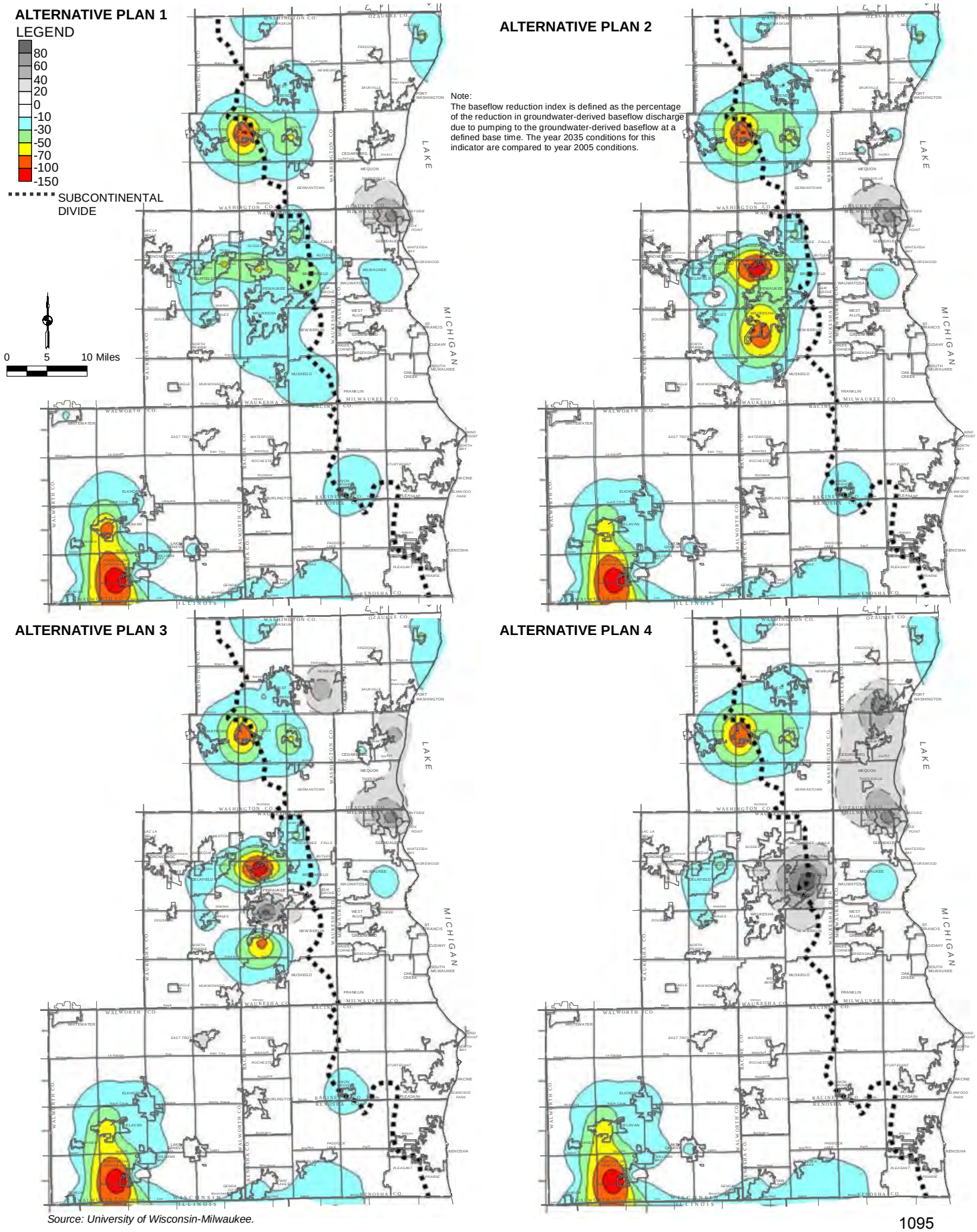
ALTERNATIVE PLAN 4



Source: University of Wisconsin-Milwaukee.

Figure M-4

BASEFLOW REDUCTION INDEX (BRI) IN THE SHALLOW AQUIFER: 2035

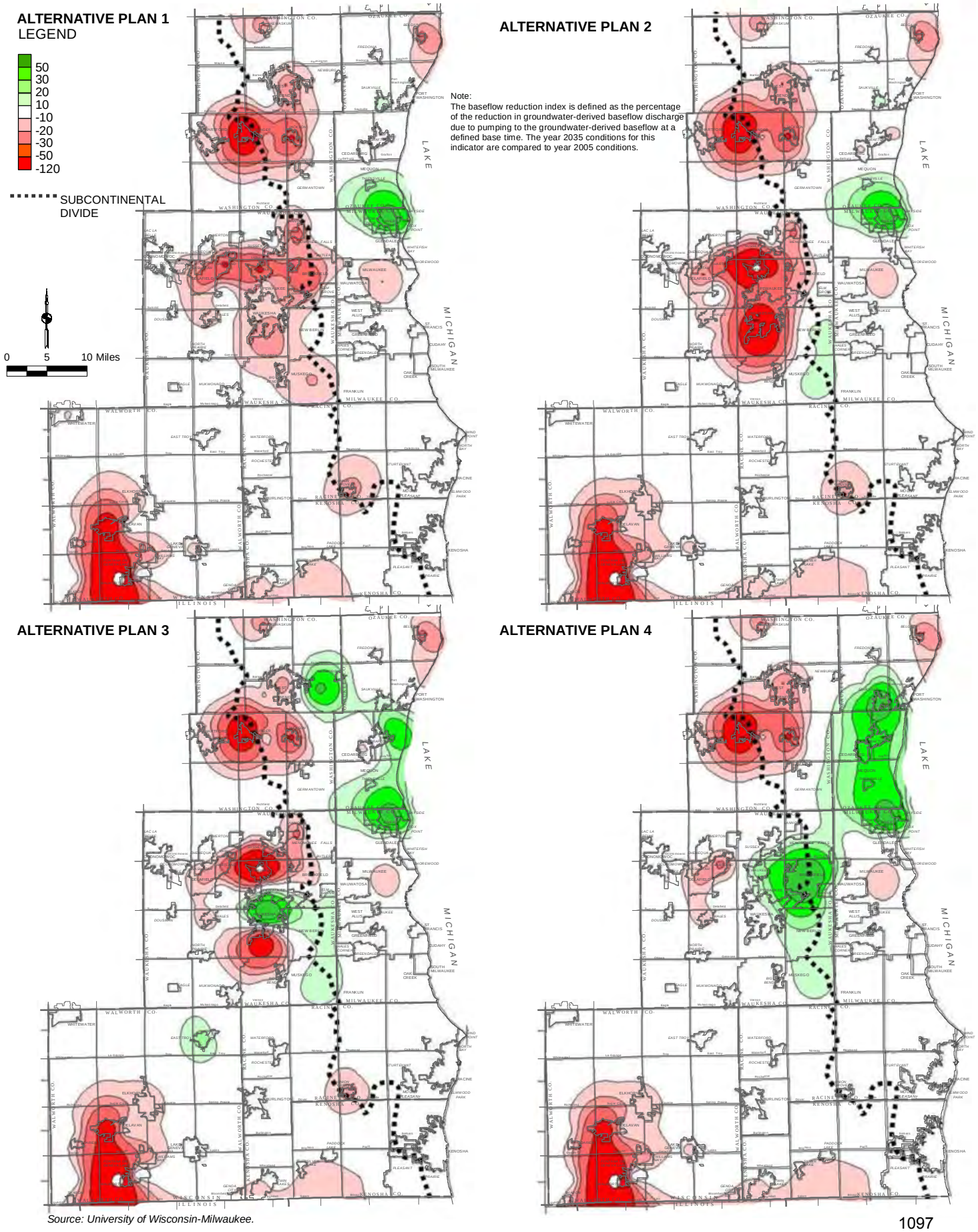


Source: University of Wisconsin-Milwaukee.

Several differences are also apparent among the distributions of BRI values associated with the four alternative plans considered. One striking example occurs in central and eastern Waukesha County, as shown in Figure M-4. Four differences among the components of the alternative plans accounts for the differences shown among the distributions of BRI values. First, the limited expansion of the area using Lake Michigan water as a source of public water supply envisioned under Alternative Plans 2 and 3 accounts for the differences in the eastern extent of the area of Waukesha County shown to have BRI values of less than -10 between these alternative plans and Alternative Plan 1. These changes are especially apparent in the values of the BRI shown for eastern portions of the Cities of Muskego and New Berlin under Alternative Plans 2 and 3, as shown in Figure M-5. Second, the shift of several Waukesha County utilities from reliance upon the deep aquifer to reliance upon the shallow aquifer envisioned under Alternative Plans 2 and 3 accounts for large decreases in the values of the BRI that are projected to be centered on the Village of Pewaukee and Town of Waukesha, as shown in Figure M-5, and the areas with low values of the BRI centered on these communities, as shown in Figure M-4, under these alternative plans. Third, the infiltration of treated wastewater from the Waukesha wastewater treatment plant into the shallow groundwater system envisioned under Alternative Plan 3 accounts for the area of BRI values greater than 10 that is centered on the City of Waukesha shown under this alternative plan, as shown in Figure M-4. It is important to note that under this alternative plan, similar local increases in the BRI are projected to be associated with the other proposed treated wastewater infiltration facilities in East Troy, Grafton, and West Bend. Fourth, the further expansion of the area using Lake Michigan water as a source of public water supply envisioned under Alternative Plan 4 accounts for the area of BRI values greater than 10 centered on the City of Brookfield and the relatively small area of BRI values less than -10 located in central Waukesha County, as shown in Figure M-4.

Figure M-5

PROJECTED CHANGES IN THE BASEFLOW REDUCTION INDEX (BRI) IN THE SHALLOW AQUIFER: 2005-2035



Source: University of Wisconsin-Milwaukee.

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Appendix N

WATER CONSERVATION PROGRAM LEVELS AND COSTS FOR WATER SUPPLY SYSTEMS IN THE REGION (preliminary recommended water supply plan conditions): 2000-2035

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Table N-1

WATER CONSERVATION PROGRAM LEVELS AND COSTS FOR MUNICIPAL WATER SUPPLY SYSTEMS IN KENOSHA COUNTY: 2000-2035

Utility	Population		Water Conservation Program Level	Estimated Average Annual Cost of Water Conservation	
	2000 Population	2035 Population		Cost per Capita ($)	Total Cost ($)
City of Kenosha Water Utility	98,700	109,900	Base	0.40	41,700
Village of Paddock Lake Water Utility	1,000	5,000	Intermediate	1.00	3,000
Village of Pleasant Prairie Water Utility	7,900	30,550	Base	0.40	7,700
Town of Bristol Utility District No. 1	1,100	4,900	Intermediate	1.00	3,000
Town of Bristol Utility District No. 3	200	200	Base	0.40	100
Town of Somers Water Utility	2,100	15,350	Base	0.40	3,500
Powers-Benedict-Tombeau Lakes Area	- -	1,800	Advanced[a]	2.00	1,800
Village of Silver Lake	- -	4,900	Advanced[a]	2.00	4,900
Village of Twin Lakes	- -	9,400	Advanced[a]	2.00	9,400
Town of Salem	- -	17,900	Advanced[a]	2.00	17,900
Total	111,000	199,900	- -	- -	93,000

[a]*Initially assumed to have an intermediate-level program in Chapter IV.*

Source: SEWRPC.

Table N-2

WATER CONSERVATION PROGRAM LEVELS AND COSTS FOR MUNICIPAL WATER SUPPLY SYSTEMS IN MILWAUKEE COUNTY: 2000-2035

Utility	Population		Water Conservation Program Level	Estimated Annual Cost of Water Conservation	
	2000 Population	2035 Population		Cost per Capita ($)	Total Cost ($)
City of Cudahy Water Utility	18,450	18,850	Base	0.40	7,500
City of Franklin Water Utility	16,900	50,150	Base	0.40	13,400
City of Glendale Water Utility	13,350	17,350	Base	0.40	6,100
City of Milwaukee Water Works	650,750	664,550	Base	0.40	263,100
City of Oak Creek Water and Sewer Utility	26,000	50,850	Base	0.40	15,400
City of South Milwaukee Water Utility	21,250	21,850	Base	0.40	8,600
City of Wauwatosa Water Utility	47,300	50,750	Base	0.40	19,600
City of West Allis Water Utility	61,250	64,650	Base	0.40	25,200
We Energies-Water Services	550	4,200	Base	0.40	1,000
Village of Brown Deer Public Water Utility	12,200	11,800	Base	0.40	4,800
Village of Fox Point Water Utility	7,000	6,100	Base	0.40	2,600
Village of Greendale Water Utility	14,400	13,500	Base	0.40	5,600
Village of Shorewood Municipal Water Utility	13,750	14,850	Base	0.40	1,400
Village of Whitefish Bay Water Utility	14,150	14,750	Base	0.40	5,800
Total	917,300	1,004,200	- -	- -	380,100

Source: SEWRPC.

Table N-3

WATER CONSERVATION PROGRAM LEVELS AND COSTS FOR MUNICIPAL WATER SUPPLY SYSTEMS IN OZAUKEE COUNTY: 2000-2035

Utility	Population		Water Conservation Program Level	Estimated Annual Cost of Water Conservation	
	2000 Population	2035 Population		Cost per Capita ($)	Total Cost ($)
City of Cedarburg Light and Water Commission	11,250	14,900	Intermediate	1.00	13,100
We Energies-Water Services[a]	5,300	28,800	Base	0.40	6,800
City of Port Washington Water Utility	10,600	15,000	Base	0.40	5,100
Village of Belgium Water Utility	1,700	2,300	Intermediate	1.00	2,000
Village of Fredonia Municipal Water Utility	1,900	3,000	Intermediate	1.00	2,500
Village of Grafton Water and Wastewater Commission	10,500	16,450	Intermediate	1.00	13,500
Village of Saukville Municipal Water Utility	4,150	5,650	Intermediate	1.00	4,900
Village of Newburg Area[b]	- -	250	Advanced[c]	2.00	200
Town of Fredonia-Waubeka Area	- -	500	Advanced[c]	2.00	500
Total	45,400	86,850	- -	- -	48,600

[a] *Provides service to portions of the City of Mequon and the Village of Thiensville.*

[b] *Limited to the portion of proposed Village of Newburg service area within Ozaukee County.*

[c] *Initially assumed to have an intermediate-level program in Chapter IV.*

Source: SEWRPC.

Table N-4

WATER CONSERVATION PROGRAM LEVELS AND COSTS FOR MUNICIPAL WATER SUPPLY SYSTEMS IN RACINE COUNTY: 2000-2035

Utility	Population		Water Conservation Program Level	Estimated Annual Cost of Water Conservation	
	2000 Population	2035 Population		Cost per Capita ($)	Total Cost ($)
City of Burlington Water Utility	9,950	15,300	Intermediate	1.00	12,600
City of Racine Water and Wastewater Utility	103,800	113,500	Base	0.40	43,500
Caddy Vista Sanitary District[a]	800	1,250	Base	0.40	400
Village of Caledonia Utility District No. 1[a]	3,550	11,800	Base	0.40	3,100
Crestview Sanitary District[b]	3,800	4,250	Base	0.40	1,600
North Park Sanitary District (Oak Creek)[b]	600	700	Base	0.40	300
North Park Sanitary District (Racine)	8,300	9,200	Base	0.40	3,500
Village of Sturtevant Water and Sewer Utility[c]	5,300	6,550	Base	0.40	2,400
Village of Union Grove Municipal Water Utility	4,300	5,900	Intermediate	1.00	5,100
Village of Waterford Water Utility	4,050	5,400	Intermediate	1.00	4,700
Village of Wind Point Municipal Water Utility	1,850	2,350	Base	0.40	800
North Cape Sanitary District	100	150	Intermediate	1.00	100
Yorkville Utility District No. 1	<50	400	Intermediate	1.00	200
Town of Burlington-Bohner Lake Area	- -	2,200	Advanced[d]	2.00	2,200
Town of Dover-Eagle Lake Area	- -	2,000	Advanced[d]	2.00	2,000
Northwest Caledonia Area	- -	200	Advanced[d]	2.00	200
Town of Norway Area[e]	- -	5,800	Advanced[d]	2.00	5,800
Village of Rochester Area	- -	1,250	Advanced[d]	2.00	1,200
Town of Rochester Area	- -	1,300	Advanced[d]	2.00	1,400
Town of Waterford Area	- -	6,700	Advanced[d]	2.00	6,800
Total	146,400	196,200	- -	- -	97,900

[a] *As of 2006, the Caddy Vista Sanitary District and the Village of Caledonia Utility District No. 1 have been combined into the Caledonia West Utility District.*

[b] *As of 2007, the Crestview Sanitary District and the North Park Sanitary District have been combined into the Caledonia East Utility District.*

[c] *As of 2007, the Village of Sturtevant Water Utility was purchased by the City of Racine Water and Wastewater Utility and is served by the City Utility on a retail basis. The Village of Sturtevant continues to own and operate its sewer utility facilities.*

[d] *Initially assumed to have an intermediate-level program in Chapter IV.*

[e] *Limited to the portion of proposed Norway refined service area within Racine County.*

Source: SEWRPC.

Table N-5

WATER CONSERVATION PROGRAM LEVELS AND COSTS FOR MUNICIPAL WATER SUPPLY SYSTEMS IN WALWORTH COUNTY: 2000-2035

Utility	Population		Water Conservation Program Level	Estimated Annual Cost of Water Conservation	
	2000 Population	2035 Population		Cost per Capita ($)	Total Cost ($)
City of Delavan Water and Sewerage Commission	8,350	20,050	Intermediate	1.00	14,200
City of Elkhorn Light and Water	7,650	14,950	Intermediate	1.00	11,300
City of Lake Geneva Municipal Water Utility	8,100	14,500	Intermediate	1.00	11,300
City of Whitewater Municipal Water Utility	11,350	16,100	Intermediate	1.00	13,700
Village of Darien Water Works and Sewer System	1,650	2,800	Intermediate	1.00	2,200
Village of East Troy Municipal Water Utility	3,750	9,450	Intermediate	1.00	6,600
Village of Fontana Municipal Water Utility	1,850	2,150	Intermediate	1.00	2,000
Village of Genoa City Municipal Water Utility	1,900	4,300	Intermediate	1.00	3,100
Village of Sharon Waterworks and Sewer System	1,650	2,600	Intermediate	1.00	2,100
Village of Walworth Municipal Water and Sewer Utility	2,400	4,750	Intermediate	1.00	3,600
Village of Williams Bay Municipal Water Utility	2,550	5,950	Intermediate	1.00	4,300
Pell Lake Sanitary District No. 1	2,450	4,700	Intermediate	1.00	3,600
Town of East Troy Sanitary District No. 3	50	100	Intermediate	1.00	100
Lake Como Sanitary District No. 1	1,900	2,950	Intermediate	1.00	2,400
Country Estates Sanitary District	450	1,100	Intermediate	1.00	800
Town of Troy Sanitary District No. 1	150	150	Intermediate	1.00	200
Town of Lyons Area	- -	1,700	Advanced[a]	2.00	1,700
Village of Mukwonago Municipal Water Utility[b]	- -	1,450	Intermediate	1.00	700
Town of East Troy-Potter Lake Area	- -	1,200	Advanced[a]	2.00	1,200
Powers-Benedict-Tombeau Lakes Area[c]	- -	1,150	Advanced[a]	2.00	1,100
Total	56,200	112,100	- -	- -	86,200

[a] *Initially assumed to have an intermediate-level program in Chapter IV.*

[b] *Limited to the portion of Mukwonago Municipal Water Utility within Walworth County.*

[c] *Limited to the portion of proposed Powers-Benedict-Tombeau Lakes area within Walworth County.*

Source: SEWRPC.

Table N-6

WATER CONSERVATION PROGRAM LEVELS AND COSTS FOR MUNICIPAL WATER SUPPLY SYSTEMS IN WASHINGTON COUNTY: 2000-2035

Utility	Population		Water Conservation Program Level	Estimated Annual Cost of Water Conservation	
	2000 Population	2035 Population		Cost per Capita ($)	Total Cost ($)
City of Hartford Water Utilities	10,850	18,150	Intermediate	1.00	14,500
City of West Bend Water Utility	28,200	44,550	Intermediate	1.00	36,400
Village of Germantown Water Utility	15,050	23,450	Intermediate[a]	1.00	19,000
Village of Jackson Water Utility	4,900	9,950	Intermediate	1.00	7,400
Village of Kewaskum Municipal Water Utility	3,350	5,500	Intermediate	1.00	4,400
Village of Slinger Utilities	3,700	8,150	Intermediate	1.00	5,900
Allenton Sanitary District	750	1,550	Intermediate[a]	1.00	1,100
Village of Newburg Area[b]	- -	1,700	Advanced[c]	2.00	1,700
Total	66,800	113,000	- -	- -	90,400

[a] *Initially assumed to have an advanced-level program in Chapter IV.*

[b] *Limited to the portion of the proposed Village of Newburg service area within Washington County.*

[c] *Initially assumed to have an intermediate-level program in Chapter IV.*

Source: SEWRPC.

Table N-7

WATER CONSERVATION PROGRAM LEVELS AND COSTS FOR MUNICIPAL WATER SUPPLY SYSTEMS IN WAUKESHA COUNTY: 2000-2035

Utility	Population		Water Conservation Program Level	Estimated Annual Cost of Water Conservation	
	2000 Population	2035 Population		Cost per Capita ($)	Total Cost ($)
City of Brookfield Municipal Water Utility	24,000	44,950	Intermediate[a]	1.00	34,000
City of Delafield Municipal Water Utility	400	12,700	Intermediate[a]	1.00	6,500
City of Muskego Public Water Utility	7,800	28,650	Intermediate[a]	1.00	18,000
City of New Berlin Water Utility (east)	19,900	22,800	Base	0.40	8,500
City of New Berlin Water Utility (central)	10,200	18,500	Intermediate[a]	1.00	14,000
City of Oconomowoc Utilities	12,500	22,300	Intermediate	1.00	17,400
City of Pewaukee Water and Sewer Utility	6,850	15,000	Intermediate[a]	1.00	11,000
City of Waukesha Water Utility	65,000	88,500	Advanced	2.00	153,500
Village of Butler Public Water Utility	1,900	1,900	Base	0.40	800
Village of Dousman Water Utility	1,600	4,750	Intermediate	1.00	3,200
Village of Eagle Municipal Water Utility	1,700	1,900	Intermediate	1.00	1,800
Village of Hartland Municipal Water Utility	7,900	11,550	Intermediate	1.00	9,700
Village of Menomonee Falls Water Utility (east)	28,050	32,700	Base	0.40	12,200
Village of Menomonee Falls Water Utility (west)	1,550	8,200	Intermediate	1.00	4,900
Village of Mukwonago Municipal Water Utility	6,150	11,500	Intermediate	1.00	8,800
Village of Pewaukee Water Utility	8,150	11,600	Intermediate[a]	1.00	9,500
Village of Sussex Water Utility	8,850	16,800	Intermediate[a]	1.00	12,400
Brookfield Sanitary District No. 4	5,900	6,100	Intermediate	1.00	6,000
Village of Big Bend	- -	2,200	Advanced[b]	2.00	2,200
Village of Elm Grove	- -	6,650	Advanced[b]	2.00	6,600
Village of Lannon	- -	1,700	Advanced[b]	2.00	1,700
Village of North Prairie	- -	2,900	Intermediate	1.00	1,500
Village of Wales	- -	1,600	Advanced[b]	2.00	1,600
Town of Eagle-Eagle Spring Lake Area	- -	450	Advanced[b]	2.00	400
Town of Norway-Wind Lake Area[c]	- -	1,350	Advanced[b]	2.00	1,300
Town of Oconomowoc-Okauchee Lake Area	- -	7,250	Advanced[b]	2.00	7,200
Town of Summit-Golden Lake Area	- -	200	Advanced[b]	2.00	200
Town of Ottawa-Pretty Lake Area	- -	250	Advanced[b]	2.00	200
Total	218,400	384,950	- -	- -	355,100

[a] *Initially assumed to have an advanced-level program in Chapter IV.*

[b] *Initially assumed to have an intermediate-level program in Chapter IV.*

[c] *Limited to the portion of the proposed Town of Norway-Wind Lake service area within Waukesha County.*

Source: SEWRPC.

Table N-8

WATER CONSERVATION LEVELS AND COSTS FOR MUNICIPAL WATER SUPPLY SYSTEMS IN THE SOUTHEASTERN WISCONSIN REGION: 2000 AND 2035

Utility	Population[a]			Estimated Annual Cost of Water Conservation
	2000 Total County Population	2035 Projected County Population	Average Population 2000-2035	
Kenosha	149,600	210,100	179,850	$ 102,800
Milwaukee	940,200	1,007,100	973,650	385,300
Ozaukee	82,300	101,100	91,700	58,800
Racine	188,800	213,600	201,200	109,900
Walworth	92,000	140,000	116,000	98,900
Washington	117,500	157,300	137,400	109,400
Waukesha	360,800	446,800	403,800	395,900
Region	1,931,200	2,276,000	2,103,600	$1,261,000

[a]*Includes population utilizing private individual wells providing for base level of water conservation, plus the municipal utility costs set forth in Tables N-1 through N-7.*

Source: U.S. Bureau of the Census and SEWRPC.

Appendix O

RESPONSES TO PRELIMINARY REGIONAL WATER SUPPLY PLAN REVIEW LETTERS RECEIVED WHICH WARRANTED SPECIFIC RESPONSES

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LETTERS SETTING FORTH COMMENTS WHICH RECEIVED LETTER RESPONSES FROM COMMISSION STAFF

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MAR 1 0 2009

March 9, 2009

Mr. Robert Biebel
Southeastern Wisconsin Regional
Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, Wisconsin 53187-1607

Re: SEWRPC's Preliminary Regional Water Supply Plan for Southeastern Wisconsin

Dear Mr. Biebel:

I appreciate the opportunity to comment on the SEWRPC Water Supply Plan. I am the Chair of the Economics Department at the University of Wisconsin – Milwaukee. I have taught economics at UWM for 37 years and have conducted research in the area of the economics of pricing for much of my professional life. Articles of mine have appeared in such journals as the American Economic Review and the Journal of Economic Theory.

Certainly water supply is one of the key concerns to our region, influencing how and where we live. Therefore, as an economist I took particular interest in how economics is being employed to create incentives that are compatible with the goal of sustainable environment and economic prosperity and in particular how SEWRPC recognizes the key role of pricing incentives in determining the rate of water usage and the location of water-using economic activity. Unfortunately, this study seems to follow the pattern of previous studies whose implementation permitted if not encouraged alarming depletions of aquifer water as well as the loss or non-sustainability of valuable ecosystem function.

I believe that the SEWRPC plan (http://www.sewrpc.org/watersupplystudy/) raises many economic warning flags. Here is a sampler. First, water is scheduled to be priced on a cost-recovery basis while standard economic principles of efficiency require that price equal the long-run marginal costs of future supplies.

Second, the water-supply plan spans the period to 2035, and relies on an associated SEWRPC land-use plan that includes development of large tracts of land in

the counties adjacent to Milwaukee County. There seems to be no inclusion of the role of pricing in determining land use policies and water usage. The land-use plan simply predicts where land will be developed and then the water-supply plan matches the predicted need. It appears to me that the predictions are merely based on past development patters, good or bad, and merely project these past trends forward.

Third, because the planned supply area straddles the sub-continental divide it impacts on international water treaties. Under the Great Lakes Compact, water cannot be diverted from Lake Michigan to suburbs west of the divide (which at the Milwaukee latitude lies ten miles west of the lake) unless an equal amount of water is returned to the Lake Michigan basin, i.e., shifted back from the west to east of the divide. There does not seem to be special economic analysis of this diversion even though water from east of the divide will have a different cost structure than water from west of the divide. In particular, the returned water will contain contaminants that current technology cannot easily remove.

Fourth, different municipalities in Southeastern Wisconsin share sources of surface and aquifer water. So far, only minor conflicts have arisen due to common pool problems, but more serious problems will likely arise during the plan period and beyond, encouraging inefficiently rapid use of water, and adding to the diversion problem. There seems to be scant anticipation of such future problems often referred to as the "Tragedy of the Commons." By ignoring such commons problems, we set ourselves up for more skirmishes such as those involving communities in western Waukesha along the Oconomowoc River or the storm water flooding issues in the town of Summit. Both of these were reported in the Journal Sentinel and serve as warnings of future problems if we merely accommodate past land-use trends.

Fifth, the plan treats water as an isolated public utility and not as one of several public utilities that support land-use development. Since inefficient pricing of any of these utilities can encourage inefficient land use, surely taken together they form a powerful set of incentives for inefficient land-use and, in turn, water-use decisions. In all pricing designs, the user should face the long-run marginal costs of using water or any service of utilities. The difficulty in imposing pricing, of course, is that some uses of water are essential for life itself and its basic requirements while other uses are more optional and some much more optional. While low-income people should not be saddled with use-deterring prices for their essential uses, the demand for water should be constrained by marginal cost pricing on the rest of us to reduce less essential uses of water.

Economists recommend "non-linear pricing" for circumstances such as these. With non-linear pricing, often called "increasing block pricing (IBP)," the price for the first quantum of daily water use, say forty gallons for personal hygiene, cooking, sanitary waste disposal, would be at a low price and higher quantities would be at higher prices. Economists point out four advantages when they prescribe IBP pricing to regulate water use. First, while water is essential, not all uses of water are essential. Second, essential uses tend to be low volume while more optional uses are typically high volume uses.

Third, although the essential uses of water are very unresponsive to price changes, i.e., demand is very inelastic, more optional uses are much more responsive to price changes, i.e., more elastic. Fourth, because IBP is a price system and not a command and control regulation, IBP leaves the rate of usage up to the user and not a direct government intrusion into decision-making.

My colleagues in the water related sciences have an alarming number of complicated-sounding discoveries and warnings about current and future problems in the ground and surface waters. They also say that the urgency and severity of all of these problems and warnings would be reduced if we could reduce the quantity of water usage. I recommend a serious study of such pricing designs as part of a revision of the water supply plan. Because of the economic slowdown, and because Waukesha in particular has plenty of water for the time being, there is considerable time to improve this water supply study, drawing upon the expertise of economists experienced in water supply economics and land use planning. We should call in experts from around the country to analyze these issues as well as raise important additional concerns such as erosion of municipal tax bases, and needless economic inefficiency. As an ancillary benefit, implementation will require sophisticated metering devices of the kind that local advanced manufacturers can produce. Moreover, if our region becomes a model for water regulation through pricing, the market for such pricing designs and the equipment needed to implement those designs will have a world-wide market.

Sincerely,

William L. Holahan
Professor and Chair
Department of Economics
University of Wisconsin - Milwaukee
holahan@uwm.edu

COPY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

W239 N1812 ROCKWOOD DRIVE • PO BOX 1607 • WAUKESHA, WI 53187-1607 • TELEPHONE (262) 547-6721
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May 21, 2009

Dr. William L. Holahan
Professor and Chair
Department of Economics
University of Wisconsin-Milwaukee
Bolton Hall 868
P.O. Box 413
Milwaukee, WI 53201-0413

Dear Dr. Holahan:

This is to acknowledge receipt of your March 9, 2009, letter providing comments on the preliminary regional water supply plan which was submitted for public review and comment during the period extending from January 2 through March 16 of 2009. The following summarizes our responses to your comments structured in accordance with the comments in your letter:

Comment: *This study seems to follow the pattern of previous studies whose implementation permitted if not encouraged alarming depletions of aquifer water as well as the loss or non-sustainability of valuable ecosystem function.*

Response: There have been no previous regional water supply studies. The current situation with regard to groundwater aquifers and ecosystem function has developed in the absence of such a plan. The preliminary regional water supply recommendations are directed toward establishing a sustainable water supply system for the Region, and to reversing the decline of water levels in the deep sandstone aquifer.

Comment: *Water is scheduled to be priced on a cost-recovery basis while standard economic principles of efficiency require that price equal the long-run marginal costs of future supplies.*

Response: Water supply pricing is governed by the Public Service Commission of Wisconsin which oversees the local water utilities. This governmental structure must be recognized in any regional planning effort. Never-the-less, the economic analyses of the alternative plans considered were based upon the marginal cost of the new facilities needed to provide the needed water supplies. Determination of the method of cost recovery to be utilized in any plan implementation efforts requires a fiscal impact analysis that will be developed by the utilities and units of government involved in concert with the Public Service Commission of Wisconsin.

Comment: *The water-supply plan spans the period to 2035, and relies on an associated SEWRPC land-use plan that includes development of large tracts of land in the counties adjacent to Milwaukee County. There seems to be no inclusion of the role of pricing in determining land use policies and water usage. The land-use plan simply predicts where land will be*

developed and then the water-supply plan matches the predicted need. It appears to me that the predictions are merely based on past development patter[n]s, good or bad, and merely project these past trends forward.

Response: The regional land use plan is not based upon an extrapolation of historic population, employment, and land use development trends. Rather, the plan is based upon a set of carefully crafted regional development objectives which seek to reverse the historic trends, as demonstrated in Attachment 1 to this letter which presents historic trends and planned growth in population, households, and employment in the seven counties of the Region. The population of Milwaukee County declined by almost 113,000 persons over the approximately 30-year period from 1970 to 2003. Despite that trend, the regional land use plan envisions an increase in Milwaukee County population of almost 66,000 persons over the next 30 years. Similarly, employment levels in Milwaukee County declined by about 20,000 jobs from 1990 to 2003. Despite that trend, the regional land use plan envisions an increase of over 39,000 jobs in Milwaukee County from 2003 to 2035. The Commission has in the past been criticized for the use of planned population and employment levels in its planning efforts that ignore historic trends. This reversal of the decline in population and employment levels in the central county of the Region in the regional land use plan is attended by major reductions in the historic growth rates of the outlying counties. For example, from 1970 to 2003 the population of Waukesha County increased by about 140,000 persons. The regional land use plan, however, envisions that from 2003 to 2035 Waukesha County's population would increase by about 76,000 persons. The plan envisions similar changes in the growth trends of the other collar counties. The regional land use plan, then, to the maximum extent practicable, seeks to recentralize development within the Region, encouraging redevelopment and new development to occur at higher densities in defined neighborhood units located in areas that either are already served by, or can readily be served by centralized sanitary sewerage, public water supply, mass transit, and police and fire protection.

You also note that there appears to be no inclusion in the role of pricing in determining land use policies and water usage. While the availability of water is an important factor to be considered in land use plans, developing a land use plan based upon the pricing of water would be inconsistent with sound land use planning principles and practices. Many factors must be taken into account in the development of an advisory land use plan that attempts to influence the land use pattern of a large region. In addition to the availability of water supply, such factors include provision of transportation facilities and services; the provision of sanitary sewerage, stormwater management and flood control; the need for park and open space; the maintenance of a productive agricultural base; the protection of air and water quality; and the protection of environmentally sensitive areas found throughout the regional landscape.

The Commission has long subscribed to principles which recognize that natural resource base factors should be a major influence in the placement and intensity of urban development. This is why, for example, the regional land use plan seeks to protect the floodlands, wetlands, woodlands, and other environmentally sensitive areas found within the Commission-delineated environmental corridors. The regional land use plan recommends preservation of about 23 percent of the Region in these environmental

corridors, as shown in Attachment 2 to this letter. This is also why the regional land use plan seeks to protect the most productive agricultural soils. The regional land use plan recommends that the region's most productive agricultural soils, or prime agricultural lands, be preserved, accounting for about 35 percent of the land area of the Region, also as shown in Attachment 2. Groundwater and surface water resources used for water supply are also important considerations in land use planning and recognition of this importance was one of the fundamental reasons why the Commission has long sought to prepare a regional water supply plan. The Commission has always recognized the relationship that exists between land use planning and water supply planning, and indicated at the very beginning of the water supply study effort that, should that planning effort identify any water resource constraints on the development pattern envisioned in the adopted regional land use plan, the Commission would initiate a process to amend the land use plan in an appropriate manner.

What has become clear in the regional water supply study is that water supply is not a limiting factor within this Region with respect to the location of urban development either east or west of the subcontinental divide. Indeed, the study has clearly shown that the relatively modest increment of urban development envisioned in the regional land use plan west of the divide can be accommodated by the available groundwater supplies, with the shifting in recent years of a number of communities from the deep to the shallow aquifer and with the recommended shift in the plan of another four water utilities from the deep to the shallow aquifer. Moreover, even the City of Waukesha, as well as all the other communities proposed in the plan to shift from groundwater to Lake Michigan water, could continue to be served by groundwater – with increased reliance on the shallow aquifer—without resorting to Lake Michigan as a source of supply. Accordingly, there is no basis for a change in the regional land use plan based upon water supply considerations.

Two additional points need to be made concerning this matter. The first is that the regional land use plan was prepared over the period 2004 to 2006 with the full and active participation of an Advisory Committee of professional planners, municipal managers, and representatives of State and Federal agencies, that directed the planning. That Advisory Committee included the City of Milwaukee Planning Director and the Dean of the University of Wisconsin-Milwaukee School of Architecture and Urban Planning. All aspects of the plan and of the employment, population, and household forecasts underlying that plan were presented to, discussed by, and ultimately unanimously approved by that Advisory Committee.

Secondly, we would note that State law requires counties and municipalities to adopt "smart growth" plans if the county or municipality is to exercise zoning, land subdivision control, or official map regulation. Within southeastern Wisconsin, three of the seven counties have now adopted such plans and three are in the process of completing such plans. These county plans essentially incorporate the adopted regional land use plan. In addition to the county plans, 138 of the 146 municipalities within the Region have prepared, or are in the process of preparing, such "smart growth" plans. Again, with limited exceptions, these local plans substantially incorporate the regional land use plan. The exceptions involve proposed development which go beyond the regional land use plan.

Finally, the preliminary regional land use plan does include a recommendation for water conservation programs to be developed throughout the Region. These programs would be utility-specific, depending upon such factors as water supply source and infrastructure needs. In some cases, these programs would include water conservation rate structures. These recommendations were developed following an extensive review of policies and practices and inputs from the Commission water supply planning Advisory Committee, which includes knowledgeable water utility managers; reputable scientists, including members of the staffs of the University of Wisconsin-Madison and of the University of Wisconsin-Milwaukee; and representatives of businesses, agriculture, and environmental interests.

Comment: *Because the planned supply area straddles the sub-continental divide it impacts on international water treaties. Under the Great Lakes Compact, water cannot be diverted from Lake Michigan to suburbs west of the divide (which at the Milwaukee latitude lies ten miles west of the lake) unless an equal amount of water is returned to the Lake Michigan basin, i.e., shifted back from the west to east of the divide. There does not seem to be special economic analysis of this diversion even though water from east of the divide will have a different cost structure than water from west of the divide. In particular, the returned water will contain contaminants that current technology cannot easily remove.*

Response: All of the utilities which are recommended to be provided with a Lake Michigan supply under the preliminary recommended plan currently have a return flow to Lake Michigan, except for one—the City of Waukesha Water Utility water service area. The analyses of alternative plans specifically considered the cost and environmental impacts associated with the return flow to Lake Michigan. The preliminary recommended plan contains specific information on the cost of such return flow, as well as considerable information on pollutant concentrations and loadings, conceptual management plan for high-flow periods problem avoidance, and impacts on water quantity, as well as calling for more-detailed environmental assessment analysis. Such analyses are recommended to be completed under more-detailed second-level planning to be carried out by the City of Waukesha and others. The information provided in the regional plan is considered to be adequate for the systems-level regional planning program.

Comment: *Different municipalities in Southeastern Wisconsin share sources of surface and aquifer water. So far, only minor conflicts have arisen due to common pool problems, but more serious problems will likely arise during the plan period and beyond, encouraging inefficiently rapid use of water, and adding to the diversion problem. There seems to be scant anticipation of such future problems often referred to as the "Tragedy of the Commons." By ignoring such commons problems, we set ourselves up for more skirmishes such as those involving communities in western Waukesha along the Oconomowoc River or the storm water flooding issues in the town of Summit. Both of these were reported in the Journal Sentinel and serve as warnings of future problems if we merely accommodate past land-use trends.*

Response: As you indicate, there are stormwater management issues in western Waukesha County, and these are being addressed in separate studies. There are, however, no major water supply problems in that area of the Region. Furthermore, as previously noted, the

preliminary regional water supply plan provides for a sustainable water supply. Also, as previously noted, the regional land use plan and preliminary regional water supply plan are not based upon an extrapolation of past land use trends. Rather, these plans propose to reverse past trends and to recentralize urban development in the Region. The preliminary regional water supply plan includes a number of recommendations for communities in western Waukesha County. These include the following:

1. Conduct of a siting procedure for all proposed high-capacity wells; the procedure being designed to identify and mitigate any potential negative impacts associated with new well construction on surface waters and any existing water supply systems;
2. The application of conservation measures generally at an intermediate program level;
3. Use of specific sources of supply which are sustainable;
4. Recovery of the deep aquifer which affects nearly the entire Region through a combination of water conservation, conversions to Lake Michigan supplies, and increased reliance on shallow aquifer supplies;
5. Use of enhanced infiltration facilities, and application of development practices and stormwater management measures designed to enhance groundwater recharge focused on areas where the development of wells may have potential negative impacts on groundwater levels or surface water baseflows;
6. Preservation in essentially natural, open uses of areas of the Region identified as having high and very high potential recharge characteristics; and
7. Chloride management, improved management of emerging and unregulated contaminants, and further consideration for cooperative development and integration of public water supply facilities.

Comment: *The plan treats water as an isolated public utility and not as one of several public utilities that support land-use development. Since inefficient pricing of any of these utilities can encourage inefficient land use, surely taken together they form a powerful set of incentives for inefficient land-use and, in turn, water-use decisions. In all pricing designs, the user should face the long-run marginal costs of using water or any service of utilities. The difficulty in imposing pricing, of course, is that some uses of water are essential for life itself and its basic requirements while other uses are more optional and some much more optional. While low-income people should not be saddled with use-deterring prices for their essential uses, the demand for water should be constrained by marginal cost pricing on the rest of us to reduce less essential uses of water.*

Response: The regional water supply plan is one element of a comprehensive regional plan that includes consideration and integration of all urban service systems, including sanitary sewerage, stormwater management and flood control, and transportation. Moreover, the regional land use plan is designed to provide for the efficient delivery of these urban services. As previously indicated, the cost-effective analyses of the alternative plans included in the regional water supply planning program were based upon the marginal cost

for new facilities needed. The cost recovery systems utilized in Wisconsin are the purview of the local utilities and the Public Service Commission of Wisconsin. We would also note that the low-income population in the Region may benefit if the recommended regional water supply plan is adopted and implemented, in that the customer base for the utilities serving the Kenosha, Milwaukee, and Racine areas would be broadened with no infrastructure cost liability. This will reduce costs to the residents of the core area of the major central cities involved.

Comment: *Recommendation for the use of "non-linear pricing" for water which is noted to be "increasing block pricing."*

Response: As previously noted, the pricing structure for water supply is under the purview of the local water utilities and the Public Service Commission of Wisconsin. Such pricing structure typically is based upon a number of factors, including the composition of the customer base, including the needs of the industrial component of that base; water supply facility capital costs and debt service; and operating costs. The type of rate structure used must be determined on a utility-specific basis.

Comment: *Statement that water problems would be reduced by reduced water usage and recommendation for further study of "pricing designs."*

Response: As previously noted, the regional water supply plan does recommended a utility-specific set of water conservation measures for the utilities, as well as recommendations for private well owners. For some of the utilities this includes consideration of water conservation rate structures.

We trust this responds to your comments.

Sincerely,

Kenneth R. Yunker, P.E.
Executive Director

KRY/RPB/pk/lgh
#144039 V1 - RWSP HOLAHAN LTR

Attachment 1

HISTORIC AND PLANNED CHANGE IN POPULATION IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

County	Historic 1970-2000	Historic 1990-2000	Planned 2000-2035
Kenosha	30,300	26,000	55,600
Milwaukee	(112,500)	(18,000)	65,800
Ozaukee	30,000	11,700	16,600
Racine	20,300	16,100	22,500
Walworth	32,200	20,600	44,400
Washington	56,100	28,600	35,400
Waukesha	139,900	68,500	75,600
Regional Total	203,900	149,500	316,200

Source: SEWRPC.

HISTORIC AND PLANNED CHANGE IN HOUSEHOLDS IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

County	Historic 1970-2000	Historic 1990-2000	Planned 2000-2035
Kenosha	25,400	11,600	24,000
Milwaukee	42,400	8,000	46,500
Ozaukee	17,700	6,800	7,500
Racine	23,100	9,200	11,100
Walworth	18,200	9,100	17,700
Washington	25,200	13,600	16,200
Waukesha	86,400	36,300	31,800
Regional Total	234,400	94,600	154,800

Source: SEWRPC.

HISTORIC AND PLANNED CHANGE IN EMPLOYMENT IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

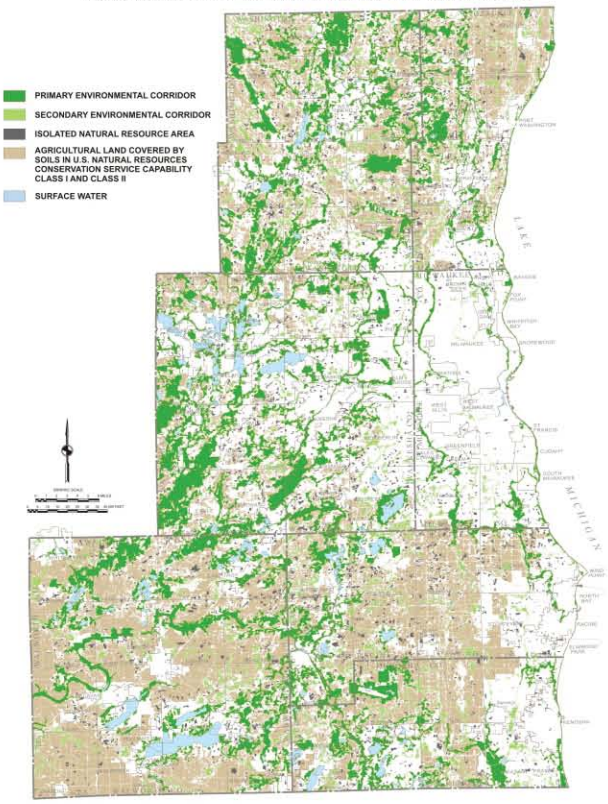
County	Historic 1970-2000	Historic1990-2000	Planned 2000-2035
Kenosha	27,400	17,300	19,000
Milwaukee	64,600	(20,000)	39,100
Ozaukee	27,500	13,900	13,100
Racine	25,400	400	16,500
Walworth	25,900	12,400	17,100
Washington	37,500	15,700	17,100
Waukesha	185,400	76,700	97,300
Regional Total	394,100	116,400	186,300

Source: SEWRPC

Doc #144756

Attachment 2

ENVIRONMENTALLY SIGNIFICANT LANDS AND PRIME AGRICULTURAL LANDS RECOMMENDED FOR PRESERVATION UNDER THE REGIONAL LAND USE PLAN



Source: SEWRPC.

Tom Barrett
Mayor, City of Milwaukee

MAR 16 2009

March 12, 2009

Mr. Robert Biebel
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
Waukesha, Wisconsin 53187-1607

Dear Mr. Biebel:

The City of Milwaukee appreciates the opportunity to comment on the Preliminary Regional Water Supply Plan for Southeastern Wisconsin. As you know, Carrie Lewis, Superintendent of the Milwaukee Water Works has represented the City on the Regional Water Supply Planning Advisory Committee and many of our comments reiterate Ms. Lewis' comments during the study period.

The City of Milwaukee supports many of the regional Water Supply Plan objectives outlined in Chapter V. However, the City of Milwaukee disagrees with the use of projected population growth and land use from the Southeastern Wisconsin Regional Planning Commission's (SEWRPC's) Land Use Plan as the basis for estimating future water supply needs. The City of Milwaukee continues to urge SEWRPC to consider a water supply plan that is based upon our understanding of existing groundwater and surface water resources including the constraints on those resources. The availability and quality of water resources should help local governments determine where future growth should occur and should drive land use planning rather than the reverse. The Water Supply Plan should not be based on a premise that water resource limitations be ignored because a particular area is identified as a growth area in the Regional Land Use Plan.

Even if the City agreed that land use and population are good proxies in establishing future water supply needs, we disagree with the assumption that existing land use trends will continue without adjustment for changes in land use policies, changes in population growth trends and changes in economic investments. The study assumes that historic

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growth patterns from the 1980s and 1990s will continue. No alternative growth scenarios were included in the water supply study. It would be helpful to include a no-growth projection in addition to the projected continuation of past population trends and land use patterns. The City of Milwaukee recommends that the Water Supply Plan not be finalized without designing and evaluating alternatives based on water resource limitations. The Water Supply Plan should also reflect several population and land use scenarios to better bracket future water supply needs.

The Plan evaluates four major alternatives. Each alternative is evaluated based on ground and surface water impacts, capital and operating costs and other environmental impacts. The Plan does not fully address hybrid approaches to meeting Waukesha and other communities' water supply needs. For example, the Plan should consider whether there are situations where blending surface water and ground water resources coupled with water conservation may be the best alternative to meeting future water needs.

Alternatives for providing additional water to Waukesha appear to rank fairly closely and the Plan does acknowledge that additional evaluation is needed to help identify the best approach. Because Waukesha is not facing a water crisis, the City of Milwaukee recommends a more complete analysis of alternatives, including hybrids of some of the alternatives already included in the Plan.

Much of the Regional Water Supply Plan is devoted to analyzing the capital and operating costs of the four alternative scenarios. The Plan does provide standard engineering costs to compare various options to each other. However the full cost of providing water is woefully underestimated. While the Plan does a good job of standardizing regional information, it does not fully reflect the full cost of improvements to Milwaukee's system that would be necessary to supply water to the additional communities. Estimating these costs will require a better understanding of Milwaukee's existing water system. The current Plan understates the full costs associated with serving suburban communities with Milwaukee Water Works water.

The Plan also does not consider the full environmental costs associated with alternatives that divert water from Lake Michigan. The Great Lakes Water Resource Compact prohibits diversions with few exceptions. In the case of these exceptions, the jurisdiction diverting Lake Michigan water must demonstrate that water will be returned to Lake Michigan. Although this language may have anticipated returning flow through a sewage treatment facility discharging directly to the lake, it is apparent that one option for the City of Waukesha is to return flow as treated wastewater through a local river or stream. This study does not fully evaluate the environmental impact of using existing water bodies to return flow to Lake Michigan. There may be costs associated with impacts to both instream water quality and quantity.

The Water Supply Plan provides a good assessment of existing drinking water issues for southeast Wisconsin. It demonstrates that although there are isolated areas of groundwater contamination and drawdowns of some groundwater resources, overall, there is no water supply crisis in southeastern Wisconsin. As such, there is time to fully analyze water supply alternatives with the addition of new technical resources (new models, different paradigms) and new public policy (e.g., the Great Lakes Water Resources Compact). Specifically, the Compact requires us to be much more thorough in any analysis of alternatives based on using water from Lake Michigan outside the basin. There are specific standards in the Compact and additional standards are likely as the Department of Natural Resources moves forward to adopt administrative rules clarifying the intent of the Compact. Because of this, the Plan should not be used as justification for diversion applications since the work was conducted prior to adoption of the Compact and development of state administrative rules. Additional legal findings must be made by any applicant wishing to divert Lake Michigan water. The costs associated with additional investments in infrastructure that may be needed to ensure that return flow requirements are met and water quality is not compromised must also be assessed in any diversion application and should be fully considered in evaluating the costs of any of the water supply alternatives.

The City of Milwaukee appreciates the hard work done by SEWRPC, its consultants and the Planning Advisory Committee. However, because the Plan clearly demonstrates that there is no water supply crisis in southeastern Wisconsin, we recommend that additional analysis be conducted to reflect existing source water limitations, new modeling capabilities and alternative land use and population scenarios. We also recommend that the adoption of the Water Supply Plan be postponed until the full requirements of the Great Lakes Water Resources Compact can be factored in to alternative scenarios. This includes waiting until the Department of Natural Resources issues administrative rules to administer the Compact.

Sincerely,

Tom Barrett
Mayor

Michael J. Murphy
Alderman – 10th District

COPY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
W239 N1812 ROCKWOOD DRIVE • PO BOX 1607 • WAUKESHA, WI 53187-1607 • TELEPHONE (262) 547-6721
FAX (262) 547-1103

May 13, 2009

Mr. Thomas Barrett
Mayor
City of Milwaukee
200 E. Wells Street
Milwaukee, WI 53202

Mr. Michael J. Murphy
Alderman, District 10
City of Milwaukee
200 E. Wells Street
Milwaukee, WI 53202

Dear Mayor Barrett and Alderman Murphy:

This is to acknowledge receipt of, and respond to, your letter of March 12, 2009, which provides comments on the preliminary regional water supply plan which was submitted for public review and comment during the period extending from January 2 to March 16 of 2009. The Commission very much appreciates, and has carefully considered, your comments and offers the following responses thereto. We believe that what follows should demonstrate to you that both the regional land use plan and the preliminary regional water supply plan are plans which, as realistically as possible, seek to maintain the City of Milwaukee as the vital center of the seven-county Region. Indeed, it is to that end that the Commission's plans have for over 40 years sought to abate urban decentralization—often known as urban sprawl.

For convenience, we have reproduced your comments prior to setting forth our responses.

Comment: *The City of Milwaukee supports many of the regional Water Supply Plan objectives outlined in Chapter V. However, the City of Milwaukee disagrees with the use of projected population growth and land use from the Southeastern Wisconsin Regional Planning Commission's (SEWRPC's) Land Use Plan as the basis for estimating future water supply needs. The City of Milwaukee continues to urge SEWRPC to consider a water supply plan that is based upon our understanding of existing groundwater and surface water resources including the constraints on those resources. The availability and quality of water resources should help local governments determine where future growth should occur and should drive land use planning rather than the reverse. The Water Supply Plan should not be based on a premise that water resource limitations be ignored because a particular area is identified as a growth area in the Regional Land Use Plan.*

Response: The regional land use plan is not based upon projections of population, employment, and existing land use development trends. Rather, the plan is based upon a set of carefully crafted regional development objectives which seek to reverse historic trends, as demonstrated in Attachment 1 to this letter, which presents historic trends and planned growth in population, households, and employment in the seven counties of the Region. The population of Milwaukee County declined by almost 113,000 persons over the approximately 30-year period from 1970 to 2003. Despite that trend, the regional land use plan envisions an increase in Milwaukee County population of almost 66,000 persons over the next 30 years. Similarly, employment levels in Milwaukee County declined by about 20,000 jobs from 1990 to 2003. The regional land use plan envisions an increase of over

39,000 jobs in Milwaukee County from 2003 to 2035. This reversal of the decline in population and employment levels in the central county of the Region would be attended by major reductions in the historic growth levels of the outlying counties. For example, from 1970 to 2003 the population of Waukesha County increased by about 140,000 persons. The regional plan, however, envisions that from 2003 to 2035 Waukesha County's population would increase by about 76,000 persons. The plan envisions similar changes in the growth trends of the other collar counties. The regional land use plan, then, seeks to recentralize development within the Region as much as possible, encouraging redevelopment and new development to occur at higher densities in neighborhoods located in areas that either are already served by, or can readily be served by, sanitary sewerage, public water supply, mass transit, and police and fire protection.

Many factors must be taken into account in the development of an advisory land use plan that attempts to influence the land use pattern of a large region. In addition to the availability of water supply that you cite, such factors include provision of transportation facilities and services, sanitary sewerage, stormwater management and flood control, park and open space considerations, the maintenance of a productive agricultural base, air and water quality considerations, and protection of environmentally sensitive areas found throughout the regional landscape.

The Commission has long subscribed to principles which recognize that natural resource base factors should influence the placement and intensity of urban development. This is why, for example, the Commission land use plan seeks to protect the floodlands, wetlands, woodlands, and other environmentally sensitive lands, most of which are found within the Commission-identified environmental corridors. The Commission's regional land use plan recommends preservation of about 23 percent of the Region in these environmental corridors, as shown in Attachment 2 to this letter. This is also why the Commission land use plan seeks to protect the most productive agricultural soils. The regional land use plan recommends that the region's most productive agricultural soils, or prime agricultural lands, be preserved, which account for about 35 percent of the land area of the Region, also as shown in Attachment 2. Groundwater and surface water resources used for water supply are also important considerations in land use planning and recognition of this importance was one of the fundamental reasons why the Commission has long sought to prepare a regional water supply plan. The Commission has always recognized the relationship that exists between land use planning and water supply planning, and indicated at the very beginning of the water supply study effort that, should that planning effort identify any water resource constraints on the development pattern envisioned in the adopted regional land use plan, the Commission would initiate a process to amend the land use plan in an appropriate manner.

What has become clear in the regional water supply study is that water supply is not a limiting factor within this Region with respect to the location of urban development either east or west of the subcontinental divide. Indeed, the study has clearly shown that the relatively modest increment of urban development envisioned in the regional land use plan west of the divide can be accommodated by the available groundwater supplies, with the shifting in recent years of a number of communities from the deep to the shallow aquifer,

and with the recommended shift in the plan of another four water utilities from the deep to the shallow aquifer. Moreover, even the City of Waukesha, as well as all the other communities proposed in the plan to shift from groundwater to Lake Michigan water, could continue to be served by groundwater—with increased reliance on the shallow aquifer—without resorting to Lake Michigan as a source of supply. Accordingly, there is no basis for a change in the regional land use plan based upon water supply considerations.

Two additional points need to be made concerning this matter. The first is that the regional land use plan was prepared over the period 2004 to 2006 with the full and active participation of the City of Milwaukee staff, including the City Planning Director, who served on the Commission Advisory Committee that directed preparation of the plan. All aspects of the plan and of the employment, population, and household forecasts underlying that plan were presented to, discussed by, and ultimately unanimously approved by that Advisory Committee. Under the Commission's cyclical approach to regional planning, the land use plan will again be reconsidered early in the next decade.

Finally, we would note that State law requires counties and municipalities to adopt "smart growth" plans if the county or municipality is to exercise zoning, land subdivision control, or official map regulation. Within southeastern Wisconsin, three of the seven counties have now adopted such plans and three are in the process of completing such plans. These county plans essentially incorporate the adopted regional land use plan. In addition to the county plans, 138 of the 146 municipalities within the Region have prepared, or are in the process of preparing, such "smart growth" plans. With some exceptions, these local plans substantially incorporate the regional land use plan. The few exceptions involved proposed development which goes beyond the regional land use plan.

Comment: *Even if the City agreed that land use and population are good proxies in establishing future water supply needs, we disagree with the assumption that existing land use trends will continue without adjustment for changes in land use policies, changes in population growth trends and changes in economic investments. The study assumes that historic growth patterns from the 1980s and 1990s will continue. No alternative growth scenarios were included in the water supply study. It would be helpful to include a no-growth projection in addition to the projected continuation of past population trends and land use patterns. The City of Milwaukee recommends that the Water Supply Plan not be finalized without designing and evaluating alternatives based on water resource limitations. The Water Supply Plan should also reflect several population and land use scenarios to better bracket future water supply needs.*

Response: As noted above, the Commission will undertake a reconsideration of the regional land use plan shortly after the 2010 U.S. Census is completed. That work will include new population and economic studies that will take account relevant observable and quantifiable trends. Furthermore, any significant changes in State land use policies that may be set forth between now and then by the State Legislature, e.g., State policies that seek to reduce carbon emissions, will also be taken into account, as will the above-referenced set of new county and local "smart growth" comprehensive plans. We look forward to this forthcoming work effort and to the City of Milwaukee's active participation therein.

We should note that "alternative futures" were considered in the preparation of the adopted regional land use plan. These alternative futures included high, intermediate, and low employment and population projections, and attendant county distributions. Historically, these alternative futures also considered differing regional land use patterns, including corridor, satellite city, and uncontrollable sprawl alternative plans, as well as the recentralization land use plan adopted. As noted earlier in this letter, the regional land use plan does not assume historic growth patterns will continue, but rather recommends abatement of those trends. This envisioned recentralization is the basis for the proposed water supply plan and applies to the Cities of Kenosha, Racine, and Waukesha, as well as to Milwaukee.

You also indicate it would be helpful to consider a no-growth projection. While a no-growth scenario is unlikely for the Southeastern Wisconsin Region, such a scenario is approximated by the 2005 water supply conditions described in the planning report, including the extent, condition, and performance of the existing water supply systems serving the Region, as well as the related source water quantity and quality. The existing conditions situation was carefully considered along with planned 2035 conditions in establishing the problems and issues to be addressed by the alternative and recommended plans. To a large extent, those problems and issues would continue to exist under a no-growth scenario. They include excessive drawdown of the deep aquifer, radium standard exceedences, excessive chloride concentrations in the surface waters, and lack of municipal water systems in some existing urban areas with attendant fire protection and water quality assurance needs. Given these factors, the existing conditions situation adequately approximates a no-growth scenario. That scenario does not meet the agreed-upon water supply development objectives, and the attendant problems would require the improvements envisioned in the preliminary recommended water supply plan, or in the alternative, increased reliance on the shallow groundwater aquifer.

Comment: *The Plan evaluates four major alternatives. Each alternative is evaluated based on ground and surface water impacts, capital and operating costs and other environmental impacts. The Plan does not fully address hybrid approaches to meeting Waukesha and other communities' water supply needs. For example, the Plan should consider whether there are situations where blending surface water and ground water resources coupled with water conservation may be the best alternative to meeting future water needs.*

Response: For areas east and west of the subcontinental divide where a Lake Michigan supply is recommended to replace groundwater supplies, the planning process did evaluate three alternatives: 1) enhanced water conservation with reliance on existing deep aquifer sources of supply; 2) enhanced water conservation with reliance on blended shallow aquifer and deep aquifer sources of supply; and 3) enhanced water conservation with Lake Michigan as the source of supply. Evaluation of these alternatives indicated that the City of Waukesha service area could be sustained using either blended shallow and deep aquifer groundwater supplies or Lake Michigan supplies. The Lake Michigan supply alternative was selected for inclusion in the preliminary recommended plan for the following reasons: 1) the favorable environmental impacts attendant to the recovery

of the deep aquifer; 2) the reduction in chloride discharges to surface waters; 3) the favorable impacts on stream flows and inland lake levels; 4) the ability to preserve the groundwater sources for other uses, such as agricultural; and 5) the opportunity to use available excess production capacity at the Milwaukee Water Works with its attendant fiscal benefits to Milwaukee ratepayers.

In the conduct of the regional water supply study, the Commission staff initially did give consideration to evaluating an alternative, particularly with respect to Waukesha, that would involve the blending of Lake Michigan surface water and groundwater resources to meet that utility's future needs. Our reasons for not including such an alternative relate to the following factors: 1) the operational complexities involved in a water utility that delivers water from two different sources where the delivering water utility is not the same as the producing water utility, including the potential for unseemly situations of establishing responsibility should contamination of the delivered water supply take place; 2) the continued adverse environmental impacts associated with heavy reliance on point-of-delivery water softening equipment which could not be eliminated in a blending alternative; 3) the likelihood that any infrastructure cost savings associated with reducing the pumping and delivery of Lake Michigan water would be offset by the costs involved in maintaining groundwater supply infrastructure; 4) the elimination of substantial operational cost savings owing to the continued use of water softening equipment at the place of water delivery; and 5) the need for special consideration and control of selected delivered water quality constituents. While the Commission has not to date included such a plan alternative in the study for these reasons, we would be prepared to do so should you, upon further reflection, indicate to us your desire that such an alternative be prepared and documented.

Comment: *Alternatives for providing additional water to Waukesha appear to rank fairly closely and the Plan does acknowledge that additional evaluation is needed to help identify the best approach. Because Waukesha is not facing a water crisis, the City of Milwaukee recommends a more complete analysis of alternatives, including hybrids of some of the alternatives already included in the Plan.*

Response: A range of alternative areawide plans was prepared and evaluated. We believe that this range is adequate to identify a recommended systems-level plan. As you point out, the preliminary recommended plan does acknowledge that, if the provision of Lake Michigan water to the City of Waukesha service area is adopted and plan implementation efforts get underway, additional, more detailed evaluations regarding the means of return flow will be needed. Because of the level of detail required, such evaluations are properly the subject of preliminary engineering. The preliminary engineering and additional evaluations would be the responsibility of the City of Waukesha should it choose to proceed with that step.

In this respect, it is important to recognize the essential nature of the typical public works development process and the distinction between the regional level systems

planning, local level preliminary engineering, and local level final design and construction phases. The planning process used to prepare the regional water supply plan constitutes the first, or areawide systems planning, phase of this three-phase public works development process. The areawide systems planning phase concentrates on the definition of the problems which need to be addressed and on the development and evaluation of alternative measures for resolution of these problems in an environmentally sound, cost-effective manner. In this first phase, each alternative plan element is developed in sufficient detail to permit a sound, comparative evaluation of the plans, and the selection of an initially preferred plan.

The second phase of the three-phase public works development process, preliminary engineering or local second level planning, is carried out subsequent to the adoption of an areawide systems plan by the implementing units and agencies of government concerned. Under this phase, improvements recommended in the system plan are carried into greater depth and detail. Examples would include preliminary engineering of needed new water supply facilities. The preliminary engineering phase of the project also should involve the development of specific information which may be needed to support an environmental assessment and, in some cases, an environmental impact statement.

Upon acceptance of the findings and recommendations of the preliminary engineering phase by the governmental units and agencies affected, the third or final design phase of the public works development process is initiated. This work should also be carried out by the implementing units and agencies of government concerned and involves the preparation of contract drawings and specifications and final cost estimates.

This process may be iterative and the findings at the second and third phases may lead to reevaluation and revision of the system plan. For example, during the preliminary engineering phase, a new alternative—based on additional information—may be developed, costs of the initially preferred alternative may be found to be excessive, or environmental impacts may prove to be unacceptable. In such cases, a reevaluation and potential amendment of the system-level plan is undertaken. With respect to the regional water supply plans, this could be the case should a component of that plan not prove implementable following the additional evaluation and legal processes involved in the second level of detailed planning. This does not mean, however, that completion of the systems level of planning should be held in abeyance until the results of the more detailed planning, engineering, and environmental studies are known.

Comment: *Much of the Regional Water Supply Plan is devoted to analyzing the capital and operating costs of the four alternative scenarios. The Plan does provide standard engineering costs to compare various options to each other. However the full cost of providing water is woefully underestimated. While the Plan does a good job of standardizing regional information, it does not fully reflect the full cost of improvements to Milwaukee's system that would be necessary to supply water to the*

additional communities. Estimating these costs will require a better understanding of Milwaukee's existing water system. The current Plan understates the full costs associated with serving suburban communities with Milwaukee Water Works water.

Response: As the alternative and preliminary recommended plans were being developed, the staff of the Milwaukee Water Works was asked to review and comment on estimates of the transmission costs entailed in providing Lake Michigan water to the City of Waukesha service area located west of the subcontinental divide, and to certain other communities located east of or straddling the divide. The Milwaukee Water Works staff was unable at that time to provide more detailed cost estimates. Therefore, a specific contingency allowance was added to the plan estimates to cover any unforeseen costs. For the preliminary recommended plan, the costs to implement the connections to the Milwaukee Water Works, including improvements to the system within the City of Milwaukee, were estimated to be $34.2 million, including a contingency allowance of about $8.5 million. Your letter implies that there may now be new, detailed pertinent cost information available from the Milwaukee Water Works. If this information were made available to the Commission, it would be incorporated into development of a final recommended plan. The actual costs entailed will, in any case, have to be more precisely and accurately estimated by the City of Milwaukee staff on a case-by-case basis during preliminary engineering, should the communities concerned approach the City for this purpose.

Comment: *The Plan also does not consider the full environmental costs associated with alternatives that divert water from Lake Michigan. The Great Lakes Water Resource Compact prohibits diversions with few exceptions. In the case of these exceptions, the jurisdiction diverting Lake Michigan water must demonstrate that water will be returned to Lake Michigan. Although this language may have anticipated returning flow through a sewage treatment facility discharging directly to the lake, it is apparent that one option for the City of Waukesha is to return flow as treated wastewater through a local river or stream. This study does not fully evaluate the environmental impact of using existing water bodies to return flow to Lake Michigan. There may be costs associated with impacts to both instream water quality and quantity.*

Response: The regional water supply plan does recognize the need for more detailed evaluations of the potential environmental impacts associated with the City of Waukesha return flow involving Underwood Creek, the Menomonee River, and the Root River assuming that the return flow is to be discharged to one of these streams. The Commission Advisory Committee unanimously recommended that the required more-detailed environmental assessment be made as part of the necessary preliminary engineering. The plan, however, also includes an alternative that would return the spent water directly to Lake Michigan via a pipeline, thus avoiding the need to discharge to any of the streams concerned. In this regard, we note that the Milwaukee Metropolitan Sewerage District and the City of Waukesha have begun discussions concerning the potential environmental impacts of the return flow on Underwood Creek in more detail

than could be done at the systems level of planning. This is a good example of the progressive phased nature of the public works development process previously cited. Moreover, should the preliminary engineering and detailed environmental studies result in a determination by the City of Waukesha not to move forward with a formal diversion application, or should a proffered diversion application by the City of Waukesha ultimately be found wanting with respect to any aspect of the Great Lakes Water Resources Compact and fail to receive the required approvals, then such results will be reflected in a future update of the regional water supply system plan, in accordance with the cyclical nature of the public works development process.

Comment: *The Water Supply Plan provides a good assessment of existing drinking water issues for southeast Wisconsin. It demonstrates that although there are isolated areas of groundwater contamination and drawdowns of some groundwater resources, overall, there is no water supply crisis in southeastern Wisconsin. As such, there is time to fully analyze water supply alternatives with the addition of new technical resources (new models, different paradigms) and new public policy (e.g., the Great Lakes Water Resources Compact). Specifically, the Compact requires us to be much more thorough in any analysis of alternatives based on using water from Lake Michigan outside the basin. There are specific standards in the Compact and additional standards are likely as the Department of Natural Resources moves forward to adopt administrative rules clarifying the intent of the Compact. Because of this, the Plan should not be used as justification for diversion applications since the work was conducted prior to adoption of the Compact and development of state administrative rules. Additional legal findings must be made by any applicant wishing to divert Lake Michigan water. The costs associated with additional investments in infrastructure that may be needed to ensure that return flow requirements are met and water quality is not compromised must also be assessed in any diversion application and should be fully considered in evaluating the costs of any of the water supply alternatives.*

Response: All of the alternative regional water supply plans were specifically developed to meet the spirit and intent of the Great Lakes Water Resources Compact and 2007 Wisconsin Act 227. The regional plan, however, was never intended to be sufficient in terms of meeting the letter of the requirements of either the Compact or Act 227. Rather, as noted above, it was always envisioned that more detailed engineering, legal, and environmental studies would be required in this respect, studies that appropriately are the responsibility not of SEWRPC, but rather of the implementing units and agencies of government concerned. Hence, the regional water supply system plan should not be held out by anyone as complete and full justification for a proposed diversion.

There are only three new diversions proposed in the preliminary recommended plan. One of these—for the central portion of the City of New Berlin—remains in active consideration at this time and, as we understand it, enjoys the support of the City of Milwaukee. A second diversion—the City of Waukesha—is much more complex in nature and is clearly deserving of a significant amount of additional engineering and

environmental assessment. While the regional water supply planning effort found that the proposed water diversion would be viable, taking into account the benefits and costs, broadly defined, both to the environment and to the sending and receiving populations concerned, there is no guarantee that the letter of the Compact and Act 227 can and will be met. Indeed, there is an intentional bias in those laws that disfavors such diversions even if it can be demonstrated that the benefits—both environmental and fiscal—exceed the costs. The only way to ascertain if that is the case will be for the City of Waukesha to proceed with a diversion application. The third proposed diversion in the preliminary regional plan involves that portion of the City of Muskego served by the Milwaukee Metropolitan Sewerage District. Given that Muskego is a straddling community like New Berlin and further given that return flow infrastructure is already in place, it may well be possible to readily implement that recommendation should the City of Muskego ultimately determine to pursue such a course of action.

Comment: *The City of Milwaukee appreciates the hard work done by SEWRPC, its consultants and the Planning Advisory Committee. However, because the Plan clearly demonstrates that there is no water supply crisis in southeastern Wisconsin, we recommend that additional analysis be conducted to reflect existing source water limitations, new modeling capabilities and alternative land use and population scenarios. We also recommend that the adoption of the Water Supply Plan be postponed until the full requirements of the Great Lakes Water Resources Compact can be factored in to alternative scenarios. This includes waiting until the Department of Natural Resources issues administrative rules to administer the Compact.*

Response: The mathematical simulation models developed for the planning effort by the U.S. Geological Survey are state-of-the-art models. The Geological Survey staff has indicated to the Commission staff that no new modeling capabilities currently exist that could be brought to bear. As previously noted, there are no existing water supply limitations that would require a change in the adopted regional land use plan. Moreover, the employment and population forecasts on which the adopted regional land use plan and the preliminary recommended water supply plan are based, we believe, largely, if not entirely, consistent with your implied preferences. The alternative and initially preferred plans are generally consistent with the intent of the Great Lakes-St. Lawrence River Water Resources Compact, and they recognize that more-detailed environmental and legal information and interpretations will have to be assembled and submitted by any applicant for a diversion. We believe that the information currently available is adequate as a basis for the adoption of a system-level regional water supply plan. The Commission has a contractual obligation to its constituent counties that provided the funding for the work to complete the plan as near to the originally specified completion date as possible. Further delay in the completion and adoption of a recommended plan would serve no useful purpose.

In summary, the Commission believes that the regional land use plan and preliminary regional water supply plan offer the following benefits for the City of Milwaukee:

- The regional land use plan, on which the water supply plan is based, envisions a reversal of historic and recent trends in levels of employment, population, and land use development which favor the recentralization of urban development in Milwaukee County and the City of Milwaukee.
- The development envisioned in the regional land use plan west of the subcontinental divide can be supported by the available sources of supply—through a shift from the deep to the shallow groundwater aquifer—without provision of any Lake Michigan supply. Indeed, upwards of one-half million more persons could be supported in the Milwaukee collar counties than envisioned in the regional plan. The land use pattern envisioned in the plan is clearly not dependent upon the expansion of Lake Michigan supplies. Thus, the expansion of the Lake Michigan supplies, or the lack thereof, will have no significant effect on land use development patterns.
- There are no new models which could be used to refine the state-of-the-art groundwater-surface water modeling carried out as part of the regional water supply planning program.
- A hybrid alternative providing for water conservation and blending of Lake Michigan and groundwater supplies for the City of Waukesha service area could be prepared and evaluated should you so desire upon reflection after receiving this letter. With or without such an alternative, the Commission intends to move forward to complete the regional water supply plan this year.

We trust the foregoing adequately responds to your comments. We hope you will agree that the regional plans considered herein are in the best interest of the City of Milwaukee. The Commission and Commission staff would be pleased to meet with you to discuss the issues raised if you think that would be useful to you.

Sincerely,

Kenneth R. Yunker, P.E.
Executive Director

KRY/pk/mlh
#143640 V3 - RWSP BARRETT/MURPHY LTR

Attachment 1

HISTORIC AND PLANNED CHANGE IN POPULATION
IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

County	Historic 1970-2003	Historic 1990-2003	Planned 2003-2035
Kenosha	36,300	26,000	55,900
Milwaukee	(112,900)	(18,000)	65,800
Ozaukee	30,060	11,700	16,600
Racine	20,300	16,100	22,500
Walworth	32,200	20,600	44,400
Washington	58,100	26,600	35,400
Waukesha	139,900	66,500	75,600
Regional Total	203,900	149,500	316,200

Source: SEWRPC.

HISTORIC AND PLANNED CHANGE IN HOUSEHOLDS
IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

County	Historic 1970-2003	Historic 1990-2003	Planned 2003-2035
Kenosha	23,400	11,900	24,000
Milwaukee	42,400	8,000	46,500
Ozaukee	17,700	6,800	7,500
Racine	23,100	9,200	11,100
Walworth	18,200	9,100	17,700
Washington	29,200	13,600	16,200
Waukesha	80,400	36,300	31,800
Regional Total	234,400	94,900	154,600

Source: SEWRPC.

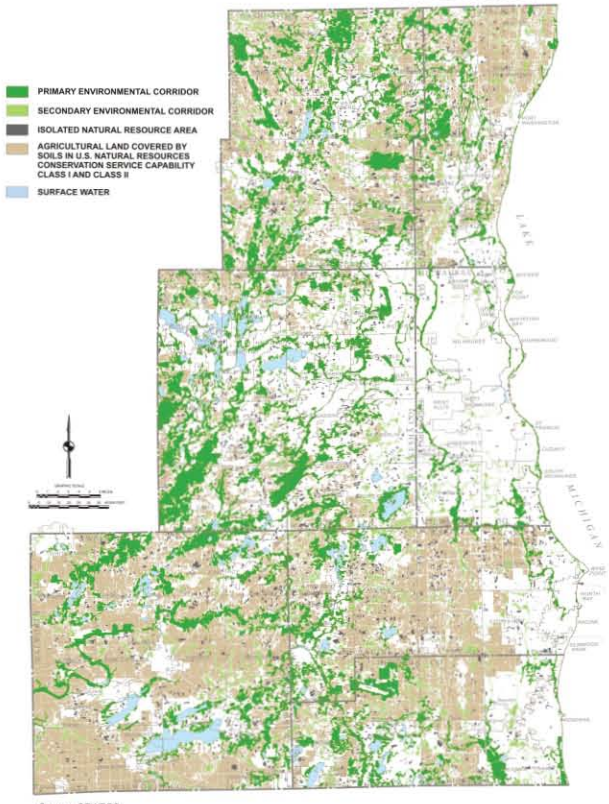
HISTORIC AND PLANNED CHANGE IN EMPLOYMENT
IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

County	Historic 1970-2003	Historic1990-2003	Planned 2003-2035
Kenosha	27,400	17,300	19,900
Milwaukee	64,600	(20,000)	39,100
Ozaukee	27,900	13,900	13,100
Racine	25,400	400	16,600
Walworth	25,900	12,400	17,100
Washington	37,500	15,700	17,100
Waukesha	185,400	76,700	67,300
Regional Total	394,100	116,400	189,300

Source: SEWRPC.

Attachment 2

ENVIRONMENTALLY SIGNIFICANT LANDS AND PRIME AGRICULTURAL
LANDS RECOMMENDED FOR PRESERVATION UNDER THE REGIONAL LAND USE PLAN



Source: SEWRPC.

UNIVERSITY of WISCONSIN
UWMILWAUKEE
College of Letters and Science
Department of Geosciences

Lapham Hall
PO Box 413
Milwaukee, WI
53201-0413
414 229 4561 phone

March 12, 2009

Mr. Robert Biebel
Southeastern Wisconsin Regional Planning Commission
W239 N 1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187

Re: Comments on the Regional Water Supply Plan

Dear Bob,

I'd like to formalize my comments on the regional water supply plan. You have heard most of these before at the meetings of the Technical Advisory Committee or in our various communications.

First, let me state that the Preferred Plan has been a huge undertaking. You and your staff are to be commended to coordinating and managing the whole process. Overall, it is a very good plan which contains many strengths. Most importantly, it proposes steps to provide sustainable water supplies for most communities east of the subcontinental divide, as well as for an number of straddling communities. In addition, the hydrologic impacts produced by those steps are largely acceptable.

I do have a few remaining concerns, however. The Preferred Plan leaves a couple of gaps in an otherwise very complete analysis.

1. It does not address the environmental or hydrologic impacts of the returned treated wastewater that would occur under Option2 if that were adopted. Nor does it include the costs of these impacts in the relative costs of Option 2. I'm very concerned that has left up in the air who will pay for any undesired impacts.

2. In addition, it doesn't explore the viability of the internal suggestion that new municipal wells in the shallow aquifer be preferentially located along waterways receiving treated effluent. This is an option that potentially is more sustainable than Option 1 but less expensive than Option 2.

Finally, as I've pointed out a number of times, the Preferred Plan doesn't really suggest any form of management of water supplies west of the subcontinental divide (except for those straddling communities that might be supplied with lake water and possibly Waukesha). The result is that there will be ever increasing competition between municipalities and private well users in the western parts of our region. And any further growth in that part of the region will necessarily lead to the same sorts of hydrologic impacts that we have seen historically in the ground-water using areas. As a consequence, the unmanaged use of water resources may well prove to be unsustainable at some point beyond 2035. This aspect is not clearly pointed out in the report.

Sincerely,

Douglas S. Cherkauer
Professor

COPY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
W239 N1812 ROCKWOOD DRIVE • PO BOX 1607 • WAUKESHA, WI 53187-1607• TELEPHONE (262) 547-6721
FAX (262) 547-1103

May 19, 2009

Dr. Douglas S. Cherkauer
Professor of Hydrogeology
University of Wisconsin-Milwaukee
Department of Geological Sciences
Lapham Hall 344
P.O. Box 413
Milwaukee, WI 53201

Dear Dr. Cherkauer:

This is to acknowledge receipt of your March 12, 2009, letter providing comments on the preliminary regional water supply plan which was submitted for public review and comment during the period extending from January 2 to March 16 of 2009. We were surprised to have you formally submit comments in this manner, given your position on the planning Advisory Committee and the project technical team. However, given your letter, the following summarizes our responses to your comments.

Comment: *The preliminary plan does not address the environmental or hydrologic impacts and related costs associated with the return flow from the City of Waukesha.*

Response: The impacts of the return flow have been specifically addressed to the extent practicable at the systems level of planning. The preliminary recommended plan contains considerable information on pollutant concentrations and loadings, a conceptual management plan for avoiding problems during high-flow periods, and an assessment of the potential impacts on water quantity, as well as calling for more-detailed environmental assessment analyses as a part of any plan implementation effort. You raised the same issue at the September 23, 2008, Advisory Committee meeting and the issue was discussed in a collegial manner. The Committee agreed, with no objections, to recognize the need for additional environmental analyses of the potential impacts on the receiving waters receiving return flow. Such analyses were recommended to be completed under more-detailed second-level planning to be carried out by the City of Waukesha and others. As you know, that plan also includes an option that would return the spent water directly to Lake Michigan via a pipeline, thus avoiding the need to discharge to any of the streams concerned. The Committee also agreed that the return flow option to be included in the plan be left open pending completion of the more-detailed environmental evaluations. Because of the level of detail required and associated cost, such evaluations are properly the subject of second-level planning and preliminary engineering. The second-level planning and preliminary engineering, including additional evaluations needed to support a diversion application would be the responsibility of the City of Waukesha should it choose to proceed with that step. In this regard, we note that the Milwaukee Metropolitan Sewerage District and the City of Waukesha are considering a cooperative evaluation of the potential environmental impacts of the return flow on Underwood Creek in more detail than could be done at the systems level of planning.

Comment: *The plan did not explore the viability of options considering placement of wells preferentially along waterways receiving treated effluent.*

Response: You have also raised this issue in the past, and it has been discussed and addressed, to the degree practicable at the systems level of planning, by incorporating the recommendation into the recommended well siting procedure. That procedure calls for a "preference to be given to (well) sites adjacent to major rivers receiving treated effluent from municipal wastewater treatment plants." You now indicate that the planning did not specifically explore an alternative plan which focuses on locating municipal wells along streams receiving wastewater treatment plant effluent. Presumably, you are raising this with regard to the City of Waukesha, as you suggest comparisons to "Option 2" which we assume is Subalternative 2 of the Composite Plan, which, in turn, was approved as the preliminary recommended water supply plan by the Advisory Committee.

The option you have suggested is approximated by Subalternative 1 to the Composite Plan, when set forth in the context of the well siting procedure previously noted. Under that subalternative, the City of Waukesha would add up to eight shallow aquifer wells and maintain some of its deep wells. That subalternative does envision one-half, or up to four, of the wells being located generally along the Fox River. Presumably, the others could also be located along the Fox River. However, the location may need to be well south or north of the City, due to existing development and required setbacks from potential sources of pollution. This would likely require additional costs for transmission to other portions of the City. In any case, the cost of such an alternative would be about the same, or likely greater, than Subalternative 1 of the Composite Plan. The cost of Subalternative 1 of the Composite Plan is more than or the same as the preliminary recommended plan, depending upon the return flow option selected for the preliminary recommended plan. Siting of the wells along the Fox River would reduce the baseflow reduction to selected streams, and potentially impact areas along the Fox River south of the City which are adjacent to the Vernon Marsh. In the past you have raised potential negative impacts regarding the siting of such wells. In any case, the potential negative impacts on baseflow to surface waters will be more significant under the refined alternative you have suggested than under the preliminary recommended plan. The other advantages which have lead to selection of the preliminary recommended plan would remain, namely 1) favorable impacts attendant to recovery of the deep aquifer; 2) reduction in chloride discharges to the environment; and 3) ability to eliminate the use of point-of-entry water treatment. Given these considerations and the cost and surface water baseflow considerations, as previously noted, it is concluded that the preliminary recommended water supply plan as approved by the Advisory Committee should remain unchanged. You could raise this issue at the next Advisory Committee meeting. However, it would have been better to have raised this issue earlier so that it could be resolved prior to the selection of a preliminary recommended plan and the related extensive public outreach program.

Comment: *The preliminary recommended plan inadequately addresses management of water supplies west of the subcontinental divide, and there may be sustainability concerns in those areas beyond the year 2035.*

Response: This issue has been discussed in the past, both during and outside of the Advisory Committee meetings. Based, in part, upon those discussions, the plan includes a high-capacity well siting procedure which is designed to mitigate the negative impacts of new well construction on surface waters and existing water supply systems. In addition, the preliminary recommended plan includes the following components which apply to the areas in question:

1. Water conservation generally at an intermediate program level.
2. Recovery of the deep aquifer which affects nearly the entire Region due to a combination of water conservation, conversions to Lake Michigan supplies, and limited increased reliance on shallow aquifer pumping.
3. Development of infiltration facilities and development practices and stormwater management measures designed to enhance groundwater recharge focused for mitigation in areas where the development of wells may have potential negative impacts on groundwater levels or surface water baseflows.
4. Preservation of the majority of the areas in the Region classified as having high and very high recharge characteristics.

In addition to these preliminary recommended plan components, the plan is to include additional auxiliary plan components. These may include elements, such as chloride management, improved management of emerging and unregulated contaminants, and further consideration for cooperative development and system integration for water supply facilities.

When this topic has been discussed in the past both within and outside of the Advisory Committee meetings, our impression was that the recommendations included in the preliminary plan were satisfactory to you. Apparently, that may not be the case. If it is not, you are welcome to raise some specific suggestions at the appropriate time at the next Advisory Committee meeting. You could also informally advise the Commission staff of your recommendations at any time. However, again, it would have been better to have fully addressed this issue earlier.

We trust the foregoing adequately responds to your comments. The Commission staff would be pleased to meet with you to discuss the issues raised if you think that would be useful.

Sincerely,

Robert P. Biebel, P.E., P.H.
Special Projects Environmental Engineer

RPB/pk
#143915 V2 - RWSP CHERKAUER LTR

Midwest Environmental ADVOCATES
pro bono publico

March 12, 2009

Robert Biebel
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, Wisconsin 53187-1607

RE: Comments on SEWRPC's Preliminary Regional Water Supply Plan for Southeastern Wisconsin

Dear Mr. Biebel:

We are submitting public comments to identify three major failings of the SEWRPC Preliminary Regional Water Supply Plan for Southeastern Wisconsin ("Water Supply Plan"), which we are confident further study, evaluation and revisions could rectify.

I. **The Water Supply Plan is Premised Upon an Outdated and Questionable Land Use Plan.**

First of all, we must raise our continuing objection to the underlying premise of SEWRPC's Water Supply Plan, which is based upon the SEWRPC 2035 Regional Land Use Plan ("Land Use Plan"). The Land Use Plan is outdated both in its approach and in its projections.

From the outset, it was clear that the analysis and findings of the Regional Water Supply Study should have been directed by a science-based assessment of the nature and extent of the region's water resources. Instead, SEWRPC's Land Use Plan emerged as the driver of the Water Supply Study and, ultimately, the Water Supply Plan, notwithstanding the record's demonstration of repeated objections by Advisory Committee members, including University of Wisconsin-Milwaukee Professor and hydrogeologist, Doug Cherkauer, and Milwaukee Water Works Superintendent, Carrie Lewis. Of the many assumptions underlying the Land Use Plan and, thereby, the Water Supply Plan, perhaps the most questionable, and most at odds with water resource constraints, is the high increase in growth projected for Waukesha County over the next twenty-five years. Indeed, as reflected in the May 15, 2007 Water Supply Study Advisory Committee meeting minutes, the growth in Waukesha County's population and housing is projected precisely where water supply sources may least be able to accommodate that growth. At this same meeting, Mr. Biebel, you drew attention to several places in the report, including Chapter IV, where it was noted that water supply conditions identified by the Water Supply Plan may identify a need to refine or revise the 2035 Land Use Plan. We say the time to revise the Land Use Plan is now.

Moreover, this projected growth, dependent as it will be on heavy automobile transit and expanded infrastructure costs, is exactly the kind of sprawl and its attendant costs that national planning experts, intent on reducing our oil dependency and carbon emissions, counsel *against*. Indeed, this sprawl is already a major contributor to Waukesha's and Southeastern Wisconsin's non-compliance with federal ozone and fine particulate air quality standards. Following the existing Land Use Plan will only make this non-compliance situation worse. The result will be significant adverse health impacts on our region's citizens, including higher rates of asthma and respiratory illness, as well as the prospect of severe economic growth restrictions for our region overall.

While outdated land use planning of this type may not be surprising given that SEWRPC's Land Use Plan unapologetically rests upon planning principles and plan concepts heralding back to 1966, the citizens and communities in our Southeast Wisconsin region deserve a better—more progressive, intelligent and current—template for growth and development than what SEWRPC is relying upon and, worse, has predicated its Water Supply Plan upon.

The Water Supply Plan's reliance on the Land Use Plan as its driver, rather than vice versa, also has resulted in Plan recommendations with little or no relevance to the sustainability of the region's water resources. For example, whereas the Water Supply Plan asserts that there will be enough water resources to implement the Land Use Plan, at the September 23, 2008 Water Supply Study Advisory Committee meeting, committee member, Doug Cherkauer, pointed to critical areas within the region where this will *not* be the case, notably, in Oconomowoc and Hartford, where existing problems with base-flow reductions will place Western Waukesha County lakes at risk of being drawn down—promising adverse impacts both to the ecology of the lakes and to the assessed value of the lake properties.

Other examples pointing to the fallibility of the Water Supply Plan's assumptions regarding sustainability include the Plan's failure to specifically address or develop plans for the growing population pressures and ongoing environmental concerns in the East Troy/Lake Beulah area. Likewise, the Water Supply Plan fails to take into account the potential cumulative impact of multiple high capacity wells in the region, an omission that is especially concerning given the region's hydrogeology. Moreover, it is our understanding that more sophisticated models exist, including one recently developed by the USGS and other scientists involved in the SEWRPC Water Supply Study, and would assist considerably in predicting impacts to lakes, streams and wetlands under different development scenarios. It is regrettable that SEWRPC has not taken the time and afforded itself the opportunity to take full advantage of these more sophisticated tools.

Yet another critical assumption on the part of the Water Supply Plan, which pertains both to the Plan's sustainability findings and the Plan's recommendation that the City of Waukesha obtain Lake Michigan water, regards its "Strategic Conversion to Lake Michigan as a Source of Water Supply" element. This element assumes that nine communities currently part of MMSD sewage system—including a portion of the City of Brookfield, the City of Cedarburg, the Village of Elm Grove, the Village of Germantown,

the Village of Grafton, the Village of Saukville, and the Town of Yorkville, the central portion of the City of New Berlin and the City of Muskego—will convert from wells to Lake Michigan for their water supply. However, this underlying assumption is, at best, unsupported in terms of whether, when and to what extent these other communities, in fact, will agree to move off the deep aquifer for their water supply, especially in view of the present cost differential between Lake Michigan water and existing groundwater supplies.

Recommendation: Given the foregoing, we recommend that the Water Supply Plan's recommendations concerning the region's water resources be put on hold until further study is undertaken to provide a complete picture of the region's water resources in terms of their sustainability in the face of future demands. After this analysis is completed, more realistic findings could be developed and in turn be used to begin the process of revising the Land Use Plan.

II. The Water Supply Plan Fails to Evaluate or to Call For Further Study of Critical Environmental Impacts to Receiving Lake Michigan Tributary Waters Identified as Recommended Alternatives.

Despite the Water Supply Plan's description and recommendations concerning the three outlined return-flow alternatives enabling a diversion of Lake Michigan water to Waukesha, the Plan plainly fails to assess a wide array of important questions relating to potential water quality and ecosystem impacts that could result from implementation of the recommended alternatives. Contrary to the meaning suggested by the title of the Plan's Chapter IX, "Alternative Plan Comparative Evaluation and Selection of Initially Preferred Plan," the evaluation of alternatives is sorely lacking in terms of return-flow impacts on receiving tributaries.

Recommendation: Any proper "comparative evaluation" as intended by the Great Lakes Compact would, at the very least, compare return flow impacts to the tributary streams being contemplated as potential recipients of return flow discharges, including both Underwood Creek and the Root River. At the very least, a proper comparative evaluation would also examine the relative impacts of developing a separate pipe and treatment system for direct discharge to Lake Michigan or of hooking up to the current MMSD system. Taking just one of these scenarios—the alternative of returning water back to Lake Michigan through Underwood Creek—would at a minimum require SEWRPC to examine the following areas of inquiry bearing upon water quality, water quantity and cost considerations ***before*** reaching any specific recommendations as part of the Water Supply Plan:

1. Are total loading of nutrients and other pollutants to Underwood Creek and Lake Michigan being considered in the permitting process?

2. What effluent limits would Waukesha need to meet to discharge to a restored Underwood Creek that fully meets the fishable and swimmable goals of the Clean Water Act? Who will be monitoring the effects of this effluent on downstream waterways?

3. What impacts might increased flows of Waukesha wastewater in Underwood Creek have on creek restoration efforts underway now or being planned by MMSD, the city of Wauwatosa, Milwaukee County Parks, and others? How would returning flow to Underwood Creek affect the ability of parties to remove concrete channelization in the future?

4. Do the assumptions used about Underwood Creek's capacity to absorb more flow take into consideration extreme run-off events of the kind seen in recent years?

5. What are the impacts of the treated wastewater on water quality of Underwood Creek, which is currently a variance water? Will monitoring be conducted to ensure that this effluent is not having a negative effect on downstream receiving waters?

6. Does Underwood Creek, as a receiving water, contain the same base flow available in the Fox River to dilute pollutants to acceptable levels that ensure compliance with water quality standards?

7. What data exists showing the concentration or loading of each regulated pollutant in the receiving stream prior to addition of the Waukesha effluent?

8. How would the proposed discharge of wastewater impact existing efforts to create a Watershed Restoration Plan for the Menomonee River?

9. Given Underwood Creek's status as one of the flashiest streams in Wisconsin, what are the impacts of the return flow on the safety of local residents and fishermen, especially during high flow events?

10. It is estimated that returning Waukesha's diversion water would increase the daily flow of Underwood Creek by 39%.

    a. What steps will need to be undertaken to prevent erosion?
    b. Who will pay for inevitable erosion damage/repair work?

III. The Water Supply Plan Recommendations Fail to Comply with Key Provisions of the Great Lakes Compact in the Absence of Act 227 Rule-Making

For like reasons, the Water Supply Plan fails to address, much less satisfy, key provisions of the recently enacted Great Lakes Compact or those of Act 227, Wisconsin's statutory implementation of the Compact. Specifically, SEWRPC's Water Supply Plan's recommendations concerning water conservation and the three outlined return-flow alternatives regarding a diversion of Lake Michigan water to Waukesha raise critical

issues pertaining to the Great Lakes Compact and Act 227 implementation in the absence of DNR rule-making, including the following:

- How does a return flow alternative that is not continuous but, rather, sporadic and spaced over the course of many months, even years, conform with the legal requirements for the Great Lakes Compact?

- With respect to the return flow alternative described immediately above, how would return flow to Lake Michigan be monitored? Over what interval? Daily? Monthly? Yearly? A five-year average? How will this be regulated to conform with the Great Lakes Compact?

- How does a return flow alternative that includes the option of discharging Lake Michigan water into the Fox River and thereby the Mississippi River basin (during a two-year storm event or greater and during low flow in the Fox River) conform with the legal requirements of the Great Lakes Compact?

- How does a return flow alternative that will, according to Waukesha Water Utility officials, include substantial quantities (20%) of infiltration and inflow (I & I) water from the Mississippi River basin in its calculations of return flow volume back to Lake Michigan conform with the legal requirements of the Great Lakes Compact?

- How does the conservation program of the City of Waukesha, referenced and relied upon in the Water Supply Study's recommendations, conform with the legal requirements of the Great Lakes Compact? Where in the Study is there an examination of the following pertinent questions:

    a. What water savings have been documented from the start of the City's water conservation program?
    b. What water savings can be tied directly to the City's conservation measures as opposed, for example, to an increase in precipitation?
    c. How does I & I water factor into the City's conservation program?
    d. What additional measures are committed to?
    e. What conservation measures have been rejected and on what basis?
    f. If a diversion is approved to Waukesha, will the city's water conservation programs be continued? If so, how will its compliance be monitored?

- In view of the Water Supply Plan's failure to examine critical water quantity and water quality considerations as described in Section II above, how do *any* of the return flow alternatives outlined in the SEWRPC Water Supply Plan conform with the legal requirements of the Great Lakes Compact and Act 227, specifically the latter's provision that the applicant, in returning water to the source watershed, must document that "[t]he returned water will be treated to protect and sustain the physical, chemical and biological integrity of the receiving waters, including consideration of the impacts of temperature, nutrient loading and flow regimes" ?

Recommendation: It is in view of the above questions—which go to the heart of the Great Lake Compact's regional review process and whose resolution is absolutely dependent upon the Wisconsin DNR's rule-making responsibility—we recommend SEWRPC hold off completion of its Water Supply Plan until Wisconsin has rules in place to guide SEWRPC's recommended alternatives in keeping with the legal requirements of the Compact and Act 227.

Thank you for your attention to the foregoing matters of concern relating to the Preliminary Regional Water Supply Plan for Southeastern Wisconsin. We are hopeful that SEWRPC will commit to undertake the additional studies and efforts, identified above, as required to fulfill the Plan's necessary scope and purpose.

Sincerely,

Jodi Habush Sinykin, Of Counsel
Midwest Environmental Advocates

Submitted on behalf of the following people and organizations:

Ecology Association of New Berlin
Milwaukee Riverkeeper
New Berlin Land Conservancy
1000 Friends of Wisconsin
State Representative Cory Mason
Sixteenth Street Community Health Center
The Great Waters Group Sierra Club
Waukesha County Environmental Action League
Wisconsin Great Lakes Coalition
Wisconsin Wildlife Federation

COPY

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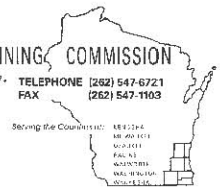


May 13, 2009

Ms. Jodi Habush Sinykin
Midwest Environmental Advocate
617 W. Green Tree Road
Milwaukee, WI 53217-3710

Dear Ms. Habush Sinykin:

This is to acknowledge receipt of your March 12, 2009, letter providing comments on the preliminary regional water supply plan which was submitted for public review and comment during the period extending from January 2 to March 16 of 2009. The response to your letter which follows we believe indicates that there may be some misunderstanding of the regional land use plan as well as of the preliminary regional water supply plan. Therefore, we believe a response to your letter is required in order to correct any misunderstanding.

The following summarizes our responses to your comments structured in accordance with the comments in your letter:

Comment: *I. The Water Supply Plan is Premised Upon an Outdated and Questionable Land Use Plan.*

First of all, we must raise our continuing objection to the underlying premise of SEWRPC's Water Supply Plan, which is based upon the SEWRPC 2035 Regional Land Use Plan ("Land Use Plan"). The Land Use Plan is outdated both in its approach and in its projections.

From the outset, it was clear that the analysis and findings of the Regional Water Supply Study should have been directed by a science-based assessment of the nature and extent of the region's water resources. Instead, SEWRPC's Land Use Plan emerged as the driver of the Water Supply Study and, ultimately, the Water Supply Plan, notwithstanding the record's demonstration of repeated objections by Advisory Committee members, including University of Wisconsin-Milwaukee Professor and hydrogeologist, Doug Cherkauer, and Milwaukee Water Works Superintendent, Carrie Lewis. Of the many assumptions underlying the Land Use Plan and, thereby, the Water Supply Plan, perhaps the most questionable, and most at odds with water resource constraints, is the high increase in growth projected for Waukesha County over the next twenty-five years. Indeed, as reflected in the May 15, 2007 Water Supply Study Advisory Committee meeting minutes, the growth in Waukesha County's population and housing is projected precisely where water supply sources may least be able to accommodate that growth. At this same meeting, Mr. Biebel, you drew attention to several places in the report, including Chapter IV, where it was noted that water supply conditions identified by the

Water Supply Plan may identify a need to refine or revise the 2035 Land Use Plan. We say the time to revise the Land Use Plan is now.

Response: Before responding to the substance of this comment, we would first comment on two statements included in the comment. First, there were no "repeated objections by Advisory Committee members" regarding the use of the adopted 2035 regional land use plan as the land use basis for the regional water supply plan. The issue was raised by Committee member Ms. Carrie M. Lewis at the Advisory Committee meetings in a collegial manner on two occasions and was discussed by the Committee. The Committee concluded that sound planning principles would dictate that the recently completed design year 2035 land use plan should be the basis for developing the regional water supply plan. However, the Committee also agreed, and it is specifically stated in the draft plan report, that if the regional water supply planning effort finds that the land use pattern envisioned in the plan was not sustainable with respect to water supply, the regional water supply plan would recommend that the regional land use plan be revised. As it turns out, the regional water supply planning effort has clearly shown that there are no water supply sustainability issues which would require a change in the adopted regional land use plan.

The second statement concerned is that the regional land use plan and attendant regional water supply plan are based upon a "high increase in growth projected for Waukesha County." The regional land use plan is not based upon projections of population, employment, and existing land use development trends. Rather, the plan is based upon a set of carefully crafted regional development objectives which seek to reverse the historic trends, as demonstrated in Attachment 1 to this letter, which presents historic trends and planned growth in population, households, and employment in the seven counties of the Region. The population of Milwaukee County declined by almost 113,000 persons over the approximately 30-year period from 1970 to 2003. Despite that trend, the regional land use plan envisions an increase in Milwaukee County population of almost 66,000 persons over the next 30 years. Similarly, employment levels in Milwaukee County declined by about 20,000 jobs from 1990 to 2003. Despite that trend, the regional land use plan envisions an increase of over 39,000 jobs in Milwaukee County from 2003 to 2035. The Commission has in the past been criticized for the use of population and employment forecasts in its planning efforts that ignore these decreasing historic trends. This reversal of the decline in population and employment levels in the central county of the Region would be attended by major reductions in the historic growth levels of the outlying counties. For example, from 1970 to 2003 the population of Waukesha County increased by about 140,000 persons. The regional land use plan, however, envisions that from 2003 to 2035 Waukesha County's population would increase by about 76,000 persons. The plan envisions similar changes in the growth trends of the other collar counties. The regional land use plan, then, to the maximum extent practicable, seeks to recentralize development within the Region, encouraging redevelopment and new development to occur at higher densities in defined neighborhood units located in areas that either are already served by, or can readily be served by centralized sanitary sewerage, public water supply, mass transit, and police and fire protection.

You also state that the regional land use plan is outdated. First and foremost, the plan was completed in 2006 and is up-to-date, timely, and accepted by the vast majority of the professional planners and elected officials in the Region, including the planning staff of the City of Milwaukee which was represented on the Commission Advisory Committee that directed preparation of the plan. As you know, State law requires counties and municipalities to adopt "smart growth" plans if the county or municipality is to exercise zoning, land subdivision control, or official map regulations. Within southeastern Wisconsin, three of the seven counties have now adopted such plans and three are in the process of completing such plans. These county plans, essentially incorporate the adopted regional land use plan. In addition to the county plans, 138 of the 146 municipalities within the Region have prepared, or are in the process of preparing, such "smart growth" plans. Again, with some exceptions, these local plans substantially incorporate the regional land use plan. The few exceptions involve proposed development which goes beyond the regional land use plan.

We would also note that the Commission's land use planning efforts have received national and international attention for the pioneering concepts advanced in the original regional land use plan—adopted in 1966 – including the delineation and preservation of environmental corridors and of prime agricultural lands. As shown in Attachment 2 to this letter, the regional land use plan recommends preservation of about 23 percent of the Region lying in its environmental corridors, and another 35 percent of the Region which encompasses its prime agricultural lands. The Commission also pioneered the delineation of protection of floodlands, wetlands, woodlands, and wildlife habitat areas and the preparation and use of detailed aerial surveys in planning. The Commission's 1966 and successive land use plans promulgated the delineation and design of neighborhood units at densities that could support mass transit service with mixed land uses and street patterns that facilitated pedestrian and bicycle movement—all features belatedly reflected in the "new urbanism" movement.

Many factors must be taken into account in the development of an advisory land use plan that attempts to influence the land use pattern of a large region. In addition to the availability of water supply that you cite, such factors include provision of transportation facilities and services, sanitary sewerage, stormwater management and flood control, park and open space considerations, the maintenance of a productive agricultural base, air and water quality considerations, and protection of environmentally sensitive areas found throughout the regional landscape.

The Commission has long subscribed to principles which recognize that natural resource base factors should influence the placement and intensity of urban development. This is why, for example, the Commission land use plan seeks to protect the floodlands, wetlands, woodlands, and other environmentally sensitive lands found within the Commission-identified environmental corridors. This is also why the Commission land use plan seeks to protect the most productive agricultural soils. Groundwater and surface water resources used for water supply are also important considerations in land use planning and recognition of this importance was one of the fundamental reasons why the Commission has long sought to prepare a regional water supply plan. The Commission has always recognized the relationship that exists between land use planning and water

supply planning, and, as previously noted, indicated at the very beginning of the water supply study effort that, should that planning effort identify any water resource constraints on the development pattern envisioned in the adopted regional land use plan, the Commission would initiate a process to amend the land use plan in an appropriate manner.

What has become clear in the regional water supply study is that water supply is not a limiting factor within this Region with respect to the location of urban development either east or west of the subcontinental divide. Indeed, the study has clearly shown that the relatively modest increment of urban development envisioned in the regional land use plan west of the divide can be accommodated by the available groundwater supplies, with the shifting in recent years of a number of communities from the deep to the shallow aquifer, and with the recommended shift in the plan of another four water utilities from the deep to the shallow aquifer. Moreover, even the City of Waukesha, as well as all the other communities proposed in the plan to shift from groundwater to Lake Michigan water, could continue to be served by groundwater—with increased reliance on the shallow aquifer—without resorting to Lake Michigan as a source of supply. Accordingly, there is no basis for a change in the regional land use plan based upon water supply considerations.

Comment: *Moreover, this projected growth, dependent as it will be on heavy automobile transit and expanded infrastructure costs, is exactly the kind of sprawl and its attendant costs that national planning experts, intent on reducing our oil dependency and carbon emissions, counsel against. Indeed, this sprawl is already a major contributor to Waukesha's and Southeastern Wisconsin's non-compliance with federal ozone and fine particulate air quality standards. Following the existing Land Use Plan will only make this non-compliance situation worse. The result will be significant adverse health impacts on our region's citizens, including higher rates of asthma and respiratory illness, as well as the prospect of severe economic growth restrictions for our region overall.*

Response: As noted above, the regional land use plan, on which the water supply plan is based, envisions a reversal of historic and recent trends in employment, population, and land use development. The plan seeks to recentralize urban development within the Region; encourage new development at higher densities in neighborhood units that can be readily served by public utilities and transit. The plan proposes a 13 percent increase in urban land over the next 30 years to accommodate a 24 percent increase in households. In addition, the plan recommends preservation of 58 percent of the Region in environmental corridor and agricultural land uses. This is the opposite of what is implied in your letter.

Comment: *While outdated land use planning of this type may not be surprising given that SEWRPC's Land Use Plan unapologetically rests upon planning principles and plan concepts heralding back to 1966, the citizens and communities in our Southeast Wisconsin region deserve a better—more progressive, intelligent and current—template for growth and development than what SEWRPC is relying upon and, worse, has predicated its Water Supply Plan upon.*

Response: As noted above, your letter has characterized the regional land use plan in a totally misleading and incorrect manner. In fact, the plan is based upon sound planning objectives and includes recommendations which support modern urbanization. The single-purpose planning that you have advocated had long been rejected by the planning profession.

Comment: *The Water Supply Plan's reliance on the Land Use Plan as its driver, rather than vice versa, also has resulted in Plan recommendations with little or no relevance to the sustainability of the region's water resources. For example, whereas the Water Supply Plan asserts that there will be enough water resources to implement the Land Use Plan, at the September 23, 2008 Water Supply Study Advisory Committee meeting, committee member, Doug Cherkauer, pointed to critical areas within the region where this will not be the case, notably, in Oconomowoc and Hartford, where existing problems with base-flow reductions will place Western Waukesha County lakes at risk of being drawn down—promising adverse impacts both to the ecology of the lakes and to the assessed value of the lake properties.*

Response: This comment is also misleading. At the September 23, 2008, Advisory Committee meeting, Dr. Cherkauer did not identify any areas within the Region where the studies indicated that the available water supply was not sustainable, nor did he specifically cite the Oconomowoc and Hartford as areas where "base flow reductions will place western Waukesha County lakes at risk of being drawn down." Dr. Cherkauer did, in a collegial manner, indicate that caution should be used in concluding that a sustainable water supply existed in the areas along the western and southern portions of the Region. He indicted that uncertainties with regard to groundwater use in Jefferson County and northeastern Illinois were a consideration that could influence sustainability of this resource in the future. This issue was discussed in a collegial manner at the Advisory Committee meeting held on September 23, 2008. It was noted that, in the case of northeastern Illinois, there were plans underway for conversion of significant areas to a Lake Michigan supply which would decrease, not increase, the use of groundwater as a source of supply in the expanding Chicago metropolitan area, and especially in that area's northwestern suburbs. In the case of Jefferson County, there are no major pumping centers which would be expected to significantly change the sustainability conclusions. Furthermore, there has been very little drawdown in the deep aquifer on the western boundary of the Region because of the availability of local recharge. Thus, the conclusions in the preliminary plan remain sound with regard to sustainability through the year 2035.

With regard to the statements regarding Oconomowoc and Hartford being critical areas where existing problems with baseflow affect lakes, the proposed regional plan does not envision the need for new water supply facilities for either community, given that Hartford is nearing completion of a new well installation. Most of the lakes in the Oconomowoc area are through-flow lakes, for which water levels are not significantly impacted by groundwater levels. The lakes that are not through-flow lakes are currently experiencing very high lake levels that have persisted for over a year. Thus, the "existing problems with base-flow reductions [that] will place Western Waukesha County lakes at risk of being drawn down" that you report simply are not in accord with facts.

Comment: *Other examples pointing to the fallibility of the Water Supply Plan's assumptions regarding sustainability include the Plan's failure to specifically address or develop plans for the growing population pressures and ongoing environmental concerns in the East Troy/Lake Beulah area. Likewise, the Water Supply Plan fails to take into account the potential cumulative impact of multiple high capacity wells in the region, an omission that is especially concerning given the region's hydrogeology. Moreover, it is our understanding that more sophisticated models exist, including one recently developed by the USGS and other scientists involved in the SEWRPC Water Supply Study, and would assist considerably in predicting impacts to lakes, streams and wetlands under different development scenarios. It is regrettable that SEWRPC has not taken the time and afforded itself the opportunity to take full advantage of these more sophisticated tools.*

Response: This comment, also includes an incorrect statement that "more sophisticated models exist, including one recently developed by the USGS and other scientists. . ." You state further that it is regrettable that SEWRPC has not taken the time to take full advantage of this new model. However, no such model exists. The model used in the development of the regional water supply plan is a state-of-the-art model developed for the Commission by the U.S. Geological Survey (USGS) with assistance from the Wisconsin Geological and Natural History Survey and the University of Wisconsin-Milwaukee Geoscience Educators. We have discussed this with the USGS staff and they agree no model such as you allude to exists which could be brought to bear on this issue.

Your letter also incorrectly indicates that the regional water supply planning does not take into account multiple high-capacity wells in the Region. The plan uses state-of-the-art groundwater-surface water modeling to specifically consider the impacts of all wells needed to serve the Region through 2035. Your comment is totally unfounded.

With regard to your comment regarding the East Troy-Lake Beulah area. As you are well aware, there is ongoing litigation concerning the specific siting of a Village of East Troy well. Because of that situation, and because the issue involved is related to very site-specific issues, it was not considered appropriate for the regional water supply plan to specifically address this issue. However, the general issue involved is addressed in the plan by the recommendation for adoption and application of a new high-capacity well siting procedure designed to avoid similar situations from occurring in other areas.

Comment: *Yet another critical assumption on the part of the Water Supply Plan, which pertains both to the Plan's sustainability findings and the Plan's recommendation that the City of Waukesha obtain Lake Michigan water, regards its "Strategic Conversion to Lake Michigan as a Source of Water Supply" element. This element assumes that nine communities currently part of MMSD sewage system—including a portion of the City of Brookfield, the City of Cedarburg, the Village of Elm Grove, the Village of Germantown, the Village of Grafton, the Village of Saukville, and the Town of Yorkville, the central portion of the City of New Berlin and the City of Muskego—will convert from wells to Lake Michigan for their water supply. However, this underlying assumption is, at best, unsupported in terms of whether, when and to what extent these other communities, in fact, will agree to move off the deep aquifer for their water supply, especially in view of*

the present cost differential between Lake Michigan water and existing groundwater supplies.

Response: This comment again indicates a statement that is incorrect. The City of Cedarburg, Village of Grafton, Village of Saukville, and Town of Yorkville are not part of the Milwaukee Metropolitan Sewerage District (MMSD) sewerage system, as you indicate.

As previously noted, there are options for providing water supplies to the communities you cite using groundwater supplies. The study has concluded that the relatively modest increment of urban development envisioned in the regional land use plan west of the divide can be accommodated by the available groundwater supplies, with the shifting in recent years of a number of communities from the deep to the shallow aquifer, and with the recommended shift in the plan of another four water utilities from the deep to the shallow aquifer. Moreover, even the City of Waukesha, as well as all the other communities proposed in the plan to shift from groundwater to Lake Michigan water, could continue to be served by groundwater—with increased reliance on the shallow aquifer—without resorting to Lake Michigan as a source of supply. However, because of environmental considerations, the plan recommends that these areas be converted to a Lake Michigan supply.

However, the Lake Michigan supply alternative was selected for inclusion in the preliminary recommended plan for the following reasons: 1) the favorable impacts attendant to the recovery of the deep aquifer; 2) the reduction in chloride discharges to surface waters; 3) the favorable impacts on stream flows and inland lake levels; 4) the ability to preserve the groundwater sources for other uses, such as agricultural; and 5) the opportunity to use available excess production capacity at the Milwaukee Water Works with its attendant fiscal benefits to Milwaukee ratepayers. The implementation issue you raise is one which is typically dealt with by the cyclical nature of the typical public works development process and the distinctions between areawide systems planning, local second-level planning and preliminary engineering, and local level final design and construction phases of that process. The regional water supply planning effort constitutes the first, or areawide systems planning, phase of this three-phase public works development process. The areawide systems planning phase concentrates on the definition of the problems which need to be addressed and on the development and evaluation of alternative measures for resolution of these problems in an environmentally sound, cost-effective manner. In this first phase, each alternative plan element is developed to sufficient detail to permit a sound, comparative evaluation of the plans, and the selection of an initially preferred plan. The second phase of the three-phase public works development process, local-level planning and preliminary engineering, is carried out subsequent to the adoption of an areawide systems plan, by the implementing units and agencies of government concerned. Under this phase, improvements recommended in the system plan are carried into greater depth and detail. Examples might include local-level planning and preliminary engineering of needed new water supply facilities. The local-level planning and preliminary engineering phase of the project also can involve the development of specific information which may be needed to support an environmental assessment and, in some cases, an environmental impact statement.

Upon acceptance of the findings and recommendations of the local-level planning and preliminary engineering phase by the governmental units and agencies affected, the third or final design phase of the public works development process is initiated. This work should also be carried out by the implementing units and agencies of government concerned and involves the preparation of contract drawings and specifications and final cost estimates.

The process may be iterative and the findings at the second and third phases may lead to reevaluation and revision of the system plan. For example during the local-level planning and preliminary engineering phase, a new alternative—based on additional information—may be developed, costs of the initially preferred alternative may be found to be excessive, or environmental impacts may be unacceptable. In these cases, a reevaluation and potential amendment of the system-level plan is undertaken. This could be the case in a number of situations should a component of the regional water supply plan not prove implementable following the additional evaluation and legal processes involved in the second level of detailed planning.

Furthermore, if a component of the regional water supply plan does not proceed to preliminary engineering or the final design phase of project development, that component would typically be reevaluated at the time of the next system-level plan update. Likewise, should one or more of the communities you indicate conclude that they do not intend to proceed with implementation of the regional plan recommendations, that decision will then be considered and reflected as necessary in the regional water supply plan updating process. This does not mean, however, that completion of the systems level of planning should be held in abeyance until the results of the more detailed planning, engineering, and environmental studies are known.

Comment: *Recommendation: Given the foregoing, we recommend that the Water Supply Plan's recommendationx concerning the region's water resources be put on hold until further study is undertaken to provide a complete picture of the region's water resources in terms of their sustainability in the face of future demands. After this analysis is completed, more realistic findings could be developed and in turn be used to begin the process of revising the Land Use Plan.*

Response: As noted above, the preliminary regional water supply plan does provide for a sustainable water supply. The municipal sources of water supply envisioned to be used under the initially recommended plan include: Lake Michigan surface water, accounting for 76 percent of the use; deep aquifer groundwater, accounting for 7 percent of the use; and shallow aquifer groundwater, accounting for 17 percent of the use. The Lake Michigan supplies may be assumed to be fully sustainable assuming sound management and a return flow as envisioned in the plan. Water levels in the deep sandstone aquifer under most of the Region are expected to rise under the use and recharge conditions envisioned under the preliminary recommended regional water supply plan. This increase in water levels should ensure the sustainability of this aquifer.

Because unconfined shallow aquifers are hydraulically connected to surface waterbodies, water levels in the shallow aquifer are buffered by the surface water system. As a

consequence, groundwater-derived baseflow to surface waterbodies is a better indicator of impacts on the shallow groundwater system than water levels in the shallow aquifer. These factors were carefully considered in the selection of the preliminary recommended plan. In many of the streams that may be expected to experience reductions in groundwater-derived baseflow, the baseflows are supplemented by discharges of effluent from wastewater treatment plants. For these streams, the impact of groundwater-derived baseflow reductions upon total streamflow may be expected to be small or negligible, since the groundwater withdrawals for the utility systems concerned are returned to the streams through the wastewater treatment plants. The preliminary recommended plan envisions mitigative measures for those waterbodies expected to experience reductions in groundwater-derived baseflow that do not receive contributions of treated effluent; however, some reduction in groundwater-derived baseflow, representing about 2 percent of the total regional baseflow, may be expected. These changes in surface water baseflow range from a loss of about 4.5 percent to an augmentation of about 15 percent on average within each county concerned. Given that groundwater-derived baseflow typically comprises only a portion of total streamflow, this is considered to be an impact within the range considered acceptable. Furthermore, the high-capacity well siting procedures recommended are designed to further minimize the potential for any unacceptable site-specific impacts. It should be stressed that the conversion of selected utilities to a Lake Michigan supply, albeit modest, was recommended, in part, because of the positive impact on the surface water systems.

Comment *II. The Water Supply Plan Fails to Evaluate or to Call For Further Study of Critical Environmental Impacts to Receiving Lake Michigan Tributary Waters Identified as Recommended Alternatives.*

Despite the Water Supply Plan's description and recommendations concerning the three outlined return-flow alternatives enabling a diversion of Lake Michigan water to Waukesha, the Plan plainly fails to assess a wide array of important questions relating to potential water quality and ecosystem impacts that could result from implementation of the recommended alternatives. Contrary to the meaning suggested by the title of the Plan's Chapter IX, "Alternative Plan Comparative Evaluation and Selection of Initially Preferred Plan," the evaluation of alternatives is sorely lacking in terms of return-flow impacts on receiving tributaries.

Response: Again, we would note a misinterpretation of the regional water supply plan. You indicate that the plan fails to ". . . Call For Further Study of Critical Environmental Impacts to Receiving Lake Michigan Tributary Waters Identified as Recommended Alternatives." You were in attendance at the September 23, 2008, Advisory Committee meeting at which the Committee unanimously agreed to call for additional environmental analyses of the potential impacts on the receiving waters being considered for return flow. To quote from the plan report: "Because of the need for further more-detailed environmental assessment of the return flow alternatives, no final recommendations relating to the return flow component is included in Subalternative 2 to the Composite Plan. Rather, the selection of the best return flow option is left open until completion of the more-detailed environmental evaluation during the plan implementation phase."; and, "Should this return flow subalternative be selected and pursued, more detailed studies of the impacts

of providing return flow through discharge of treated effluent into streams tributary to Lake Michigan will be necessary. Such studies would address the issues of water quality, baseflow enhancement, streambank erosion, and recreational use impacts, as well as any other identified issues." This issue is responded to in more detail in response to your next comment.

Comment: *Recommendation: Any proper "comparative evaluation" as intended by the Great Lakes Compact would, at the very least, compare return flow impacts to the tributary streams being contemplated as potential recipients of return flow discharges, including both Underwood Creek and the Root River. At the very least, a proper comparative evaluation would also examine the relative impacts of developing a separate pipe and treatment system for direct discharge to Lake Michigan or of hooking up to the current MMSD system. Taking just one of these scenarios – the alternative of returning water back to Lake Michigan through Underwood Creek—would at a minimum require SEWRPC to examine the following areas of inquiry bearing upon water quality, water quantity and cost considerations before reaching any specific recommendations as part of the Water Supply Plan:*

1. *Are total loading of nutrients and other pollutants to Underwood Creek and Lake Michigan being considered in the permitting process?*
2. *What effluent limits would Waukesha need to meet to discharge to a restored Underwood Creek that fully meets the fishable and swimmable goals of the Clean Water Act? Who will be monitoring the effects of this effluent on downstream waterways?*
3. *What impacts might increased flows of Waukesha wastewater in Underwood Creek have on creek restoration efforts underway now or being planned by MMSD, the city of Wauwatosa, Milwaukee County Parks, and others? How would returning flow to Underwood Creek affect the ability of parties to remove concrete channelization in the future?*
4. *Do the assumptions used about Underwood Creek's capacity to absorb more flow take into consideration extreme run-off events of the kind seen in recent years?*
5. *What are the impacts of the treated wastewater on water quality of Underwood Creek, which is currently a variance water? Will monitoring be conducted to ensure that this effluent is not having a negative effect on downstream receiving waters?*
6. *Does Underwood Creek, as a receiving water, contain the same base flow available in the Fox River to dilute pollutants to acceptable levels that ensure compliance with water quality standards?*
7. *What data exists showing the concentration or loading of each regulated pollutant in the receiving stream prior to addition of the Waukesha effluent?*
8. *How would the proposed discharge of wastewater impact existing efforts to create a Watershed Restoration Plan for the Menomonee River?*

9. *Given Underwood Creek's status as one of the flashiest streams in Wisconsin, what are the impacts of the return flow on the safety of local residents and fishermen, especially during high flow events?*
10. *It is estimated that returning Waukesha's diversion water would increase the daily flow of Underwood Creek by 39%.*
    a. *What steps will need to be undertaken to prevent erosion?*
    b. *Who will pay for inevitable erosion damage/repair work?*

Response: Some of the questions you ask are unnecessary, as the answers are obvious or have been addressed in the plan report. For example, your first question asks if pollutant loadings will be addressed in the permitting process. Wisconsin Department of Natural Resources regulations and procedure require that pollutant loadings be addressed. Another example is the ninth question regarding impacts during high flows. As has been reported numerous times, there would be no return flow discharge to the streams concerned during periods of high stream flow. The proposed regional water supply plan does recognize the need for, and specifically calls for, more-detailed evaluation of the potential environmental impacts associated with return flow involving Underwood Creek, the Menomonee River, and the Root River if the return flow is to be discharged to one or more of these streams. The Commission Advisory Committee recommended that the required more-detailed environmental assessment be made as part of the necessary plan implementation steps of second-level planning and preliminary engineering associated with the City's diversion application. The plan, however, also includes an alternative that would return the spent water directly to Lake Michigan via a pipeline, thus avoiding the need to discharge to any of the streams concerned. In this regard, we would note that the Milwaukee Metropolitan Sewerage District and the City of Waukesha are apparently planning to cooperatively evaluate the potential environmental impacts of the return flow on Underwood Creek in more detail than could be done at the systems level of planning. This is a good example of the cyclic nature of the progressive phased public works development process previously cited.

We also note that by letter dated January 6, 2009, you asked very similar questions to those listed above of the City of Waukesha. It is unclear to us why you would expect the regional water supply plan to answer the same questions you asked the City of Waukesha to address as part of the City's more-detailed second-level planning.

Comment: *III. The Water Supply Plan Recommendations Fail to Comply with Key Provisions of the Great Lakes Compact in the Absence of Act 227 Rule-Making*

For like reasons, the Water Supply Plan fails to address, much less satisfy, key provisions of the recently enacted Great Lakes Compact or those of Act 227, Wisconsin's statutory implementation of the Compact. Specifically, SEWRPC's Water Supply Plan's recommendations concerning water conservation and the three outlined return-flow alternatives regarding a diversion of Lake Michigan water to Waukesha raise critical issues pertaining to the Great Lakes Compact and Act 227 implementation in the absence of DNR rule-making, including the following:

- *How does a return flow alternative that is not continuous but, rather, sporadic and spaced over the course of many months, even years, conform with the legal requirements for the Great Lakes Compact?*
- *With respect to the return flow alternative described immediately above, how would return flow to Lake Michigan be monitored? Over what interval? Daily? Monthly? Yearly? A five-year average? How will this be regulated to conform with the Great Lakes Compact?*
- *How does a return flow alternative that includes the option of discharging Lake Michigan water into the Fox River and thereby the Mississippi River basin (during a two-year storm event or greater and during low flow in the Fox River) conform with the legal requirements of the Great Lakes Compact?*
- *How does a return flow alternative that will, according to Waukesha Water Utility officials, include substantial quantities (20%) of infiltration and inflow (I & I) water from the Mississippi River basin in its calculations of return flow volume back to Lake Michigan conform with the legal requirements of the Great Lakes Compact?*
- *How does the conservation program of the City of Waukesha, referenced and relied upon in the Water Supply Study's recommendations, conform with the legal requirements of the Great Lakes Compact? Where in the Study is there an examination of the following pertinent questions:*
  a. *What water savings have been documented from the start of the City's water conservation program?*
  b. *What water savings can be tied directly to the City's conservation measures as opposed, for example, to an increase in precipitation?*
  c. *How does I & I water factor into the City's conservation program?*
  d. *What additional measures are committed to?*
  e. *What conservation measures have been rejected and on what basis?*
  f. *If a diversion is approved to Waukesha, will the city's water conservation programs be continued? If so, how will its compliance be monitored?*
- *In view of the Water Supply Plan's failure to examine critical water quantity and water quality considerations as described in Section II above, how do any of the return flow alternatives outlined in the SEWRPC Water Supply Plan conform with the legal requirements of the Great Lakes Compact and Act 227, specifically the latter's provision that the applicant, in returning water to the source watershed, must document that "[t]he returned water will be treated to protect and sustain the physical, chemical and biological integrity of the receiving waters, including consideration of the impacts of temperature, nutrient loading and flow regimes"?*

Recommendation: It is in view of the above questions – which go to the heart of the Great Lake Compact's regional review process and whose resolution is absolutely dependent upon the Wisconsin DNR's rule-making responsibility – we recommend SEWRPC hold off completion of its Water Supply Plan until Wisconsin has rules in place to guide

SEWRPC's recommended alternatives in keeping with the legal requirements of the Compact and Act 227.

Response: All of the alternative regional water supply plans were specifically developed to meet the spirit and intent of the Great Lakes Water Resources Compact and 2007 Wisconsin Act 227. The regional plan, however, was never intended to be sufficient in terms of meeting the letter of the requirements of either the Compact or Act 227. Rather, as noted above, it was always envisioned that more detailed engineering, legal, and environmental studies would be required in this respect, studies that appropriately are the responsibility not of SEWRPC, but rather of the implementing units and agencies of government concerned. Hence, the regional water supply system plan should not be held out by anyone as complete and full justification for a proposed diversion.

There are only three diversions proposed in the preliminary recommended plan. One of these—for the central portion of the City of New Berlin—remains in active consideration at this time and, as we understand it, enjoys the support of the City of Milwaukee. A second diversion—the City of Waukesha—is much more complex in nature and is clearly deserving of a significant amount of additional engineering and environmental assessment. While the regional water supply planning effort found that the proposed water diversion would be viable, taking into account the benefits and costs broadly defined, both to the environment and to the sending and receiving populations concerned, there is no guarantee that the letter of the Compact and Act 227 can and will be met. Indeed, there is an intentional bias in those laws that disfavors such diversions even if it can be demonstrated that the benefits—both environmental and fiscal—exceed the costs. The only way to ascertain if that is the case will be for the City of Waukesha to proceed with a diversion application. The third and final proposed diversion in the preliminary regional plan involves that portion of the City of Muskego served by the Milwaukee Metropolitan Sewerage District. Given that Muskego is a straddling community like New Berlin and further given that return flow infrastructure is already in place, it may well be possible to readily implement that recommendation should the City of Muskego ultimately determine to pursue such a course of action.

We hope that upon careful consideration of our response to your letter of March 12, 2009, you will agree that the regional land use and attendant water supply plans are in the best interest of the Region and worthy of your support. The Commission staff would be pleased to meet with you to discuss the issues raised if you think that would be useful.

Sincerely,

Kenneth R. Yunker, P.E.
Executive Director

KRY/RPB/pk/mlh
#143723 V1 - RWSP MIDWEST ADVOCATES LTR

Attachment 1

HISTORIC AND PLANNED CHANGE IN POPULATION IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

County	Historic 1970-2003	Historic 1990-2003	Planned 2003-2035
Kenosha	36,300	26,000	55,900
Milwaukee	(112,900)	(18,000)	65,800
Ozaukee	30,000	11,700	16,600
Racine	20,300	16,100	22,500
Walworth	32,200	20,800	44,400
Washington	58,100	26,800	35,400
Waukesha	139,900	66,500	75,600
Regional Total	203,900	149,500	316,200

Source: SEWRPC.

HISTORIC AND PLANNED CHANGE IN HOUSEHOLDS IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

County	Historic 1970-2003	Historic 1990-2003	Planned 2003-2035
Kenosha	23,400	11,900	24,000
Milwaukee	42,400	8,000	46,500
Ozaukee	17,700	6,800	7,500
Racine	23,100	9,200	11,100
Walworth	18,200	9,100	17,700
Washington	29,200	13,600	16,200
Waukesha	80,400	36,300	31,800
Regional Total	234,400	94,900	154,800

Source: SEWRPC.

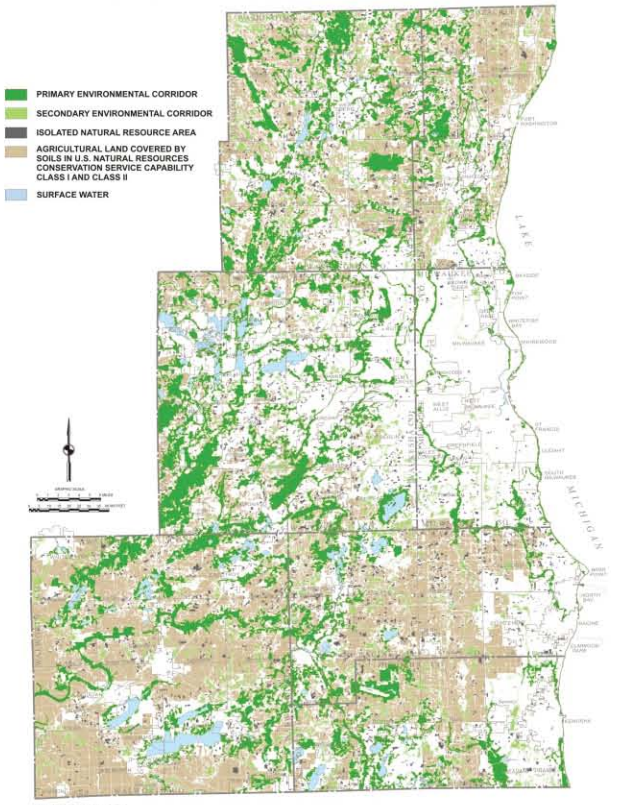
HISTORIC AND PLANNED CHANGE IN EMPLOYMENT IN SOUTHEASTERN WISCONSIN UNDER THE YEAR 2035 REGIONAL LAND USE PLAN

County	Historic 1970-2003	Historic1990-2003	Planned 2003-2035
Kenosha	27,400	17,300	19,000
Milwaukee	64,600	(20,000)	39,100
Ozaukee	27,900	13,900	13,100
Racine	25,400	400	16,600
Walworth	25,900	12,400	17,100
Washington	37,500	15,700	17,100
Waukesha	185,400	76,700	67,300
Regional Total	394,100	116,400	189,300

Source: SEWRPC.

Attachment 2

ENVIRONMENTALLY SIGNIFICANT LANDS AND PRIME AGRICULTURAL LANDS RECOMMENDED FOR PRESERVATION UNDER THE REGIONAL LAND USE PLAN



Source: SEWRPC.

ALLIANCE FOR THE GREAT LAKES
ENSURING A LIVING RESOURCE FOR ALL GENERATIONS

NATIONAL WILDLIFE FEDERATION

March 12, 2008

VIA EMAIL, FAX AND POSTAL MAIL

Kenneth Yunker
Executive Director
Southeastern Wisconsin Regional Planning Commission
P.O. Box 1607
Waukesha, WI 53187-1607
Fax: 262-547-1103
E-mail: sewrpc@sewrpc.org

Re: Preliminary Recommended Regional Water Supply Plan

Dear Mr. Yunker:

The Alliance for the Great Lakes (Alliance) and the National Wildlife Federation (NWF) urge the Southeastern Wisconsin Regional Planning Commission (SEWRPC) to ensure that the regional water supply plan provides guidance that is fully protective of the Great Lakes, a national and international treasure.

Background

On October 3, 2008, the President signed a joint resolution of Congress consenting to the Great Lakes-St. Lawrence River Basin Water Resources Compact (Compact). This followed nearly five years of negotiations between the States and three years of review and approval by the eight Great Lakes state legislatures. Our groups were actively engaged in Compact negotiations and worked with state and federal officials for Compact approval. The Compact provides the comprehensive management and legal framework for achieving sustainable water use and resource protection in the Great Lakes basin.

The Compact framework requires each state to create a management program for water withdrawals and consumptive uses within the Great Lakes basin, a program that Wisconsin created through Act 227 of 2007. While it prohibits new or increased diversions of water outside of the basin, it includes exceptions for public water supply purposes to communities that straddle the Great Lakes basin divide, and to communities located wholly within counties that straddle the basin divide.

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www.greatlakes.org

We commend SEWRPC for its deliberative and comprehensive approach to the development of a regional water supply plan (Plan). The information developed and available from the process will be very useful as southeast Wisconsin communities continue to plan for managing limited water supplies.

We note that the preliminary recommended regional water supply plan includes new and increased withdrawals from Lake Michigan to meet supply needs within the Lake Michigan basin. These withdrawals must comply with the requirements of the Compact and Act 227. The plan also suggests new water diversions from Lake Michigan to communities wholly and partially outside the basin. These communities are classified as "communities in a straddling county" and "straddling communities", respectively under the Compact. SEWRPC is commended for explicitly noting within the plan that new diversions to these community types must comply with the Compact's return flow requirements.

The recommendation for a new diversion of Lake Michigan water to the City of Waukesha (City), a community in a straddling county, was included in the plan following a SEWRPC analysis of two sub-alternatives, as presented in SEWRPC Newsletter #3. In subalternative 1, the City would continue to utilize groundwater as its source of supply. In subalternative 2, the City would be connected to a Lake Michigan supply. Newsletter #3 includes the following conclusions and statements:

> "There are viable options which rely on increased use of the shallow groundwater as a source of supply for communities located west of the subcontinental divide,"
>
> "Both subalternatives to the preliminary recommended plan represent viable water supply plans for the Southeastern Wisconsin Region,"
>
> "When Subalternative 2 is assumed to include the most costly return flow option for the City of Waukesha, the equivalent annual costs of the two subalternatives to the preliminary recommended plan are about equal."
>
> "… both of the subalternatives to the plan are considered to be equally cost-effective and are considered to be viable options which generally meet the plan objectives and standards, …"
>
> "…the plan…is specifically designed to be consistent with the Great Lakes-St. Lawrence River Basin Water Resources Compact…"

The Compact's Section 4.9, Subsection 3. Straddling Counties requires, in part, satisfaction of the following conditions for approval of a diversion:

> a. the Water shall be used solely for the Public Water Supply Purposes of the Community within a Straddling County that is *without adequate supplies of potable water*; and
>
> d. There is *no reasonable water supply alternative* within the basin in which the community is located, including conservation of existing water supplies" (*emphasis added*)

The Wisconsin statute approved to implement the Compact defines *reasonable water supply alternative* at 281.346(1)(ps) as: "... a water supply alternative that is similar in cost to, and as environmentally sustainable and protective of public health as, the proposed new or increased diversion and that does not have greater adverse environmental impacts than the proposed new or increased diversion."

The same Wisconsin statute defines *Without adequate supplies of potable water* at 281.346(1)(zm) as: "...lacking a water supply that is economically and environmentally sustainable in the long term to meet reasonable demands for a water supply in the quantity and quality that complies with applicable drinking water standards, is protective of public health, is available at a reasonable cost, and does not have adverse environmental impacts greater than those likely to result from the proposed new or increased diversion."

The SEWRPC Plan fails to discuss all facets of compliance with the Compact and indicates a near equivalency of the two options. The SEWRPC regional water supply plan documents do not demonstrate that the City of Waukesha is *without adequate supplies of potable water*, nor that it has *no reasonable water supply alternative*.

Conclusion

We fully acknowledge that the City of Waukesha may well be able to ultimately demonstrate compliance with these standards of the Compact in its application. However, this demonstration would not be adequately supported by reference to the regional water supply plan. The limited information supplied in the plan does not satisfy the requirements of the Compact.

We request that SEWRPC: 1) remove all statements in the plan that it "…is specifically designed to be consistent with the Great lakes-St. Lawrence River Basin Water Resources Compact…"; and 2) that the preferred water supply plan be modified to clearly indicate both Waukesha subalternatves and the related analysis. Since a proposal's consistency with a regional water supply plan is a requirement of many water withdrawal approvals under Act 227, water supply plan recommendations should be careful not to go beyond underlying supportive information.

Thank you for the opportunity to submit these comments. Should you have any questions about our comments, please contact Ed Glatfelter at 312-939-0838 x235 or eglatfelter@greatlakes.org.

Sincerely,

F. Edward Glatfelter
Water Conservation Program Director
Alliance for the Great Lakes

Marc Smith
Great Lakes State Policy Manager
National Wildlife Federation

COPY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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May 15, 2009

Mr. F. Edward Glatfelter
Water Conservation Program Director
Alliance for the Great Lakes
17 N. State Street, Suite 1390
Chicago, IL 60602

Mr. Marc Smith
Great Lakes State Policy Manager
Great Lakes Natural Resource Center
213 W. Liberty Street, Suite 200
Ann Arbor, MI 48104

Dear Messrs. Gladfelter and Smith:

This is to acknowledge receipt of your letter of March 12, 2009, providing comments on the preliminary regional water supply plan which was submitted for public review and comment during the period extending from January 2 through March 16 of 2009. Your constructive comments are appreciated.

The following summarizes our responses to your comments:

Issue Raised: *Compliance with the Great Lakes-St. Lawrence River Basin Water Resources Compact is not adequately supported by the regional water supply plan and the plan should be revised to indicate this.*

Response: All of the alternative regional water supply plans were specifically developed to meet the spirit and intent of the Great Lakes Water Resources Compact and 2007 Wisconsin Act 227. The regional plan, however, was never intended to be sufficient in terms of meeting the letter of the requirements of either the Compact or Act 227. Rather, it was always envisioned that more detailed planning, engineering, legal, and environmental studies would be required in this respect, studies that appropriately are the responsibility, not of SEWRPC, but rather of the implementing units and agencies of government concerned. Hence, the regional water supply system plan should not be held out by anyone as complete and full justification for a proposed diversion. With regard to the Waukesha diversion, the regional water supply planning effort found that such a water diversion would be potentially viable, taking into account the benefits and costs broadly defined, both to the environment and to the sending and receiving populations concerned. However, the plan is not intended to provide a guarantee that the letter of the Compact and Act 227 can and will be met by City proposed plan implementation actions. The only way to ascertain if that is the case will be for the City of Waukesha to proceed with a diversion application.

As you recommend, the Commission staff will revise the text of the planning report to clearly indicate the need for additional planning, engineering, legal, and environmental supporting information required to meet the requirements of the Compact.

Issue Raised: *The preferred water supply plan should be modified to indicate both subalternatives considered for the City of Waukesha.*

Response: The preliminary recommended water supply was selected based upon a careful and detailed comparative evaluation of four alternative plans and two subalternative composite plans based upon the planning objectives and standards. These objectives and standards are broadly based and included consideration of land use, costs, environmental impacts, water supply sustainability, public health and safety, and adaptability. The preliminary recommended plan, including provisions for an advanced level of water conservation and the provision of a Lake Michigan source of supply to the City of Waukesha service area, was selected primarily because of its favorable environmental and sustainability characteristics. These include: 1) the favorable environmental impacts attendant to the recovery of the deep aquifer; 2) the reduction in chloride discharges to surface waters; 3) the favorable impacts on stream flows and inland lake levels; and 4) the ability to preserve the groundwater sources for other uses, such as agricultural.

The final regional water supply plan cannot include two differing recommendations for addressing the same identified problem. If the final plan includes a recommendation that the City of Waukesha be served with Lake Michigan water, the planning report will recognize that there is a need for more detailed information to be developed on the environmental and legal aspects of the plan during the second-, or local-, level of planning and preliminary engineering. This relationship between system-level regional planning and second-, or local-, level of planning is typical of the phased approach to public works development. Should the information developed during the second level of planning result in a determination by the City of Waukesha not to move forward with a formal diversion application, or should a proffered diversion application by the City of Waukesha ultimately be found wanting with respect to any aspect of the Great Lakes Water Resources Compact and fail to receive the required approvals, then such results will be reflected in a future update of the regional water supply system plan, in accordance with the cyclical nature of the public works development process. In any case, the alternative of continuing to serve the City of Waukesha by groundwater will be fully described in the planning report.

We trust this responds to your comments. The Commission staff would be pleased to meet with you to discuss the issues raised if you think that would be useful to you.

Sincerely,

Kenneth R. Yunker, P.E.
Executive Director

KRY/RPB/pk
#144034 V1 - RWSP GLADFELTER-SMITH LTR

milwaukee RIVERKEEPER®

March 13, 2009

Robert Biebel
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, Wisconsin 53187-1607

RE: Comments on the Regional Water Supply Plan for Southeastern Wisconsin

Dear Mr. Biebel,

On behalf of Milwaukee Riverkeeper (formerly Friends of Milwaukee's Rivers), we are submitting comments regarding certain shortcomings of the Draft Regional Water Supply Plan for Southeastern Wisconsin. We have identified four areas which we strongly believe require further study and planning to ensure the viability and sustainability of our region's water resources. Although a lot of time and energy has already spent on this effort, we feel additional study and planning is warranted to avoid costly mistakes both economically as well as environmentally. In addition to the comments below, Milwaukee Riverkeeper has also signed onto comments as part of the Compact Implementation Coalition. Those comments detail concerns with the Regional Land Use Plan, Waukesha's proposed diversion, and Great Lakes Compact implementation.

Milwaukee River baseflow reduction concerns

Milwaukee Riverkeeper is very concerned with the modeled reductions in groundwater derived baseflow to surface waters, specifically in the Milwaukee River Basin. Table 4 from the December 2008 SEWRPC Newsletter lists West Bend, Jackson, and Slinger as having adequate existing sources of water supply; however, we believe the sustainability of the water resources in this area is very much in question. The aquifer simulation model produced by USGS shows potentially substantial reductions in baseflow (greater than 10 percent) in headwater streams near West Bend and the Jackson/Slinger area as well as the Milwaukee River from West Bend to Waubeka. In particular, the drawdown downstream of West Bend is severe and corresponds with an area where we have seen drastically declining water quality in recent years. SEWRPC claims that baseflow reductions are not a problem because affected reaches will be augmented with treated wastewater, thus there will be no overall effect on flow. It may appear that quantity effects will be nominal, but water quality may be substantially affected.

We urge SEWRPC to study and recommend other water supply solutions for these communities rather than encouraging depletion of these surface aquifers in important headwater stream communities. The loss of cooler groundwater means a warmer river less suitable to certain species in an already damaged ecosystem that has suffered from mismanaged upstream development. If aquifer drawdown in these areas were to reach higher proportions as stated (up to 71 feet of drawdown), this would have drastic implications for these headwater streams and on the downstream biological communities of the Milwaukee River, Cedar Creek and other tributary streams. Headwater streams provide critical habitat for spawning fish and provide a source of cool water to help regulate warmer temperatures in the main channel of the Milwaukee River. Compounding the problem is the fact that wastewater effluent will increase to the Milwaukee River, and this effluent will most likely add pollutants, nutrients, and increase water temperature and biological oxygen demand.

Further complicating this scenario is the fact that it appears a majority of the high and very high recharge areas in the Quaas Creek watershed and Jackson areas are not protected through the 2035 land use plan. As recharge areas are paved over from development, this could further exacerbate baseflow reductions. In addition, siting of high capacity wells could further decrease baseflows, and Washington County is one of the fastest growing areas in the State of Wisconsin. We are very concerned with siting of a municipal well in the Quaas Creek watershed along with additional wells in Slinger and Jackson, as this will cause additional loss of groundwater recharge areas and critical habitat, and a further reduction in baseflow.

Washington County seems to have received short shrift in the Water Supply Plan as related to other areas. Without a more detailed analysis of this region, the ability to sustain groundwater supplies without having a negative effect on surface water bodies remains in question. We are unclear of whether or not using the deep aquifer, with recharge areas would be a valid option in Washington County to protect surface waterbodies. If a detailed alternatives analysis has already been performed for this area, we would appreciate more information on how alternatives affect water quantity and water quality within the Milwaukee River Basin. If a detailed analysis has not been performed, we recommend further study and evaluation be conducted so that proper management and protection of this important headwater region for the Milwaukee River will occur.

Effects of climate change

If baseflow reductions are combined with projected impacts on water levels from climate change, there could be severe impacts on flows of the Milwaukee River as well as assimilative capacity for wastewater from treatment plants (e.g. West Bend, Fredonia, Cedarburg, Grafton, etc). SEWRPC responded at a public hearing that they did not model for climate change due to complexity and conflicting models. It is our understanding that an excellent climate change model is currently being worked on by DNR, University of Wisconsin, and others as part of the Wisconsin Initiative on Climate Change Impacts (WICCI), and that these models could be very helpful analyzing the effects of climate change on water levels. We recommend that climate change impacts be considered before committing to further drawdown local aquifers whose impact could be made more severe by an altered hydrologic cycle. We concede there are a lot of opposing opinions on how to model for climate change, but would add that the "precautionary principle" be applied, and that we are managing for the "worst" possible scenario and protecting our water resources accordingly.

Groundwater recharge concerns

SEWRPC recommends that rainfall infiltration systems should be encouraged in areas where high capacity wells will be sited in the shallow aquifer (e.g. West Bend) that will lead to probable reductions in baseflow to surface waterbodies. Given the importance of water to ecosystems and the ability for high capacity wells to drastically alter local hydrology/hydrogeology, we feel that this should not be a recommendation, but a mandate.

In addition, SEWRPC also states that important groundwater recharge areas with high or very high recharge will be largely protected through implementation of the 2035 land use plan and also because 65% of the highly rated and 83% of the very highly rated areas are within primary environmental corridors (PEC) and other areas recommended for preservation. Based on our experience, the PEC designation is "advisory" and often doesn't mean that these areas are protected or that regulations aimed at their protection are enforced. PEC designations may mean that sewers are not extended into sensitive areas within the PEC, but this does not curtail SEWRPC redrawing the lines, new tree removal, or other actions that would impair the protection and functionality of these recharge areas. We feel there should be more strict protections put in place at the state level for these high recharge areas whether or not they are part of PECs.

Waukesha diversion concerns

Our complete comments on the proposed Waukesha diversion will come in a separate document submitted by the Compact Implementation Coalition. Pertaining to the Water Supply Study, we are very concerned that SEWRPC could recommend Waukesha receive a diversion of Lake Michigan water and return it through Underwood Creek or the Root River without having done a detailed study of the water quality and quantity impacts that these alternatives would have on these surface waters. The recommendation that Waukesha return flow through Underwood Creek or the Root River without considering the impacts on the water quality and flooding potential of these surface water resources is completely inadequate. Waukesha can and will use this Water Supply Plan recommendation to validate their application for a Lake Michigan diversion. It seems that they will worry about the impacts of return flow after the fact, and regardless of whether return flow options are deemed unacceptable by downstream communities or are protective of our water resources? We also are concerned about how additional pollutant loading from Waukesha will affect our efforts to restore the Menomonee River and improve water quality and restore wildlife habitat through measures such as concrete removal, bank stabilization, etc.

Why did SEWRPC not consider subalternative 1 with some sort of water conservation and reinjection scenario? We feel this is a viable alternative that did not receive the study it deserved due to concerns by SEWRPC that cost and current regulations precluded it. Given the immense costs of the proposed diversion and return flow scenarios to local surface waters, it seems that looking at a reinjection/conservation scenario would be feasible to help address the draw down and negate or minimize the need for Lake Michigan water.

Thank you for your consideration of these comments. Please feel free to contact us with any questions or concerns at (414) 287-0207.

Sincerely,

Cheryl Nenn
Milwaukee Riverkeeper

Jason Schroeder
Water Quality Assistant

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SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
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May 15, 2009

Ms. Cheryl Nenn
Riverkeeper/Interim Executive Director
Milwaukee Riverkeeper
1845 N. Farwell Avenue, Suite 100
Milwaukee, WI 53202

Mr. Jason Schroeder
Water Quality Assistant
Milwaukee Riverkeeper
1845 N. Farwell Avenue, Suite 100
Milwaukee, WI 53202

Dear Ms. Nenn and Mr. Schroeder:

This is to acknowledge receipt of your March 13, 2009, letter providing comments on the preliminary regional water supply plan which was submitted for public review and comment during the period extending from January 2 to March 16 of 2009. In your letter you identify a number of areas of concern which you believe require further study. We believe that the following responses to each of your concerns, indicate that the concerns have indeed been addressed in the planning effort.

Issue Raised: *Milwaukee River baseflow reductions to surface waters and shallow aquifer drawdown in the Washington County portion of the Upper Milwaukee River watershed.*

Response: In your comments you express concerns regarding the groundwater-derived baseflow reductions which may occur in the Milwaukee River basin and in Washington County. You base your concern, in part, on mapping illustrating areas in which baseflow reductions may be expected and on related tabular data set forth in the regional water supply planning documents. As stated in the draft planning report and communicated directly to Mr. Schroeder, the data presented are not intended to be used on a site-specific basis. The data were developed as a basis for comparatively evaluating alternative plans on an areawide basis.

Of the four alternative plans and two composite plans considered, the preliminary recommended plan had the least negative impacts and most positive impacts on the baseflow of streams and shallow aquifer in Washington and Ozaukee Counties, except for Alternative Plan 4 which provided for more extensive conversion of groundwater to Lake Michigan supplies. While the data presented are intended to be used only on an aggregate basis for alternative plan comparison, it is important to note that the baseflow reductions that are most significant in Washington County are related to streams which currently receive artificial flow augmentation far in excess of any expected reduction due to water supply pumping. You also raised the issue of drawdown of the shallow aquifer in Washington County. The potential 71-foot drawdown on the shallow aquifer that you cite is not located in Washington County. In Washington County, the average drawdown expected is less than 1.0 foot, with a maximum of 34 feet in a small isolated area, in the immediate vicinity of a well. This level of drawdown is not considered to be a significant impact. Furthermore, the utilities in Washington County that are recommended to continue to utilize groundwater as a source of supply under the preliminary water supply plan, all have existing water supply facilities which are considered adequate, with only

limited additional expansion being required. Thus, it is envisioned that only three new wells will likely be needed in the Washington County portion of the Milwaukee River watershed over the plan design period.

The preliminary plan, moreover, includes a recommended procedure to be followed in the siting of new high-capacity wells. That procedure, if adopted, would require analyses to determine the site-specific impacts of a proposed well on groundwater contributions to the baseflows of streams and the impacts on inland lake levels. The recommended procedure is to be applied in the early stages of locating sites for proposed high-capacity wells in the shallow aquifer, and is intended to develop the necessary understanding of the performance of the hydrogeological system associated with each candidate site and its surrounding area, and to provide the means for assessing the potential impacts of proposed wells upon nearby existing wells and surface waterbodies. The procedure also provides for monitoring of water levels in the vicinity of new high capacity wells in the shallow aquifer, both during the test well phase of placement, and during operation of such wells over time. The preliminary plan calls for consideration of alternative sites for the pumped well concerned, or for the installation of enhanced rainfall infiltration systems and other mitigating measures if the site-specific analyses indicate that the proposed siting would be likely to adversely affect streamflows or water levels in lakes or wetlands.

Issue Raised: *The impact of wastewater treatment plant discharge on the Upper Milwaukee River.*

Response: You also note concern regarding the impact of wastewater treatment plant effluent discharges on water quality in the Milwaukee River. These discharges currently exist and may be expected to continue to exist, and are not, therefore, related to the regional water supply plan. These discharges are in compliance with the Wisconsin Pollution Discharge Elimination Program permit requirements. A review of the recommendations in the adopted regional water quality management plan update for the greater Milwaukee watersheds[1] recognizes that the existing wastewater treatment plant discharges will continue in the Upper Milwaukee River watershed. The plan indicates that achieving the desired instream water quality conditions will depend predominately upon the implementation of identified nonpoint source pollution abatement measures, and not upon further improvements in the quality of the existing sewage treatment plant discharges.

Issue Raised: *The potential for future development of a portion of the areas categorized as having high and very high recharge characteristics and located in the Quaas Creek subwatershed and "Jackson area."*

[1]*SEWRPC Community Assistance Planning Report No. 50,* A Regional Water Quality Plan Update for the Greater Milwaukee Watersheds, *December 2007.*

Response: You also indicate that a majority of the high and very high potential recharge areas in the Quaas Creek subwatershed and in the "Jackson area" are not protected through the 2035 land use plan. In this regard, we would note that the Quaas Creek subwatershed contains about 4.7 square miles of land area rated as having high or very high potential recharge characteristics. About 2.7 square miles, or about 57 percent, of this area would be protected under the regional land use plan. The Town and Village of Jackson together contain about 9.1 square miles of land area rated as having high or very high potential recharge characteristics. About 8.6 square miles, or 95 percent, of this area would be protected. The Commission staff intends to recommend to the Advisory Committee that this final regional water supply plan include a recommendation that the environmental corridors be expanded to include additional lands categorized as having high or very high recharge characteristics. In addition, the preliminary regional water supply plan recommends the use of development and stormwater management practices designed to maintain the natural hydrology in the areas expected to be developed. These practices include the use of conservation subdivision design, stormwater bioretention systems, rain gardens, and infiltration ponds.

Issue Raised: *The impact of siting new shallow aquifer wells in Washington County and the potential for using the deep aquifer as a source of supply.*

Response: This concern relates to the potential impact of siting new wells by the City of West Bend and the Villages of Slinger and Jackson. These utilities, as well as the City of Hartford, all have existing water supply facilities which are considered to be adequate through the design year of the plan. The Villages of Jackson and Kewaskum—and now with the completion of a new well in the City of Hartford—should have no additional capacity needs through the year 2035. We believe that given the limited need for new wells, the generalized estimates of surface water baseflow impacts, and the recommended high-capacity well siting procedures included in the plan, there need be no concerns over the potential adverse impacts of well siting in the areas concerned.

Issue Raised: *The potential for increased reliance on the deep aquifer for Washington County.*

Response: You also raise the need to consider an alternative plan which relies primarily on the deep sandstone aquifer to serve the utilities in Washington County. The Commission staff initially did give consideration to such an alternative. In the case of the Allenton Sanitary District, the deep aquifer well option was recommended. However, as noted above, in the case of most of the other utilities in Washington County, the water supply facilities needed through the year 2035, which presently rely on shallow aquifer wells, are largely in place and fully comply with State regulations. Washington County has a shallow aquifer which not only typically provides adequate well capacities, but limits the well drawdown impacts. Deep aquifer wells have disadvantages with regard to potential radium contamination which has been found in municipal wells in three Washington County communities, increased pumping and attendant energy use, and the potential for the continued drawdown of the deep aquifer with its associated quality impacts. The City of Hartford Water Utility is in the process of completing a new shallow aquifer well

which will allow abandonment of a deep aquifer well which produced water that did not meet the radium standard. This was done to comply with Wisconsin Department of Natural Resources requirements. Given the status of the existing water supply system and in the absence of well-documented significant negative environmental impacts, it would be impractical to implement an alternative which would provide for abandonment of the existing wells and replacing them with deep aquifer wells.

Issue Raised: *The effects of climate change on the flows in the Milwaukee River and the capacity of the River to assimilate the impacts of wastewater treatment plant effluent discharge.*

Response: As previously noted, the wastewater treatment plant discharges to the Milwaukee River are not a topic which would be directly addressed in the regional water supply plan. The regional water supply plan did, however, include an evaluation of the issue of climate change. The findings of that evaluation are included in Chapter VII of the planning report. Although evidence of climate change over the last 100 years and projections of future climate change are indicated by the findings of various studies, those studies have all been conducted on global, continental, and oceanic scales. Considerable uncertainty is attached to the projections for relatively small areas such as the southeastern Wisconsin. On these small spatial scales, the directions and magnitudes of projected changes and impacts over the next 30 to 40 years are model-dependent, with the suite of models used producing conflicting projections as to impacts relevant to issues of water availability. As a consequence of this, and of the coarse spatial resolution of the models, these projections cannot be used in regional water supply planning. Climate change might indeed have impacts on the flow regimen of the Milwaukee River and its wastewater assimilative capacity, but these impacts, if any, could be positive as reflected in potential increased baseflows, as well as negative in potential decreased baseflows. Any attempt to define these impacts would be purely speculative. We know through the Commission staff's active involvement in the Wisconsin Initiative on Climate Change Impacts that there are ongoing efforts to develop additional information on the potential impacts of climate change in Wisconsin. However, at this time, it should be stressed, no existing models or downscaled data are available which can be used to develop realistic explicit impacts of climate change on groundwater-surface water impacts in southeastern Wisconsin over the period to the year 2035. Given the foregoing, it was concluded by the Advisory Committee overseeing the planning effort—which includes representatives from the Wisconsin Department of Natural Resources, the U.S. Geological Survey, the State Geologic office, and major universities—that there was no practical way to make the potential effects of climate change quantitatively operational in the development of the regional water supply plan. Rather, it was determined to consider the issue by developing a recommended water supply plan which is flexible and adaptable to change.

Issue Raised: *The need to have more stringent regulations to require artificial recharge to mitigate well impacts and to preserve areas with high and very high recharge potential.*

Response: You note that the regional water supply plan recommends artificial infiltration to mitigate the potential impacts of new wells, and indicate that strict measures should be put in

place at the State level to protect areas classified as having high and very high potential recharge characteristics. We would agree entirely with you in this respect. The Regional Planning Commission is, by law, a strictly advisory agency. We will, however, include the essence of your position in this respect in the implementation chapter of the plan report, and recommend appropriate State regulations. Enactment of such regulation will require State action.

Issue Raised: *Concerns regarding the potential water quality and quantity impacts relating to the return associated with the use of a Lake Michigan water supply by the City of Waukesha.*

Response: The preliminary regional water supply plan does specifically address this concern. Pertinent data developed at the systems level of planning are included in the planning report. In addition, the planning report clearly acknowledges that, if the provision of Lake Michigan water to the City of Waukesha service area is adopted and plan implementation efforts are initiated, additional, more-detailed evaluations of the alternative means of return flow will be needed. The Technical Advisory Committee overseeing the planning effort unanimously recommended that the required more-detailed environmental assessments be made as part of the necessary preliminary engineering. The plan, however, also includes an alternative that would return the spent water directly to Lake Michigan via a pipeline, thus avoiding the need to discharge the return flow to any of the streams concerned. Because of the level of detail required, the environmental assessments required are properly the subject of local second-level planning and preliminary engineering. The preliminary engineering and additional evaluations would be the responsibility of the City of Waukesha should it choose to proceed with an effort to obtain Lake Michigan water. In this regard, we note that the Milwaukee Metropolitan Sewerage District and the City of Waukesha may cooperatively evaluate the potential environmental impacts of the return flow on Underwood Creek in more detail than could be done at the systems level of planning.

The findings of environmental assessments carried out in the second-level planning and preliminary engineering may result in reevaluation and revision of the system plan. For example, if, during the second-level planning and preliminary engineering phase, information is developed which would indicate that costs of the initially preferred alternative are excessive, or the environmental impacts are unacceptable, the system-level plan would be amended.

Issue Raised: *Recommendation for further consideration of an alternative providing for water conservation, groundwater supply, and reinjection of treated wastewater into the shallow aquifer—presumably in the Waukesha area.*

Response: The Commission staff did specifically consider the option you note by review of the components of Alternative Plan 3 and Subalternative 1 to the Composite Plan. The highest practicable level of water conservation was considered and is included in the

preliminary recommended plan. The component providing for injection of treated wastewater was not included in the preliminary plan for a number of reasons, including: 1) high cost; 2) limited spacial impact on mitigating baseflow reductions to surface waters; 3) potential public health issues relating to conventional and emerging pollutant contamination of the shallow aquifer; and 4) lack of available sites for the needed seepage cells in areas which do not impact existing residences, wetlands, or other environmentally sensitive areas. The initially recommended plan was selected for the following reasons: 1) the favorable environmental impacts attendant to the recovery of the deep aquifer; 2) the reduction in chloride discharges to surface waters; 3) the favorable impacts on surface water baseflows; 4) the ability to preserve the groundwater sources for other uses, such as agricultural; and 5) the opportunity to use available excess production capacity at the Milwaukee Water Works with its attendant fiscal benefits to Milwaukee ratepayers.

We trust the foregoing adequately responds to your comments. We hope that upon reflection you will agree that the preliminary regional water supply plan considered is in the best interest of the Region. The Commission staff would be pleased to meet with you to discuss the issues raised if you think that would be useful to you.

Sincerely,

Kenneth R. Yunker, P.E.
Executive Director

KRY/RPB/pk/lgh
#143885 V2 - RWSP NENN-SCHROEDER LTR

March 13, 2009

Robert Biebel
Southeastern Wisconsin Regional Planning Commission
P.O. Box 1607
Waukesha, WI 53187-1607

ALSO SUBMITTED VIA FAX, 262-547-1103

RE: *Comments on Water Supply Study and Environmental Justice*

Dear Mr. Biebel:

We are submitting these comments to express our concern that SEWRPC's Water Supply Study violates federal civil rights regulations and environmental justice requirements. As you know, this study was completed by an almost entirely all-white advisory committee, with no representation from organizations representing communities of color and low income communities. Further, the scope of the study - as well as its content - was itself defined by these unrepresentative entities.

We are requesting that you ensure that the Water Supply Study *not* be finalized at this time. Instead, the Water Supply Study must remain pending until there has been meaningful outreach to, meaningful involvement of, and meaningful consideration of the potential effects, and meaningful mitigation of potential adverse effects, of various water proposals on, communities of color and low income communities throughout the region. As set forth below, SEWRPC's own prior commitments, as well as federal civil rights requirements, make it clear that specific evaluation of the effects of the Water Supply Study on low income and minority communities is required before the plan can be finalized.

COMPLIANCE WITH EJTF REQUESTS

The draft Water Supply Study has not complied with recommendations of SEWRPC's Environmental Justice Task Force (EJTF). A failure to do so before the plan is finalized will evidence an intentional violation of civil rights and environmental justice requirements.

On Nov 27, 2007, SEWRPC Executive Director Philip Evenson specifically informed the Environmental Justice Task Force that SEWRPC was looking to the EJTF for guidance "with respect to analyses that should be conducted to consider the impacts of the [Water Supply Study] alternatives on minority and low income populations." (EJTF minutes of 11/27/07, p. 5).

On March 18, 2008, SEWRPC's then-Assistant Director Kenneth Yunker reiterated that the EJTF "has been asked to help define any of the environmental justice considerations to be used in the plan evaluations." (EJTF minutes of 3/18/08, pp. 7-8).

On Oct. 14, 2008, the Environmental Justice Task Force provided this guidance. The EJTF overwhelmingly recommended, with only a single "no" vote, that "***every SEWRPC plan, i.e.*** housing, land use, transportation, ***water***, etc. will ***incorporate a socio-economic impact analysis by a reputable, independent source*** other than SEWRPC before the plan may be adopted to meet the guidelines and specific purposes of the Environmental Justice Task force [sic] as outlined by SEWRPC." (emphases added). (EJTF minutes of 10/14/08, pp. 8-9). This analysis needs to occur - and any recommendations from it meaningfully evaluated and implemented - before the Water Supply Study is finalized.

UNREASONABLE FAILURE TO ADDRESS EFFECTS OF NONCOMPLIANCE WITH REGIONAL PLANS

SEWRPC's failure to meaningfully evaluate civil rights and environmental concerns is compounded by its unreasonable refusal to discuss the possibility, if not the likelihood, that communities seeking water will not be in compliance with the regional land use plan.

At a March 18, 2008 meeting of the EJTF, you were asked by an EJTF member whether the Water Supply Study would consider "worst case" scenarios, *i.e.,* water needs related to community non-compliance with the land use plan. You stated that the Study would not consider such scenarios and would instead be limited to assuming implementation of the land use plan. (EJTF Minutes of 3/18/08, p. 6.)

Whether or not SEWRPC in all situations must evaluate "worst case scenarios," it is completely unreasonable for SEWRPC to ignore the likelihood of non-compliance where, as here, such non-compliance has routinely occurred in the past. SEWRPC itself acknowledged ***- at the same EJTF meeting during which the above discussion occurred*** - that local communities have ignored its land use recommendations, including recommendations that could affect regional water supplies. (EJTF Minutes of 3/18/08, p. 5.)

The refusal to evaluate the potential effects of non-compliance with regional land use plans raises serious environmental justice concerns. Pabst Farms, for example, which was developed despite land use plan recommendations that such development not occur, has few

residents of color or low income residents.[1] Other developments that have occurred counter to land use plan recommendations may well be the same. Development of these communities also exacerbates segregated residential patterns - and Milwaukee/Waukesha is, overall, the most racially segregated region for African-Americans in the entire United States[2] - and if these or other localities use an increased water supply to facilitate or accelerate sprawl development, segregated residential patterns may worsen. At a minimum this potential problem needs to be investigated and evaluated as part of the Water Supply Study, not ignored.

Conversely, if water supply recommendations are structured in a way that disadvantages non-compliant development, low income and minority communities in urban centers may well benefit. Again, this is an issue that the Water Supply Study must address, and the failure to do so violates civil rights and environmental justice requirements.

FAILURE TO EVALUATE ADDITIONAL ENVIRONMENTAL JUSTICE RECOMMENDATIONS

Finally, the Water Supply Study has failed to address issues raised by organizations representing low income and minority communities other than the EJTF, and has failed to evaluate identified methods of ensuring that low income and minority communities are not unfairly burdened by the potential sale of water to suburban communities.

For example, in a letter sent to SEWRPC on Sept. 7, 2007, multiple community organizations articulated civil rights deficiencies in the Water Supply Study process. A copy of that letter is attached.

Unfortunately, SEWRPC's draft Water Supply Study has not addressed those deficiencies. The Water Supply Study never collected data on the racially segregated residential and employment demographic patterns in the region, nor evaluated whether supplying Lake Michigan water to additional communities could exacerbate those patterns. The Water Supply Study never evaluated whether shifting to multifamily affordable housing

[1]There have also been concerns expressed - but not evaluated in the Water Supply Study - that Pabst Farms may have exacerbated the severity of flooding in the region. *See, e.g.*, Scott Williams, "Summit officials may set up special tax district for flood cleanup," *Milwaukee Journal Sentinel* (Posted Feb. 3, 2009).

[2]*See*, "Residential Segregation of Blacks or African Americans: 1980 to 2000," U.S. Census Bureau (Dec. 2004), Ch. 5 and Fig. 5.3

could facilitate water conservation (a suggestion raised by the EPA and mentioned in that letter), and, concurrently, reduce some of those disparities. The Water Supply Study failed to investigate reverse effects, that is, whether declining to supply Lake Michigan water to communities that do not now receive it could assist in reversing some of the segregated residential and employment patterns in the region.

In addition, as SEWRPC is also aware, several years ago the City of Milwaukee Common Council unanimously voted that any water diversion request must "minimize residential, industrial and commercial sprawl, and the accompanying air and water pollution;" "include an analysis of the impact of such diversion on land use, transportation and economic development, and how comprehensive planning, including conservation programs can mitigate any negative effects;" and "[r]equire that any community which seeks water from the Great Lakes adopt a water conservation plan, a "Smart Growth" comprehensive plan, as well as a comprehensive housing strategy which provides affordable housing opportunities." City of Milwaukee Resolution 040646. Moreover, on March 18, 2008, SEWRPC Executive Director Evenson stated that the Water Supply Plan could be used as a basis for requiring assurances from communities receiving water to address such issues as housing, transportation and economic development. (EJTF minutes of 3/18/08, p. 5). Yet nothing in the Water Supply Study discusses these issues, and there is no mention of such potential solutions in the recommendations section (or anywhere) in the study. The Study also fails to evaluate the potential benefits to low income and minority communities that could occur if such assurances were required.

Again, well before the Water Supply Study was completed, SEWRPC was specifically requested to consider these issues. Its failure to address ***any***, much less all, these concerns is further evidence of its intentional disregard of environmental justice and civil rights requirements.

Submitted by:

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cc: Kenneth Yunker, Executive Director, SEWRPC
Todd Ambs, Wisconsin Dept. of Natural Resources
Alan Walts, Environmental Justice Program Manager, US EPA - Region 5
Charles Lee, Acting Director - EPA Office of Environmental Justice

September 7, 2007

Kurt Bauer, Chair, SEWRPC Water Supply Study
Robert Biebel, Secretary, SEWRPC Water Supply Study
Phil Evenson, Executive Director, SEWRPC
Southeastern Wisconsin Regional Planning Commission
P.O. Box 1607
Waukesha, WI 53187-1607

RE: *Environmental Justice and Water Supply Study*

Dear Mr. Bauer, Mr. Biebel and Mr. Evenson:

We are writing to express concern that the SEWRPC Water Supply Study appears to be operating in violation of federal civil rights regulations and environmental justice requirements. We are requesting that you immediately distribute copies of this letter to all Water Supply Study advisory committee members and to all Environmental Justice Task Force members. We do not believe this study can or should be completed until there is meaningful participation from, and the inclusion of meaningful outcomes for, minority and low-income communities in our region.

The Water Supply Study advisory committee is comprised of 33 persons - 32 of whom are white.[1] That study is being funded at least in part with federal funds from the U.S.G.S., which is an entity within the U.S. Department of the Interior. Federal regulations, 43 C.F.R. § 17.3(b)(2), prohibit recipients of federal funds from taking actions that have a discriminatory effect, regardless of whether intentional discrimination exists. Among the prohibited forms of discrimination is "Deny[ing] a person the opportunity to participate as a member of a planning or advisory body which is an integral part of the program." 43 C.F.R. § 17.3(b)(1)(vii).[2] Regardless of intent, it appears that the selection of persons for he water study advisory committee has had the clear effect of discriminating against persons of color, in violation of these regulations.

In addition to the exclusionary aspects of the advisory committee, it appears that the Water Supply Study will fail to address outcomes relevant to civil rights and environmental justice requirements. As stated above, Title VI of the Civil Rights Act prohibits actions that have a discriminatory effect, and this applies to the substantive outcomes of program decisions, as well as to participation in the process.[3] 43 C.F.R. §17.3(b)(3): "In determining the site or

[1]The Advisory Committee also includes at least three corporate representatives, but no representatives of organizations representing low income and minority communities. This disparate treatment in the context of other Advisory Committees is a matter that has been raised with SEWRPC for at least the past four years (and thus was raised before this advisory committee was chosen), but is an issue that the Commission continues to ignore.

[2]EPA regulations are virtually identical, but they also specifically reference participation in "a local sanitation board or sewer authority." 40 C.F.R. § 7.35(a)(5).

[3]*See, e.g.*, 43 C.F.R. §17.3(b)(1)(ii): A recipient may not, "directly or through contractual or

To comply with Title VI, SEWRPC also must consider the fact that the City of Milwaukee has unanimously voted that any water diversion request must "minimize residential, industrial and commercial sprawl, and the accompanying air and water pollution;" "include an analysis of the impact of such diversion on land use, transportation and economic development, and how comprehensive planning, including conservation programs can mitigate any negative effects;" and "[r]equire that any community which seeks water from the Great Lakes adopt a water conservation plan, a "Smart Growth" comprehensive plan, as well as a comprehensive housing strategy which provides affordable housing opportunities." City of Milwaukee Resolution 040646. Given that the City of Milwaukee is home to the vast majority of low income and minority persons in the region, given that its interests and concerns will be directly implicated by any plans regarding water supply, and given that the existing Advisory Committee fails to represent the interests of low income and minority communities, these issues - and outcomes - must be incorporated into the study.

The time is long past due for SEWRPC, and ***all*** SEWRPC committees, to substantively address critical civil rights issues, and to incorporate environmental justice into the outcomes of all planning processes. That includes the Water Supply Study.

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Dear Sirs and Madams:

The Commission has received your communication of March 13, 2009 providing comments on the regional water supply study with particular emphasis on environmental justice matters. Your comments have been entered into the formal record established for this purpose.

In your letter, you express concern over the Advisory Committee guiding the regional water supply study. The Advisory Committee for the Regional Water Supply Study is intended to focus on the technical aspects of water supply planning and engineering. Toward this end, the Committee is largely populated by individuals with extensive knowledge in water supply management issues, in industrial and agricultural water supply needs, and in planning and development issues. As such, the individuals asked by the Commission or directed by others to serve were done so on a race and income neutral basis. We would note that the Committee includes the water utility managers of the Cities of Milwaukee, Racine and Kenosha, which together encompass large minority and low-income populations. In the Committee deliberations to date, those individuals have demonstrated a great deal of concern for the populations they serve.

In your letter, you also cite the need for a socio-economic impact analysis to be conducted of the preliminary recommended regional water supply plan, including analysis of the impacts of that plan on regional demographic and employment location patterns, and civil rights and environmental justice implications for minority and low income populations. Please be advised that the Commission has approved the conduct of a socio-economic impact analysis of the preliminary recommended regional water supply plan, and will include an analysis of the impacts of that plan on regional demographic and employment location patterns, and implications for minority and low income populations. The findings of that analysis will be considered by the Commission in formulating a recommended water supply plan for the region.

In your letter, you also indicate concern over the implications of the potential lack of compliance with the regional water supply plan, specifically whether communities could use increased water supply to facilitate development beyond that recommended in the regional land use and water supply plans. In response, we would specifically note with respect to the water supply attendant to any diversion of water from Lake Michigan under the Great Lakes Compact, the community applying for the diversion–such as the City of Waukesha–will have to submit an estimate of the proposed volume of water to be diverted and a map showing its proposed water supply service area. The water supply service area is to be delineated by this Commission and must be consistent with the adopted area wide water quality management plan. The water supply service area approved as part of any diversion request would limit provision of Lake Michigan water to that service area. No expansion beyond the Waukesha Water Utility service area–as delineated in Chapter IV–which is consistent with the regional land use plan and the area wide water quality management plan–is envisioned in the preliminary recommended regional water supply plan. The only other diversions recommended are to the communities of New Berlin and Muskego. Their expansions would also be delineated to be consistent with the adopted regional land use plan, the area wide water quality management plan and the regional water supply plan.

Lastly, in your letter you cite a City of Milwaukee Common Council resolution which states that any water diversion request of the City must minimize residential, industrial and commercial sprawl, and the accompanying air and water pollution; include an analysis of the impact of such diversion on land use, transportation and economic development, and how comprehensive planning, and conservation programs can mitigate any negative effects; and require that any community which seeks water from the Great Lakes adopt a water conservation plan, a "Smart Growth" comprehensive plan, as well as a comprehensive housing strategy which provides affordable housing opportunities. You suggest that the water supply study should address these issues.

In response, the conditions that the City of Milwaukee, or any other water utility, would place on their provision of water–whether attendant to a diversion request or not–is their prerogative. It is our understanding that the City of Milwaukee most recently agreed to a diversion with the City of New Berlin principally in return for a one-time payment of $1.5 million. In the recent past, the City of Racine agreed

to provide sewer and water service to surrounding municipalities principally in return for tax base sharing with respect to new development.

With respect to the regional plan, the Commission recommends that all counties and communities consider implementation of all elements of the regional plan.

Sincerely,

Kenneth R. Yunker
Executive Director

KRY/PCE/lgh/dad
#144983 v1 - WaterSupplyStudy-EnvJustice Ltr

cc: Mr. Todd Ambs, Wisconsin Department of Natural Resources
Mr. Alan Walts, Environmental Justice Program Manager, US EPA – Region 3
Mr. Charles Lee, Acting Director – EPA Office of Environmental Justice

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Appendix P

CHAPTER 7
SUMMARY AND CONCLUSIONS

SOCIO-ECONOMIC IMPACT ANALYSIS OF THE REGIONAL WATER SUPPLY PLAN FOR SOUTHEASTERN WISCONSIN

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UNIVERSITY of WISCONSIN
UWMILWAUKEE

Center for Economic Development

A Socio-Economic Impact Analysis for the Regional Water Supply Plan

Prepared by:

The University of Wisconsin-Milwaukee Center for Economic Development

July 2010

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Chapter 7

Summary and Conclusions

This socio-economic impact analysis provides an evaluation of each of the six recommendations set forth in the Regional Water Supply Plan, to determine their impact on populations within the Southeastern Wisconsin region. The Center for Economic Development evaluated each of the following six categories of recommendations to determine their socio-economic impact on the Southeastern Wisconsin region:

- Source of Water Supply
- Water Conservation Programming
- Recharge Area Protection
- Stormwater Management Practices
- High Capacity Well Regulations
- Enhanced Rainfall Infiltration Systems

The following questions provided the framework for developing the SEI analysis:

- What impact, if any, would implementation of the regional water supply recommendations have on the overall distribution of population, including racial segregation patterns, in the Region?

- What impact, if any, would implementation of the regional water supply recommendations have on the overall distribution of job locations in the Region?

- What impact, if any, would implementation of the regional water supply recommendations have on the fiscal health and well-being of those communities in the Region wherein reside relatively large populations of low and moderate income families?

- What impact, if any, would implementation of the regional water supply recommendations have on housing and other land use patterns in the Region?

- To what extent, if any, would implementation of the regional water supply recommendations contribute to any failure of the plan to meet Federal regulations attendant to civil rights and environmental justice?

The study was designed to answer these questions by considering each of the RWSP recommendations individually and determining their impact on population, job locations, segregation patterns, housing patterns, the fiscal health and well being of environmental justice communities, and their compliance with federal civil rights and environmental justice regulations.

BASIS FOR THE FINDINGS OF THE SOCIO-ECONOMIC IMPACT ANALYSIS OF THE REGIONAL WATER SUPPLY PLAN

Many of the conclusions drawn in the socio-economic impact analysis rely heavily on the findings in Technical Report No. 47, Groundwater Recharge In Southeastern Wisconsin Estimated By A GIS-Based Water-Balance Model and in Technical Report No. 41, A Regional

Aquifer Simulation Model for Southeastern Wisconsin. These studies were developed as part of the Regional Water Supply Planning process by the Southeastern Wisconsin Regional Planning Commission (SEWRPC), the Wisconsin Geological and Natural History Survey (WGNHS), the United States Geological Survey (USGS), the Wisconsin Department of Natural Resources (DNR), University of Wisconsin − Milwaukee and other Wisconsin groundwater experts. The data compiled by these studies currently provide the latest, most thorough examination about what is known of the groundwater supply in southeastern Wisconsin. The science concludes that southeastern Wisconsin is currently a water-abundant Region, and suggests that the provision of Lake Michigan water to suburban communities is not essential as existing groundwater sources, if properly managed, are of sufficient quantity and quality to support projected development through the year 2035. No other studies of which we are aware contradict the conclusions of the WGNHS, USGS, DNR, SEWRPC, and other agencies.

We emphasize that while existing studies suggest that regional groundwater supplies can sustain development for the near future in most areas not currently receiving Lake Michigan water, there are several important caveats. First, little is known about the sustainability of groundwater supplies beyond the year 2035. Existing studies do not extend beyond that year. Second, existing studies base their projections about the sustainability of groundwater supplies on current land use plans, which can be altered. Changes in regional land use plans may require that conclusions about the sustainability of groundwater supplies be reexamined. Additionally, studies emphasize that groundwater supplies in certain areas of the region are likely to be sustainable only if properly managed including conversion of some utilities which are east of the subcontinental divide or straddle the divide to Lake Michigan supplies. Finally, the use of groundwater does have impacts on base flows to surface waters which are variable across the region.

Although the Regional Water Supply Plan addresses recommendations for each of the 78 public utilities in the seven-county southeastern Wisconsin region, most of the socio-economic impact analysis was limited to developing an understanding of the relationship between the 5 existing or potential Lake Michigan water service providing utilities and the 9 potential Lake Michigan receiving utilities. During the scoping phase of the SEI analysis, it became clear that the relationship between potential water providing utilities and receiving utilities would be the likely source of any socio-economic imbalances, and due to this potential for conflict, this dynamic should be explored and evaluated.

The evaluation of the RWSP took into consideration additional relevant plans, including SEWRPC's Regional Land Use Plan (RLUP), and relevant local and countywide comprehensive plans, including the planned land use components. The regional land use plan and the land use elements of the comprehensive plans provide the necessary components for understanding how the recommendations set forth in the RWSP will impact development and land use. CED compared existing and planned land uses projected in both the local comprehensive plans and the RLUP for specific communities in order to determine whether or not the land use patterns within the areas proposed for expansion or conversion under the RWSP could have an impact on environmental justice.

Review of Socio-Economic Trends in Southeastern Wisconsin

The historic development patterns in Southeastern Wisconsin outline the need for a socio-economic impact analysis. CED summarizes these historic trends in population, jobs, and income in Chapter's 2, 3, and 4 for each of the communities and counties selected for this study. The data indicate that over the past 50 years, there has been an outward migration of population and jobs from the large lakeshore manufacturing cities to the outlying counties, suburbs, and exurbs. The loss of a manufacturing-based economy and the

movement of economic and development activity inland created a negative impact on jobs and income in the historic central city areas. Data indicate that a significant increase in the number and percent of low-income persons or families living at or below the poverty level has occurred in the cities of Kenosha, Milwaukee, and Racine while it has declined in many of the selected suburban communities. Racial and ethnic minority and low-income populations have been disproportionately affected, and these populations have become increasingly concentrated in the cities of Kenosha, Milwaukee, and Racine.

In order to gain a better understanding as to how the six RWSP recommendations may impact the community over the planning period, CED also evaluated job projections and developed population projections by race, ethnicity, and disability for the year 2035. CED's cohort component model projects both numerical and proportional growth of the minority populations in each of the "selected communities" through the planning year 2035, although increases will be negligible in some communities. If trends over the past 50 years continue, migration of the White Alone, Non-Hispanic populations from the Cities of Milwaukee and Racine will continue to contribute to growth in suburban areas, and the White Alone populations in the cities of Kenosha and Waukesha are projected to decline in number and proportion while increases in minority populations will account for all of the population growth in those cities.

These trends indicate the need to evaluate the relationship that water distribution may have on development.

Evaluation: Is the way in which water is distributed a constraint on development?
Although the USGS and SEWRPC studies indicate that problems with groundwater quality and quantity are not widespread and are based on isolated conditions, and that groundwater resources are not currently a constraint on development in southeastern Wisconsin, there is ongoing debate over whether or not access to Lake Michigan water is necessary to support future development in parts of the region. Based on input from the focus groups and website comments, much concern was expressed that the provision of Lake Michigan water to the purchasing communities would promote continued sprawl development, particularly in the western suburbs where it is perceived that the proposed service area expansion provides considerable room for development. Assertions were made that the Regional Water Supply Plan failed to evaluate whether limiting growth to infill development would result in more regional equity.

During the scoping phase of the SEI study, it became evident that the relationship between water distribution and development lies at the center of this socio-economic impact analysis and that having a clear understanding of the relationship between water distribution, water source, land use, and development is necessary for identifying or evaluating any potential socio-economic impacts. In order to address part of this issue, CED held a series of focus groups with planners, utility managers, and developers to gain a better understanding of the relationship between water, water infrastructure, and development in southeastern Wisconsin.

- *Planners and utility managers participating in focus groups for this study did not view the source of supply as a potential constraint on development. Rather than the source of supply, they claimed that it is the costs associated with providing water and other infrastructure that generally has an impact on the development process.*
- *Additionally, the developers participating in focus groups expressed the view that the source of water would not have an impact on development, whether lake water or groundwater, and that the critical element was municipally-provided water and the ease with which the developer can tap into the existing infrastructure.*

A review of past socio-economic trends, as shown in Chapters 2, 3, and 4, indicates that there have been significant declines in income and other growth indicators over the past 40 years in the cities of Kenosha, Milwaukee, and Racine, while growth and development have tended to favor the suburban communities. The data also indicates that there are continued and growing socio-economic imbalances within the region that have had an increasingly negative impact on the larger urban core areas, particularly in the cities of Milwaukee and Racine. The question has been raised regarding land use changes within the projected service areas, whether or not any potential development within the undeveloped areas could have an impact on any socio-economic imbalances within the region.

Based on CED's land use analysis, the delineations of the existing and proposed utility service areas include lands that are for the most part, either currently developed or un-developable under the RLUP. The land use analysis also indicates that the majority of undeveloped lands within the projected service areas are primarily infill development. Under the RWSP, growth is limited to the existing development as well as to primarily infill developable areas within the proposed expanded water utility service areas. It is therefore not anticipated that either the projected population growth or the distribution of ethnic and racial minorities, or disabled populations as projected under the CED cohort component analysis will be caused by implementation of the recommendation to change sources of water supply. Any major population increases would be based not only on a combination of fertility, mortality, and migration, but also on an incremental growth due to expansion of the water utility service areas into areas that are currently developed. These areas were delineated under the RLUP, and based on their projected densities and land, as set forth under their respective adopted comprehensive plans, should be considered serviceable by either water or sewer utilities.

- *Based on the land use findings, it is unlikely that the recommendation for the selected communities to change water sources, from groundwater to Lake Michigan, would yield any significant socio-economic imbalances through 2035.*
- *The implementation of this recommendation presumes the development of an intergovernmental cooperative agreement and water service purchase agreement in which two or more communities would have to be in agreement over the amount of water to be provided and the delineation of the water service area. This recommendation allows for the possibility that existing regional socio-economic imbalances could be rectified through an intergovernmental cooperative agreement.*

These issues needed to be addressed prior to an evaluation of each of the six recommendations under the RWSP.

SUMMARY: EVALUATION OF THE REGIONAL WATER SUPPLY PLAN RECOMMENDATIONS

The questions listed at the beginning of this chapter provided the framework for the socio-economic impact analysis. Each of the six recommendations in the RWSP was evaluated in light of the following topics addressed:

- Impact on the population distribution, including racial segregation patterns (Chapter 2)
- Impact on job growth and job patterns (Chapter 3)
- Impact on low- and moderate- income families (Chapter 4)
- Impacts on housing and other land use patterns (Chapter 5)
- Impact on Environmental Justice (Chapter 6)

Source of Supply

Based on results from the focus groups, changing the source of water supply appears to be the most contentious recommendation in the RWSP due to the potential for conflict between some of the utilities and their communities. A total of 23 potential water utility service areas and 78 existing utilities were evaluated under the RWSP. Of the 78 existing utilities, it was recommended that 27 remain on Lake Michigan supply and 42 utilities remain on groundwater supply. The potential for conflict would only arise between 9 existing utilities recommended to be converted from groundwater to Lake Michigan as the source of supply, 2 new utilities proposed to utilize Lake Michigan water, and 5 potential provider communities. Due to the potential for conflict between providing and receiving communities, much of the analysis focused specifically on these 16 utilities.

Existing Utilities to Remain on Current Supply

The following findings apply to the 27 existing utilities recommended to remain on Lake Michigan supply, and the 42 existing utilities to remain on groundwater supply.

- *It is anticipated that population growth or racial and ethnic population patterns will not be affected by the recommendations to remain on the current source of supply.*
- *It is anticipated that future job growth will not be affected by the recommendations to remain on the current source of supply. With a known source of supply, job growth will likely be impacted by other economic factors.*
- *Each of these communities has a reliable, sustainable water supply that can support existing and planned development within their delineated water service boundaries. Therefore it is anticipated that the recommendations to remain on the current source of supply will have no impact on future land use or housing patterns.*
- *PSC regulates water utility rate structures to ensure that water rates are distributed fairly to users across the system. Therefore it is not anticipated that remaining on the current source of supply will have a financial impact on low-income or disabled households.*
- *There would be little to no adverse environmental or human health effects or impacts to these communities.*

Existing Utilities to Change Source of Supply

The following findings apply to the nine utilities recommended for conversion from groundwater to Lake Michigan as source of supply. The recommendation proposal to change the source of supply was based on a number of factors including favorable environmental impacts to aid in the recovery of the deep aquifer; to improve or maintain baseflows to surface waters; to reduce chloride discharges to streams; to preserve groundwater for other uses; and to take advantage of the Milwaukee Water Work's excess capacity which has helped keep production costs low and could provide associated fiscal benefits for Milwaukee residents.

- *Past trends indicate that a significant increase in the number and percent of low-income persons or families living at or below the poverty level has occurred over the past 40 years in the cities of Kenosha, Milwaukee, and Racine while it has declined in many of the selected suburban communities. These trends are likely to continue regardless of source of supply.*
- *Ultimately, this recommendation presumes the development of both a water purchase agreement and an intergovernmental cooperative agreement between purchasing and potential providing utilities.*
    - *This recommendation provides an opportunity for communities to engage in the negotiation process, to engage in trade either for services or monies, and to offset any potential negative socio-economic impacts, real or perceived, that might exist between the communities.*

- *Under a typical purchase agreement, customers within the purchasing utility would have to pay for the costs of the distribution infrastructure, including the costs to hook onto the Lake Michigan system; these costs would be included in new rates developed by each of the receiving utilities to equitably disperse any additional costs among consumers.*
- *Wholesale rate structures developed by the providing utility would have to take into account the addition of each utility and its potential impact on its own system.*
- *Any new users within the proposed service areas would be subject to an impact fee or other assessment to hook onto the existing system. Under each new purchase agreement, any negotiated upfront fees or monetary assessments, including those used to cover the provider community's costs, would likely be distributed among the receiving utility's consumers within their rate structures.*
- *Both the receiving and providing community would have to be in agreement regarding the proposed delineated service area along with the amount of water that would be provided. This assures that growth in the receiving community would be a known factor.*
- *In any new purchase agreement, any upfront fees negotiated through an intergovernmental agreement would also be distributed among the receiving utility's consumers within their rate structures.*
- *Based on the purchase agreement, provider and purchasing communities would be able to negotiate a non-compete term to avoid job and business "poaching".*

- *The recommendation helps to improve system efficiency, keep system costs low, and ultimately, encourage lower rates. The decision to switch five of the nine selected utilities[1] was based, in part, on the excess capacity of Milwaukee Water Works which currently utilizes only about half of its designed water production capacity. In order to serve additional wholesale utilities, some of the other Lake Michigan producer's facilities would need to invest in major expansions, and the costs of the upgrades would be passed along to new customers.*
  - *Based on the existing regulatory oversight in place by the Public Service Commission (PSC), water utility rates are intended to be designed to protect existing customers from having to subsidize the needs of new customers.*
  - *Any new users within the proposed service areas would be subject to an impact fee to hook onto the existing system, which would have to be factored into the rate structures for both the receiving and providing utilities.*
  - *It is anticipated that the water rates in the communities served by a Lake Michigan supplier, including both retail and wholesale customers, would be reduced if the provider utility's service area and customer base were to expand. This would apply to all of Milwaukee County and the Racine and Kenosha Urban Service areas. The reason for this is that the fixed costs of the providers make up the greatest portion of the rates (typically 70 percent or more). These fixed costs would be distributed over a larger base, resulting in reduced rates for all customers and potentially benefiting those areas with a higher percentage of lower income populations.*
  - *In the case of the Waukesha Water Utility, based on the cost differentials between the alternatives set forth in its Great Lakes diversion application, it*

[1] The proposed existing utilities that would most likely rely on purchasing wholesale water from Milwaukee Water Works include the City of Brookfield Municipal Water Utility (limited to portion east of the subcontinental divide), Village of Germantown Water Utility, City of Muskego Public Water Utility, City of New Berlin Water Utility, and the City of Waukesha Water Utility.

appears unlikely at this time that the difference in overall cost between the Lake Michigan option and a groundwater option would result in significant socio-economic impacts. Additionally, it is unlikely that any of the Waukesha water alternatives would have negative socio-economic impacts on Milwaukee Water Works users based on cost.

- *This recommendation was made, in part, to aid in improving local groundwater quality. If carried out in environmentally sensitive ways, this should improve environmental quality for all populations.*
    - *Compared to a "do nothing" option, it is unknown as to whether or not future water service area expansions would follow a compact urban design and therefore it is impossible to establish a conclusion as to whether or not future actions outside of the plan would have adverse environmental or disproportionately adverse impacts on the communities.*

New Utilities

The following findings apply to the 21 potential new utilities recommended to utilize groundwater supply and the 2 new utilities to utilize Lake Michigan supply.

- *The development of a new utility to serve areas of existing development would only occur if there was a demonstrated local need and initiative.*
    - *Demonstrated needs often include health issues concerning water quality, such as arsenic or radium, safety issues such as fire protection services, or cost concerns such as private well treatment costs.*
    - *In such cases, a municipal system would likely be the most beneficial to all involved including low-income persons within the proposed service area.*
- *For the 21 potential future utilities to utilize groundwater supply, which are predominantly located around lakes in the western portion of Waukesha County or in the Fox River watershed throughout Racine and Kenosha Counties, it is unlikely that the development of such systems would have an impact on population growth or minority or ethnic distribution patterns.*
- *The 21 potential future utilities recommended to utilize groundwater were delineated based on existing development, therefore it is unclear whether or not the development of a water utility system could have an impact on job growth.*
- *For the 2 new utilities to utilize Lake Michigan supply; due to limited lands for development, it is unlikely that development of a municipal water supply would spur new job growth, although it could help to ensure the viability and safety of existing businesses and promote redevelopment efforts.*
- *It is unlikely that the development of such systems would have an impact on population growth or minority or ethnic distribution patterns as the primary basis for the delineation of the 23 potential future utilities is existing development.*
- *It is unlikely that the delineations created under the RLUP would have a major impact or shift in land uses or housing patterns within the region. The delineations of the newly proposed utilities were based either upon areas of existing urban development that most likely could be served by municipal water utilities, or on areas in which there are certain environmental considerations that would need to be addressed.*
- *Costs and impact fees were evaluated:*
    - *The planning, development, and construction of a new water utility system involves significant financial resources which would ultimately be paid for by the water utility consumers. This could ultimately have financial impacts on low-income homeowners residing within those proposed utility service areas if they are required to connect to a municipal system.*
    - *The development of a new utility is achieved in part through assessments charged to homeowners and all property owners to cover the cost of making a*

physical connection to the utility service, and also to cover a portion of the costs of the utility development. The costs can be significant especially in comparison to the costs of operating and maintaining a private well.
    - *To the often financially stressed low-income households that reside within the potential future utility service areas, and even to moderate-income households, impact fees which are often thousands of dollars can be a financial hardship.*
    - *Impact fees can also cause political and legal problems for potential consumers, utilities, and municipalities regardless of income levels within a community.*
- *The development of a new municipal water utility would be based on a demonstrated local need and initiative, and presupposes the development of an environmental analysis. The demonstrated local need may be based on specific environmental factors that need to be addressed. For those 21 potential new utilities to utilize groundwater supply and the 2 new utilities to utilize Lake Michigan supply, it is assumed that an environmental analysis would help to identify any potential adverse environmental impacts as well as environmental injustices.*
    - *For these communities, however, the "do nothing" option may or may not have an adverse environmental impact; continued monitoring may be necessary if an adverse environmental or human health impact is suspected.*
- *Recommendation: the RWSP should include information or a sub-recommendation on how communities or new utilities can provide assistance or low- or no-interest loans for low- to median-income homeowners.*

Water Conservation Programming

A water conservation program is identified as a combination of practices, procedures, policies and technologies to reduce the amount of water used or to improve or maintain water utility system efficiency. The recommendations regarding water conservation programming in the RWSP are two-fold in their design: first, they were developed to increase water system efficiency which reduces the amount of water pumped to meet customer demands, and second, to reduce the amount of water used by customers. The RWSP includes a range of recommendations for water conservation programming, depending on the infrastructure needs of each water utility and the source of supply as shown in Table 58 in Planning Report 52.

Water conservation measures, at any level, are designed to both improve the use of supply and therefore to sustain all sources of water supply for all water consumers. The following applies to all of the existing and proposed utility service areas;

- *Based on the recommendations, it is likely that the water conservation measures implemented at the local level could encourage customers to reduce their water use.*
- *It is unlikely that water conservation programming would have any negative fiscal impact on low-income households, and any savings at the utility level could be passed on to all utility customers including low-income customers.*
- *Although conservation programs could lead to reductions in lawn watering or changes in landscaping practices, it is unlikely that this could have any widespread impact or change in land use or housing patterns, and it is unlikely that there would be any impact on land uses and household patterns.*
- *As water conservation measures are intended to improve the quantity and quality of all water supplies within the region, it is unlikely that the implementation of this recommendation would cause any disproportionate environmental justice impacts.*

Recharge Area Protection

Currently, there are no regulatory constraints, at either the state, county or local levels, regarding development in (high or very high) groundwater recharge areas. The RWSP recommends that important groundwater recharge and discharge areas should be identified for preservation or for application of land development plans and practices that protect groundwater quality and maintain the natural surface and groundwater hydrology. It does not, however, give further instruction as to specify any new regulatory constraints, and as SEWRPC is an advisory body, it does not hold the authority to create or enforce new regulatory constraints.

Based on the RWSP recommendation related to recharge area protection;

- *The recharge areas, by their nature, are typically undevelopable or undeveloped open space lands, or lands within the delineated environmental corridors that SEWRPC recommends not be developed, therefore it is unlikely that there would be any significant impact on any segment of the population.*
    - *As such, it is unlikely that the implementation of this recommendation would cause any disproportionate environmental injustice impacts.*
- *There is no credible method to draw a linkage between the implementation of the recharge area protection recommendation and the potential for having an impact on population growth or minority, ethnic, or disabled population distribution patterns in the Region.*
- *Based on a lack of regulatory constraints and a lack of formally delineated recharge areas, there is no credible method to draw a linkage between the implementation of the recharge area protection recommendation and the potential for having an impact on low-income households in the Region.*
- *It is unlikely that the installation of enhanced rainfall infiltration systems would have an adverse impact on the environment or that it would cause any disproportionate environmental injustice impacts.*
- *Recommendation: The delineation of recharge areas for protection should, if applicable, include an inventory of the population and land use, and any development of local, county, or state regulations regarding recharge areas should take into consideration any potential ramifications that the implementation of regulations could have on the populations of the delineated recharge areas.*

Stormwater Management Practices

Similar to groundwater recharge, stormwater management practices encourage groundwater treatment and infiltration (recharge) in order to best maintain the natural hydrology between surface waters and groundwaters, and therefore, to contribute to a sustainable groundwater supply. The RWSP recommends following stormwater best management practices related to infiltration and recharge for all new residential and for selected nonresidential developments.

Regulations regarding stormwater management and its related land management practices are set forth by the State of Wisconsin in NR Chapters 151-155, NR 216, NR 243, and ATCP 50 of the Wisconsin Administrative Code, and administered at the County or local level through various zoning ordinances. Stormwater management practices are generally considered to be safeguards to ensure a safe, abundant groundwater supply, and although unlikely to have an impact on population or job patterns, state-of-the-art stormwater management practices may require restrictions on specific types of land uses.

Based on the RWSP recommendation to follow best management practices related to stormwater infiltration and recharge for all new development;

- *There is no clear, identifiable linkage between the implementation of the stormwater management practices recommendation and the potential for having an impact on population growth or minority, ethnic, and disabled population distribution patterns or job growth and distribution in the Region.*
- *The implementation of the stormwater management practices recommendation most likely would have a positive impact on land uses or household patterns in the Region. This recommendation also provides an opportunity to study the impacts that various stormwater infiltration and recharge practices may have on various land uses (different types and densities) and housing patterns, and in turn can help to further direct land use planning.*
- *It is unlikely that stormwater management practices would have an adverse impact on the environment or that it would cause any disproportionate environmental injustice impacts.*

High Capacity Well Siting Procedures

Currently, the Wisconsin Department of Natural Resources regulations require a permit application for all new high capacity wells. The DNR review includes the potential impact of the well on nearby municipal wells and selected adjacent surface waters among other things. The RWSP provides guidance regarding the siting of all new high capacity wells and for monitoring the impacts that such wells may have on the shallow aquifer. The RWSP recommendations for improving high capacity well regulations are based on improving methods to safeguard the quantity and quality of the groundwater supply, and for insuring that groundwater extraction will not have a negative impact on nearby surface waters through baseflow depletion.

This recommendation implies adoption of regulations incorporating well siting procedures, and development of such regulations should take into consideration any potential impacts on existing housing or land use patterns. Additionally, the RWSP recommendation to improve high-capacity well siting methods and regulations provides an opportunity to study the impacts that high-capacity well siting can have on various land uses (different types and densities) and on housing patterns. This in turn can provide greater insight into the impacts that high-capacity groundwater pumpage can have on local land uses and conditions within southeastern Wisconsin, and can help to further direct land use planning.

Based on the RWSP recommendation to improve high capacity well siting methods and regulations,

- *There is no clear, identifiable direct linkage between the implementation of the high capacity well recommendation and the potential for having an impact on population growth or minority and ethnic distribution patterns, job growth or distribution, or overall land use patterns in the Region. This recommendation implies adoption of regulations incorporating well siting procedures. Development of high capacity well regulations should take into consideration any potential impacts on all nearby populations and land uses.*
- *It is unlikely that the high capacity well recommendation would have an adverse impact on the environment or that it would cause any disproportionate environmental injustice impacts.*

Enhanced Rainfall Infiltrations Systems

Enhanced rainfall infiltration systems are artificial methods to recharge groundwater. The RWSP recommends the use of enhanced rainfall infiltration systems in conjunction with the siting of shallow aquifer high capacity wells, if siting studies indicate that baseflow reductions to nearby surface waters could be materially affected.

The determination to use enhanced rainfall infiltration systems is based on local conditions and the appropriate type of groundwater recharge infiltration system would need to be determined on a site specific basis.

- *As the enhanced rainfall infiltration systems typically involve open space areas, there should be no foreseeable significant impact on land use or housing patterns in the Region.*
- *Based on these constraints, there is no clear linkage between the implementation of the enhanced rainfall infiltration system recommendation and the potential for having an impact on population growth or minority, ethnic, and disabled population distribution patterns in the Region.*
- *There is no clear linkage between the implementation of the enhanced rainfall infiltration system recommendation and the potential for having an impact on job growth or distribution patterns in the Region.*

SUMMARY: EVALUATION OF THE REGIONAL WATER SUPPLY PLAN IN LIGHT OF PUBLIC PARTICIPATION

As part of the socio-economic impact analysis, CED examined whether or not the implementation of the regional water supply recommendations could contribute to any failure of the plan to meet Federal regulations attendant to civil rights and environmental justice. This includes an evaluation of the RWSP planning process itself.

The planning process demands that planners find a way to directly engage those whose lives and communities could ostensibly be impacted by planning decisions at all levels, particularly in minority and low-income communities. Assessing community perceptions about regional development is most difficult when portions of that community may not be engaged in the planning process. The third point in the Office of Environmental Justice *Toolkit* asks whether or not Environmental Justice communities have been sufficiently involved in the decision-making process. The *Toolkit* provides guidance to evaluate whether or not any relevant person or group has been denied an opportunity for meaningful involvement in governmental decision-making relating to the distribution of environmental benefits or burdens.

While SEWRPC conducted considerable public outreach during the course of the RWSP planning process, its failure to include a representative from environmental justice communities on the RWSP Technical Committee violates the spirit, if not the letter, of environmental justice. Although environmental justice communities were solicited to provide feedback and insight throughout the planning process, the lack of direct inclusion in plan development violates the intent of Principle 7 of the Principles of Environmental Justice. It may also weaken the plan as it denies an opportunity for SEWRPC to engage with environmental justice communities in order to gain support for plan recommendations.

- *Recommendation: for any future updates to the Regional Water Supply Plan, it is recommended that SEWRPC and the Environmental Justice Task Force establish a process for selecting one or more representatives from either the EJTF or from the Environmental Justice community for the RWSP Technical Committee.*

There has been a growing trend in community-level planning towards the formalization of public participation plans, partially due to the widespread implementation of comprehensive and "Smart Growth" planning efforts. A public participation plan provides a formal document that outlines the specific strategies that are used for public engagement[2]. Developing a

[2] Miskowiak, Douglas Center for Land Use Education *Crafting an Effective Plan for Public Participation,* November 2004 accessible at www.uwsp.edu/cnr/landcenter/Publications/PublicParticipation.pdf

formalized public participation plan or strategy for each of the region-wide plans, similar to the public participation plan that SEWRPC adopted for the Regional Transportation Plan[3] and each of the county-wide comprehensive plans, may help to facilitate effective public involvement and add to greater transparency in the planning process.

- *Recommendation: for any future updates to the Regional Water Supply Plan, it is recommended that SEWRPC adopt a formal public participation plan.*

* * *

[3] SEWRPCs Public Participation Plan for Transportation Planning accessible online at http://maps.sewrpc.org/transportation/taskforce/pdfs/sewrpc_public_participation_plan.pdf

Appendix Q

MODEL RESOLUTION FOR ENDORSEMENT OF THE REGIONAL WATER SUPPLY PLAN FOR SOUTHEASTERN WISCONSIN

WHEREAS, the Southeastern Wisconsin Regional Planning Commission, which was duly created by the Governor of the State of Wisconsin in accordance with Section 66.0309(2) of the *Wisconsin Statutes* on the 8th day of August 1960, upon petition of the Counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha, has the function and duty of making and adopting a master plan for the physical development of the Region; and

WHEREAS, the Southeastern Wisconsin Regional Planning Commission, pursuant to its function and duty as a regional planning agency, has prepared and adopted at its meeting held on the ___ day of _____ 20__, a regional water supply plan set forth in a report entitled, SEWRPC Planning Report No. 52, *A Regional Water Supply Plan for Southeastern Wisconsin*, published in _____ 20__; and

WHEREAS, the Commission has transmitted certified copies of its resolution adopting the regional water supply plan for Southeastern Wisconsin, together with the aforementioned SEWRPC Planning Report No. 52, to the local units of government concerned and to the appropriate State and Federal agencies; and

WHEREAS, the (name of local governing body) has supported, participated in the financing of, and generally concurred in the regional planning programs undertaken by the Southeastern Wisconsin Regional Planning Commission, and believes that the regional water supply plan prepared by the Commission is a sound and valuable guide to water supply management in the development of not only the Region but also the local community, and that the adoption of such plan by the (name of local governing body) will assure a common understanding by the units and agencies of government concerned and enable these units and agencies of government to program the necessary plan implementation work.

NOW, THEREFORE, BE IT RESOLVED that, pursuant to Section 66.0309(12) of the *Wisconsin Statutes*, the (Name of Local Governing Body) on the _____ day of _____, 20__, hereby endorses the regional water supply plan for Southeastern Wisconsin previously adopted by the Commission as set forth in SEWRPC Planning Report No. 52 as a guide for regional and community development.

BE IT FURTHER HEREBY RESOLVED that the _____ clerk transmit a certified copy of this resolution to the Southeastern Wisconsin Regional Planning Commission and to the Secretary of the Wisconsin Department of Natural Resources.

(President, Mayor, or Chairman
of the Local Governing Body)

ATTESTATION:

(Clerk of Local Governing Body)

Appendix R

FUNDING AND TECHNICAL ASSISTANCE INFORMATION

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Table R-1[a]

FUNDING AND TECHNICAL ASSISTANCE PROGRAM DESCRIPTIONS

Administrator of Funding Program	Name of Funding Program	Eligibility	Type of Projects and Funding Eligibility Criteria	Assistance Provided	Application Deadline
Sources of Water Supply Elements—Assistance to Utilities and Municipalities					
U.S. Department of Agriculture (USDA)-Rural Utilities Service	Water and Environmental Programs	Cities, villages, towns, and sanitary districts in rural areas with a population up to 10,000	Loans and grants to construct, improve, or modify municipal drinking water systems	Maximum loan: 100 percent of project cost Maximum grant depends upon median household income of community	Applications accepted throughout fiscal year
USDA-Rural Utilities Service	Guaranteed Water and Environmental Programs	Cities, villages, towns, and sanitary districts in rural areas with a population up to 10,000	Loan guarantees to construct, improve, or modify drinking water systems	Guarantee of up to 90 percent of eligible loss Maximum loan 100 percent of project cost	Continuous
USDA-Rural Utilities Service	Emergency Community Water Assistance Grants	Public bodies and nonprofit corporations servicing rural areas, including cities, villages, and towns with population less than 10,000	Applicants must demonstrate that a significant decline in the quantity or quality of water occurred within two years of filing the application Eligible projects include: 1. Extend, repair, or perform significant maintenance on existing water systems 2. Construct new water supply infrastructure 3 Replace equipment	Grants of up to 100 percent of eligible project costs up to: 1. $500,000 to alleviate a significant decline in quantity or quality 2. $75,000 to make repairs partial replacement, or significant maintenance to alleviate an acute shortage or significant decline	Continuous
Wisconsin Board of Commissioners of Public Lands (BCPL)	State Trust Fund Loan Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts	Loans for any public purpose project including water utility projects Applicant must provide a general obligation bond	Loans subject to: 1. Availability of funds 2. Legal purpose 3. Sufficient general obligation borrowing capacity	Continuous
Wisconsin Department of Administration, Division of Intergovernmental Relations	Intergovernmental Relations	Wisconsin units of governments	All projects are eligible for technical assistance	Assists communities in locating potential funding sources	Continuous
Wisconsin Department of Commerce	Community Development Block Grants for Public Facilities (CDBG-PF)	Cities, villages, and towns with a population of less than 50,000 All counties except Milwaukee and Waukesha	Installation, repair, or replacement of public water systems Projects must meet at least one of three national objectives: 1. Project principally benefits low- and moderate-income persons 2. Project eliminates slum and blight 3. Proposed activity meets an urgent local need	Maximum grant for any single application is $750,000 Awards are rarely more than $500,000 or 50 percent of the local share of costs, whichever is less	None
Wisconsin Department of Commerce	Community Development Block Grants Public Facilities for Economic Development (CDBG-PFED)	General-purpose units of local government with a population of less than 50,000	Water systems and related infrastructure that enables a business to create jobs and invest in the community	Maximum grant of $10,000 per job created with a maximum total of $750,000 Local match of at least 25 percent	None

Table R-1 (continued)

Administrator of Funding Program	Name of Funding Program	Eligibility	Type of Projects and Funding Eligibility Criteria	Assistance Provided	Application Deadline
Sources of Water Supply Elements—Assistance to Utilities and Municipalities (continued)					
Wisconsin Department of Commerce	Community Development Block Grants–Small Cities Housing Program	Cities, villages, and towns with a population of less than 50,000 All counties except Milwaukee and Waukesha	Grants to community, 0 percent deferred loans to owner-occupied households 1. Water hookups 2. Well repair or replacement	Grants of up to $650,000	Preliminary Application due April 28 Final Application August
Wisconsin Department of Natural Resources (WDNR)	Safe Drinking Water Loan Program (SDWLP)	County, City, Village, Town, Town Sanitary District, Public Inland Lake Protection and Rehabilitation District	Projects to construct or modify public water systems to: 1. Address SDWA health standard exceedences 2. Prevent future violations of rules related to contaminants with health effects 3. Replace aging infrastructure 4. Consolidate water systems 5. Purchase a portion of another public water system's capacity 6. Restructure a public water system 7. Create a new community water system	1. For disadvantaged municipalities, loans at 33 percent of market rate[b] 2. For all other municipalities, loans at 55 percent of market rate	Notice of intent to apply and priority evaluation and ranking form due December 31 Financial Assistance Application due April 30
National Rural Water Association (NRWA)	NRWA Revolving Loan Fund	Public entities with population up to 10,000	1. Predevelopment costs associated with proposed water projects 2. Short-term costs incurred for replacement equipment 3. Small scale extension of services	Loans of up to 75 percent of project costs or $100,000, whichever is less	Continuous
Wisconsin Community Action Program Association (WISCAP)	Rural Community Assistance Program (RCAP)	Small, rural, low-income communities and sanitary districts	1. Develop and improve water systems 2. Develop capacity to manage, operate, and maintain water utilities	Training and technical assistance	Continuous
Wisconsin Rural Water Association	Construction Loan Program	Small communities with populations less than 10,000	Utility projects	Interim loans for systems receiving USDA-RD or Wisconsin Environmental Improvement Fund Funding Technical assistance and training	Continuous
Sources of Water Supply Elements—Assistance to Individuals and Households					
USDA-Rural Development	Section 502 Rural Housing Direct Loan Program	Rural residents with incomes less than 80 percent of area median income	Providing water facilities	100 percent financing on 33-year term	Continuous
USDA-Rural Development	Section 504 Repair Loan and Grant Program	Low-income rural resident or living in a town with a population of up to 10,000 Eligibility for grants if, over 62 years of age and unable to repay loan	Installing or repairing essential features, such as private wells, or removing health and safety hazards	Maximum loan of $20,000 Maximum grant of $7,500	Continuous
WDNR	Well Compensation Grant Program	Owner of contaminated private water supply Annual family income less than $65,000	1. Replacement, reconstruction, treatment, and abandonment of contaminated private wells 2. Connection to municipal water system	Grant provides 75 percent of eligible costs up to a maximum of $9,000	Continuous
Wisconsin Department of Veterans Affairs	Home Improvement Loan Program (HILP)	State of Wisconsin veterans	Any home improvement, including private wells to a veteran's residence	Loans of up to 90 percent of equity	Continuous

Table R-1 (continued)

Administrator of Funding Program	Name of Funding Program	Eligibility	Type of Projects and Funding Eligibility Criteria	Assistance Provided	Application Deadline
Sources of Water Supply Elements—Assistance to Individuals and Households (continued)					
Wisconsin Department of Veterans Affairs	Personal Loan Program (PLP)	State of Wisconsin veterans	Any purpose, including: 1. Private wells 2. Paying assessments	Maximum loan of $25,000	Continuous
Foundation for Rural Housing	Water Well System Loan Program	Low income owner-occupants	Replacement or repair of private wells	Low interest loans Maximum loan $11,000	Continuous
Comprehensive Water Conservation Program Element—Assistance to Utilities and Municipalities					
Wisconsin Department of Administration, Division of Intergovernmental Relations	Intergovernmental Relations	Wisconsin units of governments	All projects are eligible for technical assistance	Assists communities in locating potential funding sources	Continuous
Groundwater Recharge Area Protection Element					
BCPL	State Trust Fund Loan Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts	Loans for any public purpose project including land acquisition Applicant must provide a general obligation bond	Loans subject to: 1. Availability of funds 2. Legal purpose 3. Sufficient general obligation borrowing capacity	Continuous
National Fish and Wildlife Foundation	Wal-Mart Stores, Inc. Acres for America	State and local units of government, nonprofit conservation organizations	Acquisition or permanent easement for conservation of habitat	$2.5 million available annually; 50 percent local match required, higher local match preferred	Preproposals due April 1 and September 1 Full proposals due June 1 and November 1
Wisconsin Department of Administration, Division of Intergovernmental Relations	Intergovernmental Relations	Wisconsin units of governments	All projects are eligible for technical assistance	Assists communities in locating potential funding sources	Continuous
WDNR	Knowles-Nelson Stewardship Program	Wisconsin units of government, nonprofit conservation organizations	Land acquisition and easements	$60 million available every year Grant provides 50 percent of eligible costs	May 1
WDNR	Lake Protection Grant Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts, nonprofit conservation organizations	1. Land acquisition and easements 2. Lake management plan implementation projects recommended in a WDNR-approved plan	Up to 75 percent of eligible project costs Maximum grant $200,000	May 1
WDNR	Municipal Flood Control Grants Chapter NR 199 of the *Wisconsin Administrative Code*	Cities, villages, towns, metropolitan sewerage districts	Construction of stormwater and groundwater facilities related to flood control and riparian restoration projects	70 percent State cost-share assistance; 30 percent local match	March 15
WDNR	River Protection Grant Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts, nonprofit conservation organizations	1. Land acquisition and easements	Up to 75 percent of eligible project costs Maximum grant $50,000	May 1

Table R-1 (continued)

Administrator of Funding Program	Name of Funding Program	Eligibility	Type of Projects and Funding Eligibility Criteria	Assistance Provided	Application Deadline
Groundwater Recharge Area Protection Element (continued)					
U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS)	Grassland Reserve Program	Individual landowners for a 10-year, 15-year, or 20-year agreement or permanent easement	1. Conservation easements 2. Grassland restoration	For permanent easements, payment up to the fair market value of the land less the grazing value 50 percent cost-share assistance for restoration up to $50,000	Continuous
NRCS	Wetland Reserve Program	Individual landowners for a 10-year agreement, or a 30-year or permanent easement	Wetland restoration of land in current agricultural production	75 to 100 percent cost-share depending on the option chosen and technical assistance. Also between 75 to 100 percent of the cost of the land assessment taken out of production in a one-time payment for the 30-year and permanent easement options only.	Continuous
U.S. Fish and Wildlife Service (FWS)	Pittman-Robertson Wildlife Restoration Program	State fish and wildlife agencies	Selection, restoration, rehabilitation, and improvement of areas of land or water adaptable as feeding, resting, or breeding places for wildlife	75 percent cost-share assistance; requires 25 percent match from nonFederal sources	Continuous
FWS	State Wildlife Grants	State fish and wildlife agencies	Development and implementation of programs benefiting wildlife and their habitats, including species not hunted, priority placed on species of greatest conservation concern	Planning grants provide Federal share of up to 75 percent and require 25 percent nonFederal match; Implementation grants provide Federal share of up to 50 percent and require 50 percent nonFederal match	Contact regional FWS office
Enhanced Rainfall Infiltration Systems Element					
Wisconsin Board of Commissioners of Public Lands (BCPL)	State Trust Fund Loan Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts	Loans for any public purpose project including land acquisition Applicant must provide a general obligation bond	Loans subject to: 1. Availability of funds 2. Legal purpose 3. Sufficient general obligation borrowing capacity	Continuous
Wisconsin Department of Administration, Division of Intergovernmental Relations	Intergovernmental Relations	Wisconsin units of governments	All projects are eligible for technical assistance	Assists communities in locating potential funding sources	Continuous
Wisconsin Department of Natural Resources (WDNR)	Knowles-Nelson Stewardship Program	Wisconsin units of government, nonprofit conservation organizations	Land acquisition and easements	$60 million available every year Grant provides 50 percent of eligible costs	May 1
Wisconsin Department of Natural Resources (WDNR)	Lake Protection Grant Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts, nonprofit conservation organizations	1. Land acquisition and easements 2. Lake management plan implementation projects recommended in a WDNR-approved plan	Up to 75 percent of eligible project costs Maximum grant $200,000	May 1

Table R-1 (continued)

Administrator of Funding Program	Name of Funding Program	Eligibility	Type of Projects and Funding Eligibility Criteria	Assistance Provided	Application Deadline
Enhanced Rainfall Infiltration Systems Element (continued)					
Wisconsin Department of Natural Resources (WDNR)	River Protection Grant Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts, nonprofit conservation organizations	1. Land acquisition and easements	Up to 75 percent of eligible project costs Maximum grant $50,000	May 1
Stormwater Management Practice Element					
BCPL	State Trust Fund Loan Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts	Loans for any public purpose project including stormwater best management practices Applicant must provide a general obligation bond	Loans subject to: 1. Availability of funds 2. Legal purpose 3. Sufficient general obligation borrowing capacity	Continuous
Wisconsin Department of Administration, Division of Intergovernmental Relations	Intergovernmental Relations	Wisconsin units of governments	All projects are eligible for technical assistance	Assists communities in locating potential funding sources	Continuous
WDNR	Clean Water Fund Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts	Planning, design, and construction of structural urban stormwater best management practices required by a WPDES permit, a performance standard, or a WDNR-approved stormwater plan	Interest rate of 65 percent of the current CWFP market rate	Notice of intent to apply and priority evaluation and ranking form due December 31
WDNR	Clean Water Fund Program Small Loan Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts	Planning, design, and construction of structural urban stormwater best management practices Must apply for State Trust Fund Loan through BCPL	Interest rate subsidy on State Trust Fund Loan Maximum project cost of $1,000,000	Continuous
WDNR	Municipal Flood Control Grants Chapter NR 199 of the *Wisconsin Administrative Code*	Cities, villages, towns, metropolitan sewerage districts	Construction of stormwater and groundwater facilities related to flood control and riparian restoration projects	70 percent State cost-share assistance; 30 percent local match	March 15
WDNR	River Protection Grant Program	Counties, cities, villages, towns, town sanitary districts, public inland lake protection and rehabilitation districts, nonprofit conservation organizations	1. Land acquisition and easements 2. Installation of practices to control nonpoint source pollution	Up to 75 percent of eligible project costs Maximum grant $50,000	May 1
High-Capacity Well Siting Element					
WDNR	Targeted Runoff Management Grants	Local units of government, public inland lake protection and rehabilitation districts	Construction of agricultural and urban BMPS to control nonpoint source pollution Highest priority given to projects that implement performance standards under NR 151 or address waterbodies on the Federal 303(d) list	Up to 70 percent of eligible costs with total State funding not to exceed $150,000	April 15

Table R-1 (continued)

Administrator of Funding Program	Name of Funding Program	Eligibility	Type of Projects and Funding Eligibility Criteria	Assistance Provided	Application Deadline
High-Capacity Well Siting Element (continued)					
WDNR	Urban Nonpoint Source and Stormwater Management Grants	Local units of government, public inland lake protection and rehabilitation districts	Planning activities for stormwater planning, ordinance development Construction grants to pay for the construction of best management practices to control stormwater pollutants from existing urban areas	Planning grants provide up to 70 percent State cost-share Construction grants provide 50 percent State cost-share up to a total State share of $150,000 with a potential grant of $50,000 for land acquisition, where needed	April 15

NOTE: The Catalog of Federal Domestic Assistance programs can be accessed at *http://www.cfda.gov*. Additional information on grants can be accessed through the University of Wisconsin-Madison Grants Information Collection at *http://grants.library.wisc.edu*.

[a]*Some of the programs described in this table may not be available under all envisioned conditions for a variety of reasons, including local eligibility requirements or lack of funds in Federal and/or State budgets at a given time.*

[b]*Disadvantaged municipalities are those with population less than 10,000 and median household income equal to or less than 80 percent of the State's median household income.*

Source: SEWRPC.

Table R-2

PLAN IMPLEMENTATION FUNDING AND TECHNICAL ASSISTANCE CONTACT INFORMATION[a,b]

Administrator of Funding Program	Name of Funding Program	Address	Phone Number	Internet Web Address
Foundation for Rural Housing	Water Well System Loan Program	Jay Mageland Rural Housing, Inc. 4506 Regent Street Madison, WI 53705	(608) 238-3448	http://www.wisconsinruralhousing.org/
National Fish and Wildlife Foundation	Wal-Mart Stores, Inc. Acres for America	National Fish and Wildlife Foundation 1133 Fifteenth Street, Suite 1100 Washington, DC 20005	(202) 857-0166	http://www.nfwf.org
National Rural Water Association	NRWA Revolving Loan Fund	Rural Water Revolving Loan Fund 2915 S. 13th Street Duncan, OK 73533	(800) 332-8715	http://www.nwra.org/revolvingloan.htm
U.S. Department of Agriculture (USDA) Natural Resources Conservation Service	Grassland Reserve Program Wetland Reserve Program	U.S. Department of Agriculture Natural Resource Conservation Service 826 Main Street Union Grove, WI 53182	(262) 878-1234	www.nrcs.usda.gov
U.S. Department of Agriculture (USDA) Rural Development	Section 502 Rural Housing Direct Loan Program	USDA–Rural Development W6529 Forrest Avenue Suite 200 Fond du Lac, WI 54937	(920) 907-2976	http://www.rurdev.usda.gov/rhs/indiv_sfh.htm
USDA Rural Development	Section 504 Repair Loan and Grant Program	USDA Rural Development–WI Business & Community Programs 4949 Kischling Court Stevens Point, WI 54481	(715) 345-7610	http://www.rurdev.usda.gov/wi/Programs
USDA Rural Utilities Service	Water and Environmental Programs Guaranteed Water and Environmental Programs Emergency Community Water Assistance Grants	USDA Rural Development–WI Business & Community Programs 4949 Kischling Court Stevens Point, WI 54481	(715) 345-7610	http://www.rurdev.usda.gov/wi/Programs
U.S. Fish and Wildlife Service	Pittman-Robertson Wildlife Restoration Program State Wildlife Grants	Wildlife and Sportfish Restoration Programs U.S. Fish and Wildlife Service BHW Federal Building 1 Federal Drive Ft. Snelling, MN 55111-5056	(612) 713-5130	http://wsfrprograms.fws.gov/
Wisconsin Board of Commissioners of Public Lands (BCPL)	State Trust Fund Loan Program	Scott Eastwood Board of Commissioners of Public Lands P.O. Box 8943 Madison, WI 53078-8943	(608) 266-0034	http://bcpl.wisconsin.gov
Wisconsin Community Action Program Association (WISCAP)	Rural Community Assistance Program (RCAP)	Bill Brown, Rural Development Director WISCAP–Rural Community Assistance Program 1310 Mendota Street, Suite 107 Madison, WI	(608) 244-0407	http://www.wiscap.org/rcap_what_is_rcap.htm
Wisconsin Department of Administration, Division of Intergovernmental Relations	Intergovernmental Relations	Dawn Vick, Team Leader Division of Intergovernmental Relations Department of Administration 101 East Wilson Street, 9th Floor P. O. Box 8944 Madison, WI 53708-8944	(608) 266-7043	http://www.wisconsinpartnership.wi.gov/
Wisconsin Department of Commerce	Community Assistance Block Grants for Public Facilities Community Development Block Grants Public Facilities for Economic Development	Jim Frymark Wisconsin Department of Commerce Bureau of Community Finance P.O. Box 7970 Madison, WI 53707-7970	(608) 266-2742	http://commerce.wi.gov/cd/cd-bcf-cdbg-pf.html http://commerce.wi.gov/cd/cd-bcf-cdbg-pfed.html
Wisconsin Department of Commerce	Community Assistance Block Grants–Small Cities Housing Program	Joanna Schumann Wisconsin Department of Commerce Bureau of Housing and Community Development P.O. Box 7970 Madison, WI 53707-7970	(608) 261-6535	http://commerce.wi.gov/housing/cd-boh-home.html

Table R-2 (continued)

Administrator of Funding Program	Name of Funding Program	Address	Phone Number	Internet Web Address
Wisconsin Department of Natural Resources (WDNR)	Clean Water Fund Program	Pat Sullivan DNR Bureau of Community Financial Assistance–CF/2 P.O. Box 7921 Madison, WI 53707-0496	(608) 266-5742	http://www.dnr.state.wi.us/org/caer/cfa/EL/Section/clean.html
WDNR	Clean Water Fund Program Small Loan Program	Dave Calhoon DNR Bureau of Community Financial Assistance–CF/2 P.O. Box 7921 Madison, WI 53707-0496	(608) 264-8844	http://www.dnr.state.wi.us/org/caer/cfa/EL/Section/small.html
WDNR	Knowles-Nelson Stewardship Program	Tom Blotz Wisconsin Department of Natural Resources 2300 N. Dr. Martin Luther King, Jr. Drive Milwaukee, WI 53212	(414) 263-8610	http://www.dnr.state.wi.us/org/caer/cfa/lr/stewardship/stewardship.html
WDNR	Lake Protection Grant Program	Heidi Bunk, Lake Coordinator Wisconsin Department of Natural Resources 141 NW Barstow Street, Room 180 Waukesha, WI 53188	(262) 574-2130	http://www.dnr.state.wi.us/org/caer/cfa/Grants/Lakes/lakeprotection.html
WDNR	Municipal Flood Control Grants Chapter NR 199 of the *Wisconsin Administrative Code*	Jeff Soellner-Grant Program Manager Wisconsin Department of Natural Resources 101 S. Webster P. O. Box 7921 Madison, WI 53707-7921	(608) 267-7152	http://dnr.wi.gov/org/caer/cfa/EF/flood/grants.html
WDNR	River Protection Grant Program	John Masterson, River Coordinator Wisconsin Department of Natural Resources 1155 Pilgrim Road P. O. Box 408 Plymouth, WI 53703	(920) 892-8756 Ext 3055	http://www.dnr.state.wi.us/org/caer/cfa/BUREAU/programs.html
WDNR	Safe Drinking Water Loan Program	Jeanne Cargill DNR Bureau of Community Financial Assistance–CF/2 P.O. Box 7921 Madison, WI 53707-0496	(608) 267-7587	http://DNR.wi.gov/org/caer/cfa/EL/Section/drinkingwater.html
WDNR	Targeted Runoff Management Grants Urban Nonpoint Source and Storm Water Management Grants	Kathleen Thompson TRM & Urban NPs and Storm Water Grants Coordinator Wisconsin Department of Natural Resources 101 South Webster Street Madison, WI 53703	(608) 267-7568	http://dnr.wi.gov/runoff/financial.htm
WDNR	Well Compensation Grant Program	Kevin Shurilla Wisconsin Department of Natural Resources 1155 Pilgrim Road Plymouth, WI 53073-4294	(920) 892-8756 Ext 3033	http://www.dnr.state.wi.us/org/caer/cfa/Grants/wellcomp.html
Wisconsin Department of Veterans Affairs[c]	Home Improvement Loan Program (HILP) Personal Loan Program (PLP)	Loans Staff Department of Veterans Affairs 30 W. Mifflin Street Madison, WI 53703	(608) 266-1311 (800) 847-8387	http://dva.state.wi.us/Ben_improvementloans.asp http://dva.state.wi.us/Ben_personalloans.asp
Wisconsin Rural Water Association	Construction Loan Program	Ken M. Blomberg–Executive Director Wisconsin Rural Water Association 350 Water Way Plover, WI 54467	(715) 344-7778	http://wrwa.org

[a]*The Catalog of Federal Domestic Assistance programs can be accessed at* http://www.cfda.gov. *Additional information on grants can be accessed through the University of Wisconsin-Madison Grants Information Collection at* http://grants.library.wisc.edu.

[b]*Some of the programs described in this table may not be available under all envisioned conditions for a variety of reasons, including local eligibility requirements or lack of funds in Federal and/or State budgets at a given time.*

[c]*Initial contact is the local County Veterans Service Officer.*

Source: SEWRPC.

Table R-3

CONSERVANCIES AND LAND TRUSTS ACTIVE IN THE SOUTHEASTERN WISCONSIN REGION

Conservancy or Land Trust	Address	Telephone	E-mail and Internet Link	Project Areas
Caledonia Conservancy	Caledonia Conservancy P.O. Box 044714 Racine, WI 53404	(262) 639-2382	caledoniaconservancy@gmail.com http://www.caledoniaconservancy.org	Village of Caledonia
Cedar Lakes Conservation Foundation	Cedar Lakes Conservation Foundation P.O. Box 347 West Bend, WI 53095	(414) 962-3670	AskCLCF@clcf.info http://www.clcf.info	The headwaters and watersheds of Gilbert, Big Cedar, Little Cedar Lakes, and Cedar Creek
Des Plaines Wetland Conservancy	Des Plaines Wetland Conservancy 9626 113 Street Pleasant Prairie, WI 53158	(262) 697-0070	- -	- -
Faye Gehl Conservation Foundation	Faye Gehl Conservation Foundation P.O. Box 1440 Germantown, WI 53022	(262) 251-8570	- -	- -
Geneva Lake Conservancy	Geneva Lake Conservancy 398 Mill Street P.O. Box 588 Fontana, WI 53125	(262) 275-5700	glc@genevalakeconservancy.org http://www.genevalakeconservancy.org	Southern Walworth County, primary focus is on the area around Geneva Lake
Ice Age Trail Alliance	Ice Age Trail Alliance 2110 Main Street Cross Plains, WI 53528	(608) 798-4453	info@iceagetrail.org http://www.iceagetrail.org	Focus is on the Ice Age National Scenic Trail
Kenosha/Racine Land Trust	Kenosha Racine Land Trust P.O. Box 085153 Racine, WI 53408-5153	(262) 552-6861	infokrlt@krlt.org http://www.krlt.org	Kenosha and Racine Counties
Kettle Moraine Land Trust[a]	Kettle Moraine Land Trust P.O. Box 176 Elkhorn, WI 53121	(262) 949-7211	info@kmlandtrust.org http://www.kmlandtrust.org	Southern Kettle Moraine lakes area in Walworth County
Milwaukee Area Land Conservancy	Milwaukee Area Land Conservancy 9724 W. Forest Home Avenue Hales Corners, WI 53130-1618	(414) 427-1901	malc@mkeconservancy.org http://www.mkeconservancy.org	Milwaukee County
Muskego Lakes Conservancy	Muskego Lakes Conservancy P.O. Box 202 Muskego, WI 53150	(262) 679-3480	http://www.littlemuskegolake.org	Muskego Lakes area of Waukesha County
The Nature Conservancy	The Nature Conservancy Madison Field Office 663 W. Main Street Madison, WI 53703	(608) 251-8140	wisconsin@nature.org http://www.nature.org	Main project areas are Chiwaukee Prairie in Kenosha County, and the Mukwonago River watershed in Waukesha, Walworth, and Jefferson Counties

Table R-3 (continued)

Conservancy or Land Trust	Address	Telephone	E-mail and Internet Link	Project Areas
Ozaukee Washington Land Trust	Ozaukee Washington Land Trust P.O. Box 917 West Bend, WI 53095-0917	(262) 338-1794	owlt@owlt.org http://www.owlt.org	Main project areas are: Cedar Sauk Woodlands, Holy Hill, Huiras Lake, Milwaukee River corridor, and Shady Lane Woods in Ozaukee and Washington Counties
The Prairie Enthusiasts	The Prairie Enthusiasts P.O. Box 1148 Madison, WI 53071	(715) 381-1291	carolwinge@yahoo.com http://www.theprairieenthusiasts.org	Southern and Western Wisconsin
River Revitalization Foundation	River Revitalization Foundation 1845 N. Farwell Avenue Milwaukee, WI 53202	(414) 271-8000	kgleffe@riverrevitalizationfoundation.org http://www.riverrevitalizationfoundation.org	Lands adjacent to the Kinnickinnic, Menomonee, and Milwaukee Rivers
Tall Pines Conservancy	Tall Pines Conservancy P.O. Box 65 Nashotah, WI 53058-0065	(262) 369-0500	info@tallpinesconservancy.org http://www.tallpinesconservancy.org	Northwestern Waukesha County
Waukesha Land Conservancy	Waukesha Land Conservancy P.O. Box 2572 Brookfield, WI 53008	(262) 821-2044	wclc@wi.rr.com http://www.waukeshalandconservancy.org	Waukesha County

[a]*The Kettle Moraine Land Trust was formed through the merger of the former Lauderdale Lakes Conservancy and the former Land Trust of Walworth County.*

Source: SEWRPC.