

September 9, 2020

Regulatory File No. 2017-02087-MHK

Waukesha Water Utility c/o Dan Duchniak 115 Delafield Street Waukesha, Wisconsin 53188

Dear Dan Duchniak:

Enclosed is the validated copy of the Department of the Army permit authorizing permanently discharge fill material within 133 square feet of the Root River and in 102 square feet of wetlands and to temporarily discharge dredged and fill material within 3,998 square feet of tributaries and in a total of 8.04 acres of wetlands for the construction of a long-term water supply and return flow system for the City of Waukesha. Please be advised that the authorization hereby granted is contingent on the permittee's compliance with all conditions stated in the permit and its attachments.

This Federal permit does not obviate the need to obtain any other Federal, state or local authorizations required by law.

If you have any questions, please contact Marie Kopka in our Brookfield office at (651) 290-5733 or Marie.H.Kopka@usace.army.mil. In any correspondence or inquiries, please refer to the Regulatory file number shown above.

Sincerely,

Todd M. Vesperman Chief, Wisconsin East Branch

Enclosures

cc: Geri Radermacher, Wisconsin DNR (IP-SE-2018-N04503, N04505, N04506) Ron Londre, TRC Katie Richardson, Greely and Hansen

#### DEPARTMENT OF THE ARMY PERMIT

Permittee Waukesha Water Utility

**Permit No.** 2017-02087-MHK

**Issuing Office** St. Paul District U.S. Army Corps of Engineers

**NOTE:** The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

#### **Project Description:**

You are authorized to permanently discharge fill material within 133 square feet of the Root River and in 102 square feet of wetlands and to temporarily discharge dredged and fill material within 3,998 square feet of tributaries and in a total of 8.04 acres of wetlands for the construction of a long-term water supply and return flow system for the City of Waukesha. The authorized work area is shown on the attached drawings labeled MVP-2017-02087-MHK Page 1 through 28.

#### **Project Location:**

The project site is in Sections 2, 3, 11, 13, 14, 24, 25, Township 5 North, Range 20 East; in Sections 19, 20, 21, 22, 26, 27, 28, 29, 30, 35, Township 5 North, Range 21 East; in Sections 9, 13, 14, 15, 16, Township 6 North, Range 19 East; in Sections 13, 14, 15, 16, 17, 18, 19, 20, 29, 32, 33, 34, Township 6 North, Range 20 East; and in Sections 15, 16, 17, 18, Township 6 North, Range 21 East, in Waukesha and Milwaukee County, Wisconsin.

#### **Permit Conditions:**

#### **General Conditions:**

- 1. The time limit for completing the work authorized ends on December 31, 2023. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the date is reached.
- 2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

- 3. If you discover any previously unknown historic or archaeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
- 4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
- 5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
- 6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

#### **Special Condition:**

1. You shall remove all temporary fill within aquatic resources and restore and monitor these areas in accordance with the Wetland and Waterway Restoration Plan dated July 31, 2019 labeled MVP-2017-02087-MHK Page 9 through 28.

#### **Further Information:**

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

- () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
- (x) Section 404 of the Clean Water Act (33 U.S.C. 1344).
- () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
- 2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
  - b. This permit does not grant any property rights or exclusive privileges.
  - c. This permit does not authorize any injury to the property or rights of others.
  - d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the

(PERMITTEE SIGNATURE)

terms and conditions of this permit.

9/8/2020

09 SEP 2020

(DATE)

Daniel S. I (PERMITTEE PRINTED OR T

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Toeld Vag

Todd Vesperman Chief, Wisconsin East Branch

for:

Karl D. Jansen Colonel, Corps of Engineers District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE SIGNATURE)

(DATE)

(TRANSFEREE PRINTED OR TYPED NAME)



3-110 D1 Wetland and Waterway Impact Permit Application | DRAFT SECTION 2



Figure 2-1 Program Schematic

#### PSC DOCKET NUMBER: 6240-CW-117 **Table 1 DNR Wetland/Waterway Impact Location Table - Revised August 19, 2020** Supplement Document to WDNR Form 3500-53. Check all that apply.

Note: Any revisions to this table must be agreed upon by all parties before filing.

RESOURCE					CONSTRUCTION METHOD/ACTIVITY LOCATION										RESOURCE IMPACT									
		1	1	-	Dredge 4					Tem	mporary Impact	Activity					1	1	-					4
Route/ Segment/ Contract	Wetland Type or Waterway Name <sup>1</sup>	Feature Unique ID <sup>2</sup>	Permit Required	Bridge <sup>3</sup>	square feet	cubic yards	Grading on banks (upland) over 10,000 sq. ft. <sup>5</sup>	/J&B r feet)	Plow (linear feet) Trench <sup>6</sup> (square feet)	<ul> <li>Matting</li> <li>(square feet)</li> </ul>	ng <sup>7</sup> Bore Pits <sup>8</sup> are (square t) feet)	Grading <sup>9</sup> (square feet)	Permanent Structure/Fill Placement <sup>10</sup> (square feet)	County	Municipality	QQ	Q	Sectio	Township (N), Range (E/W)	ASNRI 11	Temporary Fill (square feet)	Permanent Fill (square feet)	Conversion <sup>12</sup> (square feet)	DNR DOCKET <sup>13</sup>
R01. Sentry Drive	Hardwood Swamp	F1-W01	Yes									315		Waukesha	City of Waukesha	MULTI	NE	9	6 N, 19 E	Yes; PEC Intersect	315		315	-
R01. Sentry Drive	Fresh (Wet) Meadow Fresh (Wet) Meadow	F1-W02 R-W01	Yes									767		Waukesha	City of Waukesha	NE	NE	9	6 N, 19 E 6 N 19 E	Yes; PEC Intersect Yes: PEC Intersect	767			
RUF, J West Ave.	UNT to Pebble Brook	R-W01	Ne		Evenuete under eukvert	autort only	10' u excavat 18"	inder ion with min				202		Waukesha	City of Waukesha	MOET	SE	15	6 N, 19 E	Ves. PEC Intersect	202			
POE Les Paul West Ave to East Ave	WBIC N/A	R 301	Ves			curvert only	existing STM	der 36" RCP (x2)	112			16 1 4 4		Waukosha	City of Walkesha	MUT	SE CE	15	6 N 10 E	Vos DEC Intersect	16.257			
RUS. Les Paul - West Ave to East Ave	UNT to Pebble Brook	R-W03	Yes		non-navigab	le per DNR	non-	navigable	e per DNR			16,144		Waukesha	City of Waukesha	NE	SW	15	6 N, 19 E	Yes: PEC Intersect	16,257			-
R06. Les Paul - East Ave to Sunset Dr	WBIC N/A Pebble Brook	R-S04	No		HDD		1	2						Waukesha	City/Town of Waukesha	NE	SW	14	6 N, 19 E	Yes; PEC Intersect				-
R06. Les Paul - East Ave to Sunset Dr	WBIC 769500 UNT to Pebble Brook WBIC 5006475	R-S05	No		HDD			8						Waukesha	City/Town of Waukesha	SE	NE	14	6 N, 19 E	No				
R06. Les Paul - East Ave to Sunset Dr	Pebble Brook	R-S06	No		HDD			3						Waukesha	City/Town of Waukesha	SE	NE	14	6 N. 19 E	No				
R06. Les Paul - East Ave to Sunset Dr	WBIC 769500 Deep and Shallow Marsh, Floodplain Forest	R-W06	Yes						39			434		Waukesha	City of Waukesha	NW	SW	14	6 N, 19 E	No	473		5	
R06. Les Paul - East Ave to Sunset Dr	Fresh (Wet) Meadow, Deep and Shallow Marsh, Floodplain Forest	R-W07	Yes				40	07	6,241			16,625		Waukesha	City of Waukesha	MULTI	SW	14	6 N, 19 E	Yes; PEC Intersect	22,866		2,758	
R06. Les Paul - East Ave to Sunset Dr	Fresh (Wet) Meadow	R-W14	Yes						010	_		783		Waukesha	Town of Waukesha	NE	NE	14	6 N, 19 E	No	783			
R07. E Sunset - Les Paul to E Racine R07. E Sunset - Les Paul to E Racine	Fresh (Wet) Meadow Fresh (Wet) Meadow	R-W133 R-W134	Yes						9,433	_		1,883		Waukesha Waukesha	City/Town of Waukesha	NE	NW	13	7 N, 19 E 8 N, 19 E	No	2,702 20,845			
R10. S. Racine - Shady Ln to X @ Quarry	Fresh (Wet) Meadow, Hardwood Swamp	F2-W01	Yes						41			656		Waukesha	City of New Berlin	SW	SE	18	6 N, 20 E	No	698		657	
R10. S. Racine - Shady Ln to X @ Quarry	Fresh (Wet) Meadow	R-W15	Yes						67	-		4,761		Waukesha	City of New Berlin	NE SW/	NE	19	6 N, 20 E	No	4,828			
R12. S Racine - Observatory to W Lawnsdale	Fresh (Wet) Meadow	R-W18	Yes						2			479		Waukesha	City of New Berlin	MULTI	NW	20	6 N, 20 E	No	479			-
R13. S. Racine - Lawnsdale to W National	Fresh (Wet) Meadow	R-W20	Yes									3		Waukesha	City of New Berlin	NE	NW	29	6 N, 20 E	No	3			
R15. I-43 - S Racine to S Calhoun	UN I WBIC N/A	R-S22	Yes		996	63	Trench, partial open	water pa	rtial culvert					Waukesha	City of New Berlin	NW	SE	32	6 N, 20 E	No	1,080			
R15. I-43 - S Racine to S Calhoun	WBIC 5037068	R-S08	No		HDD		2	5						Waukesha	City of New Berlin	NE	SE	32	6 N, 20 E	No				
R15. I-43 - S Racine to S Calhoun	WBIC 5037052 Muskeep Creek	R-S09	Yes		345	128	Tre	nch						Waukesha	City of New Berlin	SW	NW	33	6 N, 20 E	No	345			
R15. I-43 - S Racine to S Calhoun R14. S Racine - National to I-43	WBIC 762500 Deep and Shallow Marsh	R-S10 R-W23	No Yes		HDD		1	.6				534		Waukesha Waukesha	City of New Berlin City of New Berlin	SW MULTI	NE	33	6 N, 20 E 6 N, 20 E	No	534			_
R14. S Racine - National to I-43	Deep and Shallow Marsh, Fresh (Wet) Meadow	R-W25	Yes						3,145			7,018		Waukesha	City of New Berlin	SE	NW	32	6 N, 20 E	No	10,163			-
R15. I-43 - S Racine to S Calhoun	Floodplain Forest, Fresh (Wet) Meadow, Shrub-Carr	R-W26	Yes				63	24	9,755			10,111		Waukesha	City of New Berlin	MULTI	SE	32	6 N, 20 E	No	19,866		4,719	-
R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow	R-W27	Yes									137		Waukesha	City of New Berlin	NW	SE	32	6 N, 20 E	No	137			
R15. I-43 - S Racine to S Calhoun R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow Fresh (Wet) Meadow	R-W28 R-W29	Yes						398	-		495		Waukesha Waukesha	City of New Berlin City of New Berlin	SW	NW	33	6 N, 20 E 6 N, 20 F	No	893			-
R15. I-43 - S Racine to S Calhoun	Deep and Shallow Marsh	R-W30	Yes						775			892		Waukesha	City of New Berlin	SW	NW	33	6 N, 20 E	No	1,667			-
R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow	R-W31	Yes						385	_		4,076		Waukesha	City of New Berlin	MULTI	NW	33	6 N, 20 E	No	4,461		1,874	
R15. I-43 - S Racine to S Calhoun R15. I-43 - S Racine to S Calhoun	Floodplain Forest.Fresh (Wet) Meadow	R-W32 R-W33	Yes						3.067			4,446		Waukesha	City of New Berlin	SE	NW	33	6 N, 20 E	No	7,513		2.942	
R15. I-43 - S Racine to S Calhoun	Floodplain Forest, Fresh (Wet) Meadow	R-W34	Yes				20	61	1,584			5,429		Waukesha	City of New Berlin	MULTI	NW	33	6 N, 20 E	No	7,013		5,096	
R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow, Shrub-Carr	R-W35	Yes						870	-		5,685		Waukesha	City of New Berlin	MULTI	NE	33	6 N, 20 E	No	6,555		1,320	
R15. I-43 - S Racine to S Calhoun R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow	R-W30	Yes						207			1,488		Waukesha	City of New Berlin	NE	NE	33	6 N, 20 E	No	1,280			-
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W41	Yes						18			1,713		Waukesha	City of New Berlin	SE	NE	34	6 N, 20 E	No	1,730		222	
R19. Mooreland Rd - Westridge Dr to Janesville Rd. R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W46 R-W48	Yes							-		803		Waukesha Waukesha	City of New Berlin City of New Berlin	SE	SE	34	6 N, 20 E	NO	803		232	
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Deep and Shallow Marsh,Shrub-Carr	R-W51	Yes									717		Waukesha	City of Muskego	NW	NE	3	5 N, 20 E	No	717		401	
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W54	Yes									2,468		Waukesha	City of Muskego	NW	NE	3	5 N, 20 E	No	2,468			
R19. Mooreland Rd - Westridge Dr to Janesville Rd. R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow Fresh (Wet) Meadow	R-W55 R-W56	Yes									160		Waukesha Waukesha	City of Muskego City of Muskego	SE	NE	3	5 N, 20 E 5 N, 20 E	NO	160			
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W59	Yes									619		Waukesha	City of Muskego	SE	NE	3	5 N, 20 E	No	619			-
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W60	Yes							-		192		Waukesha	City of Muskego	SE	NE	3	5 N, 20 E	No	192			
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W62	Yes									9,511		Waukesha	City of Muskego	NE	SE	3	5 N, 20 E	No	9,511			
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W64	Yes									285		Waukesha	City of Muskego	NE	SE	3	5 N, 20 E	No	285			
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Deep and Shallow Marsh, Fresh (Wet) Meadow, Hardwood Swamp, Shrub-Carr	R-W65	Yes									7,273		Waukesha	City of Muskego	NE	SE	3	5 N, 20 E	No	7,273		3,775	
R19. Mooreland Rd - Westridge Dr to Janesville Rd. R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow Fresh (Wet) Meadow	R-W66 R-W67	Yes									120		Waukesha Waukesha	City of Muskego City of Muskego	NE	SE	3	5 N, 20 E 5 N, 20 E	NO	120			
R20. Mooreland/Durham - Janesville to X @ Schultz	Fresh (Wet) Meadow	R-W69	Yes						866			430		Waukesha	City of Muskego	SW	SW	2	5 N, 20 E	No	1,295			
R20. Mooreland/Durham - Janesville to X @ Schultz	Deep and Shallow Marsh, Fresh (Wet) Meadow, Hardwood Swamp, Shrub-Carr, Wet to Wet-Mesic Prairie	R-W71	Yes						1,302			5,623		Waukesha	City of Muskego	NW	NW	11	5 N, 20 E	No	6,925		536	
R20. Mooreland/Durham - Janesville to X @ Schultz	Fresh (Wet) Meadow	R-W74	Yes	+			0	.3	16	-		105		Waukesha	City of Muskego	SW	NE	11	5 N, 20 E	No	1,172			+
R20. Mooreland/Durham - Janesville to X @ Schultz	Fresh (Wet) Meadow	R-W76	Yes						61			115		Waukesha	City of Muskego	NW	SE	11	5 N, 20 E	No	176			
R21. Durham Dr - X @ Schultz Ln to X @ Holz Dr R21. Durham Dr - X @ Schultz Ln to X @ Holz Dr	Fresh (Wet) Meadow Fresh (Wet) Meadow	R-W80 R-W83	Yes						49			312		Waukesha	City of Muskego	SE	NE	14	5 N, 20 E	Yes; PEC Intersect Yes: PEC Intersect	361			
R22. Durham Dr - Holz Dr to N Cape Rd	Fresh (Wet) Meadow	R-W84	Yes									61		Waukesha	City of Muskego	MULTI	MULTI	13	5 N, 20 E	No	61			_
R22. Durham Dr - Holz Dr to N Cape Rd	Fresh (Wet) Meadow	R-W87	Yes						171	_		70		Waukesha	City of Muskego	NE	NE	24	5 N, 20 E	No	171			
R23. N Cape Rd - Durham Dr to X @ Boxhorn Dr R23. N Cape Rd - Durham Dr to X @ Boxhorn Dr	Fresh (Wet) Meadow	R-W89	Yes									723		Waukesha	City of Muskego	SE	NE	24	5 N, 20 E	No	70			+
R24. N Cape Rd - X @ Boxhorn Dr to W Ryan Rd	Fresh (Wet) Meadow	R-W90	Yes									1,461		Waukesha	City of Muskego	SE	SE	24	5 N, 20 E	No	1,461			1
R23. N Cape Rd - Durham Dr to X @ Boxhorn Dr R25. Rvan Rd - Cape Rd to S 92nd St	Waterway Waterway - Rvan Creek	R-S13 R-S14	No		non-navigab חמוו	le per DNR	non-	navigable	e per DNR					Waukesha	City of Muskego	SE	NE SF	24	5 N, 20 E	No	+			+
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow	R-W101	Yes		100		2	5	165		181	586		Milwaukee	City of Franklin	NW	NE	30	5 N, 21 E	No	932			1
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow	R-W102	Yes	+	110.0				387			198		Milwaukee	City of Franklin	NW	NE	30	5 N, 21 E	No	585			
к25. куал Кd - Cape Kd to 5 92nd St R25. Ryan Rd - Cape Rd to 5 92nd St	Fresh (Wet) Meadow Fresh (Wet) Meadow,Shrub-Carr	R-W104 R-W106	No Yes	+	HDD		4	ð	2.510			1,832		Milwaukee	City of Franklin City of Franklin	NE MULTI	NE	30	5 N, 21 E 5 N. 21 F	No	4,342		3,436	+
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow,Hardwood Swamp	R-W108	Yes						6,648			15,912		Milwaukee	City of Franklin	MULTI	NE	29	5 N, 21 E	No	22,560		1,447	1
R25. Ryan Rd - Cape Rd to S 92nd St	Deep and Shallow Marsh, Fresh (Wet) Meadow	R-W109	No	+	HDD		54	41	205	_		E 26		Milwaukee	City of Franklin	MULTI	NE	29	5 N, 21 E	No	0/1		20.2	+
R25. Ryan Rd - Cape Rd to S 92nd St	Hardwood Swamp,Shrub-Carr	R-W92	Yes						505			668		Milwaukee	City of Franklin	NW	NW	30	5 N, 21 E	No	668		668	
			· · ·	·								-	-	-			-			-				

## MVPMVP-2017-02087-MHK PAGE 2 OF 28

## PSC DOCKET NUMBER: 6240-CW-117 Table 1 DNR Wetland/Waterway Impact Location Table - Revised August 19, 2020 Supplement Document to WDNR Form 3500-53. Check all that apply.

Note: Any revisions to this table must be agreed upon by all parties before filing.

					CONST	RUCTION MET	HOD/ACTIVIT	Y						OCATION					PESOUPCE	IMPACT				
	RESOURCE		1		Waterway Imp	act Activity					Wetland Impact A	Activity				-OCATION	-	r	-1		RESOURCE			_
Route/ Segment/ Contract	Wetland Type or Waterway Name <sup>1</sup>	Feature Unique ID <sup>2</sup>	Permit Required	Bridge <sup>3</sup>	Square feet	cubic yards	Grading on banks (upland) over 10,000 sq. ft. <sup>5</sup>	HDD/J&B (linear feet)	Plow (linear feet)	Trench <sup>6</sup> (square feet)	Matting <sup>7</sup> Bore Pits <sup>8</sup> ( (square (square feet) feet)	Grading <sup>9</sup> Str (square Pla feet) (so	Permanent tructure/Fill acement <sup>10</sup> quare feet)	County	Municipality	QQ	Q	Section	Township (N), Range (E/W)	ASNRI 11	Temporary Fill (square feet)	Permanent Fill (square feet)	Conversion <sup>12</sup> (square feet)	DNR DOCKET <sup>13</sup>
R25. Ryan Rd - Cape Rd to S 92nd St	Deep and Shallow Marsh, Fresh (Wet) Meadow, Hardwood Swamp	R-W94	Yes							719		1,762		Milwaukee	City of Franklin	NW	NW	30	5 N, 21 E	No	2,481		1,750	
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow	R-W96	Yes							1,364				Milwaukee	City of Franklin	NE	NW	30	5 N, 21 E	No	1,364			
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow	R-W98	Yes					6		131		201		Milwaukee	City of Franklin	NE	NW	30	5 N, 21 E	No	332			
R25. Ryan Rd - Cape Rd to 5 92hd St	Fresh (wet) Meadow	K-W99	res					ь				58		willwaukee	City of Franklin	IN VV	NE	30	5 N, 21 E	NO	58			
R26. Ryan Rd 92nd St to X @ Saint Martins Rd	WBIC 5037891	R-S15	No		HDD			12						Milwaukee	City of Franklin	SE	SW	21	5 N, 21 E	No				
R27. Ryan Rd - Saint Martins Rd to S 60th	UNT to Root River WBIC 5037878	R-S16	No		HDD			5						Milwaukee	City of Franklin	SE	SW	22	5 N, 21 E	No				
R27. Ryan Rd - Saint Martins Rd to S 60th	Root River WBIC 2900	R-S17	No		HDD			50						Milwaukee	City of Franklin	SE	SE	22	5 N, 21 E	No				
R27. Ryan Rd - Saint Martins Rd to S 60th	UNT to Root River WBIC 5037893	R-S18	No		HDD			9						Milwaukee	City of Franklin	SE	SE	22	5 N, 21 E	No				
R26. Ryan Rd 92nd St to X @ Saint Martins Rd	Fresh (Wet) Meadow	R-W114	Yes									621		Milwaukee	City of Franklin	NW	NW	28	5 N, 21 E	No	621			
R26. Ryan Rd 92nd St to X @ Saint Martins Rd	Fresh (Wet) Meadow	R-W115	Yes					22		1,179		569		Milwaukee	City of Franklin	NW	NW	28	5 N, 21 E	No	1,748			
R26. Rvan Rd 92nd St to X @ Saint Martins Rd	Fresh (Wet) Meadow	R-W110 R-W117	Yes							262		3.355		Milwaukee	City of Franklin	NE	NW	28	5 N, 21 E	No	3.617			
D29 5 60th Duan Dd to W Onlywood Dd	UNT to Root River	D 610	No		Evenuete under eulvert	subject only	9' undor ove	avation under o	victing 12" PCP	STNA		-,		Milwoulcoo	City of Franklin	MULTI	MULTI	MULTI	EN 21 F	Ne	-,			
	WBIC N/A UNT to Root River	R-519	NO		Excavate under cuivert	cuivert only	9 under exc	avation, under e.	kisung 12 KCP	51101				Milwaukee	City of Franklin	MULTI	MULTI	MULTI	5 N, 21 E	NO	257			
R28. S 60th - Ryan Rd to W Oakwood Rd R27. Rvan Rd - Saint Martins Rd to S 60th	WBIC N/A Fresh (Wet) Meadow	R-S20 R-W119	Yes		357	132	Trench, most	iy open water, po	ssible culvert in	500		426		Milwaukee	City of Franklin City of Franklin	NW	NE	28	5 N, 21 E	No	357 926			
R27. Ryan Rd - Saint Martins Rd to S 60th	Deep and Shallow Marsh, Fresh (Wet) Meadow	R-W120	Yes							12,647	128	343		Milwaukee	City of Franklin	SE	SE	21	5 N, 21 E	No	13,118			
R27. Ryan Rd - Saint Martins Rd to S 60th	Deep and Shallow Marsh, Fresh (Wet) Meadow, Shrub-Carr	R-W123	Yes					110		4,748	94	10,483		Milwaukee	City of Franklin	MULTI	SW	22	5 N, 21 E	No	15,325		598	
R27. Ryan Rd - Saint Martins Rd to S 60th	Fresh (Wet) Meadow	R-W128 R-W129	Yes					119		4,369		9,763		Milwaukee	City of Franklin	SW	SE	22	5 N, 21 E	Yes; PEC Intersect	14,132		1,479	
R28. S 60th - Ryan Rd to W Oakwood Rd	Fresh (Wet) Meadow	R-W120	Yes									109		Milwaukee	City of Franklin	SW	NW	26	5 N, 21 E	No	109			
R28. S 60th - Ryan Rd to W Oakwood Rd	Fresh (Wet) Meadow	R-W131	Yes							190		41		Milwaukee	City of Franklin	SW	SW	26	5 N, 21 E	No	232			
R29. Oakwood Rd and Discharge Parcel/END	Fresh (Wet) Meadow, Floodplain Forest	F3-W01	Yes							12,454		28,281	93	Milwaukee	City of Franklin	MULTI	NW	35	5 N, 21 E	Yes; PEC Intersect	40,735	93	587	
R29. Oakwood Rd and Discharge Parcel/END	Waterway - Root River Deep and Shallow Marsh, Fresh (Wet) Meadow, Hardwood	Root River	Yes		133	12		31				4.250		Milwaukee	City of Franklin	MULTI	NW	35	5 N, 21 E	No	2,216	133	161	
S2. W Coffee Rd - S Swartz Rd to S Heide Li	Swamp Fresh (Wet) Meadow	MKE-W05	Yes									4,339		Waukesha	City of New Berlin	SE	NW	17	6 N, 20 E	NO	4,339		101	
S2. W Coffee Rd - S Swartz Rd to S Heide Ln	Fresh (Wet) Meadow	MKE-W06	Yes							177		813		Waukesha	City of New Berlin	SE	NE	17	6 N, 20 E	No	989			
S2. W Coffee Rd - S Swartz Rd to S Heide Ln	Waterway - Ditch	MKE-S07	No		non-navigabl	e per DNR		non-navigab	le per DNR					Waukesha	City of New Berlin	MULTI	MULTI	17	6 N, 20 E	No				
S3. W Coffee Rd - S Heide Ln to S Calhoun Rd	Deep and Shallow Marsh, Fresh (Wet) Meadow, Shrub-Carr	MKE-W08	Yes		HDD			177		17,897		6,912	9	Waukesha	City of New Berlin	MULTI	MULTI	16	6 N, 20 E	No	24,809	9	2,035	
S3. W Coffee Rd - S Heide Ln to S Calhoun Rd	Fresh (Wet) Meadow	MKE-W20	Yes							2,036	3	56		Waukesha	City of New Berlin	SE	NE	16	6 N, 20 E	No	2,095			
S3. W Coffee Rd - S Heide Ln to S Calhoun Rd	Unnamed tributary to Poplar Creek	MKE-S01	No		HDD			10						Waukesha	City of New Berlin	MULTI	MULTI	16	6 N, 20 E	No				
S4. W Coffee Rd - S Calboun Rd to W National Ave	WBIC 5036678 Eresh (Wet) Meadow	MKE-W16	Yes							2 510		2 052		Waukesha	City of New Berlin	SW	NW	15	6 N 20 F	No	4 562			
S4. W Coffee Rd - S Calhoun Rd to W National Ave	Deep and Shallow Marsh, Fresh (Wet) Meadow	MKE-W18	Yes							0.2		10,776		Waukesha	City of New Berlin	SE	NW	15	6 N, 20 E	No	10,776			
S5. National/Oklahoma - Coffee to X @ S 122nd St	Unnamed tributary to Poplar Creek WBIC 772900	MKE-S02	No		HDD			15						Waukesha	City of New Berlin	SE	NW	14	6 N, 20 E	No				
S5. National/Oklahoma - Coffee to X @ S 122nd St	Unnamed tributary to Root River WBIC 5036469	MKE-S03	No		Excavate under culvert	culvert only	~2' under e	xcavation, under	existing STM					Waukesha	City of New Berlin	MULTI	MULTI	MULTI	6 N, 20 E	No				
S6. W Oklahoma Ave - X @ 122nd to X @ 101st St	Unnamed tributary to Root River WBIC 7625	MKE-S04	No		HDD			65						Waukesha	City of West Allis	MULTI	MULTI	MULTI	6 N, 21 E	No				
S6. W Oklahoma Ave - X @ 122nd to X @ 101st St	Root River WBIC 2900	MKE-S05	No		HDD			45						Milwaukee	City of West Allis	MULTI	MULTI	MULTI	6 N, 21 E	No				
S7. W Oklahoma Ave - X @ 101st St to SUPPLY START	Unnamed tributary to Honey Creek WBIC 5036372	MKE-S06	No		Excavate under culvert	culvert only	6' under exe	cavation, under 7	6"x48" sewer					Milwaukee	City of Milwaukee/City of We	est MULTI	MULTI	MULTI	6 N, 21 E	No				
S7. W Oklahoma Ave - X @ 101st St to SUPPLY START	Honey Creek	MKE-S08	No		Jack and Bore			10						Milwaukee	City of Milwaukee/City of We	est NW	NW	15	6 N, 21 E	No				
Alternate Booster Pumping Station	Fresh (Wet) Meadow	W-3	No											Waukesha	City of Waukesha	SW	SE	1	6 N. 19 E	No				
Alternate Booster Pumping Station	Fresh (Wet) Meadow	W-4	No											Waukesha	City of Waukesha	SW	SE	1	6 N, 19 E	No				
Alternate Booster Pumping Station	Fresh (Wet) Meadow	W-6	No											Waukesha	City of Waukesha	SW	SE	1	6 N, 19 E	No				
Alternate Booster Pumping Station	Fresh (Wet) Meadow	W-7	No											Waukesha	City/Town of Waukesha	SW	SE	1	6 N, 19 E	No				
Highway 59	Fresh (Wet) Meadow	W-12 W-13	No											Waukesha	City of Waukesha	SE	NW	12	6 N, 19 E	No				
Broadway	UNT	S-1	No		Jack and Bore	culvert only	~18" b	elow 30" CMP sto	ormwater pipe					Waukesha	City of Waukesha	MULTI	MULTI	1	6 N, 19 E	No				
West Coffee Road	UNT WBIC 773000	S-2	No		Excavate under culvert		~18" t	oelow 54" RCP sto	rmwater pipe					Waukesha	City of New Berlin	SE	NW	18	6 N, 20 E	No				
<u> </u>											• • •								. v	Vetland - Total (sq. ft.	350230	102	37094	
																				Wetland - Total (acre	8.04	0.02	0.85	
Notes:																			Wa	aterway - Total (sq. ft.	3998	133	0	_
1 Conversion de la terre de la constant de la constant de la Constant	and Deed Olassification system. Franktown india					المستعلقة والمستعدم				D		1 4k - 4		- 41-					V	Vaterway - Total (acre	0.09	0.003	0.00	_
<sup>2</sup> least the and an ether reference would be applied in	(a a Water al 4. Character 4)	ate where wa	ter nows (e.	9. UNT 10 3	Silver Creek) (UNT – unit	ameu inbutary).	include all wate	iways mapped		Surface v	Water Data viewer webtoo	i triat cross tri	ie project pa	aui.					RFP We	tland - Subtotal (sq. ft.)	261832	0	34311	_
Insert the code or other reference used in application 3. In the second seco	(e.g. wetland 1, Stream 1)																		RFP W	etland - Subtotal (acre)	6.01	0.00	0.79	_
<sup>4</sup> If the water year will be dreaded in direction of the second	ath by width) and volume (less the by width by down it)	od met-di	a ha r	od on the	willed town														KFP Wate	erway - Subtotal (sq. ft.)	1/83	U	0	-
The waterway will be dredged, indicate the area (len	gui by width) and volume (length by Width by depth) of t	if the state of th	o be remove	ed and bac	killed (lemporary dredge	;) 			4			··	14						RFP Wa	terway - Subtotal (acre)	0.04	0.00	0.00	-
Only complete this column if the upland banks of the	waterway will be graded in excess of 10,000 sq. ft., and	ii the project	is not locate	ed in Milwa	iukee County, if the project	ci will not require	e a local grading	permit, and if	une project w	III not req	uire a DINK construction s	tormwater per	rmit						WSP We	tland - Subtotal (sq. ft.)	47663	9	2196	-
It the wetland will be trenched, indicate the area (leng 7	th by width) of soil to be removed and backfilled (tempo	rary fill)																	WSP W	etland - Subtotal (acre)	1.09	0.0002	0.05	-
It construction matting (i.e. timber, composite, etc.) w	If be placed in wetland for vehicle/equipment access or	under soil st	ockpiles, ind	icate the a	rea (length by width) of m	natting to be place	ced in wetland (t	emporary fill)											WSP Wate	erway - Subtotal (sq. ft.)	0	0	0	-
The area of temporary wetland disturbance (length b	y width) for each bore pit is unknown at this time, please	e use an esti	mate based	on the size	e of the pipe														WSP Wat	terway - Subtotal (acre)	0.00	0.00	0.00	4
<ul> <li>Grading includes construction access, material stock</li> </ul>	piling, staging, as well as grading.																		Outfall Site We	tland - Subtotal (sq. ft.)	40735	93	587	4
If a permanent structure or permanent fill will be place	ed in wetland (i.e. valve station, lift station, hydrants, et	c.), incidate t	he area (len	gth by widt	th) of permanent fill														Outfall Site W	etland - Subtotal (acre)	0.94	0.002	0.01	4
Indicate if the wetland or waterway is a DNR Area of	Special Natural Resource Interest, which includes trout	t streams			_														Outfall Site Wate	rway - Subtotal (sq. ft.)	2216	133	0	-
Conversion reiers to vegetative clearing of shrub an	u/or rorested weilands, resulting in an herbaceous wetla	and, for the p	urposes of c	construction	11														ouudii site Wa	ici way - subtotal (acre)	0.05	0.003	0.00	

<sup>13</sup> Assigned and to be completed by the DNR

(please submit in excel and pdf format)

### MVP-2017-02087-MHK PAGE 3 OF 28



Typical Pipeline Sections



### MVP-MVP-2017-02087-MHK PAGE 5 OF 28

WAUKESHA, WISCONSIN **GREAT LAKES WATER SUPPLY PROGRAM RETURN FLOW PIPELINE TYPICAL SECTION ALONG LES PAUL PARKWAY** 2/26/2019







	MVP-2017-2087-	MHK PAGE	8 OF 28
			DATE APD REVISION
		Maukesha Water Utility SERVING WALKESHA SINCE 1886	CREELEY AND HANSEN 741 N. GRAND AVE, SUITE 308 WAUKESHA, WI 53186 NO.
		GREAT WATER	CONTRACT PACKAGE 6: RETURN FLOW PIPELINE, 18-INCH SANITARY SEWER, AND OUTFALL FACILITIES REAERATION BUILDING AND OUTFALL CIVIL DETAILS CIVIL DETAILS
GHT 3" NCHOR ATTACHED AT THREE POINTS TO 4 FT 1"=2'-0"		APPROVED SEAL AFFIXED MONTH / DAY / MAY JOB NO.: 15310 DESGN RLB APPRV RLB SCALE: DRAWING	YEAR 2019 CHCK MCS DRWN TBW 1" = 2'-0' G NUMBER
	ch2m:	SHEET 236 OF	259 REV 0

# Great Lakes Water Supply Program



# DRAFT 3-110 D1-Wetland and Waterway Restoration Plan

Revised July 31, 2019







# TABLE OF CONTENTS

SECTION 1	Executive	Summary	1-1
SECTION 2	Waterway	Crossings and Restoration	2-1
	2.1	Construction Timing	2-1
	2.2	Crossing Methods	2-1
	2.2.1	Wet Crossing Method	2-1
	2.2.2	Dry Crossing Method – Dam and Flume	2-2
	2.2.3	Dry Crossing Method – Dam and Pump	2-2
	2.2.4	Dry Crossing Method - Directional Drill and Guided Bore	2-3
	2.3	Waterway Crossing Equipment Routes	2-3
	2.4	Waterway Protection	2-4
	2.5	Streambed Substrate Protection and Preservation	2-4
	2.6	Permanent Restoration	2-4
	2.7	Trenched Waterway Crossings and Root River Outfall Details	2-5
	2.8	Waterway Restoration Monitoring	2-7
	2.9	Waterway Restoration Corrective Measures	2-8
SECTION 3	Temporar	y Wetland Impacts and Restoration	3-1
	3.1	Wetland Soil Preservation and Re-establishment of Drainage Patterns and Grad	les3-1
	3.2	Wetland Revegetation and Monitoring Plan	3-1
	3.2.1	Temporary Revegetation	3-1
	3.2.2	Timing for Temporary Revegetation	3-2
	3.2.3	Wetland Crossings	3-2
	3.2.4	Permanent Seeding of Wetland Areas	3-2
	3.2.5	Seed Bed Preparation and Seeding Procedures for Wetlands and Waterway	
		Overbank Areas	3-5
	3.2.6	Seeding Methods	3-5
	3.2.7	Seed Specifications	3-6
	3.3	Wetland Restoration Monitoring	3-6
	3.4	Wetland Restoration Corrective Measures	3-7
SECTION 4	Reference	9S	4-1



## TABLE OF CONTENTS

#### LIST OF TABLES

Table 1	Temporary Seed Mix	2-7
Table 2	Temporary Seed Mix	3-1
Table 3	Higher-Quality Seed Mix	3-3
Table 4	Wetlands with Native Mean C of $\geq$ 2.0	3-3

PROGRAM TEAM MEMBER CONSULTANTS:







## SECTION 1 Executive Summary

Successful restoration of wetlands disturbed during construction is dependent on a number of factors. These include protection of the hydric soil layer, re-establishment of elevations within the wetland and existing drainage patterns, and revegetation of wetlands and surrounding buffers. Monitoring of wetlands and if necessary, corrective actions, ensure that higher quality wetlands are returned to their pre-construction functionality.

The procedures in this Wetland and Waterway Restoration Plan (Plan) apply to streams, rivers, and other waterbodies such as jurisdictional ditches, ponds, and lakes. These procedures require that judgment be applied in the field and will be implemented under the supervision of the Great Water Alliance Program (Program).

Stream crossing requirements, including construction methods, timing, erosion control, and restoration are described in this Plan. If the contractor considers certain parts of these procedures to be technically impractical due to site-specific engineering constraints, they may submit an on-site modification request to the Program for consideration of alternative measures that would provide an equal or greater level of protection to the stream and river ecosystems. The Program will review the contractor's alternatives and consult with appropriate regulatory agencies. The contractor will receive written approval from the Program prior to implementing the alternatives. During wet and high runoff conditions, the Program, in consultation with the appropriate regulatory agencies, will determine whether conditions warrant additional considerations for construction activities. Pipelines shall maintain a minimum of 6 feet of cover to the bed elevation of the jurisdictional waterway. Trenches across the waterwayshall be the minimum width that they can be practically and safely implemented to preserve the stream substrate to the maximum extent practical.





## **SECTION 2** Waterway Crossings and Restoration

#### 2.1 Construction Timing

All in-stream work activities (installation of dams, sheet piling, etc.) will be minimized to the extent practicable on an area and time duration basis. In-stream trenching will be conducted during periods permitted by the appropriate regulatory agencies and applicable permits. The duration of waterway crossings shall be limited to the maximum time duration basis specified by the appropriate regulatory agencies in the permit documents.

The Program will require the contractor to stabilize disturbed waterway banks with erosion control materials such as an erosion control blanket and seeding. Permanent stabilization will be initiated within 24 hours and fully implemented 72 hours after installation of the crossing and reestablishing bank geometrywhen utilizing the wet trench method, and prior to restoring flow using the dam and pump or flume methods, unless site and permit conditions delaypermanent installation.

#### 2.2 Crossing Methods

#### 2.2.1 Wet Crossing Method

Wet crossing method is a method of crossing a waterway in which no diversion of water takes place and direct excavation within the waterway occurs.

Wet crossing methods for jurisdictional waterways will only be allowed as permitted by the regulatory agencies and shall be restricted to ephemeral streams, which are waterways that only have flow after significant rainfalls or melting events and do not have seasonally continuous flow or permanent flow. Wet crossings will not be allowed where blasting or rock breaking will occur or where the width of the waterbody to be crossed is greater than 20 feet as measured from the ordinary high-water mark. Wet crossings will not be allowed during times when flow is present or if rain is expected within 72 hours of the beginning of the crossing. For the purpose of selecting crossing method, roadside ditches are not considered to be jurisdictional waterways unless classified as such by regulatory authority.

Under the wet crossing method, the following timeframes for crossing the stream and re-establishing bank geometry apply:

Ephemeral waterbodies crossed by the wet method less than or equal to 10 feet wide bank to bank, or 10 feet wide or less from water's edge to water's edge at the time of construction, whichever is greater, must be trenched, installed, and bank geometry reestablished within 24 hours.

Ephemeral waterbodies crossed by the wet method greater than 10 feet wide and less than 20 feet wide from bank to bank, or between 10 feet wide and 20 feet wide from water's edge to water's edge at the time of construction, whichever is greater, must be trenched, installed, and bank geometry reestablished within 48 hours.

Ephemeral waterbodies greater than 20 feet in width from bank to bank or greater than 20 feet in width from water's edge to water's edge, whichever is greater, shall not be crossed with the wet crossing method unless specifically allowed by the regulators on a case by case basis.







Best Management Practices (BMP's) to re-establish bank stability and vegetation for waterways crossed with the wet crossing method shall be initiated within 24 hours and fully implemented within 72 hours.

Intermittent (seasonallycontinuous flow) or perennial (permanent flow) jurisdictional waterbodies, which would require diversion of water, shall not be crossed utilizing the wet method unless specifically allowed by the regulators on a case-by-case basis.

#### 2.2.2 Dry Crossing Method – Dam and Flume

The flume method is a dry crossing method that is suitable for crossing relatively narrow streams that have straight channels and are relatively free of large rocks and bedrock at the point of crossing. This method involves placement of flume pipe(s) in the stream bed to convey stream flow across the construction area without introducing sediment to the water. The upstream and downstream ends of the flume(s) are incorporated into dams made of sand bags and plastic sheeting (or equivalent). The upstream dam must be constructed first and will funnel stream flow into the flume(s). The downstream dam must prevent backwash of water into the trench and construction work area. Once the flumes and dams are operational, water between the dams is continuously pumped out of the work area to an appropriate dewatering BMP to create a dry working area. A trench is then excavated across the streambed, and the pipeline is installed across the stream. The trench is then backfilled, and the streambed and banks restored to preconstruction geometry. BMP's to stabilize disturbed areas are then installed and the dams and flume(s) are removed from the stream. Any incidental stream repairs needed at the site of the dams shall be made.

Contractor shall use the earthen trench plug method to reduce water accumulated as a result of groundwater inflows, rainfall or runoff to the upland trench from entering the in-stream work zone. Earthen trench plugs (hard plugs) between the in-stream trench work zone and the upland trench would be installed prior to excavation of the in-stream trench to prevent water from entering the work zone. Earthen trench plugs will be removed immediately prior to pipe placement, and then replaced when the pipe is in place. Trench water accumulated upslope of trench plugs will be pumped and managed appropriately prior to trench plug removal.

#### 2.2.3 Dry Crossing Method – Dam and Pump

The dam and pump method is a dry crossing method that is suitable for low flow streams and is a preferred alternative to fluming for crossing meandering channels. The dam and pump method involves damming of the stream with sandbags, inflatable/portable dams, sheet piling, and/or steel plates upstream and downstream of the proposed trench and pumping water from the upstream side of the dam around the construction area to the downstream side of the dam. Once the pumps and dams are operational, water between the dams is continuouslypumped out of the work area to an appropriate dewatering BMP to create a dry working area. A trench is then excavated across the streambed, and the pipeline is installed across the stream. The trench is then backfilled, and the streambed and banks restored to preconstruction geometry. BMP's to stabilize disturbed areas are then installed and the dams and pump(s) are removed. Any incidental stream repairs needed at the site of the dams shall be made.

Contractor shall use the earthen trench plug method to reduce water accumulated as a result of groundwater inflows, rainfall or runoff to the upland trench from entering the in-stream work zone. Earthen trench plugs (hard plugs) between the in-stream trench work zone and the upland trench would be installed prior to excavation of the in-stream trench to prevent water from entering the work zone. Earthen trench plugs will be removed immediatelyprior to pipe placement, and then replaced when the pipe is in place. Trench water accumulated upslope of trench plugs will be pumped and managed appropriatelyprior to trench plug removal.







#### 2.2.4 Dry Crossing Method – Directional Drill and Guided Bore

Installing the pipe underneath a stream utilizing the directional drill or guided bore method will involve placing a drill unit on one side of the stream. A small-diameter pilot hole will be drilled under the stream along a prescribed profile and route. After the pilot hole has been completed, barrel reams will be used to enlarge the pilot hole to accommodate the desired pipeline diameter. Drilling mud is utilized to remove cuttings and maintain the integrity of the hole. Water from a Program-approved source will be used to prepare the slurry of drilling mud and will be appropriated according to applicable permits. The pipe section will be pulled through the hole by the drilling rig and attached to the adjoining sections of pipe on each side of the waterbody.

During drilling operations, drilling mud and slurry will be stored back from the waterbody in an earthen berm sediment control structure, in tanks, or by other methods so that it does not flow into the waterbody, adjacent wetlands or off the workspace.

After the pipe is in place, excess drilling mud will be hauled off-site to a Program-approved disposal location or licensed disposal facility.

The directional drilling/guided bore method normally does not result in the disturbance of the stream banks or riparian vegetation (with exception of extremely limited hand clearing of woody vegetation required to facilitate guide wire placement), which reduces the potential for erosion and sedimentation at the stream crossing. Consequently, temporary erosion control measures that are installed at open-cut crossings typically are not necessary for drilled/bored crossings.

The contractor is required to submit a mitigation plan for critical phases of the drilling operations, including fluid fracture. This mitigation plan will be subject to specific requirements and processes specified as follows. The contractor will be required to continuouslymonitor the ground surface or waterway crossing within vicinity of the horizontal directional drill for evidence of fluid fracture. In the event of fluid fracture, the contractor will be required to stop drilling, wait 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a Marsh funnel and then wait another 30 minutes. If mud fracture return loss continues, the contractor is directed to not proceed with drilling operations and notify the resident project representative in writing. The resident project representative will review the occurrence and determine the appropriate course of action depending upon the conditions at which the fracture occurred. During this time, it is anticipated that the drilling fluid will harden and seal any subsurface pathways. If the inadvertent return occurs in a river or stream, it is anticipated the stream's current will quickly dissipate it. The contractor will be directed to proceed with the Work as authorized by the resident project representative in writing. Sand bags or similar methods for containment could be required if congealing of the fluid does not occur. Appropriate parties will be notified.

#### 2.3 Waterway Crossing Equipment Routes

Adjacent existing roadways will be to transfer equipment along the pipeline and to facilitate crossing of waterways. For all waterways that will be crossed using a trenchless trenched pipeline installation method, the contractor shall utilize the existing roadway as the equipment crossing route.



#### 2.4 Waterway Protection

Waterways adjacent to the limits of construction will be protected by use of appropriate BMPs. Stormwater management and erosion control requirements, as set forth by the WDNR within NR 216 and NR 151 and in support of NR 103, will be followed by the Program.

Appropriate sediment and erosion control measures will be implemented throughout construction, and BMPs for stormwater management and erosion control will be utilized. The BMPs utilized will meet the typical construction standards and practices as set forth by the WDNR.

#### 2.5 Streambed Substrate Protection and Preservation

Where trenching occurs within the bed of a perennial or intermittent jurisdictional waterway, substrate segregation shall be performed to preserve any existing protective layers. This maybe an armoring layer or other surficial accumulated layer which protects the stability of the waterway.

Surficial substrate layers which are to be disturbed during pipe installation within the work zone of the jurisdictional waterway shall be segregated and protected until final backfilling of the pipe trench and restoration of adjacent disturbed waterway bed areas. Layers having materials that would be classified as substantially different based on grain size, shall be managed as distinct layers. Backfilled surficial substrate layers shall have the same general sequence of sediment grain sizes as occurred prior to excavation and shall be restored to the same sequence as the adjacent unexcavated materials.

If the waterway bed is composed of materials that must be either blasted or ripped to create the pipe trench, a minimum of 3 feet of the blasted or ripped material will be backfilled to the elevation of the top of adjacent bedrock except that a minimum of 1 feet of pipe bedding material will be maintained above the pipe in cases where the surface of the blasted or ripped layer is below the bed elevation of the waterway.

#### 2.6 Permanent Restoration

Waterway banks disturbed during installation of the pipelines will be stabilized with erosion control materials such as an erosion control blanket and seeding. Where the banks have been disturbed, the contractor will restore the slopes as near as practicable to pre-construction conditions unless that slope is determined by the Program to be unstable. Where the slope of the banks is determined to be unstable or has the potential to erode or fail, the banks will be reshaped to transition the disturbed areas into the natural stream bank with the intent to stabilize the bank and create a blended, natural appearance.

Berms or other sediment filter devices will be installed at the base of sloped approaches to streams greater than five percent and the outlet of the berm will be directed awayfrom the stream into a well vegetated area. Temporary sediment control devices will remain in place until the area has stabilized, and adequate revegetation has established.

T ypically, waterbody banks will be restored as near as practicable to preconstruction conditions after backfilling is complete and will be seeded with an appropriate seed mix and covered with an erosion control blanket. Erosion controls, (e.g. straw bales, biologs, silt fences, etc.) will be installed as necessary based on site-specific conditions. The Program will reestablish stream bank vegetation using the seed mix listed in **Table 3**, unless an alternate seed mix is requested by applicable agencies. Additional vegetation requirements may also be contained within project





specific permits. Where a waterbody is located within a wetland, the banks will be re-seeded with the seed mix in **Table 3**.

Unstable soils and/or site-specific factors such as stream velocity and flow direction mayrequire additional restoration efforts, such as installation of rock rip-rap to stabilize disturbed stream banks. Rock rip-rap will be used only where site-specific conditions require and where applicable permits or approvals have been acquired. Geotextile fabric and rock riprap will be placed according to site and permit conditions. Disturbed soils upslope and on either side of the riprap will be prepared for seeding according to specifications and other stream bank protection requirements. Supplemental bioengineering techniques mayalso be implemented as determined by the Program on a case by case basis and as coordinated with the regulatory agencies.

Drainage ditches and intermittent streams will be permanently restored and stabilized with erosion control blanket, permanent seeding, or other appropriate measures.

#### 2.7 Trenched Waterway Crossings and Root River Outfall Details

The Program is proposing to cross three streams using a trenched method. This includes waterway R-S22 (unnamed tributary along IH43), R-S08 (unnamed tributary to Muskego Creek) along IH43, and R-S20 (unnamed tributary to the Root River) along South 60<sup>th</sup> Street. If these crossings are void of water and meet the criteria for a wet crossing, a wet crossing method will be used. If there is water present or the crossings do not meet the criteria to allow a wet crossing, either a dam and flume method or a dam and pump method will be used at these crossings. All other streams will be crossed using a horizontal directional drill method or the pipeline will be installed in an open cut trench underneath the existing culvert while protecting the culvert during construction. When backfilling the trench under a protected culvert, care shall be taken to ensure that backfill materials or flowable fill is adequatelyplaced under the existing culvert to provide full support and prevent future settlement.

R-S22 Crossing: The R-S22 crossing is a meandering drainage stream, that is part within the I-43 right-of-way running parallel to I-43 east and part off the Racine Avenue off ramp, that flows south toward I-43 before being funneled into dual 42-inch RCP storm pipes that allow the flow to continue south underneath I-43. The portion running parallel to I-43 and at the existing culverts will be impacted by the trench and pipeline installation. It is anticipated that the contractor will divert the water during construction and cut the ends off of the culverts during pipeline installation and then reinstall them (via boot and grout) after completing the pipeline installation. The downstream damming activities required for dam and flume or dam and pump methods, if required, will be incorporated into the culverts. Once the dams and flume (or pumps) are operational, water between the dams will be continuouslypumped out of the work area to an appropriate dewatering BMP to create a dry working area. As the stream banks will be reconstructed upon pipeline installation, the culverts will be reconstructed, and there is currently no riprap in this area, it is anticipated that there will be no need for additional riprap to protect the culvert inlets from scouring. The contractor will follow the requirements as previously outlined in this Plan to make this crossing, including providing the necessary BMP's to protect the undisturbed waterway and any construction area dewatering. The BMP's will include silt fence to limit sediments from construction activities from entering the waterway, sediment socks on the discharge side of pumps, sedimentation checks to protect downstream waterways, and silt fence and hay bales to capture sediment from construction area dewatering. The actual BMP's used by the contractor will be dependent on the actual crossing method, site conditions, and the permit requirements.

**R-S08 Crossing:** The R-S082 crossing is a meandering drainage stream, east of Martin Road, that flows south toward I-43 before being funneled into an RCP box culvert that allow the flow to continue south underneath I-43. The existing box culvert will not be impacted by the trench and pipeline installation. Any impacts to the apron end







walls that may occur will be repaired upon completion of the pipeline installation. The downstream damming activities required for dam and flume or dam and pump methods, if required, will be incorporated into the box culvert. Once the dams and flume (or pumps) are operational, water between the dams will be continuouslypumped out of the work area to an appropriate dewatering BMP to create a dry working area. As the apron end wall and stream banks will be reconstructed upon pipeline installation and there is currently no riprap in this area, it is anticipated that there will be no need for additional riprap to protect the box culvert inlet from scouring. The contractor will follow the requirements as previously outlined in this Plan to make this crossing, including providing the necessary BMP's to protect the undisturbed waterway and any construction area dewatering. The BMP's will include silt fence to limit sediments from construction activities from entering the waterway, sediment socks on the discharge side of pumps, sedimentation checks to protect downstream waterways, and silt fence and hay bales to capture sediment from construction area dewatering. The actual BMP's used by the contractor will be dependent on the actual crossing method, site conditions, and the permit requirements.

R-S20 Crossing: The R-S22 crossing is a meandering drainage stream, south of Franklin Drive on 60th Street, that flows west toward 60th Street before being funneled into dual 48-inch RCP storm pipes that allow the flow to continue west under 60th Street. The existing culverts will be impacted by the trench and pipeline installation. It is anticipated that the contractor will cut the ends off of the culverts during pipeline installation and then reinstall them (via boot and grout) after completing the pipeline installation. The downstream damming activities required for dam and flume or dam and pump methods, if required, will be incorporated into the culverts. Once the dams and flume (or pumps) are operational, water between the dams will be continuously pumped out of the work area to an appropriate dewatering BMP to create a dry working area. The existing riprap in this area will be removed and stored for future replacement. Upon pipeline installation, the stream banks will be reconstructed, the culverts will be reconstructed, and the riprap will be reinstalled to existing conditions or better. The contractor will follow the requirements as previously outlined in this Plan to make this crossing, including providing the necessary BMP's to protect the undisturbed waterway and any construction area dewatering. The BMP's will include silt fence to limit sediments from construction activities from entering the waterway, sediment socks on the discharge side of pumps, sedimentation checks to protect downstream waterways, and silt fence and hay bales to capture sediment from construction area dewatering. The actual BMP's used by the contractor will be dependent on the actual crossing method, site conditions, and the permit requirements.

**Root River Outfall:** The Root River Outfall is not a full waterway crossing. However, the treated effluent from the City of Waukesha Clean Water Plant will ultimatelybe discharged to the Root River at this location. As such, an outfall discharge structure will be constructed within the banks of the Root River to accept the discharge and prevent erosion. The Root River Outfall will consist of an RCP flared end section installed on the end of a 30-inch ductile iron discharge gravity pipe. The flared end section will extend into the river and the invert will match the elevation of the existing river bed. A 10-foot long pad of 15-inch riprap will be placed at the outlet of the flared end section. The thickness of the riprap will be approximately24 inches. Filter fabric will be placed between the river bed and the riprap. It is anticipated that the installation of the discharge pipe, flared end section, and the riprap will be accomplished within an area protected by a temporary coffer dam.

The general construction sequence could include the following: installation of silt fencing around the construction area, establishment of construction entrance and sediment tracking pad, installation protective matting in the riparian wetland, installation of a coffer dam in the river to allow for dewatering the work zone, installation of dewatering equipment, installation of dewatering discharge sedimentation BMPs, excavation of upland trenches, installation of ditch plugs, dewatering of the river work zone, excavation and installation of the discharge pipeline, discharge structure, filter fabric and riprap, restoration of river sediments, backfilling subsoils, restoration of bank and wetland





soils, installation of river bank erosion BMPs, inspection of installations, removal of dewatering equipment, removal of the coffer dam, removal of protective matting, preparation of seedbeds, planting wetland and upland areas, and removal of BMPs. It is anticipated that the construction sequence would be similar to the one listed above. However, the sequence would reflect permit conditions and the means and methods selected by the Program contractor. The BMPs to be used will include, at a minimum, silt fence along the wetlands adjacent to the river, silt fence along the river where there are not fringing wetlands and silt fence along the pipeline construction. A coffer dam will be used in the river to exclude water from the work zone. Water pumped from the work zone will be discharged into a sedimentation dewatering bag to remove fines before returning the water to the river. The dewatering bag will be placed in an upland location.

The duration of the outfall construction will depend, in part, on weather, river flows, and unforeseen conditions. It is anticipated that the duration of outfall construction would be approximately two months.

The streambank is to be restored with live plants, which shall consist of trees, shrubs and herbaceous plugs. Trees and shrubs are to be planted in two ranks along the river. Sandbar willow is to be planted closer to the river followed by black willow that is to be planted upslope of the sandbar willow. Herbaceous plugs shall be planted in groupings of 10 per the landscaping plan and shall be arranged with consideration given to probable hydrologic gradient and species type. The area planted in herbaceous plugs shall be protected using goose fencing or similar BMP to protect the plantings from wildlife predation. The herbaceous plugs shall include the species listed in Table 1.

Scientific Name	Common Name	Spacing
Asclepias incarnata	Marshmilkweed	1' OC
Carex lupulina	Hop sedge	1' OC
Carex vulpinoidea	Foxsedge	1' OC
Elymus canadensis	Canada wild rye	1' 00
Elymus virginica	Virginia wild rye	1' 00
Helianthus grosseserratus	Sawtooth sunflower	1' OC
Juncus effusis	Soft rush	1' OC
Panicum virgatum	Switch grass	1' OC
Scirpus atrovirens	Dark green bulrush	1' OC
Schoenoplectus tabernaemontani	Softstem bulrush	1' OC

#### 2.8 Waterway Restoration Monitoring

The bed and banks impacted by the crossings of waterways R-S22, R-S08, R-S20 and the Root River outfall will be monitored for a period of three years post-construction. Monitoring will occur mid to late summer with a report provided to the USACE and WDNR by November 30 of the monitoring year. Waterways to be crossed by HDD are not anticipated to be impacted by construction and are not planned for post construction monitoring.

As part of the monitoring, a site visit will be conducted to evaluate for potential scour or erosion, bank and bed stability, and revegetation.



Photographs in each of the cardinal directions will be taken of the restoration area during the monitoring visit to document the progress of the restoration.

#### 2.9 Waterway Restoration Corrective Measures

Corrective measures will be taken if, based on the Waterway Restoration Monitoring, the waterway restorations do not appear to be successful. If there is excessive erosion, bank failure, or unsuccessful vegetation establishment; the Program will repair or replant as appropriate. Corrective measures may include regrading/reshaping the waterway, repairing erosion, or replanting/seeding plants.





#### **SECTION 3 Temporary Wetland Impacts and Restoration**

#### 3.1 Wetland Soil Preservation and Re-establishment of Drainage Patterns and Grades

During construction, numerous areas through wetlands of varying quality and size will be disturbed. Essential to their restoration is proper wetland soil segregation and re-establishment of the elevations within the wetlands and the drainage patterns which feed them.

As work progresses, various techniques may be employed to preserve wetland soils. Wetland soils directly over the trench and within 6 feet of the estimated trench width (trench influence area) must be salvaged and stockpiled in a windrow adjacent to the excavation or in another area which is protected from erosion and mixing prior to excavation within the subsoil. Protection of wetland soils that are not within the influence area of the trench may be removed as well for their protection or other methods in place soil preservation may be employed depending on conditions encountered at the time of construction. In all cases, compaction and/or mixing of wetland soils must be avoided during construction. One method which may be employed, depending on conditions encountered, is stripping and segregating of all wetland soils within the work zone. Alternatively, soils outside of the trench influence area maybe protected in place from mixing and rutting. Methods to protect wetland soils in place include timber matting, use of low ground pressure equipment, and performing construction during frozen conditions.

In addition to protecting the wetland soils, the hydrologic setting must also be preserved. The re-establishment of drainage patterns and wetland elevations are essential to returning a wetland to its pre-construction condition. Documentation of the existing grades and drainage patterns will be completed as part of the pre-construction survey to provide a predictable means of re-establishing hydrology to the effected wetland.

#### 3.2 Wetland Revegetation and Monitoring Plan

#### 3.2.1 **Temporary Revegetation**

The primary focus of The Program's temporary revegetation measures is to quickly establish ground cover vegetation, minimize potential soil erosion, and minimize noxious weed establishment. The Program's temporary seed mix is located in Table 2.

Unless specifically requested by landowners or land managing agencies, The Program does not intend to establish temporary vegetation in actively cultivated land, standing water wetlands, and/or other standing water areas.

Seed Name	Pure Live Seed (Pounds Per Acre)	% of Seed
Oats ( <i>Avena sativa</i> ) if seeding prior to August 15, or Cereal Rye ( <i>Secale cereale</i> ) if late summer, fall, or dormant (late fall) seeding	40	50%
Annual Ryegrass (Lolium italicum)	40	50%
TOTAL	80	100%





#### 3.2.2 Timing for Temporary Revegetation

T emporary revegetation will be established in construction work areas where 14 days or more will elapse between:

- the installation of the first pipeline and the second line where two pipelines will be co-constructed;
- the completion of final grading at a site and the establishment of permanent vegetation; and/or,
- where there is a high risk of erosion due to site-specific soil conditions and topography.

The Program may require the contractor(s) to conduct temporary seeding sooner than 14 days at site specific locations near sensitive resource areas and/or areas prone to wind/water erosion. Temporary vegetation should be established at any time between April 1 and September 10. Attempts at temporary revegetation after these dates should be assessed on a site-specific basis and with approval from the Program.

#### 3.2.3 Wetland Crossings

T ypical pipeline construction in wetlands consists of clearing, stringing, trenching, dewatering installation, backfilling, final grading, cleanup, and revegetation. However, due to the unstable nature of some wetland soils, construction activities may differ somewhat from those described for upland areas. Construction activities will be minimized in wetlands to the extent practicable.

Pre-construction planning is an essential part of wetland crossings. Wetland crossing requirements, including construction methods, timing, erosion control, and restoration, are described in this section and in the wetland crossing permits issued by state, federal and/or tribal agencies as applicable. If certain parts of these procedures are technically impractical due to site-specific engineering constraints, a request will be submitted to the Program for approval of alternative measures.

The procedures in this section apply to all wetlands that will be affected by the project. These procedures require that judgment be applied in the field and will be implemented under the supervision of the Program and the Environmental Inspector. The intent of these procedures is to minimize construction-related disturbance and sedimentation of wetlands and to restore wetlands as nearly as possible to pre-existing conditions.

#### 3.2.4 Permanent Seeding of Wetland Areas

Wetlands are generally divided into two categories: naturally occurring or within roadside ditches. Higher quality natural wetlands, those with a mean coefficient of conservatism (Mean C) of 2 or greater will be seeded with a more diverse native seed mix (**Table 3**). Lesser quality wetlands (Mean C < 2) and ditches will have a less diverse seed mix as described in this section.

#### **Higher-Quality Wetland Areas**

Higher-quality wetlands are identified in **Table 4** below and will be seeded with the mix provided in **Table 3** to provide temporary cover and an additional seed source as well as allowed to revegetate naturally. The natural revegetation process will be encouraged by the seeds and rhizomes in the topsoil spread back over the right-of-way after pipe installation. No fertilizer, lime, or mulch will be applied in wetlands.

Three-year monitoring of these wetlands will be conducted to document the floristic quality and Mean C. This is further described in the Wetland Monitoring section.





Table 3. Higher-Quality Natural Wetland Seed Mix												
HQ-Natural	Wet to Wet Mesic Full Sun to Part Sun	3.25 PLS LBS/Acre										
Wildflowers		Oz/Acre										
Alisma subcordatum	Mud Plantain	1.50										
Asclepias incarnata	Marsh (Red) Milkweed	4.00										
Aster novae-angliae	New England Aster	0.25										
Aster puniceus	Swamp Aster	0.50										
Eupatorium perfoliatum	Boneset	0.25										
Helenium autumnale	Sneezeweed	0.50										
lris versicolor	Northern Blue Flag Iris	4.50										
Lobelia cardinalis	Cardinal Flower	0.75										
Lobelia siphilitica	Great Blue Lobelia	0.50										
Lycopus americanus	Water Horehound	0.25										
Mimulusringens	MonkeyFlower	0.10										
Penthorum sedoides	Ditch Stonecrop	0.05										
Polygonum pensylvanicum	Pinkweed	1.00										
Pycnanthemum virginianum	Mountain Mint	0.50										
Solidago graminifolia	Grass-Leaved Goldenrod	0.10										
Solidago riddellii	Riddell's Goldenrod	0.50										
Verbena hastata	`Blue Vervain	0.75										
Grasses, Sedges, & Rushes		Oz/Acre										
Bromus ciliatus	Fringed Brome	16.00										
Poa palustris	Fowl Bluegrass	0.50										
Elymus virginicus	Virginia Wild Rye	0.50										
Carex bebbii	Bebb's Oval Sedge	0.50										
Carex crinita	Fringed Sedge	0.50										
Carex hystericina	Porcupine Sedge	0.25										
Carex lacustris	Common Lake Sedge	0.75										
Carex stipata	Common Fox Sedge	0.25										

#### Table 4. Natural Wetlands with Mean $C \ge 2.0$

Wetland ID	Plant Community
F1-W01	Hardwood Swamp
F1-W02	Fresh (Wet) Meadow
F3-W01	Fresh (Wet) Meadow
MKE-W08	Shallow Marsh
MKE-W08	Shrub-Carr
MKE-W16	Fresh (Wet) Meadow
MKE-W18	Shallow Marsh

Waukesha Water Utility





**SECTION 3** 

MKE-W20	Fresh (Wet) Meadow
R-W01	Fresh (Wet) Meadow
R-W03	Fresh (Wet) Meadow
R-W06	Shallow Marsh
R-W07	Shallow Marsh
R-W07	Floodplain Forest
R-W26	Floodplain Forest
R-W26	Shrub-Carr
R-W34	Floodplain Forest
R-W35	Shrub-Carr
R-W36	Fresh (Wet) Meadow
R-W63	Fresh (Wet) Meadow
R-W65	Hardwood Swamp
R-W71	Hardwood Swamp
R-W92	Hardwood Swamp
R-W92	Shrub-Carr
R-W94	Shallow Marsh
R-W94	Hardwood Swamp
R-W113	Shrub-Carr
R-W116	Fresh (Wet) Meadow

#### Low-Quality Wetland Areas and Ditches

Lesser-quality natural wetlands and ditches will be seeded with grass seed or sod.

Grass Seed: The contractor will provide a fresh, clean, new crop of grass seed meeting the requirements of the authority having jurisdiction or Section 630 of the State Specifications. The contractor will provide seed components free of noxious weed seeds. Unless otherwise indicated, the contractor will provide Seed Mixture No. 40. The seed mix 40 plant species includes KentuckyBluegrass (35%), Red Fescue (20%), Hard Fescue (20%), and Improved Fine Perennial Ryegrass (25%).

Sod: The contractor will provide sod meeting the requirements of the authority having jurisdiction or Section 631 of the State Specifications.

The natural revegetation process will be encouraged by the seeds and rhizomes in the topsoil spread back over the right-of-way after pipe installation. No fertilizer, lime, or mulch will be applied in wetlands.

Due to the current condition (i.e., dominant invasive species and landscape position (ditch) and low floristic quality of these wetlands, monitoring will not be conducted.

#### Saturated/Standing Water Wetlands

The Program does not propose to seed standing water wetland areas. It has been the Program's experience that the reestablishment of vegetation within standing water wetlands occurs best through natural process without supplemental seeding.

#### Forested Wetland Restoration

The Program proposes to allow natural reforestation of the temporary workspace area within forested wetlands via stump sprouting, root sprouting, and natural recruitment. Where forested wetlands have been temporarily converted, the applicable seed mix will be seeded, but woody vegetation will be allowed to reestablish naturally. Majority of the

Waukesha Water Utility





forested wetland areas are within roadway right-of-ways that may be maintained by municipalities that manage the right-of-ways. Great Water Alliance (GWA) is anticipating that if the vegetation in the right-of-ways is left unmanaged, then woody plant species would grow naturally. Management/mowing of vegetation within roadway right-of-ways is the responsibility of the municipalities. Additionally, for future potential maintenance activities and protection of the pipeline from tree roots, it is preferred that trees not be allowed to be establish. Specific forested wetland restoration provisions will be followed as indicated in applicable permits issued for the project.

# 3.2.5 Seed Bed Preparation and Seeding Procedures for Wetlands and Waterway Overbank Areas

After replacement of subsoils, soil horizon layers will be restored to the thicknesses that were present at the time of trench excavation. Following final grading, deep tillage will be performed in actively cultivated wetland areas to relieve soil compaction and promote root penetration. Deep tillage will not be conducted in non-farmed wetlands.

In actively cultivated wetland areas, the soil will then be tilled to a minimum depth of 4 inches with a disc, field cultivator, or chisel plow (or equivalent) to prepare a seedbed, breaking up large clods and firm the soil surface. The resulting seedbed must be soft enough to permit seed to be covered and mulch to be anchored, yet firm enough to support the weight of an adult without sinking into the soil more than about 1/2 inch. Tillage and equipment operations related to seeding and mulching will be performed parallel to ground contours as much as practicable.

Following replacement of subsoils in non-agricultural areas, wetland soil horizon layers will be restored to the thicknesses that were present at the time of trench excavation. The soils will then be tilled to a maximum depth of 4 inches with a disc, field cultivator, or chisel plow (or equivalent) to prepare a seedbed, breaking up large clods and firm the soil surface.

No soil amendments will be applied in wetlands unless directed by the appropriate agencies. Additionally, soil amendments should not be used for plantings consisting of native grasses, forbs, and legumes unless otherwise directed by agencies.

#### 3.2.6 Seeding Methods

Seed will be applied uniformly at specified rates across the prepared ROW by drilling, broadcasting, or hydroseeding. Seeding activities will be suspended if conditions are such that equipment will cause rutting of the surface in the designated seeding areas. The Program will continue to monitor ROW conditions to resume seeding activities as site conditions improve and according to the general seeding timing restrictions.

#### **Drill Seeding**

Seeding equipment will be capable of uniformly distributing the seed and sowing it at the required depth. Drills will be equipped with a feeding mechanism that will provide a uniform flow of seed at the desired application rate. Doubledisc furrow openers equipped with depth bands and packer wheels to firm the soil over the seed will be used where practicable.

#### **Broadcast Seeding**

Broadcast seeding rate will be double the drill-seeding rate. Seed will be uniformly distributed by a mechanical or hand operated seeder. Following seeding, a cultipacker, corrugated metal roller, cultimulcher with the tines disengaged, harrow, or hand rake will be used to cover the seeds and firm the seedbed as is appropriate for the area.

Waukesha Water Utility





#### Hydroseeding

Hydroseeding rate will be double the drill seeding rate, or the same as broadcast seeding rate. Seed will be applied alone or in a seed, fertilizer and/or hydromulch slurry. If seeding is applied alone, the amount of hydromulch material will be adjusted to the seed slurry to show where seeding has taken place, providing a means to identify uniform cover of the ROW. Hydroseeders must provide continuous coverage.

#### 3.2.7 Seed Specifications

Seed will be of high quality, complywith Wisconsin Seed and Weed Laws, and will originate from the United States. Seed used will be purchased on a "Pure Live Seed" (PLS) basis for seeding (both temporary and permanent) revegetation areas. Seed tags will identify:

- purity;
- germination;
- date tested;
- total weight and PLS weight;
- weed seed content; and
- seed supplier's name and business information.

Seed will be used within 12 months of germination testing as required by applicable state rules and regulations. The seed tags on the seed sacks will also certify that the seed is "Noxious Weed Free." Seed rates used on the project will be based on PLS rate, not actual weight basis. Therefore, to determine the correct application rate if not indicated on the seed tag, a correction calculation must be performed based the purity and germination.

The species components of individual mixes are subject to availability at the time of purchase. Grass species maybe substituted with alternative native or non-invasive species that are subject to approval by the Program.

Seed tags must be collected by the contractor and provided to the Program during seeding activities. The tags will be reviewed by the Program prior to installation to ensure that the seed mix complies with Program specifications and that it is being applied to the correct location. If bulk delivery of seed is made, the above information will still be made available to the Program. Off-loading/on-loading of seed will not be performed in a designated wetland area.

Legume seed (if used) will be treated with an inoculant specific to the species and in accordance with the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydroseeding). When hydroseeding, four times the manufacturer's recommended rate of inoculant will be used. Pre-inoculated seed that has been coated will be seeded within 12 months of inoculation or will be re-inoculated.

The contractor's proposed seed sources will be submitted to the Program for review and approval prior to construction. The contractor will also arrange for appropriate storage of the seed.

#### 3.3 Wetland Restoration Monitoring

It is proposed that the higher-quality wetlands listed in **Table 4** of **Section 3.2.4** be monitored for a period of three years. Monitoring will occur mid to late summer with a report provided to the USACE and WDNR by November 30 of the monitoring year. It is also proposed that low quality wetlands not listed in Table 3 will be planted with the appropriate wetland seed mix and adequate vegetative cover will be verified within the initial as built report, but will not be monitored for the three-year period.





A meander survey will be performed to identify and record all vascular plant species present and identifiable at the time of the site visit. Based on the data collected, a mean C-value and Floristic QualityIndex (FQI) value will be calculated using coefficients of conservatism values based on the WDNR FQA Calculator v1.5.17.

Photographs in each of the cardinal directions will be taken of the restoration area during the monitoring visit to document the progress of the restoration.

Performance criteria of a minimum mean coefficient of conservatism value (C-value) of 2.0 will be required to demonstrate successful restoration of the high-quality wetlands.

#### 3.4 Wetland Restoration Corrective Measures

Corrective measures will be taken if, based on the Wetland Restoration Monitoring, the wetland restorations do not appear to be successful or are not meeting the performance criteria. Corrective measures may include regrading to correct hydrologic issues, repairing erosion, and invasive species management and/or reseeding to correct floristic quality issues.





## SECTION 4 References

Bernthal, Tom. 2003. Development of a Floristic Quality Assessment for Wisconsin. Wisconsin Department of Natural Resources, Bureau of Fisheries Management and Habitat Protection, 22 pp.



#### State of Wisconsin DEPARTMENT OF NATURAL RESOURCES 141 NW Barstow, Room 180 Waukesha, WI 53188

Tony Evers, Governor Preston D. Cole, Secretary Telephone 608-266-2621 Toll Free 1-888-936-7463 TTY Access via relay - 711



August 21, 2020

IP-SE-2018-68-N04503, N04505, N04506

Dan Duchniak Waukesha Water Utility 115 Delafield Street Waukesha, WI 53188

Dear Mr. Duchniak:

Re: Amendment to Great Water Alliance-Great Lakes Water Supply Program Waterway and Wetland Permit

The Department of Natural Resources (department) has reviewed your request to amend permit IP-SE-2018-68-N04503, N04505, N04506 which authorizes the wetland and waterway impacts of the Great Lakes Water Supply Program. The amendment specifically requests additional temporary wetland impact to facilitate a shift in alignment along the return flow system.

Your request to authorize additional temporary wetland impact is approved with certain conditions and limitations. Attached is the permit amendment containing new conditions, along with a copy of your original permit which is still in effect unless otherwise noted.

Please note the original permit requires the submittal and approval of a stream crossing plan for the utility crossings of the waterways (open cut trench crossings), the construction plans for the outfall structure on the Root River, as well as the final wetland and waterway restoration plans. These submittals have not yet been submitted to the department.

If you have any questions about this permit amendment, please call me at (262) 574-2153 or email Geri.Radermacher@wisconsin.gov.

Sincerely,

Seu Radermacher

Geri Radermacher Water Management Specialist

cc: Marie Kopka, U.S. Army Corps of Engineers Stacy Schumacher, Public Service Commission





#### PERMIT AMENDMENT

Waukesha Water Utility is hereby granted under 401 CWA, Section 30.025, 30.12, 30.20, 281.36, Wisconsin Statutes, an amendment to permit number IP-SE-2018-68-N04503, N04505, N04506, which authorized wetland fill, a structure on the bed of a waterway and dredging waterways. The project is located in Section 13, Town 06 North, Range 19 East, Sections 2, 3, 12-20, 27, 29, 32-34 Township 06 North, Range 20 East, and Sections 7 and 18, Town 06 North, Range 21 East, (all in the City of New Berlin, Waukesha County, and Sections 9, 13-16, Town 06 North, Range 19 East, (all in the City of Waukesha, Waukesha County), and Sections 32-34, Town 6 North Range 20 East, and Sections 2, 3, 11, 13, 14, 24, 25, Town 05 North, Range 20 East, and Section 30, Town 05 North, Range 21 East, (all in the City of Muskego, Waukesha County), and Sections 9 and 13-16, Town 06 North, Range 19 East, and Section 9, Town 6 North Range 19 East, (all in the Town of Waukesha, Waukesha County), and Sections 13, 24, 25, Town 05 North, Range 20 East, and Sections 21, 22, 26-30 and 35, (all in the City of Franklin, Milwaukee County), and Sections 8 and 16-18, Town 06 North, Range 21 East, (all in the City of Greenfield, Milwaukee County), and Sections 8, 9, 15-17, (all in the City of Milwaukee, Milwaukee County), and Section 12, Town 06 North, Range 20 East, and Sections 7-9 and 15-18, (all in the City of West Allis, Milwaukee County). This is an approved amendment to increase the amount of temporary wetland impact by .13 acres. The applicant is bound by the conditions of the original permit and by any conditions of this amendment.

#### AMENDED PERMIT CONDITIONS

- 1. All original permit conditions remain in effect, except where modified by the amended permit conditions below.
- 2. Condition #27 of the original permit has been modified to read, "No wetlands may be disturbed beyond the area specifically authorized in this permit. Wetland impacts are identified in the attached Wetland/Waterway Impact Location Table 1, dated August 19, 2020 (attached)"

#### FINDINGS OF FACT

- On June 12, 2020, Waukesha Water Utility (WWU) filed a request with the Department for an amendment of a permit which authorizes wetland fill, structure on the bed of a waterway and dredging waterways, in order to construct the infrastructure associated with the water supply and return systems of the Great Water Alliance Program, under 401 CWA, Section 30.025, 30.12, 30.20 281.36, Wisconsin Statutes
- 2. The project is located in Section 13, Town 06 North, Range 19 East, Sections 2, 3, 12-20, 27, 29, 32-34 Township 06 North, Range 20 East, and Sections 7 and 18, Town 06 North, Range 21 East, (all in the City of New Berlin, Waukesha County, and Sections 9, 13-16, Town 06 North, Range 19 East, (all in the City of Waukesha, Waukesha County), and Sections 32-34, Town 6 North Range 20 East, and Sections 2, 3, 11, 13, 14, 24, 25, Town 05 North, Range 20 East, and Section 30, Town 05 North,

Range 21 East, (all in the City of Muskego, Waukesha County), and Sections 9 and 13-16, Town 06 North, Range 19 East, and Section 9, Town 6 North Range 19 East, (all in the Town of Waukesha, Waukesha County), and Sections 13, 24, 25, Town 05 North, Range 20 East, and Sections 21, 22, 26-30 and 35, (all in the City of Franklin, Milwaukee County), and Sections 8 and 16-18, Town 06 North, Range 21 East, (all in the City of Greenfield, Milwaukee County), and Sections 8, 9, 15-17, (all in the City of Milwaukee, Milwaukee County), and Section 12, Town 06 North, Range 20 East, and Sections 7-9 and 15-18, (all in the City of West Allis, Milwaukee County.

- 3. Waukesha Water Utility was granted permit IP-SE-2018-68-N04503, N04505, N04506 to construct the Great Water Alliance Program (Program) which brings water from Lake Michigan to the City of Waukesha and returns water back to the Root River. The applicant's stated purpose of the program is to provide a long-term, safe and sustainable water supply for the City of Waukesha. The Program includes a Water Supply System and a Return Flow System. The Water Supply System requires pipelines and facilities capable of conveying Lake Michigan potable water from Milwaukee to Waukesha. The Return Flow System requires piping and facilities capable of returning treated effluent from the Waukesha Clean Water Plant to the Root River, a tributary to Lake Michigan.
- 4. Waukesha Water Utility filed a request to amend the original permit on June 12, 2020 to modify the alignment of the Return Flow Pipeline from the north side of STH100/Ryan Road to the south side of STH 100/Ryan Road resulting in an additional 0.13 acres of temporary wetland impact.
- 5. The project directly impacts 8.042 acres of wetland, of which .002 acres is permanent wetland fill and 8.04 acres is temporary wetland impacts. The Water Supply System impacts 1.09 acres of wetland and the Return Flow System Impacts 6.95 acres of wetland, of which 6.01 acres are associated with the Return Flow Pipeline and 0.94 acres are associated with the Return Facilities and Outfall Site.
- 1. The Department has determined that the proposed amendment to the permit will not affect the Findings of Fact and Conclusions of Law of the original permit. A copy of the original permit is attached to this amendment.

#### CONCLUSIONS OF LAW

- 1. The Department has authority under 401 CWA, Sections 30.20, 30.12. 281.36 Wisconsin Statutes and the foregoing Findings of Fact, to issue an order granting the permit amendment requested.
- 2. The Department has complied with Section 1.11, Wisconsin Statutes and NR 150, Wisconsin Administrative Code.

Dated at Waukesha Service Center, Wisconsin on 08/21/2020.

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES For the Secretary

Seu Radermacher

By\_

Geri Radermacher Water Management Specialist

#### PSC DOCKET NUMBER: 6240-CW-117 **Table 1 DNR Wetland/Waterway Impact Location Table - Revised August 19, 2020** Supplement Document to WDNR Form 3500-53. Check all that apply.

Note: Any revisions to this table must be agreed upon by all parties before filing.

RESOURCE				CONSTRUCTION METHOD/ACTIVITY										LO	CATION					RESOURCE I	MPACT		
		1			Dredge 4	act Activity				Temporary Impact	act Activity					1		1					4
Route/ Segment/ Contract	Wetland Type or Waterway Name <sup>1</sup>	Feature Unique ID <sup>2</sup>	Permit Required	Bridge <sup>3</sup>	square feet	cubic yards	Grading on banks (upland) over 10,000 sq.	DD/J&B lear feet)	Plow (linear feet) Trench <sup>6</sup> (square	Matting <sup>7</sup> (square (square	<sup>8</sup> Grading <sup>9</sup> (square	Permanent Structure/Fill Placement <sup>10</sup>	County	Municipality	QQ	Q	Section	Township (N), Range (E/W)	ASNRI 11	Temporary Fill (square feet)	Permanent Fill (square feet)	Conversion <sup>12</sup> (square feet)	DNR DOCKET <sup>13</sup>
							π		feet)	feet) feet)	feet)	(square feet)											
R01. Sentry Drive R01. Sentry Drive	Hardwood Swamp Fresh (Wet) Meadow	F1-W01 F1-W02	Yes								315		Waukesha	City of Waukesha	MULTI	NE	9	6 N, 19 E 6 N 19 F	Yes; PEC Intersect Yes: PEC Intersect	315		315	
R04. S West Ave.	Fresh (Wet) Meadow	R-W01	Yes								262		Waukesha	City of Waukesha	MULTI	SE	15	6 N, 19 E	Yes; PEC Intersect	262			
							10 excav	0' under vation with															
R05. Les Paul - West Ave to East Ave	UNT to Pebble Brook WBIC N/A	R-S01	No		Excavate under culvert	culvert only	1 cle	L8" min earance, under					Waukesha	City of Waukesha	NE	SE	15	6 N, 19 E	Yes; PEC Intersect				
							existi ST	ing 36" RCP TM (x2)															
R05. Les Paul - West Ave to East Ave	Fresh (Wet) Meadow	R-W03	Yes						112		16,144		Waukesha	City of Waukesha	MULTI	SE	15	6 N, 19 E	Yes; PEC Intersect	16,257			
R06. Les Paul - East Ave to Sunset Dr	UNT to Pebble Brook WBIC N/A	R-S02	No		non-navigab	e per DNR	no	on-navigabl	le per DNR				Waukesha	City/Town of Waukesha	NE	SW	14	6 N, 19 E	Yes; PEC Intersect				
R06. Les Paul - East Ave to Sunset Dr	Pebble Brook WBIC 769500	R-S04	No		HDD			12					Waukesha	City/Town of Waukesha	NE	sw	14	6 N, 19 E	Yes; PEC Intersect				
R06. Les Paul - East Ave to Sunset Dr	UNT to Pebble Brook WBIC 5036475	R-S05	No		HDD			8					Waukesha	City/Town of Waukesha	SE	NE	14	6 N, 19 E	No		·		
R06. Les Paul - East Ave to Sunset Dr	Pebble Brook WBIC 769500	R-S06	No		HDD			8					Waukesha	City/Town of Waukesha	SE	NE	14	6 N, 19 E	No				
R06. Les Paul - East Ave to Sunset Dr	Deep and Shallow Marsh, Floodplain Forest	R-W06	Yes						39		434		Waukesha	City of Waukesha	NW	SW	14	6 N, 19 E	No	473		5	+
R06. Les Paul - East Ave to Sunset Dr	Forest	R-W07	Yes					407	6,241		16,625		Waukesha	City of Waukesha	MULTI	SW	14	6 N, 19 E	Yes; PEC Intersect	22,866		2,758	
R06. Les Paul - East Ave to Sunset Dr	Fresh (Wet) Meadow	R-W14	Yes								783		Waukesha	Town of Waukesha	NE	NE	14	6 N, 19 E	No	783			
R07. E Sunset - Les Paul to E Racine R07. E Sunset - Les Paul to E Racine	Fresh (Wet) Meadow Fresh (Wet) Meadow	R-W133 R-W134	Yes						9,433		1,883		Waukesha	City of Waukesha City/Town of Waukesha	NW	NW	13	7 N, 19 E 8 N, 19 E	NO	2,702			-
R10. S. Racine - Shady Ln to X @ Quarry	Fresh (Wet) Meadow, Hardwood Swamp	F2-W01	Yes						41		656		Waukesha	City of New Berlin	SW	SE	18	6 N, 20 E	No	698		657	-
R10. S. Racine - Shady Ln to X @ Quarry	Fresh (Wet) Meadow	R-W15	Yes						67		4,761		Waukesha	City of New Berlin	NE	NE	19	6 N, 20 E	No	4,828			+
R11. S. Racine - Quarry to X @ Observatory Ru R12. S Racine - Observatory to W Lawnsdale	Fresh (Wet) Meadow	R-W17 R-W18	Yes						2		437		Waukesha	City of New Berlin	MULTI	NW	20	6 N, 20 E	No	439			-
R13. S. Racine - Lawnsdale to W National	Fresh (Wet) Meadow	R-W20	Yes								3		Waukesha	City of New Berlin	NE	NW	29	6 N, 20 E	No	3	·		
R15. I-43 - S Racine to S Calhoun	UNT WBIC N/A	R-S22	Yes		996	63	Trench, partial op	oen water pa	artial culvert				Waukesha	City of New Berlin	NW	SE	32	6 N, 20 E	No	1,080			
R15. I-43 - S Racine to S Calhoun	UNT to Muskego Creek WBIC 5037068	R-S08	No		HDD			25					Waukesha	City of New Berlin	NE	SE	32	6 N, 20 E	No				
R15. I-43 - S Racine to S Calhoun	UNT to Muskego Creek WBIC 5037052 Muskego Creek	R-S09	Yes		345	128	1	Trench					Waukesha	City of New Berlin	SW	NW	33	6 N, 20 E	No	345			
R15. I-43 - S Racine to S Calhoun	WBIC 762500	R-S10	No		HDD			16			59.4		Waukesha	City of New Berlin	SW	NE	33	6 N, 20 E	No	504			
R14. S Racine - National to I-43	Deep and Shallow Marsh	R-W23	Yes						2.445		534		Waukesha	City of New Berlin	MULII	NE	32	6 N, 20 E	NO	534			-
R14. S Racine - National to I-43	Deep and Shallow Marsh, Fresh (Wet) Meadow	R-W25	Yes						3,145		7,018		Waukesha	City of New Berlin	SE	NW	32	6 N, 20 E	NO	10,163			
R15. I-43 - S Racine to S Calhoun R15. I-43 - S Racine to S Calhoun	Floodplain Forest, Fresh (Wet) Meadow, Shrub-Carr Fresh (Wet) Meadow	R-W26 R-W27	Yes					624	9,755		10,111		Waukesha Waukesha	City of New Berlin City of New Berlin	NW	SE	32	6 N, 20 E 6 N, 20 F	No No	19,866		4,719	+
R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow	R-W28	Yes						398		495		Waukesha	City of New Berlin	SW	NW	33	6 N, 20 E	No	893			
R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow	R-W29	Yes						329		449		Waukesha	City of New Berlin	SW	NW	33	6 N, 20 E	No	778			
R15. I-43 - S Racine to S Calhoun R15. I-43 - S Racine to S Calhoun	Deep and Shallow Marsh Fresh (Wet) Meadow	R-W30 R-W31	Yes						385		4.076		Waukesha	City of New Berlin City of New Berlin	SW MULTI	NW	33	6 N, 20 E	NO	1,667		1.874	+
R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow	R-W32	Yes								1,737		Waukesha	City of New Berlin	SE	NW	33	6 N, 20 E	No	1,737		.,	
R15. I-43 - S Racine to S Calhoun	Floodplain Forest, Fresh (Wet) Meadow	R-W33	Yes					0.64	3,067		4,446		Waukesha	City of New Berlin	SE	NW	33	6 N, 20 E	No	7,513		2,942	
R15. I-43 - S Racine to S Calhoun R15. I-43 - S Racine to S Calhoun	Floodplain Forest, Fresh (Wet) Meadow Fresh (Wet) Meadow Shruh-Carr	R-W34 R-W35	Yes					261	1,584		5,429		Waukesha	City of New Berlin	MULTI	NW	33	6 N, 20 E 6 N, 20 E	No	7,013		5,096	-
R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow	R-W36	Yes						1,557		1,488		Waukesha	City of New Berlin	MULTI	NE	33	6 N, 20 E	No	3,044		1,520	
R15. I-43 - S Racine to S Calhoun	Fresh (Wet) Meadow	R-W37	Yes						207		1,073		Waukesha	City of New Berlin	NE	NE	33	6 N, 20 E	No	1,280			
R19. Mooreland Rd - Westridge Dr to Janesville Rd. R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Hardwood Swamp	R-W41 R-W46	Yes						18		232		Waukesha	City of New Berlin City of New Berlin	SE NE	SE	34	6 N, 20 E 6 N, 20 E	NO	1,730		232	
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W48	Yes								803		Waukesha	City of New Berlin	SE	SE	34	6 N, 20 E	No	803			
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Deep and Shallow Marsh,Shrub-Carr	R-W51	Yes								717		Waukesha	City of Muskego	NW	NE	3	5 N, 20 E	No	717		401	
R19. Mooreland Rd - Westridge Dr to Janesville Rd. R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W54 R-W55	Yes								2,468		Waukesha	City of Muskego	SE	NE	3	5 N, 20 E	No	2,468			
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W56	Yes								85		Waukesha	City of Muskego	SE	NE	3	5 N, 20 E	No	85			
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W59	Yes								619		Waukesha	City of Muskego	SE	NE	3	5 N, 20 E	No	619			
R19. Mooreland Rd - Westridge Dr to Janesville Rd. R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W60 R-W62	Yes								1.735		Waukesha	City of Muskego	NE	SE	3	5 N, 20 E	No	192			-
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W63	Yes								9,511		Waukesha	City of Muskego	NE	SE	3	5 N, 20 E	No	9,511	·		
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow Deen and Shallow Marsh Fresh (Wet) Meadow Hardwood	R-W64	Yes								285		Waukesha	City of Muskego	NE	SE	3	5 N, 20 E	No	285			-
R19. Mooreland Rd - Westridge Dr to Janesville Rd. R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Swamp,Shrub-Carr Fresh (Wet) Meadow	R-W65 R-W66	Yes Yes								7,273		Waukesha Waukesha	City of Muskego City of Muskego	NE	SE SE	3	5 N, 20 E 5 N, 20 E	No	7,273		3,775	
R19. Mooreland Rd - Westridge Dr to Janesville Rd.	Fresh (Wet) Meadow	R-W67	Yes								149		Waukesha	City of Muskego	NE	SE	3	5 N, 20 E	No	149			
R20. Mooreland/Durham - Janesville to X @ Schultz	Fresh (Wet) Meadow	R-W69	Yes						866		430		Waukesha	City of Muskego	SW	SW	2	5 N, 20 E	No	1,295			
R20. Mooreland/Durham - Janesville to X @ Schultz	Deep and Shallow Marsh,Fresh (Wet) Meadow,Hardwood Swamp,Shrub-Carr,Wet to Wet-Mesic Prairie	R-W71	Yes						1,302		5,623		Waukesha	City of Muskego	NW	NW	11	5 N, 20 E	No	6,925		536	
R20. Mooreland/Durham - Janesville to X @ Schultz	Fresh (Wet) Meadow	R-W73	Yes			1					1,172		Waukesha	City of Muskego	MULTI	NW	11	5 N, 20 E	No	1,172			1
R20. Mooreland/Durham - Janesville to X @ Schultz	Fresh (Wet) Meadow	R-W74	Yes					0.3	16		105		Waukesha	City of Muskego	SW	NE SE	11	5 N, 20 E	No	121			
R21. Durham Dr - X @ Schultz Ln to X @ Holz Dr	Fresh (Wet) Meadow	R-W80	Yes						49		312		Waukesha	City of Muskego	SE	NE	14	5 N, 20 E	Yes; PEC Intersect	361			-
R21. Durham Dr - X @ Schultz Ln to X @ Holz Dr	Fresh (Wet) Meadow	R-W83	Yes								220		Waukesha	City of Muskego	SW	NW	13	5 N, 20 E	Yes; PEC Intersect	220			
R22. Durnam Dr - Holz Dr to N Cape Rd R22. Durham Dr - Holz Dr to N Cape Rd	Fresh (Wet) Meadow Fresh (Wet) Meadow	R-W84 R-W87	Yes			1			171		61	+	Waukesha Waukesha	City of Muskego City of Muskego	MULTI NF	MULTI NF	13	5 N, 20 E 5 N. 20 F	No No	61 171			+
R23. N Cape Rd - Durham Dr to X @ Boxhorn Dr	Fresh (Wet) Meadow	R-W88	Yes								70		Waukesha	City of Muskego	SE	NE	24	5 N, 20 E	No	70			
R23. N Cape Rd - Durham Dr to X @ Boxhorn Dr	Fresh (Wet) Meadow	R-W89	Yes								723		Waukesha	City of Muskego	SE	NE	24	5 N, 20 E	No	723			+
R24. N Cape Rd - X @ Boxhorn Dr to W Ryan Rd R23. N Cape Rd - Durham Dr to X @ Boxhorn Dr	Fresh (Wet) Meadow Waterway	R-W90 R-S13	Yes		non-navigab	e ner DNR	n	on-navigabl	e ner DNR		1,461		Waukesha	City of Muskego	SE SE	SE	24	5 N, 20 E 5 N 20 F	No	1,461			-
R25. Ryan Rd - Cape Rd to S 92nd St	Waterway - Ryan Creek	R-S14	No		HDD			31					Milwaukee	City of Franklin	SE	SE	19	5 N, 20 E	No				1
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow	R-W101	Yes	_				25	165	181	586		Milwaukee	City of Franklin	NW	NE	30	5 N, 21 E	No	932			+
к25. куал ка - Cape ка to 5 92nd St R25. Rvan Rd - Cape Rd to 5 92nd St	Fresh (Wet) Meadow Fresh (Wet) Meadow	K-W102 R-W104	Yes	-	HDD			48	387		198		Milwaukee	City of Franklin	NW	NÉ NF	30	5 N, 21 E 5 N 21 F	No	585			+
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow,Shrub-Carr	R-W106	Yes						2,510		1,832		Milwaukee	City of Franklin	MULTI	NW	29	5 N, 21 E	No	4,342		3,436	1
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow,Hardwood Swamp	R-W108	Yes		1100		<u></u>	E 44	6,648		15,912		Milwaukee	City of Franklin	MULTI	NE	29	5 N, 21 E	No	22,560		1,447	
R25. Ryan Rd - Cape Rd to S 92nd St R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow, Shrub-Carr	R-W109 R-W113	Yes		НОО	1		341	305		536		Milwaukee	City of Franklin City of Franklin	NE	NE	29	5 N, 21 E	No	841		302	+
R25. Ryan Rd - Cape Rd to S 92nd St	Hardwood Swamp,Shrub-Carr	R-W92	Yes	1							668		Milwaukee	City of Franklin	NW	NW	30	5 N, 21 E	No	668		668	1

## PSC DOCKET NUMBER: 6240-CW-117 Table 1 DNR Wetland/Waterway Impact Location Table - Revised August 19, 2020 Supplement Document to WDNR Form 3500-53. Check all that apply.

Note: Any revisions to this table must be agreed upon by all parties before filing.

					CONSTR	RUCTION METI	HOD/ACTIVIT	Ϋ́						OCATION					RESOURCE	IMPACT				
	NEGOGRAL	1	1		Waterway Im	pact Activity		-			Wetland Impact	Activity	1				1	1	1		RECOORCE		_	_
Route/ Segment/ Contract	Wetland Type or Waterway Name <sup>1</sup>	Feature Unique ID <sup>2</sup>	Permit Required	Bridge <sup>3</sup>	square feet	cubic yards	Grading on banks (upland) over 10,000 sq. ft. <sup>5</sup>	HDD/J&B (linear feet)	Plow (linear feet)	Trench <sup>6</sup> (square feet)	Matting <sup>7</sup> Bore Pits <sup>8</sup> (square feet) feet)	Grading <sup>9</sup> (square feet)	Permanent Structure/Fill Placement <sup>10</sup> (square feet)	County	Municipality	QQ	Q	Section	Township (N), Range (E/W)	ASNRI <sup>11</sup>	Temporary Fill (square feet)	Permanent Fill (square feet)	Conversion <sup>12</sup> (square feet)	DNR DOCKET <sup>13</sup>
R25. Ryan Rd - Cape Rd to S 92nd St	Deep and Shallow Marsh, Fresh (Wet) Meadow, Hardwood Swamp	R-W94	Yes							719		1,762		Milwaukee	City of Franklin	NW	NW	30	5 N, 21 E	No	2,481		1,750	
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow	R-W96	Yes							1,364				Milwaukee	City of Franklin	NE	NW	30	5 N, 21 E	No	1,364			
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow	R-W98	Yes							131		201		Milwaukee	City of Franklin	NE	NW	30	5 N, 21 E	No	332			
R25. Ryan Rd - Cape Rd to S 92nd St	Fresh (Wet) Meadow	R-W99	Yes					6				58		Milwaukee	City of Franklin	NW	NE	30	5 N, 21 E	No	58			
R26. Ryan Rd 92nd St to X @ Saint Martins Rd	UNT to Ryan Creek	R-S15	No		HDD			12						Milwaukee	City of Franklin	SE	SW	21	5 N, 21 E	No				
R27. Ryan Rd - Saint Martins Rd to S 60th	UNT to Root River	R-S16	No		HDD			5						Milwaukee	City of Franklin	SE	sw	22	5 N, 21 E	No				
, R27. Rvan Rd - Saint Martins Rd to S 60th	Root River	R-\$17	No		НОО			50						Milwaukee	City of Franklin	SE	SE	22	5 N 21 F	No				
P27. Ryan Ru Saint Martins Ru to 5 octi	WBIC 2900 UNT to Root River	R 517	No		1100			50						Adhusulus	City of Franklin	50	52	22	5 N, 21 C	No				
	WBIC 5037893	K-310	INU		HDD			9						Willwaukee	City of Franklin	35	35	22	5 N, 21 E	NU				
R26. Ryan Rd 92nd St to X @ Saint Martins Rd	Fresh (Wet) Meadow	R-W114	Yes									621		Milwaukee	City of Franklin	NW	NW	28	5 N, 21 E	No	621			
R26. Ryan Rd 92nd St to X @ Saint Martins Rd	Fresh (Wet) Meadow	R-W115	Yes					22		1,179		569		Milwaukee	City of Franklin	NW	NW	28	5 N, 21 E	No	1,748			
R26. Ryan Rd 92nd St to X @ Saint Martins Rd	Fresh (Wet) Meadow	R-W115 R-W117	Yes					33		262		3 355		Milwaukee	City of Franklin	NE	NW	28	5 N, 21 E	NO	3,617			
	UNT to Root River	11 11/	103							202		3,333		WillWalkce	city of Hunkin	THE .		20	510,211	110	5,017			
R28. S 60th - Ryan Rd to W Oakwood Rd	WBIC N/A	R-S19	No		Excavate under culvert	culvert only	9' under exc	avation, under ex	xisting 12" RCP	STM				Milwaukee	City of Franklin	MULTI	MULTI	MULTI	5 N, 21 E	No				
R28. S 60th - Ryan Rd to W Oakwood Rd	WBIC N/A	R-S20	Yes		357	132	Trench, mostl	ly open water, po	ossible culvert i	npact				Milwaukee	City of Franklin	MULTI	MULTI	MULTI	5 N, 21 E	No	357			
R27. Ryan Rd - Saint Martins Rd to S 60th	Fresh (Wet) Meadow	R-W119	Yes							500	100	426		Milwaukee	City of Franklin	NW	NE	28	5 N, 21 E	No	926			
R27. Ryan Rd - Saint Martins Rd to S 60th	Deep and Shallow Marsh, Fresh (Wet) Meadow	R-W120	Yes							12,647	128	343		Milwaukee	City of Franklin	SE	SE	21	5 N, 21 E	NO	13,118			
R27. Ryan Rd - Saint Martins Rd to S 60th	Deep and Shallow Marsh, Fresh (Wet) Meadow, Shrub-Carr	R-W123	Yes							4,748	94	10,483		Milwaukee	City of Franklin	MULTI	SW	22	5 N, 21 E	No	15,325		598	
R27. Ryan Rd - Saint Martins Rd to S 60th	Fresh (Wet) Meadow	R-W128	Yes					119		4,369		9,763		Milwaukee	City of Franklin	SW	SE	22	5 N, 21 E	Yes; PEC Intersect	14,132		1,479	
R28. S 60th - Ryan Rd to W Oakwood Rd	Fresh (Wet) Meadow	R-W129 R-W130	Yes									35		Milwaukee	City of Franklin	SW	NW NW	26	5 N, 21 E	NO	35			
R28. S 60th - Rvan Rd to W Oakwood Rd	Fresh (Wet) Meadow	R-W130	Yes							190		41		Milwaukee	City of Franklin	SW	SW	20	5 N, 21 E	No	232			
R29. Oakwood Rd and Discharge Parcel/END	Fresh (Wet) Meadow, Floodplain Forest	F3-W01	Yes							12,454		28,281	93	Milwaukee	City of Franklin	MULTI	NW	35	5 N, 21 E	Yes; PEC Intersect	40,735	93	587	
R29. Oakwood Rd and Discharge Parcel/END	Waterway - Root River	Root River	Yes		133	12		31						Milwaukee	City of Franklin	MULTI	NW	35	5 N, 21 E	No	2,216	133		
S2. W Coffee Rd - S Swartz Rd to S Heide Ln	Deep and Shallow Marsh, Fresh (Wet) Meadow, Hardwood Swamp	MKE-W03	Yes									4,359		Waukesha	City of New Berlin	SW	NW	17	6 N, 20 E	No	4,359		161	
S2. W Coffee Rd - S Swartz Rd to S Heide Ln	Fresh (Wet) Meadow	MKE-W05	Yes									73		Waukesha	City of New Berlin	SE	NW	17	6 N, 20 E	No	73			
S2. W Coffee Rd - S Swartz Rd to S Heide Ln	Fresh (Wet) Meadow	MKE-W06	Yes							177		813		Waukesha	City of New Berlin	SE	NE	17	6 N, 20 E	No	989			
S2. W Coffee Rd - S Swartz Rd to S Heide Ln	Waterway - Ditch	MKE-S07	No		non-navigat	le per DNR		non-navigab	le per DNR					Waukesha	City of New Berlin	MULTI	MULTI	17	6 N, 20 E	No				
S3. W Coffee Rd - S Heide Ln to S Calhoun Rd	Deep and Shallow Marsh, Fresh (Wet) Meadow, Shrub-Carr	MKE-W08	Yes		HDD			177		17,897		6,912	9	Waukesha	City of New Berlin	MULTI	MULTI	16	6 N, 20 E	No	24,809	9	2,035	
S3. W Coffee Rd - S Heide Ln to S Calhoun Rd	Fresh (Wet) Meadow	MKE-W20	Yes							2,036	3	56		Waukesha	City of New Berlin	SE	NE	16	6 N, 20 E	No	2,095			
S3. W Coffee Rd - S Heide Ln to S Calhoun Rd	Unnamed tributary to Poplar Creek	MKE-S01	No		HDD			10						Waukesha	City of New Berlin	MULTI	MULTI	16	6 N, 20 E	No				
S4. W Coffee Rd - S Calhoun Rd to W National Ave	Fresh (Wet) Meadow	MKF-W16	Yes							2.510		2.052		Waukesha	City of New Berlin	SW	NW	15	6 N. 20 F	No	4.562			
S4. W Coffee Rd - S Calhoun Rd to W National Ave	Deep and Shallow Marsh, Fresh (Wet) Meadow	MKE-W18	Yes							0.2		10,776		Waukesha	City of New Berlin	SE	NW	15	6 N, 20 E	No	10,776			
S5 National/Oklahoma - Coffee to X @ S 122nd St	Unnamed tributary to Poplar Creek	MKE-S02	No		НОО			15						Waukesha	City of New Berlin	SE	NW	14	6 N 20 F	No				
	WBIC 772900 Unnamed tributary to Root River	11112 502			100									Waakcona	city of field bernin	52			011,202					
S5. National/Oklahoma - Coffee to X @ S 122nd St	WBIC 5036469	MKE-S03	No		Excavate under culvert	culvert only	~2' under ex	xcavation, under	existing STM					Waukesha	City of New Berlin	MULTI	MULTI	MULTI	6 N, 20 E	No				
S6. W Oklahoma Ave - X @ 122nd to X @ 101st St	WBIC 7625	MKE-S04	No		HDD			65						Waukesha	City of West Allis	MULTI	MULTI	MULTI	6 N, 21 E	No				
S6. W Oklahoma Ave - X @ 122nd to X @ 101st St	Root River WBIC 2900	MKE-S05	No		HDD			45						Milwaukee	City of West Allis	MULTI	MULTI	MULTI	6 N, 21 E	No				
S7. W Oklahoma Ave - X @ 101st St to SUPPLY START	Unnamed tributary to Honey Creek WBIC 5036372	MKE-S06	No		Excavate under culvert	culvert only	6' under exc	avation, under 7	6"x48" sewer					Milwaukee	City of Milwaukee/City of We Allis	MULTI	MULTI	MULTI	6 N, 21 E	No				
C7. W. Oklahama Ave. V. @ 101-t Ctar Clubbly CTART	Honey Creek	MAKE COS	N -		look and Dave	1		10					1	Milandia	City of Milwaukee/City of We	st		45	6 N 24 F	N		1	1	1
S7. W Oklahoma Ave - X @ 101st St to SUPPLY START	WBIC 16300	IVIKE-SU8	NO		Jack and Bore			10						Milwaukee	Allis	NVV	IN VV	15	6 N, 21 E	NO				
Alternate Booster Pumping Station	Fresh (Wet) Meadow	W-3	No	-					ļ		<u>↓                                      </u>			Waukesha	City of Waukesha	SW	SE	1	6 N, 19 E	No			-	
Alternate Booster Pumping Station	Fresh (Wet) Meadow	W-4	NO											Waukesha	City of Waukesha	SW	SE	1	6 N, 19 E	No				
Alternate Booster Pumping Station	Fresh (Wet) Meadow	W-7	No											Waukesha	City/Town of Waukesha	SW	SE	1	6 N, 19 E	No				
Broadway	Fresh (Wet) Meadow	W-12	No											Waukesha	City of Waukesha	SE	SW	1	6 N, 19 E	No				
Highway 59	Fresh (Wet) Meadow	W-13	No											Waukesha	City of Waukesha	SE	NW	12	6 N, 19 E	No				
Broadway	UNT	S-1 5-2	No		Jack and Bore	culvert only	~18" be	elow 30" CMP sto	ormwater pipe					Waukesha	City of Waukesha	MULTI	MULTI	1	6 N, 19 E	No				
West Collee Road	WBIC 773000	5-2	NO		Excavate under cuivert		10 0	Nelow 54 Incr sto	iniwater pipe					Waukesha	City of New Berlin	35	INVV	10	6 N, 20 E	Vetland - Total (sg. ft	350230	102	37094	
																			·	Wetland - Total (acre)	8 04	0.02	0.85	-
Notes:																			Wa	aterway - Total (sq. ft.	3998	133	0	1
																			v	Vaterway - Total (acre	0.09	0.003	0.00	
<sup>1</sup> For wetlands, state the wetland type using the Egge	rs and Reed Classification system. For waterways, indica	ite where wa	ater flows (e.	g. UNT to :	Silver Creek) (UNT = unr	named tributary). I	Include all water	rways mapped	I in the DNR	Surface \	Water Data Viewer webto	ol that cro	oss the project pa	ath.					RFP We	tland - Subtotal (sq. ft.)	261832	0	34311	
<sup>2</sup> Insert the code or other reference used in application	n (e.g. Wetland 1, Stream 1)																		RFP W	etland - Subtotal (acre)	6.01	0.00	0.79	
<sup>3</sup> Indicate the number of bridges needed																			RFP Wate	erway - Subtotal (sg. ft.)	1783	0	0	
<sup>4</sup> If the waterway will be dredged, indicate the area (length by width) and volume (length by width by depth) of bed material to be removed and backfilled (temporary dredge)														REP Wat	terway - Subtotal (acre)	0.04	0.00	0.00						
<sup>5</sup> Only complete this column if the unland banks of the	waterway will be graded in excess of 10 000 so ft and	if the project	t is not locate	ed in Milws	aukee County if the proje	, ct will not require	a local grading	permit, and if	the project w	ill not rea	uire a DNR construction	stormwate	er permit						W/CD W/~	tland - Subtotal (co. ft )	47663	9	2196	1
<sup>6</sup> If the wetland will be trenched, indicate the area (long	th by width) of soil to be removed and backfilled (tompo	arv fill)						r string and f											WSF WE	(etland - Subtotal (acro)	1 00	0,0002	0.05	1
<sup>7</sup> If construction matting (i.e. timber composite at a vert	ill be placed in watland for vehicle/agginment accord	undor coil -+	ookniloo izd	licato the -	vrog (longth hy width) -f -	notting to be place	od in wotland (t	omporary fill)											WCD W	Country Subtration (acre)	1.05	0.0002	0.05	-
<sup>8</sup> If the area of temperancy watered disturbance. (In the	his be praced in welland for vehicle/equipment access of		imata basa d	on the si-	a ca (iciigui by widui) Ol f o of tho pipo	naturig to be place	ea in welland (le	emporary IIII)											vvSP vvate	nway - Subiotal (sq. ft.)	0.00	0	0	-
<sup>9</sup> Grading includes construction second disturbance (length	by waan, nor each bore pit is unknown at this time, pleas	s use an est	mate pased	on the SIZ	e or me hihe														WSP Wat	terway - Subtotal (acre)	0.00	0.00	0.00	-
10 If a community includes construction access, material stoc	<pre>k pining, staging, as well as grading.</pre>				4b) - f														outrail Site We	tuano - Subtotal (sq. ft.)	40/35	93	587	-
II a permanent structure or permanent fill will be pla	ced in wetland (i.e. valve station, lift station, hydrants, et	une area (len	igtn by wid	un) of permanent fill													-	Outrall Site W	retiand - Subtotal (acre)	0.94	0.002	0.01	-	
<sup>12</sup> Conversion refers to vegetative clearing of the set	or Special Natural Resource Interest, which includes trout	streams		constructi-														C	Outfall Site Wate	erway - Subtotal (sq. ft.)	2216	133	0.00	-
Conversion releas to vegetative clearing of shrub a	nuror roresteu wettanus, resulting in an nerbaceous wetta	ina, ior the p	urboses of (	CONSTRUCTIO	41														Guttan Site Wat	ici way - Subtotal (acre)	0.05	0.005	0.00	

<sup>13</sup> Assigned and to be completed by the DNR

(please submit in excel and pdf format)

Tony Evers, Governor Preston D. Cole, Secretary Telephone 608-266-2621 Toll Free 1-888-936-7463 TTY Access via relay - 711



December 13, 2019

IP-SE-2018-68-N04503, N04505, N04506

Dan Duchniak Waukesha Water Utility 115 Delafield Street Waukesha, WI 53188

Dear Mr. Duchniak:

The Department of Natural Resources (department) has completed review of the waterway and wetland permit applications for the proposed Great Water Alliance-Great Lakes Water Supply Program (project). The project requires authorization to impact wetland, to dredge waterways and to install an outfall structure on the bed of the Root River. The waterway and wetland permit applications are approved.

Attached is the permit. The permit contains conditions that must be followed to avoid and minimize wetland impacts and to protect public interests in navigable waterways. Please read the permit conditions carefully so you are fully aware of the permit requirements.

Please note the permit requires the submittal and approval of a stream crossing plan for the utility crossings of the waterways (open cut trench crossings), the construction plans for the outfall structure on the Root River, as well as the final wetland and waterway restoration plans.

If you have any questions about your permit, please call me at (262) 574-2153 or email Geri.Radermacher@wisconsin.gov.

Sincerely,

Seu Radermacher

Geri Radermacher Water Management Specialist

cc: Marie Kopka, U.S. Army Corps of Engineers Adam Ingwell, Public Service Commission





#### STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Waukesha Water Utility is hereby granted under 401 CWA, Section 30.025, 30.12, 30.20 281.36, Wisconsin Statutes, a permit for wetland fill, a structure on the bed of a waterway and dredging waterways, in order to construct the infrastructure associated with the water supply and return systems, located in Section 13, Town 06 North, Range 19 East, Sections 2, 3, 12-20, 27, 29, 32-34 Township 06 North, Range 20 East, and Sections 7 and 18, Town 06 North, Range 21 East, (all in the City of New Berlin, Waukesha County, and Sections 9, 13-16, Town 06 North, Range 19 East, (all in the City of Waukesha, Waukesha County), and Sections 32-34, Town 6 North Range 20 East, and Sections 2, 3, 11, 13, 14, 24, 25, Town 05 North, Range 20 East, and Section 30, Town 05 North, Range 21 East, (all in the City of Muskego, Waukesha County), and Sections 9 and 13-16, Town 06 North, Range 19 East, and Section 9, Town 6 North Range 19 East, (all in the Town of Waukesha, Waukesha County), and Sections 13, 24, 25, Town 05 North, Range 20 East, and Sections 21, 22, 26-30 and 35, (all in the City of Franklin, Milwaukee County), and Sections 8 and 16-18, Town 06 North, Range 21 East, (all in the City of Greenfield, Milwaukee County), and Sections 8, 9, 15-17, (all in the City of Milwaukee, Milwaukee County), and Section 12, Town 06 North, Range 20 East, and Sections 7-9 and 15-18, (all in the City of West Allis, Milwaukee County), subject to the following conditions:

#### PERMIT

#### **General Conditions**

- You must notify Geri Radermacher at phone (262) 574-2153 or email Geri.Radermacher@wisconsin.gov before starting the project construction and again not more than 5 days after the discharge is complete.
- 2. Within one week of completion, you must submit a series of photographs to the department showing all work authorized by this permit. The photographs must be clear, labeled with the wetland/waterway feature identifier, and must show each permitted activity and appropriate restoration.
- 3. You shall complete the wetland impact, waterway crossings and outfall structure installation and restoration on or before 12/13/2022. You may submit a written request for an extension prior to the expiration date of the permit. Your request shall identify the requested extension date and the reason for the extension. A permit extension may be granted, for good cause, by the department. You may not begin or continue construction after the original permit expiration date unless the department grants a new permit or permit extension in writing.
- 4. This permit authorizes the activities in waterways and wetlands listed in the Wetland/Waterway Impact Location Table 1, dated June 28, 2019 (attached) and reflected in the submitted Wetland Impact Exhibit, dated June 3, 2019. This permit does not authorize any work other than what you specifically describe in your application and plans and as modified by the conditions of this permit. If you wish to alter the permit conditions, you must first obtain written approval of the department.
- 5. You are responsible for obtaining any federal, state or local permit or approval that may be required before starting your project.

- 6. Upon reasonable notice, you shall allow access to your project site during reasonable hours to any department employee who is investigating the project's construction, operation, maintenance or permit compliance.
- 7. The department may modify or revoke this permit if the project is not completed according to the terms of the permit, or if the department determines the activity results in significant adverse impact to wetland functional values, in significant adverse impact to water quality, or in other significant adverse environmental consequences.
- 8. A copy of this permit must be posted on the project web site for at least five days prior to construction and remain posted until at least five days after construction and restoration work have ended. A copy of this permit and approved construction plan must be available at all project field offices and construction sites until the project is complete. All employees, consultants, and contractors who are working on the project must be made aware of the permit, its conditions, and its location. All appropriate managers and supervisors in charge of, or working on construction or compliance, be provided with copies of the permit.
- 9. Your acceptance of this permit and efforts to begin work on this project signify that you have read, understood and agreed to follow all conditions of this permit.
- 10. You, your agent, and any involved contractors or consultants may be considered a party to the violation pursuant to Section 281.36 (13), Wis. Stats. and Section 30.292, Wis. Stats., for any violations of Section 281.36 and Chapter 30, Wis. Stats., or violations of this permit.
- 11. You assume all responsibility and liability for any direct or indirect damage caused or resulting from the project and hold the State of Wisconsin, and its employees, harmless.
- 12. Spills of hazardous or toxic materials that pose a threat to human health, safety or the environment must be cleaned up to the extent practicable. All spills should be reported immediately to the department using the 24-hour toll free hot line, 1-800-943-0003. For more information, please visit the spills program web page: <a href="https://www.dnr.state.wi.us/org/aw/rr/spills/index.htm">www.dnr.state.wi.us/org/aw/rr/spills/index.htm</a>.
- 13. You shall update the Endangered Resources Review(s) for this project within one year of the start of construction and comply with all required actions within the review letter.
- 14. All equipment used for the project including but not limited to vehicles, construction machinery, barges, boats, hoses, sheet pile and pumps shall be de-contaminated for invasive and exotic viruses and species prior to use and after use.

The following steps must be taken <u>every time</u> you move your equipment to avoid transporting invasive and exotic viruses and species. To the extent practicable, equipment and gear used on infested waters shall not be used on other non-infested waters.

- 1. Inspect and remove aquatic plants, animals, and mud from your equipment.
- 2. **Drain all water** from your equipment that comes in contact with infested waters, including but not limited to tracked vehicles, barges, boats, hoses, sheet pile and pumps.
- 3. **Dispose** of aquatic plants, animals in the trash. Never release or transfer aquatic plants, animals or water from one waterbody to another.

4. Wash your equipment with hot (>140° F) and/or high-pressure water,

- OR -

Allow your equipment to dry thoroughly for 5 days.

#### **Erosion Control Conditions**

- 15. Construction shall be accomplished in such a manner as to minimize erosion and siltation into surface waters. Erosion control measures (such as silt fence and straw bales) must meet or exceed the technical standards of ch. NR 151, Wis. Adm. Code. The technical standards are found at: http://dnr.wi.gov/topic/stormwater/standards/const\_standards.html.
- 16. Appropriate erosion control measures shall be in-place and effective during every phase of this project.
- 17. Erosion control measure shall be in place at the end of each working day.
- 18. Erosion control measures shall be inspected, and necessary repairs or maintenance performed after every rainfall exceeding ½ inch and at least once per week.
- 19. You shall maintain a log of the erosion control inspections, repairs made, and rain events. This log shall be made available to any department personnel upon request.
- 20. Any area where topsoil is exposed during construction shall be stabilized to prevent soil from being eroded and washed into a sensitive resource.
- 21. The removal of vegetative cover and exposure of bare ground shall be restricted to the minimum necessary for construction. Areas where soil is exposed must be protected from erosion by seeding and mulching, sodding, diversion of surface runoff, installation of straw bales or silt screens, construction of settling basins, or similar methods as soon as possible after removal of the original ground cover as described by the department's technical standards, or site-specific erosion control plan approved by department.
- 22. All erosion control matting used on this project shall be made from natural fiber only, without any synthetic mesh or netting.
- 23. Site stabilization between October 1 and April 15 requires seeding and mulching (with weed-free mulch or non-synthetic matting).
- 24. After the site is 70% stabilized, all temporary erosion control measures shall be removed and disposed of properly.
- 25. Any temporary erosion control devices, construction debris, or waste remaining after constriction constitutes littering and may be enforced as determined necessary by the department.
- 26. All dewatering activities, including dredging, must comply with Technical Standard 1061 <u>https://dnr.wi.gov/topic/stormWater/documents/Dewatering\_1061.pdf</u>.

#### Wetland Conditions

- 27. No wetlands may be disturbed beyond the area specifically authorized in this permit. Wetland impacts are identified in the attached Wetland/Waterway Impact Location Table 1, dated June 28, 2019.
- 28. All equipment used in wetlands shall work during frozen conditions, from construction mats, or be designed and properly sized to minimize the amount of disturbance to wetlands.
- 29. Wetland activities shall not result in topsoil/subsoil mixing.
- 30. All construction waste materials shall be removed from wetlands during restoration.
- 31. All vehicles and equipment used in wetlands shall be checked at least once per work day for fluid (e.g. fuel, oil, hydraulic, coolant, etc.) leaks. All leaks must be immediately corrected before the equipment is allowed back into operation.
- 32. All wetlands shall be restored to pre-existing conditions including the soil profile, elevations, vegetative cover and hydrology. You shall submit a final wetland restoration plan to the department. This plan shall be approved in writing prior to conducting any work in wetland.
- 33. Where permanent fill material is authorized, the project will be constructed in a manner that will maintain wetland hydrology in the remaining wetland complex.
- 34. Ground water barriers shall be installed within the trench as detailed in the application to prevent the pipeline from negatively impacting wetland hydrology.

#### **Waterway Conditions**

- 35. No waterways shall be disturbed beyond the areas specifically authorized in this permit.
- 36. You shall follow the prescribed waterway crossing method listed in attached Wetland/Waterway Impact Location Table 1, dated June 28, 2019. Any proposed changes to approved waterway crossings method shall be approved by the department.
- 37. Prior to conducting any stream dredging, you shall provide the department a stream crossing plan. The plan shall include site specific waterway details (width, bank slope and height, stream bed composition, flow data, etc) and crossing details (trench width and length, construction sequence and timing, restoration, stream bypass plan, erosion control plan, emergency action plan, etc). This plan shall be approved in writing by the department prior to conducting stream dredging.
- 38. Prior to installing the outfall structure, you shall provide the department an outfall structure construction plan. This plan shall include details on the construction sequence, timing, erosion and sediment control, work zone isolation, emergency action plan, etc. This plan shall be approved by the department in writing prior to initiating activities below the OHWM of the Root River.

- 39. The outfall structure and associated riprap shall confirm to the details provided in the application.
- 40. Work in waterways is prohibited between March 1st and June 15th of the calendar year unless approved by the department in writing.
- 41. You shall restore all disturbed waterways to pre-existing conditions. You shall provide the department a final waterway restoration plan for review and written approval prior to conducting any dredging and/or installing the outfall structure.
- 42. The streambed backfill material shall be consistent with the pre-existing and adjacent bed material. If the stream bed in the crossing location has a unique substrate feature, it shall be replaced (i.e. cobbles, boulders, riffles, etc).
- 43. For all dredged waterways, you shall provide the department with documentation post construction to document streambed and streambank elevations and slopes have not changed due to the construction of this project.
- 44. You shall not work in waterways during periods of high flows or high water levels.
- 45. Work within waterways shall be completed as quickly as possible to minimize potential resource impacts.
- 46. Installation of the pipeline and outfall structure shall be done in a manner which minimizes the removal of trees, shrubs and other shoreline and wetland vegetation.
- 47. Pump intakes and discharges shall prevent impacts to fisheries, wildlife, and their habitat.
- 48. Pump intakes and discharges shall be placed to avoid the disturbance and removal of bed material. Pump discharges shall have energy dissipation devices installed to prevent disturbance and scour of bed material.
- 49. No earthen coffer dams are allowed.

#### FINDINGS OF FACT

- Waukesha Water Utility (WWU) filed an application for a permit for wetland fill, structure on the bed of a waterway and dredging waterways, in order to construct the infrastructure associated with the water supply and return systems, in Section 13, Town 06 North, Range 19 East, Sections 2, 3, 12-20, 27, 29, 32-34 Township 06 North, Range 20 East, and Sections 7 and 18, Town 06 North, Range 21 East, (all in the City of New Berlin, Waukesha County, and Sections 9, 13-16, Town 06 North, Range 19 East, (all in the City of Waukesha, Waukesha County), and Sections 32-34, Town 6 North Range 20 East, and Sections 2, 3, 11, 13, 14, 24, 25, Town 05 North, Range 20 East, and Section 30, Town 05 North, Range 21 East, (all in the City of Muskego, Waukesha County), and Sections 9 and 13-16, Town 06 North, Range 19 East, and Section 9, Town 6 North Range 19 East, (all in the Town of Waukesha, Waukesha County), and Sections 13, 24, 25, Town 05 North, Range 20 East, and Sections 21, 22, 26-30 and 35, (all in the City of Franklin, Milwaukee County), and Sections 8 and 16-18, Town 06 North, Range 21 East, (all in the City of Greenfield, Milwaukee County), and Sections 8, 9, 15-17, (all in the City of Milwaukee, Milwaukee County), and Section 12, Town 06 North, Range 20 East, and Sections 7-9 and 15-18, (all in the City of West Allis, Milwaukee County.
- The Great Lakes-St. Lawrence River Basin Water Resources Compact (Compact) approved a diversion of Lake Michigan water from the Great Lakes-St. Lawrence River Basin on June 21<sup>st</sup>, 2016. The approval required WWU to return a volume of water to Lake Michigan approximately equal to the volume of water withdrawn from Lake Michigan.
- 3. The project is the Great Water Alliance Program (Program) which brings water from Lake Michigan to the City of Waukesha and returns water back to the Root River. The applicant's stated purpose of the program is to provide a long-term, safe and sustainable water supply for the City of Waukesha. The Program includes a Water Supply System and a Return Flow System. The Water Supply System requires pipelines and facilities capable of conveying Lake Michigan potable water from Milwaukee to Waukesha. The Return Flow System requires piping and facilities capable of returning treated effluent from the Waukesha Clean Water Plant to the Root River, a tributary to Lake Michigan.
- 4. The project directly impacts 7.92 acres of wetland, of which .01 acres is permanent wetland fill and 7.91 acres is temporary wetland impacts. The Water Supply System impacts 1.09 acres of wetland and the Return Flow System Impacts 6.83 acres of wetland, of which 5.89 acres are associated with the Return Flow Pipeline and 0.94 acres are associated with the Return Facilities and Outfall Site.
- 5. No practicable alternative exists which would avoid impacts to wetlands, and the project will result in the least environmentally damaging practicable alternative taking into consideration practicable alternatives that avoid wetland impacts. Wetland impacts were avoided by siting the project outside of wetlands to the maximum extent practicable. Major above-ground infrastructure components were located in upland areas. Underground pipeline routes were primarily located along roadways and previously disturbed areas, impacting wetlands with pre-dominantly lower functional value. Larger wetland complexes were avoided to the maximum extent practicable and the horizontal directional drill construction method was utilized to avoid wetland impact. The department has determined the project meets the water quality standards found in NR 299.04, Wis. Admin. Code.

- 6. The department has determined wetland impacts have been minimized to the extent practicable. Wetland impacts were minimized by siting the pipeline routes along previously disturbed road corridors, and by minimizing the trench width and minimizing overall construction limits in wetland. Wetland impact will also be minimized by utilizing construction matting in travel areas in wetland workspaces. Ground water barriers will be installed to prevent the pipeline from draining wetland area. Soils and hydrology will be restored to pre-existing conditions and vegetation will be allowed to restore to pre-existing conditions.
- 7. Most of the wetland impacts are proposed to emergent wetlands within existing ROW. These wetlands provided limited fish and wildlife value and limited floristic diversity. The primary functional value of these wetlands is water quality and stormwater conveyance. Impacts to the functional values of these wetlands is expected to be temporary as the active construction impact is brief and the herbaceous vegetation should restore within a growing season.
- 8. The proposed project, if constructed in accordance with this permit, will comply with Wisconsin's Endangered Species Law, 29.604, Wis. Stats.
- 9. The proposed project, if constructed in accordance with this permit, will not result in significant adverse impacts to wetland functional values, significant adverse impacts to water quality, or other significant adverse environmental consequences.
- 10. The project does not require compensatory wetland mitigation under 281.36(3n)(d)2 Wis. Stats.
- 11. The department has completed an investigation of the project site and has evaluated the project as described in the application and plans. The attached Wetland/Waterway Impact Location Table 1, dated June 28, 2019 and the submitted Wetland Impact Exhibit, dated June 3, 2019 specify the locations, regulated activities and general construction requirements for each waterway and wetland impact.
- 12. The project will include open cut (dredging) installation through three navigable waterways. The applicant will provide detailed plans for each waterway crossing for department approval to ensure impacts to the waterways are minimized.
- 13. The project will include the installation of one outfall structure on the bed of the Root River. The applicant will provide final detailed plans for the installation of this structure for department approval to ensure impacts to the waterway during construction are minimized.
- 14. The discharge water is regulated by the department's Wisconsin Pollutant Discharge Elimination System (WPDES) Program. The department has the authority to impose discharge limits for pollutants that have codified water quality standards or discharge limitation guidelines promulgated by rule.
- 15. The Root River, the unnamed tributaries to Muskego Creek and the unnamed tributary to the Root River are navigable waters (and no bulkhead exists at the project site.)
- 16. The proposed outfall structure will not materially obstruct navigation of the Root River.

- 17. The outfall structure and dredging will not be detrimental to the public interest in navigable waterways. Proper erosion and sediment control will be utilized during construction to minimize impacts to water quality. The dredging and outfall structure will not have a significant impact on fish and wildlife habitat and will not significantly impact the navigation of the waterways.
- 18. The outfall structure will not materially reduce the flood flow capacity of a waterway. The outfall structure will not restrict flow within the floodway of the Root River and will result in less than .01 inches of elevation increase. The flows calculated for the Flood Insurance Study are not expected to be affected by the addition of the return flow.
- 19. The activity will not cause environmental pollution as defined in s. 299.01(4) Wis. Stats.
- 20. No material injury will result to the riparian rights of any riparian owners of real property that abuts any water body that is affected by the activity.
- 21. The proposed project, if constructed in accordance with this permit will not adversely affect water quality, will not increase water pollution in surface waters and will not cause environmental pollution as defined in s. 283.01(6m), Wis. Stats.
- 22. The proposed project, if constructed in accordance with this permit, will comply with s. 157.70 Wis. Stats. and Section 106 of the National Historic Preservation Act, 36 C.F.R. Part 800.
- 23. The department participated in the Certificate of Authority (CA) process with the Public Service Commission (PSC), under PSC docket 6240-CW-117.
- 24. The department, pursuant to s. 1.11 Wis. Stats, and ch. NR 150, Wis. Admin. Code, has the responsibility to comply with Wisconsin Environmental Policy Act and the authority to determine its compliance with that Act.
- 25. A comprehensive summary of the environmental analysis completed for the project can be found in the WEPA Compliance Determination for the project dated December 13, 2019, which is archived here: <u>https://dnr.wi.gov/topic/EIA/Archive.html</u>. This document was prepared in accordance with NR 150, Wis. Admin. Code.
- 26. In July 2011, the department held informational meetings to accept public comments on the scope of the EIS. The department announced the availability of a draft EIS in June 2015. In August 2015, the department held informational hearings to receive public comments on the draft EIS. In January 2016, the department released a preliminary final EIS with a summary of comments received, and a response to comments. In June 2017, the department requested information from WWU necessary to complete the EIS process. In August 2019, the department announced the availability of an updated EIS and held an informational hearing to receive public comments. In December 2019, the department released a final EIS, including a summary of public comments and the department's response to comments.
- 27. The department considered the environmental analysis information and all public comments received during the NR 150 Wis. Admin. Code process.

- 28. A Notice of Pending Application for the waterway and wetland permit application was published on the department's website on July 31, 2019.
- 29. A public informational hearing for the waterway and wetland permit application was held on August 20, 2019. Public comments were received on the application and were related to water quality and water quantity impacts to the Root River, water management and erosion control during construction, and impacts to wooded wetlands. The department considered public comment when making this decision.
- 30. The department and the applicant have completed all procedural requirements and the project as permitted will comply with all applicable requirements of 401 CWA, Sections 30.20, 30.12. 281.36, Wisconsin Statutes and Chapters NR 102, 103, 329 and 345 of the Wisconsin Administrative Code.

#### CONCLUSIONS OF LAW

1. The department has authority under the above indicated Statutes and Administrative Codes, to issue a permit for the construction and maintenance of this project.

#### NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review department decisions shall be filed. For judicial review of a decision pursuant to sections 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the department, to file your petition with the appropriate circuit court and serve the petition on the department. Such a petition for judicial review shall name the department as the respondent.

To request a contested case hearing of any individual permit decision pursuant to section 30.209, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the department, to serve a petition for hearing on the Secretary of the Department of Natural Resources, P.O. Box 7921, Madison, WI, 53707-7921. The petition shall be in writing, shall be dated and signed by the petitioner, and shall include as an attachment a copy of the decision for which administrative review is sought. If you are not the applicant, you must simultaneously provide a copy of the petition to the applicant. If you wish to request a stay of the project, you must provide information, as outlined below, to show that a stay is necessary to prevent significant adverse impacts or irreversible harm to the environment. If you are not the permit applicant, you must provide a copy of the petition to the permit applicant at the same time that you serve the petition on the Department.

# The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30 day period for filing a petition for judicial review.

A request for contested case hearing must meet the requirements of s. 30.209, Wis. Stats., and sections NR 2.03, 2.05, and 310.18, Wis. Admin. Code, and if the petitioner is not the applicant the petition must include the following information:

1. A description of the objection that is sufficiently specific to allow the department to determine which provisions of this section may be violated if the proposed permit or contract is allowed to proceed.

- 2. A description of the facts supporting the petition that is sufficiently specific to determine how the petitioner believes the project, as proposed, may result in a violation of Chapter 30, Wis. Stats.
- 3. A commitment by the petitioner to appear at the administrative hearing and present information supporting the petitioner's objection.

If the petition contains a request for a stay of the project, the petition must also include information showing that a stay is necessary to prevent significant adverse impacts or irreversible harm to the environment.

Dated at Waukesha Service Center, Wisconsin on December 13, 2019 STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES For the Secretary

Seu Rader macher

By\_

Geri Radermacher Water Management Specialist