MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

October 15, 2020

The Honorable Carrie Ruud
Chair, Senate Environment & Natural Resources Policy and Legacy Finance Committee
3233 MN Senate Building
95 University Avenue West
St. Paul, MN 55155

The Honorable Bill Ingebrigtsen
Chair, Senate Environment & Natural Resources Finance Committee
3207 MN Senate Building
95 University Avenue West
St. Paul, MN 55155

The Honorable John Persell
Chair, House Environment and Natural Resources Policy Committee
437 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, MN 55155

The Honorable Rick Hansen
Chair, House Environment and Natural Resources Finance Division
407 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, MN 55155

The Honorable Chris Eaton
Ranking Minority Member, Senate Environment and Natural Resources Policy and Legacy Finance Committee
2403 MN Senate Building
95 University Avenue West
St. Paul, MN 55155

The Honorable David Tomassoni
Ranking Minority Member, Senate Environment and Natural Resources Finance Committee
2235 MN Senate Building
95 University Avenue West
St. Paul, MN 55155

The Honorable Dale Lueck
Republican Lead, House Environment and Natural Resources Policy Committee
311 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, MN 55155

The Honorable Dan Fabian
Republican Lead, House Environment and Natural Resources Finance Division
287 State Office Building
100 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, MN 55155

RE: Interagency Agreements and Intra-Agency Transfers

Dear Committee Chairs and Ranking Minority Members:

This report also is available on our website at https://www.pca.state.mn.us/about-mpca/2020-legislative-reports

Please see the attached lnteragency Agreements and Intra-Agency Transfers Report, which is required by 2017 Session Law (lSS), Chapter 4, article 2, Sec. 16.

Please contact me if you have questions.

Sincerely,

Greta Gauthier
Assistant Commissioner for Legislative and Intergovernmental Relations
Commissioner's Office

Attachment

GG:ES:cbg

Minnesota Pollution Control Agency

FY 2020 Transfers

October 15, 2020

TRANSFER FROM					TRANSFER TO						
Transfer Out Agency	**Transfer Out Fund Name**	**Transfer Out AppropID**	**Transfer Out AppropID Name**	**Transfer Out Amt**	**Transfer In Agency**	**Transfer In Fund Name**	**Transfer In AppropID**	**Transfer In AppropID Name**	**Transfer In Amount**	**Purpose of Transfer**	**Legal Authority for Transfer**
MPCA	Remediation Fund	R32G108	Petroleum Remediation Cleanup	(736,766.53)	Commerce	Petroleum Tank Release Cleanup	B135202	Petro Transfer To PCA	736,766.53	Petroleum related activities	191 04 01 002
MPCA	Remediation Fund	R32G105	Transfer to Dept Health	(257,000.00)	Health	Remediation Fund	H12431P	Water Supply Monitoring	257,000.00	EH Contaminated Sites	191 04 01 002 06b
MPCA	Environmental Fund	R32E115	Environmental Risks	(177,000.00)	Health	Environmental Fund	H12531P	Biomonitoring & Health Risks	177,000.00	Environmental Health Risks	191 04 01 002 02g
MPCA	Environmental Fund	R32E115	Environmental Risks	(512,000.00)	Health	Environmental Fund	H12531B	Biomonitoring & Health Risks	512,000.00	Environmental Health Risks	191 04 01 002 02g
MPCA	Environmental Fund	R32E110	Toxic Chemicals Children	(57,000.00)	Health	Environmental Fund	H12530P	Harmful Chemicals in Products	57,000.00	Toxic Chemicals Children	191 04 01 002 02e
MPCA	Environmental Fund	R32H117	Understanding Reducing TCE	(121,000.00)	Health	Environmental Fund	H12534P	Trichloroethylene	121,000.00	Trichloroethylene	191 04 01 002 03b
MPCA	Environmental Fund	R32H119	Env Edication Lead	(200,000.00)	Health	Environmental Fund	H12533P	Blood Lead & Asma	200,000.00	Env Edication Lead	191 04 01 002 02i
DNR	General	R298026	OSD Legal Costs	(700,000.00)	MPCA	General Fund	R32H120	North Met Mining Project	700,000.00	Outside Legal Councel	191 04 01 003 08
PFA	Clean Water Revolving Fund	B240110	Admin CESRF Fees	(1,586,150.00)	MPCA	Clean Water Revolving Fund	R32B111	PFA Agreement	1,586,150.00	IA: Technical & Admin Services	M.S. 471.59
Commerce	Petroleum Tank Release Cleanup	B135202	Petro Transfer To PCA	4,046,101.00	MPCA	Remediation Fund	R32G108	Petroleum Remediation Cleanup	(4,046,101.00)	Petroleum related activities	191 04 01 002
Public Safety	Restricted Misc Special Revenue	P072RP2	Railroad & Pipeline Safety	(104,000.00)	MPCA	Other Misc Special Revenue	R32F128	ER Rail Safety	104,000.00	Railroad & Pipeline Safety	MS 299A.55, Sub 2 (b)
DNR	Restricted Misc Special Revenue	R291214	LAM Mining Envir & Reg Acct SR	(300,000.00)	MPCA	Other Misc Special Revenue	R32H108	DNR-Metallic Mineral Mining IA	300,000.00	Metallic Mining Project	MS 298.17 b1
TOTAL				**(704,816)**					**704,816**		

Minnesota Pollution Control Agency

FY 2020 Interagency Agreements and Service Level Agreements

October 15, 2020

Agency	Amount	Legal Authority	Purpose	Effective Date	Duration
MN.IT Services *	$ 12,992,124	M.S. 16E.016	MN.IT provides enterprise IT services to MMB	07/01/19	06/30/20
Board of Soil and Wataer	$ 3,099,600.00	SF7 Art1 Sec2 Sub4c SF3 Art2 Sec 5f	SSTS Grants Program	07/26/19	06/30/24
Board of Soil and Wataer	$ 5,000.00	M.S. 471.59	SSTS Grants Program Adminstration	07/26/19	06/30/24
Board of Soil and Wataer	$ 122,600.00	M.S. 471.59	e-Link	10/01/19	09/30/21
Department of Health	$ 2,000,000.00	M.S. 471.59	Anaytical services provided to the MPCA from MDH	07/01/19	06/30/20
Department of Nautural Resources	$ 140,000.00	M.S. 471.59	Technical Assistance for 3M Grant Prirorty 1 Drinking Water Quality, Quantity & Sustainability	08/16/19	06/30/20
Department of Nautural Resources	$ 10,000.00	M.S. 471.59	Technical assistance for the Eco Experience	07/22/19	09/30/20
Department of Nautural Resources	$ 300,000.00	M.S. 471.59	Land Survey	01/07/20	06/30/21
Department of Nautural Resources	$ 31,200.00	M.S. 471.59	Maintain IMPROVE Network Station at GRB State Park	04/01/20	03/31/22
Department of Nautural Resources	$ 255,000.00	M.S. 471.59	NRDA Collaboration	07/01/19	06/30/21
Department of Nautural Resources	$ 109,200.00	M.S. 471.59	KISTERS Time-Series Data Management System	07/01/19	06/30/21
Department of Nautural Resources	$ 24,162.00	M.S. 471.59	Coastal Assessment work on Lake Superior	06/08/20	11/30/20
Minnesota Management & Budget	$ 12,473.00	M.S. 43A.09 and 471.59	Statewide Recuiting	07/01/19	06/30/20
Minnesota Management & Budget	$ 28,565.00	M.S. 471.59	Executive Branch Training and Development	07/01/19	06/30/20
Minnesota Management & Budget	$ 64,960.00	M.S. 471.59	Evaluation of the Greencorps program	07/01/19	06/30/21
Minnesota Management & Budget	$ 5,000.00	M.S. 4.045 and 471.59	Children's Cabinet	07/01/19	06/30/20
Minnesota Management & Budget	$ 8,807.00	M.S. 471.59	Implement Diversity, Equity and Inclusions Programs	07/01/19	06/30/20
Minnesota Management & Budget	$ 36,720.00	M.S. 471.59	Climate Change Impacts	02/03/20	06/30/20
Minnesota Management & Budget	$ 57,220.00	M.S. 471.59	Rule Advisory for Construction and Demolition Landfills	7/1/2019	04/01/21
Minnesota Management & Budget	$ 54,000.00	M.S. 471.59	Water Permitting Program Evaluation	9/3/2019	12/31/19
Minnesota Management & Budget	$ 29,214.00	M.S. 471.59	Enterprise Talent Devemopment	10/23/2019	06/30/20
Attorney General	$ 807,495.00	M.S. 8.15 sub 3	Legal Services	07/01/19	06/30/20
Public Facilities	$ 1,738,080.00	M.S. 471.59 and 446A.04	Provide technical and Administrative services for the Clean Water Revolving Fund	07/01/19	06/30/20
* - copy wil be provided by MN.IT					
Total	**$ 21,931,420**				

STATE OF MINNESOTA
INTERAGENCY AGREEMENT BETWEEN
MINNESOTA ATTORNEY GENERAL'S OFFICE AND THE MINNESOTA POLLUTION CONTROL AGENCY
FY 2020

WHEREAS, pursuant to Minnesota Statutes chapter 8, the Attorney General shall provide legal services to state agencies, boards and commissions; and

WHEREAS, pursuant to Minn. Stat. § 8.15, subd. 3 the Attorney General is authorized to enter into agreements with executive branch agencies to provide legal services; and

WHEREAS, the Agency desires certain legal services in order to administer and deliver its programs; and

NOW, THEREFORE, IT IS AGREED by the Parties to this Agreement the Minnesota Attorney General ("AGO") and the Minnesota Pollution Control Agency ("Agency"):

1. **Terms of Payment.** The Agency agrees to transfer to the AGO in FY 2020 an amount equal to the costs of legal services that are directly billed to it for legal services provided by the AGO. The billings will be based on the actual hours of service provided to the Agency by the AGO. The billings for actual hours of service provided will be based on hourly rates of $133.00 for attorney services and $85.00 for legal assistant and investigator services. The actual breakdown of legal services provided by attorneys and legal assistants will be determined within the AGO's discretion. Both the Agency and the AGO acknowledge that the hourly rates in this agreement are the hourly rates charged by the AGO for services to state agencies.

2. **Scope**. AGO will provide legal services to the Agency in accordance with Minn. Stat. § 8.06, except those duties, if any, delegated to the Agency or provided by outside counsel under Section 8.06. The scope of legal services to be provided may include matters pertaining to the Agency's official duties, including representation in litigation or other legal proceedings, provision of legal advice and assistance, provision of training and education to Agency staff, and other legal needs as may be necessary. Pursuant to § 8.06 the Attorney General may, at the request of the Agency, authorize outside counsel to be employed to provide legal services to the Agency.

3. **Outside Counsel and Agency Legal Staff**: If the AGO intends to appoint outside counsel to represent the Agency in any legal matter, the AGO shall consult with the Agency on the choice of counsel, and may, in consultation with the Agency delegate to an Agency staff attorney the authority to represent the Agency in the matter. The Agency will pay directly for any legal services provided by outside counsel appointed by the AGO or for the provision of legal services delegated by the AGO to an Agency staff attorney.

4. **Transfer Mechanism:** Monthly payments shall be made by the Agency to the AGO based on monthly billings for hours of actual services provided for legal work at the rates agreed upon in paragraph 1. The payment(s) shall be made within 30 days of the date of the monthly billing. The first monthly billing to the Agency under this Agreement will cover the period of time commencing July 1, 2019.

5. **Meetings and Reports**. AGO staff will meet with the Agency upon request to discuss priorities for legal services, to discuss strategies for reducing litigation and related costs, and to review litigation data to ensure accuracy. The AGO shall provide a written monthly status report to the Agency detailing the status of all Agency matters in which the AGO is representing the Agency, showing any change in the status of each matter since the last report. The monthly status report shall be sent to the Agency's General Counsel.

6. **Billing Reports**. The hours of legal services provided under this agreement will be recorded by AGO staff for use in the AGO billing system. The AGO will consult with the Agency before billing the Agency for legal work associated with litigation initiated by the AGO or another State entity. The AGO will provide the Agency with a report of all hours of services provided under this Agreement on a monthly basis, and the report will include an itemized description of the services provided, the total number of hours for each applicable AGO docket number, and names of Agency staff involved, if applicable.

   Each billing report will typically include two (2) complete pay periods. Billing reports may contain (3) complete pay periods in certain months or less than (2) complete pay periods at the beginning and end of the fiscal year. The AGO will provide each report to the Agency no later than six (6) weeks after the end of the period covered by the report.

7. **Litigation Costs and Expenses**. Agency litigation costs and expenses including, but not limited to, the cost of filing legal documents, hiring expert witnesses and court reporters, messenger services and travel expenses (e.g., out-of-state or air travel within the State of Minnesota) will be paid directly by the Agency and will not come from the funds identified to be paid to AGO in this Agreement. AGO staff will complete a "Notice of Need for Encumbrance" form, including the name and address of the vendor and the estimated cost to be incurred, and forward a copy to the Agency before such special expenses or obligations are incurred.

8. **Estimated Amount:** The total cost of legal services to be provided to the Agency by the AGO in FY 2020 is estimated by the Agency and the AGO to be $807,495. This amount of AGO legal services is merely a rough estimate for a one year period.

9. **Insufficient Funding:** The Agency will endeavor in good faith to pay for the total amount of legal services actually rendered to it by the AGO. However, if the Agency believes during the term of this Agreement that it will not have sufficient funds to pay for all the legal services anticipated to be rendered to it by the AGO, the Agency shall immediately so notify the AGO. The parties acknowledge that a new or supplemental

appropriation may be necessary, and MMB, the Agency and the AGO shall work cooperatively to obtain any necessary increased or supplemental funding. The parties agree that the Agency's obligation to pay for the cost of AGO legal services does not require the Agency to transfer funds to the AGO that (1) are appropriated or limited by contract, to be used for a specific purpose that clearly does not include the payment for AGO legal services; (2) would result in staff furloughs, involuntary leaves of absences or layoffs; or (3) are encumbered to pay for an expense unrelated to the payment of AGO legal services, but it is understood that the Agency may unencumber a portion or all of encumbered funds to the extent they are not necessary to pay for the expense for which they were encumbered.

10. **Amendments**. Any amendments to this Agreement shall be in writing and shall be executed as an amendment to the Agreement, including the mutual consent of all parties to the amendment.

11. **Authorized Agents**. The authorized agent of the AGO for purposes of this Agreement is Ray Smith. The Agency's authorized agent for purposes of this Agreement is Adonis Neblett.

APPROVED:

MINNESOTA POLLUTION CONTROL AGENCY

By: Laura Bishop

Title: Commissioner

Date: 9-24-19

OFFICE OF THE ATTORNEY GENERAL

By: John C. Keller

John C. Keller

Title: Chief Deputy Attorney General

Date: 10/1/19

MINNESOTA MANAGEMENT & BUDGET

By:

Title: Deputy Commissioner

Date: 10/4/19

|#4474975-v1

MINNESOTA POLLUTION CONTROL AGENCY

Interagency Agreement

State of Minnesota

SWIFT Contract No.: 161960
PO No. 3000024705
AI: 225064
Activity ID: PRO20190002

This Interagency Agreement is between the **Minnesota Pollution Control Agency,** 520 Lafayette Road North, St. Paul, MN 55155 (hereinafter "MPCA") and the **Minnesota Board of Water and Soil Resources,** 500 Lafayette Road North, St. Paul, MN 55155 (hereinafter "BWSR").

Recitals

1. The MPCA has appropriated FY 2020 and FY 2021 funds through Minnesota Laws, SF7, Article 1, Section 2, Subd. 4 (c) and SF3, Article 2, Section 5 (f) for the purposes of the Subsurface Sewage Treatment System (SSTS) Grants Program.
2. BWSR disburses funds to counties for the MPCA for the County SSTS Program through its Natural Resources Block Grant (NRBG) Program (hereinafter "County Programs").
3. The MPCA will transfer said funds to BWSR to disburse funds to County Programs under the terms of this Agreement.

Agreement

1. Term of Agreement

1.1 ***Effective date*: July 26, 2019,** or the date the State obtains all required signatures under Minn. Stat. §16C.05, subdivision 2, whichever is later.

1.2 ***Expiration date*: June 30, 2024,** or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2. Scope of Work

This Agreement allows for the transfer of funds from the MPCA to BWSR for the County Programs to be distributed to counties through the NRBG program. The MPCA is the approval agent for determining county grant eligibility and grant award amounts. BWSR is the fiscal agent that disburses the grant funds per approval information supplied by the MPCA. BWSR is responsible for verifying that county fiscal obligations are met.

3. MPCA's Responsibilities

In its capacity as supervising authority of the County Programs, the MPCA agrees to:

- Provide a schedule to BWSR for base grants and performance credit grants that shows the amount of each grant each delegated county is to receive.
- Determine grant eligibility for counties for base funding for the County SSTS program.
- Provide a schedule to BWSR for competitive grants and low-income grants that shows the amount of each grant each county is to receive.
- Provide to BWSR the specific information that counties must report on to comply with Clean Water Fund and environmental fund requirements.
- Ensure that award schedules are provided and funds are transferred in a timely manner with BWSR NRBG program administration policies and procedures.

4. BWSR's Responsibilities

In its capacity as NRBG administrator, BWSR agrees to:

- Distribute the 2020 and 2021 Base Grants and Low Income upgrade grant funds to County SSTS programs.

- Ensure that Clean Water Funds for the SSTS program is separately defined in grant awards and amendments, with the appropriate reporting requirements included. The availability of Clean Water Funds, which is different than the environmental funds, must be clearly identified.
- Periodically review fiscal records, financial reports, and budgetary documents submitted by counties to verify that grant fund expenditures are being allocated according to their grant.

5. Consideration and Conditions of Payment

All services provided by BWSR under this Agreement must be performed to the MPCA's satisfaction, as determined by the MPCA's Authorized Representative and MPCA County Programs' managers.

The MPCA will transfer funds to BWSR for the County Programs under the following terms of each County Program:

County SSTS Grants Program

The funds shall be transferred to BWSR, within 30 days, after delivery of the following award schedules to BWSR:

- The FY 2020 base grant awards (August 2019)
- The FY 2020 low-income upgrade grant awards (August 2019)
- The FY 2021 base grant awards (August 2020)
- The FY 2021 incentive grant awards (August 2020)
- The FY 2021 low-income upgrade grant awards (August 2020)

Returned Fund Redistribution. Any money returned by counties as unused may be redistributed to counties by BWSR as directed from a schedule provided by the MPCA.

Use of funds as match; Total Obligations.

The MPCA is already using these funds as match to a federal grant; thus, neither BWSR nor the counties may use this money as match to any other federal grant.

The total obligation of the MPCA for compensation and reimbursement to BWSR for the County SSTS Grants Program under this Agreement will not exceed **$3,099,600.00** (Three Million Ninety-nine Thousand Six Hundred Dollars and Zero Cents) for FY 20.

The funds for FY 21 have not yet been allocated. Once final numbers are determined, this agreement will be amended to include them.

6. Authorized Representatives

MPCA's Authorized Representative is **Aaron Jensen**, SSTS Program, 520 Lafayette Road North, St. Paul, Minnesota 55155, 651-757-2544, aaron.s.jensen@state.mn.us, or his successor.

BWSR's Authorized Representative is **Melissa Lewis,** Land and Water Section Manager, 500 Lafayette Road North, St. Paul, Minnesota 55155, 651-297-4735, melissa.k.lewis@state.mn.us, or her successor.

7. Amendments

Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original agreement, or their successors in office.

8. Liability

Each party will be responsible for its own acts and behavior and the results thereof.

9. Termination

Either party may terminate this Agreement at any time, with or without cause, upon 30 days written notice to the other party.

10. Legacy Logo

Minn. Stat. §114D.50 Subd 4 (f) states: “When practicable, a direct recipient of an appropriation from the clean water fund shall prominently display on the recipient's Web site home page the legacy logo required under Laws 2009, chapter 172, article 5, section 10, as amended by Laws 2010, chapter 361, article 3, section 5, accompanied by the phrase "Click here for more information." When a person clicks on the legacy logo image, the Web site must direct the person to a Web page that includes both the contact information that a person may use to obtain additional information, as well as a link to the Legislative Coordinating Commission Web site required under section 3.303, subdivision 10.

Clean Water Land and Legacy Amendment Logo Usage Guidelines:
http://www.legacy.leg.mn/sites/default/files/resources/Legacy_Logo_Guidelines.pdf

Download the Legacy Logo: http://www.legacy.leg.mn/legacy-logo/legacy-logo-download

Reporting FTEs

Minn. Stat. §3.303, Subd. 10 (2)(vi) requires that information provided on the Legislative Coordinating Commission’s Legacy Fund website must include specific information on all projects receiving funding: “(vi) the number of full-time equivalents funded under the project. For the purposes of this item, “full-time equivalent” means a position directly attributed to the receipt of money from one or more of the funds covered under this section, calculated as the total number of hours planned for the position divided by 2,088.”

Signatures

Document Signature Details -- External User

Order	Ext. User	Status	Actual Singer	Name	Title	Date/Time
1	VNR9P0000000_1	Signed	VNR9P0000000_1	JEREMY OLSON	EXTERNAL	07/26/2019 at 10:54 AM

Document Signature Details -- Internal Users

Order	Type	Role/User	Status	Actual Signer	Name	Title	Date/Time
1	Role	M_FS_WF_SC_DOC_SIGNER_01	Signed	00244060	Michelle Kelly Stryker	Encumbrance VerificationSigner	July 26, 2019 at 10:58 AM
2	Role	M_FS_WF_SC_DOC_SIGNER_02	Signed	01031035	Katie E Smith	State Agency Signer	July 26, 2019 at 11:09 AM

MINNESOTA POLLUTION CONTROL AGENCY

Interagency Agreement

State of Minnesota

SWIFT Contract No.: 162787
PO No. 3000024706
AI: 225064
Activity ID: PRO20190003

This Interagency Agreement is between the **Minnesota Pollution Control Agency,** 520 Lafayette Road North, St. Paul, MN 55155 (hereinafter "MPCA") and the **Minnesota Board of Water and Soil Resources,** 500 Lafayette Road North, St. Paul, MN 55155 (hereinafter "BWSR").

Agreement

1. Term of Agreement

1.1 ***Effective date*: July 26, 2019,** or the date the State obtains all required signatures under Minn. Stat. §16C.05, subdivision 2, whichever is later.

1.2 ***Expiration date*: June 30, 2024,** or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2. Scope of Work

This Agreement allows for the transfer of funds from the MPCA to BWSR for administrative cost support for the Administration of the County Subsurface Sewage Treatment System (SSTS) Program grants to be distributed to counties through the Natural Resources Block Grant (NRBG) program for FY 20 and FY 21.

Total estimated costs for BWSR to administer SSTS grants for FY 20 and FY 21:

- Program support: 20 hours/year x $50/hour x 2 years in biennium = $2,000
- Grant processing: Approximately 175 SSTS grants/year x 3 days to process x $50/hour x 2 years = $2,400
- eLINK support (Grantees that have an eLINK question each year and each question takes an hour to resolve): 6 hours x $50/hour x 2 years = $600

3. Consideration and Conditions of Payment

All services provided by BWSR under this Agreement must be performed to the MPCA's satisfaction, as determined by the MPCA's Authorized Representative.

Use of funds as match; Total Obligations.

The MPCA is already using these funds as match to a federal grant; thus, neither BWSR nor the counties may use this money as match to any other federal grant.

The MPCA will transfer funds upon invoice according to the following payment schedule:

- $2,500 for FY 20 upon receipt of invoice after execution
- $2,500 for FY 21 upon receipt of invoice July 1, 2020, or later

The total obligation of the MPCA for compensation and reimbursement to BWSR for Administration of the County SSTS Grants Program under this Agreement will not exceed **$5,000.00 (Five Thousand Dollars and Zero Cents).**

4. Authorized Representatives

MPCA's Authorized Representative is **Aaron Jensen**, SSTS Program, 520 Lafayette Road North, St. Paul, Minnesota 55155, 651-757-2544, aaron.s.jensen@state.mn.us, or his successor.

BWSR's Authorized Representative is **Melissa Lewis,** Land and Water Section Manager, 500 Lafayette Road North, St. Paul, Minnesota 55155, 651-297-4735, melissa.k.lewis@state.mn.us, or her successor.

5. Amendments

Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original agreement, or their successors in office.

6. Liability

Each party will be responsible for its own acts and behavior and the results thereof.

7. Termination

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8. Legacy Logo

Minn. Stat. §114D.50 Subd 4 (f) states: "When practicable, a direct recipient of an appropriation from the clean water fund shall prominently display on the recipient's Web site home page the legacy logo required under Laws 2009, chapter 172, article 5, section 10, as amended by Laws 2010, chapter 361, article 3, section 5, accompanied by the phrase "Click here for more information." When a person clicks on the legacy logo image, the Web site must direct the person to a Web page that includes both the contact information that a person may use to obtain additional information, as well as a link to the Legislative Coordinating Commission Web site required under section 3.303, subdivision 10.

Clean Water Land and Legacy Amendment Logo Usage Guidelines:
http://www.legacy.leg.mn/sites/default/files/resources/Legacy_Logo_Guidelines.pdf

Download the Legacy Logo: http://www.legacy.leg.mn/legacy-logo/legacy-logo-download

Reporting FTEs

Minn. Stat. §3.303, Subd. 10 (2)(vi) requires that information provided on the Legislative Coordinating Commission's Legacy Fund website must include specific information on all projects receiving funding: "(vi) the number of full-time equivalents funded under the project. For the purposes of this item, "full-time equivalent" means a position directly attributed to the receipt of money from one or more of the funds covered under this section, calculated as the total number of hours planned for the position divided by 2,088."

Signatures

Document Signature Details -- External User

Order	Ext. User	Status	Actual Singer	Name	Title	Date/Time
1	VNR9P0000000_1	Signed	VNR9P0000000_1	JEREMY OLSON	EXTERNAL	07/26/2019 at 10:52 AM

Document Signature Details -- Internal Users

Order	Type	Role/User	Status	Actual Signer	Name	Title	Date/Time
1	Role	M_FS_WF_SC_DOC_SIGNER_01	Signed	00244060	Michelle Kelly Stryker	Encumbrance VerificationSigner	July 26, 2019 at 10:57 AM
2	Role	M_FS_WF_SC_DOC_SIGNER_02	Signed	01031035	Katie E Smith	State Agency Signer	July 26, 2019 at 11:11 AM

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

SWIFT Contract Number: 166042
PO Number: 3000025070
Tempo ID: 187607
Activity ID: PRO20190020

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

This Agreement is between the **Minnesota Pollution Control Agency** (MPCA), 520 Lafayette Road North, St. Paul, MN 55155 and the **Minnesota Board of Water and Soil Resources** (BWSR), 520 Lafayette Road North, St. Paul, MN 55155.

Agreement

1. **Term of Agreement**
   1.1 ***Effective date*: October 1, 2019**, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later.
   1.2 ***Expiration date*: September 30, 2021**, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2. **Scope of Work**
   This agreement is for BWSR to provide a statewide conservation reporting system (eLINK) in order for MPCA to access data from eLINK, use eLINK to support their programs, and receive support services associated with eLINK. Support services will be aimed at both MPCA staff and local government recipients of grants.

   The goal of BWSR's eLINK system is to track conservation projects and grants; indicators and pollution reduction benefits; cumulative grant funding over a period of years; map locations of projects on a statewide, county, watershed, or individual-project basis; and provide documentation needed to comply with various state and federal program reporting requirements. Project locations can be used with natural resource information to estimate soil erosion and resultant environmental benefits from project implementation.

   Agreement Objectives:
   BWSR shall:
   - Provide use of eLINK through ongoing system administration, maintenance, and new development services for all eLINK records and usability. For these services, a $13,700.00 flat rate will be invoiced quarterly, for a total amount not to exceed $109,600.00 over the two-year period, reflecting the portion of MPCA grant and loan records as a subset of all grant records in eLINK.
   - Provide an estimated 130 hours per year, not to exceed 260 hours of support services over the two year period of this agreement. BWSR will be paid an hourly rate of $50.00 per hour for support services, for a total not to exceed $13,000.00 over the two-year period of this agreement. The hours will be allocated as needed among the following tasks:
     - Provide user technical support and training during regular business hours of Monday through Friday from 8:00 a.m. to 4:30 p.m., to MPCA staff and local governmental units who use the eLINK system.
     - Provide map products/GIS data files for use in the United States Environmental Protection Agency's (USEPA's) Grants Reporting and Tracking System (GRTS), MPCA's Annual Watershed Achievement Report (the annual report to USEPA), Watershed Restoration and Protection (WRAPS) reports, and other MPCA reports as needed for MPCA's business needs, including Clean Water Accountability Act.
     - Set up and enter into eLINK, the new Section 319 and Clean Water Partnership (CWP) projects annually.
     - Provide load reduction/best management practices (BMP) information for CWP and Section 319 projects to MPCA by February 1 and August 1 each year.
     - Respond to data requests to create reports from eLINK grant and loan records database queries as needed. Data request responses shall normally be within two (2) business days unless a longer response time is agreed upon by both parties for complex requests.
   - Submit detailed invoices to MPCA quarterly including the type of task completed.

- An annual report summarizing all work completed under this agreement will be due by October 31, 2020 for the first year, and by September 15, 2021 for the second year of this agreement. BWSR will be provided MPCA's report form template.

MPCA shall:

- Schedule reviews with BWSR, as needed, to discuss the status of the project.
- Schedule and invite BWSR representatives to the bimonthly project manager's meetings, monthly watershed staff video conference meetings, and other meetings, as appropriate.
- Request reporting system improvements/updates as needed.
- Provide to BWSR any current information on the federal Clean Water Act Section 319 and USEPA guidance and help implement new guidance as it relates to this agreement.
- Report full-time equivalents (FTEs) to the Legislative Coordinating Commission's Legacy Fund website on an annual basis per Clean Water Fund reporting requirements.

Outcomes:

- MPCA staff will become proficient in checking the status of their projects in the conservation reporting system.
- All local governments which have Section 319 and CWP projects will provide completed best management practices and requisite anticipated pollution reductions in a timely manner.
- All requested documents will be submitted as requested for the Watershed Achievement Report.
- All requested data will be submitted as requested for entry into the Federal Government Reporting and Tracking System (GRTS).

3. Consideration and Conditions of Payment

All services provided by BWSR under this Agreement must be performed to the MPCA's satisfaction, as determined by the MPCA's Authorized Representative.

The total obligation for both years of the contract for all compensation and reimbursements to BWSR under this Agreement will not exceed **$122,600.00 (One Hundred Twenty Two Thousand Six Hundred Dollars and zero cents)**.

MPCA will promptly pay BWSR after BWSR presents an itemized invoice for the services actually performed and the State's Authorized Representative accepts the invoiced services. Invoices must be submitted timely and according to the following schedule: **Quarterly**.

Invoices will reference the SWIFT Contract number, Purchase Order number, and the name of the State's Authorized Representative and will be submitted electronically to: mpca.ap@state.mn.us. If there is a problem with submitting an invoice electronically, please contact the Accounts Payable Unit at 651-757-2491.

4. Authorized Representatives

The MPCA's Authorized Representative/Project Manager is **David Miller**, Watershed Division, 520 Lafayette Road North, St. Paul, Minnesota 55155, (651) 757-2448, david.miller@state.mn.us, or his successor and has the responsibility to monitor the performance and the authority to accept the services provided under this Agreement. If the services are satisfactory, the MPCA's Authorized Representative/Project Manager will certify acceptance on each invoice submitted for payment.

BWSR's Authorized Representative is **Melissa Lewis**, Assistant Section Manager, or her successor, 520 Lafayette Road North, St. Paul, MN 55155, (651) 297-4735, melissa.k.lewis@state.mn.us. If BWSR's Authorized Representative changes at any time during this Agreement, BWSR must immediately notify MPCA in writing.

5. Change Orders

If the MPCA's Project Manager or BWSR's Authorized Representative identifies a change needed in the workplan and/or budget, either party may initiate a Change Order using the Change Order Form provided by the MPCA.

Change Orders may not delay or jeopardize the success of the Project, alter the overall scope of the Project, increase or decrease the overall amount of the Agreement, or cause an extension of the term of this Agreement. Major changes require an Amendment rather than a Change Order.

The Change Order Form must be approved and signed by the MPCA's Project Manager and BWSR's Authorized Representative **in advance of doing the work**. Documented changes will then become an integral and enforceable part of the Agreement. The MPCA has the sole discretion on the determination of whether a requested change is a Change Order or an Amendment. The state reserves the right to refuse any Change Order requests.

6. **Amendments**
Any amendment to this agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original agreement, or their successors in office.

7. **Liability**
Each party will be responsible for its own acts and behavior and the results thereof.

8. **Termination**
Either party may terminate this agreement at any time, with or without cause, upon 30 days' written notice to the other party.

9. **Clean Water Fund and Legacy Logo**
Minn. Stat. § 114D.50 Subd 4 (f) states: "When practicable, a direct recipient of an appropriation from the clean water fund shall prominently display on the recipient's Web site home page the legacy logo required under Laws 2009, chapter 172, article 5, section 10, as amended by Laws 2010, chapter 361, article 3, section 5, accompanied by the phrase "Click here for more information." When a person clicks on the legacy logo image, the Web site must direct the person to a Web page that includes both the contact information that a person may use to obtain additional information, as well as a link to the Legislative Coordinating Commission Web site required under section 3.303, subdivision 10. Clean Water Land and Legacy Amendment Logo Usage Guidelines: http://www.legacy.leg.mn/sites/default/files/resources/Legacy_Logo_Guidelines.pdf. Download the Legacy Logo: http://www.legacy.leg.mn/legacy-logo/legacy-logo-download

Reporting FTEs
Minn. Stat. § 3.303, Subd. 10 (2)(vi) requires that information provided on the Legislative Coordinating Commission's Legacy Fund website must include specific information on all projects receiving funding: "(vi) the number of full-time equivalents funded under the project. For the purposes of this item, "full-time equivalent" means a position directly attributed to the receipt of money from one or more of the funds covered under this section, calculated as the total number of hours planned for the position divided by 2,088."

~Signatures on following page~

STATE ENCUMBRANCE VERIFICATION

Individual certifies that funds have been encumbered as required by Minn. Stat. §§ 16A.15 and 16C.05.

Signed: _____

Date: 9/30/19

BOARD OF WATER AND SOIL RESOURCES

By: _____ Digitally signed by Melissa Lewis Assistant Section Manager Date: 2019.09.30 07:55:17 -05'00'

(with delegated authority)

Printed Name: _Melissa Lewis___

Title: _Assistant Section Manager_____

Date: __9/30/19_____

MINNESOTA POLLUTION CONTROL AGENCY

By: _____

(with delegated authority)

Printed Name: Dana Vanderbosch

Title: Director

Date: 9/30/19

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

SWIFT Contract No.: 161214
Purchase Order No.: 3000024682
Agency Interest ID No.: 224243
Activity ID No.: PRO20190005

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

For Assistance Related to Implementation of the 3M Settlement Agreement

This Agreement is between the **Minnesota Pollution Control Agency,** 520 Lafayette Road North, St. Paul, MN 55155 ("MPCA") and the **Minnesota Department of Natural Resources,** 500 Lafayette Road, St Paul, MN 55155 ("DNR").

Agreement

1. **Term of Agreement**
   - 1.1. ***Effective date*: August 16, 2019**, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later.
   - 1.2. ***Expiration date*: June 30, 2020**, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2. **Scope of Work**
   To accomplish the purposes of the 3M Agreement, dated February 20, 2018, as Co-Trustee with the MPCA, DNR will provide support and technical assistance to meet *Priority 1: Drinking Water Quality, Quantity, and Sustainability* goals including support at public meetings.

   DNR will maintain documentation for all funds spent under this agreement within the State of Minnesota's accounting system for the purpose of financial auditing.

3. **Considerations and Payment**
   MPCA will reimburse DNR for staff costs and contractual support for work under this Agreement. The total obligation of the MPCA for all compensation and reimbursements to DNR will not exceed $130,000.00 (One Hundred Thirty Thousand Dollars and Zero Cents). Of this amount, up to $10,000 is for grant and contract administration. Grant administration will be billed at a rate of $66.00 per hour, and contract administration will be billed at a rate of $71.00 per hour.

   The MPCA agrees to reimburse DNR for staff costs for work under this Agreement starting July 1, 2019.

   MPCA will promptly pay DNR after DNR presents an itemized invoice for the services actually performed and MPCA's Authorized Representative accepts the invoiced services. Invoices must be submitted at least at least every six months.

   Invoices will reference the SWIFT Contract number, Purchase Order number, and the name of MPCA's Project Manager and will be submitted electronically to: mpca.ap@state.mn.us. If there is a problem with submitting an invoice electronically, please contact the Accounts Payable Unit at 651-757-2491.

4. **Conditions of Payment**
All services provided by DNR under this Agreement must be performed to MPCA's satisfaction, as determined at the sole discretion of MPCA's Authorized Representative.

5. **Authorized Representative**
MPCA's Authorized Representative is **Kathryn Sather**, Division Director, 520 Lafayette Road North, St. Paul, MN 55155, 651-757-2691, Kathryn.Sather@state.mn.us, or her successor.

DNR's Authorized Representative is **Steve Colvin**, Division Director, 500 Lafayette Road, St Paul, MN 55155, 651-259-5709, Steve.Colvin@state.mn.us, or his successor.

6. **Amendments**
Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same party who executed and approved the original agreement, or their successor in office.

7. **Liability**
Each party will be responsible for its own acts and behavior and the results thereof to the extent authorized by law and shall not be responsible for the acts of the other party and the results thereof.

8. **Termination**
Either party may terminate this Agreement at any time, with or without cause, upon 30 days' written notice to the other party.

1. STATE ENCUMBRANCE VERIFICATION
Individual certifies that funds have been encumbered as required by Minn. Stat. §§ 16A.15 and 16C.05.

Signed: _____

Date: 8/14/19

2. Minnesota Department of Natural Resources

By: _____
(With delegated authority)

Title: Director

Date: 8/16/19

3. Minnesota Pollution Control Agency

By: _____
(with delegated authority)

Title: Asst. Division Director

Date: 8/26/2019

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Contract No: 161579
Purchase Order No: 3-155516
Agency Interest No: 187607
Activity ID No: PRO20190008

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

This agreement is between the **MINNESOTA POLLUTION CONTROL AGENCY**, 520 Lafayette Road N., St. Paul, MN 55155 (MPCA) and **MINNESOTA DEPARTMENT OF NATURAL RESOURCES,** 500 Lafayette Road, St. Paul, MN 55155 (MNDNR)

Agreement

1. **Term of Agreement**
   - **1.1 Effective date: July 1, 2019**, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later.
   - **1.2 Expiration date: June 30, 2021,** or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2. **Scope of Work**

2.1 Purchase: MPCA will purchase hardware, software and licenses for the KISTERS Time-Series Data Management System and GoCanvas and invoice MNDNR for reimbursement of MNDNR's share of real costs.

2.2 Maintenance: MPCA will maintain the hardware and software systems for the KISTERS Time-Series Data System software and database.

In the event that MNDNR experiences software issues during use of the KISTERS Time-Series Data System, MNDNR will contact the KISTERS Time-Series Data System **Technical Representative, Wade Gillingham, 504 Fairgrounds Rd., Suite 200, Marshall, MN 56258; 507-476-4256; Wade.Gillingham@state.mn.us**, or his successor. If the KISTERS Time-Series Data System Technical Representative changes at any time during this agreement, MPCA will notify MNDNR in writing.

In the event that MNDNR experiences software issues during use of the GoCanvas Software, MNDNR will contact the GoCanvas **Technical Representative, Eileen Campbell, 12 Civic Center Plaza, Suite 2165 Mankato, MN 56001; 507-344-5244; Eileen.Campbell@state.mn.us**, or her successor. If the GoCanvas Technical Representative changes at any time during this agreement, MPCA will notify MNDNR in writing.

The MPCA will respond to issues and problems raised by MNDNR with the same priority as issues and problems raised by MPCA staff.

MPCA reserves the right to request reimbursement from MNDNR for additional licenses attributable to MNDNR needs and for costs arising from unforeseen issues or problems that require a substantial increase in MPCA staff time to resolve

MPCA will make available staff time with expertise in the KISTERS Time-Series Data System to participate in mutually beneficial interagency efforts that require connection to or replication of time-series water and climate data.

MNDNR will maintain the MNDNR/MPCA Cooperative Stream Gaging web site.

MPCA and MNDNR both have administrator access at http://www.gocanvas.com to modify and develop applications for field data entry into the KISTERS Time-Series Data System and will work with the KISTERS Time-Series Data System Technical Representative to ensure field data are being submitted properly from GoCanvas to the KISTERS Time-Series Data System.

MN.IT Enterprise will direct bill MPCA and MNDNR for remote access and RSA tokens based on the current rate/month/user as determined by MN.IT Enterprise.

2.3 Security: MPCA and MNDNR agree to allow network connections across firewalls when necessary, practical, and secure.

In order to obtain access to the KISTERS Time-Series Data System through the MPCA network, a MNDNR staff person must complete and sign the MNIT @ MPCA Network Account Request form. Network access will be granted following approval by the associated MPCA Section Manager. In the event that an authorized MNDNR employee with access to MPCA computer systems leaves MNDNR employment or is re-assigned, MNDNR will provide timely written notification to MPCA of the employment status change so that actions can be taken to promptly disable the employee's account.

2.4 Data Stewardship: MPCA and MNDNR will work together to cooperatively manage all MPCA and MNDNR data in the system.

3 Consideration and Payment

3.1 Payments under this agreement are limited to reimbursement by MNDNR to MPCA for real costs associated with MNDNR users of the KISTERS Time-Series Data Management System and GoCanvas. Upon receipt of an invoice from MPCA the MNDNR will reimburse MPCA for Vendor Charged Software Maintenance Fees. In the event that MNDNR's usage substantially increases, decreases or changes in nature, either party to this contract may initiate a contract amendment to reflect changes in needs, services or costs.

3.2 Upon execution of this agreement and receipt of MPCA's invoice, MNDNR shall submit payment according to costs in Table 1 for projected costs for Fiscal Year 2020.

Table 1. Annual Costs – State Fiscal Year 2020

Item	Timeline	Cost
KISTERS Time-Series Data Management System costs	7/1/2019 – 6/30/2020	$49,000
GoCanvas licenses (10)	7/1/2019 – 6/30/2020	$2,500
Contingency for unforeseen costs	7/1/2019 – 6/30/2020	$2,000
TOTAL		$53,500

3.3 Upon receipt of an MPCA invoice, MNDNR shall submit payment according to costs in Table 2 for projected costs for Fiscal Year 2021.

Table 2. Annual Costs – State Fiscal Year 2021

Item	Timeline	Cost
KISTERS Time-Series Data Management System Costs	7/1/2020 – 6/30/2021	$51,000
GoCanvas licenses (10)	7/1/2020 – 6/30/2021	$2,700
Contingency for unforeseen costs	7/1/2020 – 6/30/2021	$2,000
TOTAL		$55,700

3.4 The total obligation of MNDNR for annual costs to MPCA for all compensation and reimbursements to MPCA under this contract will not exceed $109,200 (One Hundred Nine Thousand and Two Hundred Dollars).

4. Conditions of Payment

Access to and maintenance of the KISTERS Time-Series Data Management System and the basis for invoices provided by MPCA under this agreement must be provided to MNDNR's satisfaction, as determined at the sole discretion of MNDNR's Authorized Representative.

5. Authorized Representative

MNDNR's Authorized Representative is **Carrie Robertson, 325 Randolph Ave, Suite 500, Saint Paul, MN 55102; 651-539-2108; Carrie.Robertson@state.mn.us,** or her successor.

MPCA's Authorized Representative is **Eileen Campbell, 12 Civic Center Plaza, Suite 2165, Mankato MN 56001; 507-344-5244; Eileen.Campbell@state.mn.us,** or her successor.

6 Amendments

Any amendment to this agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original agreement, or their successors in office.

7 Liability

Each party will be responsible for its own acts and behavior and the results thereof.

8 Termination

Either party may terminate this agreement at any time, with or without cause, upon 30 days' written notice to the other party.

1. STATE ENCUMBRANCE VERIFICATION

Individual certifies that funds have been encumbered as required by Minn. Stat. §§ 16A.15 and 16C.05.

Signed: Felicia Barnes

Date: 7/8/2019

SC. 161579 PO 3-155516

2. MINNESOTA POLLUTION CONTROL AGENCY

By: Gina Vanderbosch
(With delegated authority)

Title: Assistant Division Director

Date: 7/9/2019

3. MINNESOTA DEPARTMENT OF NATURAL RESOURCES

By:
(With delegated authority) Steve Colvin

Title: Director, Ecological & Water Resources

Date: 7/8/19

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155 4194

SWIFT Contract Number: 162709
PO Number: 3000024646
Tempo ID: 214727
Activity ID: PRO20190007

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

This Agreement is between the **MNIT Services Department of Natural Resources** (MNIT@DNR), 500 Lafayette Road North, St. Paul, Minnesota 55155 and the **Minnesota Pollution Control Agency** (MPCA), 520 Lafayette Road North, St. Paul, Minnesota 55155.

Agreement

1 Term of Agreement

1.1 ***Effective date*: July 22, 2019**, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later.

1.2 ***Expiration date*: September 30, 2020**, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2 Scope of Work

MPCA requests computer support assistance for the MPCA Eco Experience at the 2019 and 2020 Minnesota State Fairs (State Fair).

MNIT@DNR Responsibilities:

- Unpack and image approximately thirty-five (35) computers that are borrowed by MPCA from Dell Corporation and sent directly to the MNIT@DNR designated location. The computers are a combination of laptops, all-in-ones, and personal computers (PCs) with monitors. Imaging entails loading the standard software and internet access programs onto the computers so they are fully functional. Some computers will need to be "white-listed" so visitors cannot navigate away from specific screens or webpages. These specific sites will be provided to the MNIT@DNR staff by the MPCA staff.
- After imaging, the computers are repackaged for transport to the Eco Experience building at the State Fair. Computers will be ready for transport by the Thursday before the start of the fair *(August 15th in 2019)(August 13th in 2020)*
- MNIT@DNR staff will unpack the computers and set them up in their appropriate spots, pursuant to the location map that is provided by MPCA, on Monday and Tuesday the week of the start of the State Fair *(August 19th and 20th in 2019)(August 17th and 18th in 2020)*. Internet connections will be established using credentials received from the State Fair computer staff. All computers will be verified to be functioning properly by MNIT@DNR staff. The packaging materials will be neatly stored in an area designated by the Eco Experience Coordinator. Some computers will be designated as extras in case a computer fails. These don't need to be unpacked, but need to be accessible to Eco Experience staff.
- MNIT@DNR staff will provide remote IT assistance during the State Fair for computers that are used by MPCA staff. (Some of the computers are used by different exhibitors in the building; those exhibitors provide their own IT support during the State Fair.) A phone number and email address will be provided to Eco Experience staff and volunteers to call for assistance between roughly 8:00 a.m. and 10:00 p.m. for all twelve days of the State Fair.
- On Tuesday after Labor Day *(September 3rd in 2019)(September 8th in 2020)*, MNIT@DNR will make sure any data collected on specific computers designated by MPCA is properly saved for access by MPCA staff. MNIT@DNR will then dismantle the computers, follow Dell Corporation instructions for removing any imaging if needed, pack, and prepare all mailing labels for shipping back to Dell Corporation. After the boxes are labeled,

MNIT@DNR will notify the shipper to schedule pick up of the computers during normal business hours from the Eco Experience building at the Minnesota State Fairgrounds.

- MNIT@DNR will record all hours, by activity, spent on each component of work for the Eco Experience to include on invoices to the MPCA.
  Activity categories include:
  - **Imaging**—includes unpacking, imaging and repacking for transport to the Eco Experience building
  - **Set-up**—setting up the computers
  - **Support/Trouble shooting**
  - **Take-down**—data collection, wiping drives (if needed), repacking, preparing shipping labels, contacting shipper

MPCA Responsibilities:

- MPCA staff will transport the computers to the Eco Experience building from MNIT@DNR on Thursday or Friday a week before the State Fair *(August 15th or 16th in 2019)(August 13th or 14th in 2020).*

3 Consideration and Payment

The total obligation of the MPCA for all compensation and reimbursements to MNIT@DNR under this Agreement will not exceed **$10,000.00 (Ten Thousand Dollars and Zero Cents)**. $5,000.00 will be invoiced to MPCA after the 2019 State Fair and $5,000.00 after the 2020 State Fair.

4 Conditions of Payment

All services provided by MNIT@DNR under this Agreement must be performed to MPCA's satisfaction, as determined at the sole discretion of MPCA's Authorized Representative or his/her delegate.

MPCA will promptly pay MNIT@DNR after MNIT@DNR presents an itemized invoice for the services actually performed and the State's Authorized Representative accepts the invoiced services. Invoices must be submitted timely and according to the following schedule: Once after each State Fair in September. Invoices must detail the hours spent on each activity. Invoices will also reference the SWIFT Contract number, Purchase Order number, and the name of the State's Authorized Representative and will be submitted electronically to: mpca.ap@state.mn.us. If there is a problem with submitting an invoice electronically, please contact the Accounts Payable Unit at 651-757-2491.

5 Authorized Representative

MPCA's Authorized Representative is Karen Van Norman, Eco Experience Coordinator, 520 Lafayette Road North, St. Paul, Minnesota 55155, 651-757-2494, karen.van.norman@state.mn.us, or her successor.

MNIT@DNR's Authorized Representative is Jenna Covey, MNIT@DNR Chief Business Technology Officer, 500 Lafayette Road North, St. Paul, Minnesota 55155, 651-259-5476, jenna.covey@state.mn.us, or her successor.

6 Amendments

Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original agreement, or their successors in office.

7 Liability

Each party will be responsible for its own acts and behavior and the results thereof.

8 Termination

Either party may terminate this Agreement at any time, with or without cause, upon 30 days' written notice to the other party.

STATE ENCUMBRANCE VERIFICATION

Individual certifies that funds have been encumbered as required by Minn. Stat. §§ 16A.15 and 16C.05.

Signed: _____

Date: 7/3/19

MINNESOTA POLLUTION CONTROL AGENCY

By: _____
(With delegated authority)

Title: Asst. Division Director

Date: 7/10/19

MNIT SERVICES DEPARTMENT OF NATURAL RESOURCES

By: _____
(With delegated authority)

Title: CBTO

Date: 7/9/19

163342/3000157489

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

This Agreement is between the **Minnesota Pollution Control Agency** ("MPCA"), 520 Lafayette Road North, St. Paul, Minnesota 55155, and the **Minnesota Department of Natural Resources** ("DNR"), 500 Lafayette Road North, St. Paul, Minnesota 55155.

Recitals

1. The MPCA and DNR, as authorized co-trustees of the State's natural resources, are responsible for seeking settlement from responsible parties for the release of petroleum and hazardous substances into the environment. The settlements are based on the harm to natural resources and lost services resulting from the release of contaminants. A Natural Resource Damage Assessment (NRDA) is a process designed to calculate natural resources damages caused by the release.
2. The MPCA and DNR work jointly and cooperatively when conducting NRDA assessments and restoration project planning. Some NRDA actions require additional contractual assistance when expertise is unavailable or MPCA and DNR lack staff capacity. The MPCA has a master contract for conducting NRDA services and may utilize other external contracts if necessary.
3. Pursuant to Minnesota Statute 115B.20 Subd. 2 (4), the DNR has legislative authority to use funds in the DNR Remediation Fund for NRDA administration, planning and implementation work. Administration includes costs of assessment and staff training.
4. This Agreement will allow the transfer of funds from the Remediation Fund to the MPCA for NRDA work orders or other purchasing requests. All transfers are jointly agreed upon by MPCA and DNR NRDA management team and are documented in the annual NRDA budget. Fund transfers may cover 100% (One Hundred Percent) of the identified costs or some agreed-upon portion of the total **Agreement.**

1. Term of Agreement

1.1 Effective date: ***July 1, 2019***, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later.

1.2 Expiration date: ***June 30, 2021,*** or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2 Scope of Work

2.1 MPCA Responsibilities:

A. The MPCA as co-trustee with DNR, and in cooperation with the DNR, will identify the need to conduct pre-assessment, injury/quantification, assessment, restoration planning, case management, and other activities associated with NRDA sites located in Minnesota.
B. The MPCA's proposed NRDA annual expenditure budget is based on anticipated contract work order needs and staff training and expenses for the upcoming fiscal year. Work order activities include NRDA tasks such as the pre-assessment, injury/quantification, assessment, restoration planning, and other needs that are within the scope of the MPCA master contracts. All staff training and expenses must be approved by the DNR/MPCA NRDA Management Team.
C. The DNR/MPCA NRDA Management Team shall review and approve the NRDA expenditure budget, **Attachment A**, which is attached and incorporated into this Agreement. The MPCA will submit a SWIFT invoice to DNR to provide funds to the MPCA. Once the Agreement is executed, Attachment A will be fully incorporated into this Agreement and funded to the extent authorized by DNR. The MPCA will proposed a

FY2021 budget and subsequent invoice prior to June 30, 2020.

D. The MPCA will submit draft work orders to the DNR for review, and either party may negotiate changes before final execution of any Work Order.
E. The MPCA will provide timely deliverables as described in each work order, including regular progress reports, to the NRDA Management Team.
F. The MPCA will review invoices and make timely payments to the contractor.
G. The MPCA will track and report the remaining funds at the end of the fiscal year that were provided to the MPCA for NRDA expenditures.

2.2 DNR Responsibilities:

A. The DNR will administer annual financial transfers to the MPCA for costs of NRDA actions, including MPCA staffing and training and MPCA's master contractors conducting NRDA assessments, which require approval by the NRDA Management Team.

B. As part of the NRDA Management Team, the DNR will review and approve the annual expenditures worksheet, **Attachment A.** Once approved, **Attachment A** will be fully incorporated into this Agreement and funded to the extent authorized by the DNR.

C. The DNR may identify the need to conduct pre-assessment, injury/quantification, assessment, and restoration planning, case management, and other activities associated with NRDA sites located in Minnesota. DNR will coordinate with MPCA to utilize the NRDA master contractors and the scope of work will be approved by the NRDA management team.

D. The MPCA and DNR will work collaboratively to identify future NRDA sites, assessment needs and implementation expenditures. Both agencies will participate in oversight of the delivery of work order products and in other activities related to each NRDA to the extent that the Parties have agreed to on a project-by-project basis.

3 Consideration and Payment

Upon execution of the **Agreement**, the MPCA will send an invoice (SWIFT) to the DNR. The DNR shall encumber and promptly pay the MPCA invoice upon receipt. The total obligation of DNR to the MPCA under this Agreement will not exceed $255,000 (Two Hundred Fifty Five Thousand Dollars) over the 2020-2021 biennium.

The MPCA shall draw against such funds as it incurs costs to perform NRDA tasks and staff training. Upon expiration or termination of this Agreement, or termination of a specific work order, the DNR shall be entitled to a refund of unspent funds of those advanced to the MPCA, for products specific to work orders for which the funds were provided. The NRDA Management Team will determine if the funds roll over to the next fiscal year or will be returned to the DNR Remediation Fund.

4 Conditions of Payment

All services provided by MPCA under this Agreement must be performed to DNR's satisfaction, as determined by DNR's Authorized Representative or his/her successor, upon review of progress reports or other requested documentation.

5 Authorized Representatives

DNR's Authorized Representative is **Steve Colvin, steve.colvin@state.mn.us**, 651-259-5106, 500 Lafayette Road North, St. Paul, MN 55155, or his successors in office.

MPCA's Authorized Representative is **Reena Solheid, reena.solheid@state.mn.us** , 651-757-2575, 520 Lafayette Road North, St. Paul, MN 55155, or her successors in office.

6 Amendments

Any amendment to this agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original Agreement, or their successors in office.

7 Liability

Each party will be responsible for its own acts and behavior and the results thereof.

8 Termination

Either party may terminate this agreement at any time, with or without cause, upon 30 days' written notice to the other party.

1. State Encumbrance Verification

Individual certifies that funds have been encumbered as required by Minn. Stat. §§ 16A.15 and 16C.05.

Signed: Felicia Barnes

Date: 7/24/2019

SWIFT Contract Number: 163342/3000057481

2. Minnesota Pollution Control Agency

Signed: Christine Durrow

Title: Assistant Division Director

Date: 7-29-19

3. Minnesota Department of Natural Resources

Signed: [signature]

(With delegated authority.) Steve Colvin

Title: Director, Ecological & Water Resources

Date: 7/29/19

MINNESOTA POLLUTION CONTROL AGENCY

ATTACHMENT A

Estimated Annual Budget

for MPCA/DNR Interagency Agreement

Minnesota Department of Natural Resources (DNR)

Doc Type: Contract

Program:	Natural Resource Damage Assessment	Fiscal Year:	2020
MPCA Authorized Representative:	Kathy Sather	Phone:	651-757-2691
DNR Authorized Representative:	Steve Colvin	Phone:	651-259-5709
Prepared by:	Susan Johnson	Phone:	218-302-6601

Estimated Annual Budget (add/delete rows as needed)

	Project or Task (if known)	MPCA amount	DNR amount
1.	Fiscal year 2019 balance remaining (estimated)	$30,000	
2.	St. Regis		$75,000
3	Douglas Manufacturing or other cases (with approval)	($18,000)	$60,000
4.	Emergency funds for spills	($10,000)	
5.	State NRD Alliance meeting	($2,000)	
	Each Agency Totals:	0.00	$135,000
	Total amount requested (DNR Total minus MPCA Total):		**$135,000**

Copies to: Susan Johnson, Program Coordinator, MPCA
Steve Colvin, Director, Ecological and Water Resources, DNR
Hans Neve, Manager, Closed Landfill and Emergency Management Section, MPCA

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

SWIFT Contract No.: 168688
Purchase Order No.: 3000025676
AI #: 39273
Project ID #: PRO20190004

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

This Agreement is between the **Minnesota Pollution Control Agency (MPCA)** 520 Lafayette Road North, St. Paul, MN 55155 and **Minnesota Department of Natural Resources (DNR)** 500 Lafayette Road North, St. Paul, MN 55155.

Agreement

1 Term of Agreement

1.1 ***Effective date*:** January 7, 2020, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later.

1.2 ***Expiration date*:** June 30, 2021, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2 Scope of Work

The DNR will conduct the work under this Agreement as specified in **Attachment A – Scope of Work,** which is attached and incorporated into this Agreement. Site-specific detailed workplans, project schedules and budgets will be submitted to the MPCA by the DNR in the form of **Attachment B – Example Work Plan Template,** which is attached and incorporated into this Agreement. Each Work Plan will be reviewed, approved, and encumbered by MPCA prior to work starting on a particular land survey.

3 Consideration and Payment

MPCA will reimburse DNR at the DNR Division of Lands and Minerals' professional services rate for real estate activities. If included in a site-specific workplan, the reimbursed cost of materials for each geodetic monument will not exceed $500.00. DNR Division of Lands and Minerals' professional services hourly rate is $111.00 for FY20 and may be adjusted to reflect the current hourly rate in effect each fiscal year thereafter.

The total obligation of the MPCA for all compensation and reimbursements to DNR under this Agreement will not exceed **$300,000.00 (Three hundred thousand dollars and zero cents).**

Invoices will be submitted on a monthly basis for services completed and will be submitted electronically to mpca.ap@state.mn.us. Invoices should reference the SWIFT Contact number, purchase order number, the name of the land survey project, and the name of MPCA's Authorized Representative. If there is a problem with submitting an invoice electronically, please contact the Accounts Payable Unit at 651-757-2491.

4 Conditions of Payment

All services provided by DNR under this agreement must be performed to MPCA Authorized Representative's satisfaction.

5 Authorized Representative

MPCA's Authorized Representative is **Shawn Ruotsinoja**, 520 Lafayette Road North, St. Paul, MN 55155, 651-757-2683, shawn.ruotsinoja@state.mn.us, or his successor.

DNR's Authorized Representative is **Susan Damon,** 500 Lafayette Road North, St. Paul, MN 55155, 651-259-5961, susan.damon@state.mn.us, or her successor.

6 Amendments

Any amendment to this agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original agreement, or their successors in office.

7 Change Orders

If the MPCA's Authorized Representative or the DNR's Authorized Representative identifies a change needed in the workplan and/or budget, either party may initiate a Change Order using the Change Order Form provided by the MPCA. Change Orders may not delay or jeopardize the success of the Project, alter the overall scope of the Project, increase or decrease the overall amount of the Contract, or cause an extension of the term of this Contract. Major changes require an Amendment rather than a Change Order.

The Change Order Form must be approved and signed by both Authorized Representatives **in advance of doing the work**. Documented changes will then become an integral and enforceable part of the Contract. The MPCA has the sole discretion on the determination of whether a requested change is a Change Order or an Amendment and reserves the right to refuse any Change Order requests.

8 Liability

Each party will be responsible for its own acts and behavior and the results thereof.

9 Termination

Either party may terminate this agreement at any time, with or without cause, upon 30 days' written notice to the other party.

1. STATE ENCUMBRANCE VERIFICATION

Individual certifies that funds have been encumbered as required by Minn. Stat. §§ 16A.15 and 16C.05.

DocuSigned by:
Paul L Nevin
894ACA4E32F44D3...

Date: January 7, 2020

2. MINNESOTA DEPARTMENT OF NATURAL RESOURCES

DocuSigned by:
Susan E. Damon
EE85E9F1ABEA4A7...

Date: January 27, 2020

3. MINNESOTA POLLUTION CONTROL AGENCY

(with delegated authority)

DocuSigned by:
Doug Wetzstein
FA6D3C31C9384A6...

Date: January 28, 2020

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Interagency Agreement
State of Minnesota

SWIFT Contract No.: 171767
Purchase Order No.: 3000025930
Tempo Agency Interest No.: 39273
Activity ID: PRO20200001

This Agreement is between the Minnesota Departments of **Minnesota Pollution Control Agency**, 520 Lafayette Road North, St. Paul, MN 55155 (MPCA) and **Minnesota Department of Natural Resources**, 500 Lafayette Road North, St. Paul, MN 55155 (DNR).

Agreement

1 Term of Agreement

1.1 ***Effective date*****: April 1, 2020**, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later. The DNR must not begin work under this Agreement until this Agreement is fully executed and the DNR has been notified by the MPCA's Authorized Representative to begin the work.

1.2 ***Expiration date*****: March 31, 2022,** or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2 Scope of Work

The DNR Agrees to operate and maintain the IMPROVE (Interagency Monitoring of Protected Visual Environments) Network Station at Great River Bluffs State Park (GRBSP) as described in **Attachment A: Workplan**, which is attached and incorporated into this Agreement.

3 Consideration and Payment

3.1 The DNR shall operate and maintain the IMPROVE Network Station at GRBSP every Tuesday for 52 weeks a year at a rate of $300.00 per week. The annual costs will not exceed **$15,600.00 (Fifteen Thousand Six Hundred Dollars and Zero Cents).** Year one is defined as the period of April 1, 2020 – March 31, 2021. Year two is defined as the period of April 1, 2021 – March 31, 2022.

3.2 The total obligation for all compensation under this Agreement will not exceed **$31,200.00 (Thirty-One Thousand, Two Hundred Dollars and Zero Cents).**

3.3 Invoices. The MPCA will promptly pay the DNR after the DNR presents an itemized invoice for the services actually performed and the MPCA's Authorized Representative accepts the invoiced services. Invoices must be submitted timely and according to the following schedule: **Annually.**

Invoices shall include:

- DNR Project Manager
- Agreement Amount
- Agreement Amount available to date
- Invoice Number
- Invoice Date
- MPCA Authorized Representative/Project Manager
- SWIFT Contract Number
- SWIFT Purchase Order Number
- Invoicing Period (actual working period)

- Itemized list of all work performed and brief update of task and objective completed
- Receipts for supplies, shipping, lab fees and any other subcontractor invoices must be attached

Invoices must be submitted electronically to: mpca.ap@state.mn.us. If there is a problem with submitting an invoice electronically, please contact the Accounts Payable Unit at 651-757-2491.

3.4 Federal Funds. Federal money will be used or may potentially be used to pay for all or part of the services under this Agreement. The DNR is responsible for compliance with all federal requirements imposed on the funds and accepts full financial responsibility for any requirements imposed by the DNR's failure to comply with federal requirements. See **Attachment B: Program Conditions and General Federal Terms and Conditions**, which is attached and incorporated into this Agreement.

4 Conditions of Payment

All services provided under this Agreement must be performed to MPCA's satisfaction, as determined at the sole discretion of MPCA's Authorized Representative.

5 Authorized Representative

MPCA's Authorized Representative is **Kurt Anderson**, 520 Lafayette Road, St. Paul, MN 55155, kurt.anderson@state.mn.us, 651-757- 2192, or their successor.

DNR's Authorized Representative is **Annemarie Selness**, Great River Bluffs State Park, 43605 Kipp Drive, Winona, MN 55987, annemarie.selness@state.mn.us, 507-643-6849 or their successor.

6 Amendments

Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original Agreement, or their successors in office.

7 Liability

Each party will be responsible for its own acts and behavior and the results thereof.

8 Termination

Either party may terminate this Agreement at any time, with or without cause, upon 30 days' written notice to the other party.

Signatures

Title	Name	Signature	Date
Encumbrance Verification	Paul L Nevin	DocuSigned by: Paul L Nevin 894ACA4E32F44D3...	February 28, 2020
Fiscal and Division Services Unit Manager	Linda Erickson-Eastwood	DocuSigned by: Linda Erickson-Eastwood 3694054445D1471...	March 3, 2020
Assistant Division Director	Melissa Lewis	DocuSigned by: Melissa Lewis 5F0F911B6E6D4E8...	March 4, 2020

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Interagency Agreement

State of Minnesota

SWIFT Contract No.: 174970
Purchase Order No.: 3000026477
Tempo Agency Interest No.: 39273
Activity ID: PRO20200003

This Agreement is between the Minnesota Departments of **Minnesota Pollution Control Agency**, 520 Lafayette Road North, St. Paul, MN 55155 (MPCA) and **Minnesota Department of Natural Resources**, 500 Lafayette Road North, St. Paul, MN 55155 (DNR).

Agreement

1 Term of Agreement

1.1 ***Effective date*****: June 8, 2020**, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later. The DNR must not begin work under this Agreement until this Agreement is fully executed and the DNR has been notified by the MPCA's Authorized Representative to begin the work.

1.2 ***Expiration date*****: November 30, 2020,** or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2 Scope of Work

The DNR agrees to assist MPCA's Coastal Condition Assessment work along the north shore of Lake Superior by providing fish specimen collection as described in **Attachment A: Workplan**, which is attached and incorporated into this Agreement.

3 Consideration and Payment

3.1 ***Compensation*****.** The DNR shall provide fish specimen collection for ten (10) monitoring events as described in **Attachment A: Workplan** at a rate of $2,416.20 per event.

3.2 ***Total Obligation*****.** The total obligation for all compensation under this Agreement will not exceed **$24,162.00 (Twenty-Four Thousand, One Hundred Sixty-Two Dollars and Zero Cents).**

3.3 ***Invoices*****.** The MPCA will promptly pay the DNR after the DNR presents an itemized invoice for the services actually performed and the MPCA's Authorized Representative accepts the invoiced services. Invoices must be submitted timely and according to the following schedule: **Monthly, or at least quarterly.**

Invoices shall include:

- DNR Project Manager
- Agreement Amount
- Agreement Amount available to date
- Invoice Number
- Invoice Date
- MPCA Authorized Representative/Project Manager
- SWIFT Contract Number
- SWIFT Purchase Order Number
- Invoicing Period (actual working period)
- Itemized list of all work performed

Invoices must be submitted electronically to: mpca.ap@state.mn.us. If there is a problem with submitting an invoice electronically, please contact the Accounts Payable Unit at 651-757-2491.

3.4 *Federal Funds*. Federal money will be used or may potentially be used to pay for all or part of the services under this Agreement. The DNR is responsible for compliance with all federal requirements imposed on the funds and accepts full financial responsibility for any requirements imposed by the DNR's failure to comply with federal requirements. See **Attachment B: Federal Terms and Conditions**, which is attached and incorporated into this Agreement.

4 Conditions of Payment

All services provided under this Agreement must be performed to MPCA's satisfaction, as determined at the sole discretion of MPCA's Authorized Representative.

5 Authorized Representative

MPCA's Authorized Representative is **Jordan Donatell**, 520 Lafayette Road, St. Paul, MN 55155, jordan.donatell@state.mn.us, 651-757- 2254, or their successor.

DNR's Authorized Representative is **Cory Goldsworthy**, Area Fisheries Supervisor, Duluth- French River Hatchery, 5357 North Shore Drive, Duluth, MN 55804, cory.goldsworthy@state.mn.us , 218-302-3268, or their successor.

6 Amendments

Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original Agreement, or their successors in office.

7 Liability

Each party will be responsible for its own acts and behavior and the results thereof.

8 Termination

Either party may terminate this Agreement at any time, with or without cause, upon 30 days' written notice to the other party.

Signatures

Title	Name	Signature	Date
Encumbrance verification	Agnes Benjamin	DocuSigned by: Agnes Benjamin E2C9DC0382EA480...	June 4, 2020
Fisheries Section Chief	Bradford Parsons	DocuSigned by: Bradford Parsons 0D84C2BB33B14FC...	June 4, 2020
Assistant Division Director	Melissa Lewis	DocuSigned by: Melissa Lewis 5F0F911B6E6D4E8...	June 10, 2020

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Project Workplan

SWIFT Contract No.: 174970
Agency Interest No.: 39273
Activity ID: PRO20200003

Project Title: NATIONAL COASTAL CONDITION ASSESSMENT 2020 FISH TISSUE COLLECTION MINNESOTA DEPARTMENT OF NATURAL RESOURCES

1. Project Summary:

Organization:	Minnesota Department of Natural Resources – Fisheries Division French River Hatchery
Contractor contact name:	Cory Goldsworthy
Title:	Area Fisheries Supervisor, Duluth- French River Hatchery
Address:	5357 North Shore Drive Duluth, MN 55804
Phone:	218-302-3268
E-mail:	cory.goldsworthy@state.mn.us

MPCA contact(s):

MPCA project manager:	Jordan Donatell
Title:	Environmental Specialist
Address:	520 Lafayette Road North Saint Paul, MN 55109
Phone:	651-757-2254
E-mail:	jordan.donatell@state.mn.us

Project information

Start date:	6/8/2020	**End date:**	11/30/2020
Total cost:	$24,162.00		

2. Statement of Problems, Opportunities, and Existing Conditions

The Minnesota Pollution Control Agency (MPCA) was awarded a National Coastal Condition Assessment (NCCA) grant funded through the United States Environmental Protection Agency (EPA) for conducting environmental monitoring along waters bordering the north shore of Lake Superior. The NCCA 2020 Field Operations Manual (NCCA FOM) outlines a number of environmental quality indicators for collection associated with this project to help understand the overall conditions and stressors to the nation's coastal waters. Of these data, fish specimen collection is required for consumption and contaminate analysis by EPA labs. It is necessary to engage the experts in the Minnesota Department of Natural Resources (MNDNR) in an interagency agreement to conduct the fish specimen collection work associated with this effort. The MNDNR Duluth office at French River, Minnesota has the necessary experience, equipment and protocols in place to meet the fish specimen collection requirements associated with the NCCA work. MNDNR and MPCA crews will collaborate to ensure fish specimens are collected during the monitoring events when MPCA crews collect the remainder of the data prescribed under the NCCA FOM. The MNDNR fisheries crews are to collect fish and deliver them to MPCA

crews after at least 10 specimens have been acquired (if possible). MNDNR crew are not responsible for processing, preserving or shipping fish specimens samples to EPA labs, rather, MPCA crews will complete this work upon delivery to MPCA crews.

Goals, Objectives, Tasks, and Subtasks

Goal: Collect at least ten (10) lake trout during each of ten (10) monitoring visits at stations determined by EPA in near shore waters of Lake Superior following the prescribed protocol in the NCCA FOM (A draft copy of the applicable sections of the Draft 2020 NCCA FOM is attached as **Attachment C**. A copy of the final version of the 2020 NCCA will be provided by MPCA prior to the first monitoring event).

Objective 1: MNDNR fisheries staff deploy and retrieve gill nets to collect at least ten (10) lake trout during each of ten (10) separate monitoring visits to NCCA stations on the north shore of Lake Superior.

Task A: Prepare and coordinate with MPCA monitoring crews to ensure lake trout are collected during water quality data collection.

Subtask 1: Beginning in early June 2020, MNDNR staff and MPCA Project Manager shall have weekly, or at least bi-weekly, check-ins to gauge logistical and operational challenges for the upcoming collaborative work and to share station location information, access details, and other insights.
Subtask 2: Schedule with the MPCA Project Manager, ten (10) monitoring events at mutually agreeable dates, based on prevailing weather conditions and staffing logistics.
Subtask 3: Develop a final scheduling plan with MPCA project manager for each upcoming monitoring event. One MPCA crewmember must accompany the MNDNR fish crew during net deployment and retrieval.
Subtask 3: MNDNR and MPCA field crews should communicate the day prior to each individual monitoring event to discussion details for execution of the final plan developed in Subtask 3.

Responsible Party: MNDNR staff, MPCA Project Manager

Task B: Deploy and retrieve gill nets within 500 meters of each of the NCCA monitoring stations listed in Table 1 below, to collect a minimum ten (10) lake trout per monitoring event to provide to MPCA staff.

Table 1

NCCA Station ID	Draw State	Waterbody	Latitude (DD)	Longitude (DD)
NGL20_MN-10001*	MN	Lake Superior	47.1411	-91.4504
NGL20_MN-10002*	MN	Lake Superior	47.5563	-90.8677
NGL20_MN-10003	MN	Lake Superior	46.7905	-92.0448
NGL20_MN-10004	MN	Lake Superior	47.7716	-90.1809
NGL20_MN-10005	MN	Lake Superior	47.4809	-90.9831
NGL20_MN-10007	MN	Lake Superior	46.7931	-91.9957
NGL20_MN-10008	MN	Lake Superior	47.0626	-91.5926
NGL20_MN-10009	MN	Lake Superior	47.7278	-90.4268
*These stations will be sampled on two different occasions for statisitical purposes				

Subtask 1: Follow final plan developed in Task A; collaborate with MPCA as needed to ensure accurate and successful monitoring is achieved.
Subtask 2: Deploy gill nets per NCCA FOM Section 5.4.2 and Section 14 using the following technique:

- Overnight set
- 4.5” stretch mesh
- Cross contour net set

Subtask 3: Retrieve nets, collect a minimum of ten (10) fish specimens (at each monitoring event)

and preserve them per NCCA FOM for delivery to MPCA crews for processing and shipping to the EPA laboratory.

Responsible Party: MNDNR Fisheries Staff

Objective 1 Timeline: June 8, 2020 through November 30, 2020.
Objective 1 Cost: $24,162.00 ($2,416.20 per monitoring event)
Objective 1 Deliverables: A minimum of ten (10) lake trout provided to MPCA crews from each of the ten (10) individual monitoring events, for a desired 100 lake trout in total.

3. Measurable Outcomes

Successful execution of this agreement is measured by the ability to collect a minimum of ten (10) lake trout specimens at each of the ten (10) individual monitoring events following NCCA FOM and meeting project goals for contaminant and human health related analysis.

United States Environmental Protection Agency
Office of Water
Washington, DC
EPA # 841-F-19-005

National Coastal Condition Assessment 2020 Field Operations Manual

[Selected Sections 2-5, Sections 14]

April 2020

NOTICE

The National Coastal Condition Assessment provides a comprehensive assessment for coastal waters across the United States. The complete documentation of overall project management, design, methods, and standards is contained in four documents:

- National Coastal Condition Assessment 2020: *Quality Assurance Project Plan (EPA # 841-F-19-003)*
- National Coastal Condition Assessment 2020: *Site Evaluation Guidelines (EPA # 841-B-20-001)*
- National Coastal Condition Assessment 2020: *Field Operations Manual (EPA # 841-F-19-005)*
- National Coastal Condition Assessment 2020: *Laboratory Operations Manual (EPA # 841-F-19-004)*

This Field Operations Manual contains a brief introduction and base and site location procedures for *in situ* measurements, sampling water (grabs for chemistry, pathogen analysis, and algal toxin analysis), benthic macroinvertebrates, sediment (for composition, contamination and toxicity), and fish tissue (for human health and ecological indicators). These methods are based on the guidelines developed and followed in the Coastal 2000 and National Coastal Assessment Monitoring and Assessment Program (USEPA, 2001). All National Coastal Condition Assessment Project Cooperators must follow the methods and guidelines in this Field Operations Manual. Mention of trade names or commercial products in this document does not constitute endorsement or recommendation for use. Details on specific methods for site evaluation and sample processing can be found in the appropriate companion document.

The citation for this document is:

U.S. EPA. National Coastal Condition Assessment 2020 Field Operations Manual. United States Environmental Protection Agency, Office of Water, Office of Wetlands, Oceans and Watersheds. Washington, D.C. *EPA- 841-F-19-005*. 2020.

ACRONYMS/ABBREVIATIONS

CPR	Cardiopulmonary resuscitation
DI	Deionized
DO	Dissolved oxygen
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FLC	Field Logistics Coordinator
GED	Gulf Ecology Division, U.S. EPA Office of Research and Development
GIS	Geographic information system
GL	Great Lakes
GPS	Global positioning system
GRTS	Generalized Random Tessellation Stratified survey design
HDPE	High density polyethylene
HQ	Headquarters
IM	Information Management
MED	Mid-Continent Ecology Division, U.S. EPA Office of Research and Development
NAD 83	North American Datum of 1983
NARS	National Aquatic Resource Surveys
NCA	National Coastal Assessment
NCCA	National Coastal Condition Assessment
NEP	National Estuary Program
NIST	National Institute of Standards and Technology
NM	Nautical miles
NOAA	National Oceanic and Atmospheric Administration
ORD	Office of Research and Development, U.S. EPA
OSHA	Occupational Safety and Health Administration
PAR	Photosynthetically active radiation
PBS	Phosphate Buffer Solution
PDF	Portable Document Format

PET	polyethylene terephthalate
PETG	polyethylene terephthalate copolyester, glycol modified
PFD	Personal flotation device
PSI	Pounds per square inch
QAC	Quality Assurance Coordinator
QAPP	Quality Assurance Project Plan
QA/QC	Quality assurance/quality control
QCS	Quality Check Solution
SAV	Submerged aquatic vegetation
SOP	Standard Operating Procedure
SRM	Standard Reference Material
TOC	Total organic carbon
USDA	United States Department of Agriculture
USGS	United States Geological Survey
VHS	Viral Hemorrhagic Septicemia

CONTACT LIST

Table 1.1 Contacts

Role	Name	Phone/Email	Address
NCCA Team Lead	Hugh Sullivan	202-564-1763 sullivan.hugh@epa.gov	US EPA Office of Water 1200 Pennsylvania Avenue NE (4503T) Washington DC 20460
NCCA QA Coordinator	Danielle Grunzke	202-566-2876 grunzke.danielle@epa.gov	US EPA Office of Water 1200 Pennsylvania Ave NE (4503T) Washington DC 20460
NARS QA Coordinator	Kendra Forde	202-566-0417 forde.kendra@epa.gov	US EPA Office of Water 1200 Pennsylvania Ave NE (4503T) Washington DC 20460
EPA Logistics Coordinator	Brian Hasty	202-564-2236 hasty.brian@epa.gov	US EPA Office of Water 1200 Pennsylvania Ave NE (4503T) Washington DC 20460
Contractor Field Logistics Coordinator	Chris Turner	715-829-3737 cturner@glec.com	Great Lakes Environmental Center, Inc. 739 Hastings Street Traverse City, MI 49686
NARS IM Coordinator	Michelle Gover	541-754-4793 gover.michelle@epa.gov	GDIT 200 SW 35th Street Corvallis OR 97333
Great Lakes Human Health Fish Tissue Manager	Leanne Stahl John Healey (Alternate)	202-566-0404 stahl.leanne@epa.gov 202-566-0176 healey.john@epa.gov	US EPA Office of Water 1200 Pennsylvania Avenue NE (4305T) Washington DC 20460

Table 1.2 Regional Coordinators

Role	Name	Phone/Email	Address
EPA Region 1	Hilary Snook	617-918-8670 snook.hilary@epa.gov	USEPA Region 1 – New England Regional Laboratory 11 Technology Drive North Chelmsford, MA 01863-2431
EPA Region 2	Emily Nering	732-321-6764 nering.emily@epa.gov	USEPA Facilities Raritan Depot 2890 Woodbridge Avenue Edison, NJ 08837-3679
EPA Region 3	Bill Richardson	215-814-5675 richardson.william@epa.gov	USEPA Region 3 1650 Arch Street Philadelphia, PA 19103-2029
EPA Region 4	Chris McArthur	404-562-9391 mcarthur.christopher@epa.gov	USEPA Region 4 15165 -- Sam Nunn Atlanta Federal Center. Atlanta, GA 30303-8960
EPA Region 5	Mari Nord Ed Hammer	312-886-3017, nord.mari@epa.gov 312-886-3019, hammer.edward@epa.gov	USEPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507
EPA Region 6	Rob Cook	214-665-7141 cook.robert@epa.gov	USEPA Region 6 1445 Ross Avenue Suite 1200 Dallas, TX 75202-2733
EPA Region 9	Matt Bolt	415-972-3578 bolt.matthew@epa.gov	USEPA Region 9 75 Hawthorne Street San Francisco, CA 94105
EPA Region 10	Lillian Herger	206-553-1074 herger.lillian@epa.gov	USEPA Region 10 1200 Sixth Avenue Seattle, WA 98101

2 BACKGROUND

The National Coastal Condition Assessment (NCCA) is one of a series of water assessments being conducted by states, tribes, the U.S. Environmental Protection Agency (EPA), and other partners. In addition to coastal waters, the National Aquatic Resource Surveys (NARS) focus on rivers and streams, lakes, and wetlands in a revolving sequence. The purpose of these assessments is to generate statistically-valid reports on the condition of our Nation's water resources and identify key stressors to these systems.

The goal of the NCCA is to address two key questions about the quality of the Nation's coastal waters:

- What percent of the Nation's coastal waters are in good, fair, and poor condition for key indicators of water quality, ecological health, and recreation?
- What is the relative importance of key stressors such as nutrients and contaminated sediments?

The NCCA is designed to be completed during the index period of June through the end of September. Field crews collect a variety of measurements and samples from preselected sampling sites that are located at predetermined coordinates.

This manual describes field protocols and daily operations for crews in the NCCA. As a probability-based survey of our Nation's coastal and estuarine waters, the NCCA is designed to:

- Assess the condition of the Nation's coastal and estuarine waters at national and regional scales, including the Great Lakes;
- Identify the relative importance of selected stressors to coastal and estuarine water quality;
- Evaluate changes in condition from previous National Coastal Assessments (NCA) starting in 2005; and
- Help build State and Tribal capacity for monitoring and assessment and promote collaboration across jurisdictional boundaries.

2.1 SURVEY DESIGN

EPA selected sampling locations using a probability-based survey design, allowing data from a subset of sampled sites to be applied to the larger target population, and permitting assessments with known confidence bounds.

The 2020 NCCA survey design produces:

1. National and regional estimates of the status of all coastal waters, including major estuary groups and the Great Lakes; and
2. National and regional estimates of the change in status in coastal water condition between 2005 and 2020.

With input from the states and other partners, EPA used an unequal probability, stratified design to select 1000 probabilistic sampling events, of which roughly 50% are resample sites (sites that were sampled in 2010 or 2015 and will be sampled again in 2020). Resample sites from 2010/2015 are identified as Base 10 sites; while newly drawn sites are identified as Base 20 sites. Approximately 7% of the 2010/2015 resample sites are also designated "revisit sites," which indicates that they will be sampled twice in 2020 to assess crew sampling and temporal variability. In addition to the 1000 probabilistic sampling events, a number of intensification sites have been added to NCCA 2020, many of which were also selected using a stratified probabilistic design.

Sample site stratification is based on major estuaries using the National Oceanic and Atmospheric Administration (NOAA) Coastal Assessment framework and National Estuary Program (NEP). The Great Lakes sites are stratified based on the individual Great Lake, depth zone, and country. Only the shallow nearshore depth zone is included in the probabilistic design for NCCA Great Lakes sites. The shallow nearshore depth zone is defined as the region extending from the shoreline to a depth of 30 meters, and no more than 5 kilometers from the shoreline.

Oversample sites were drawn to provide alternate sampling sites if primary sites are rejected and to provide supplemental sampling locations for states that wish to conduct a state level or NEP-level condition assessment.

Additional details on the NCCA survey design can be found in the NCCA survey design documents.

2.2 Target Population and Sample Frame

The target population for the estuarine resources consists of all coastal waters of the conterminous United States from the head-of-salt to confluence with the ocean, including inland waterways, tidal rivers and creeks, lagoons, fjords, bays, and major embayments (see **Figure 2.1, Figure 2.2** and **Figure 2.3** for examples). For the purposes of this study, the head-of- salt is defined as waters with salinity less than 0.5 parts per thousand (ppt) salinity, representing the landward/upstream boundary. The seaward boundary extends out to where an imaginary straight-line intersecting two land features would fully enclose a body of coastal water. All waters within the enclosed area are defined as estuarine, regardless of depth or salinity.

The target population for the Great Lakes consists of all waters of the Great Lakes of the United States and Canada. The current target population is restricted to the shallow nearshore zones of Lake Superior, Lake Michigan, Lake Huron, Lake Erie, and Lake Ontario. The Great Lakes target population excludes embayments with connection to open water that are less than 200 meters in width. The NCCA Great Lakes sites are restricted to waters within the United States. Please refer to the Site Evaluation Guidelines and the NCCA Web site (http://www.epa.gov/owow/monitoring/nationalsurveys.html) for more detailed information on the target population.

The sample frame was derived from prior NCA developed by EPA Office of Research and Development (ORD) Gulf Ecology Division (GED). The prior GED sample frame was

enhanced as part of the National Coastal Monitoring Network design by including information from NOAA's Coastal Assessment Framework, boundaries of NEP and identification of major coastal systems. For the first NCCA in 2010, information on salinity zones was obtained from NOAA. For the Delaware Bay, Chesapeake Bay, Puget Sound, and the State of South Carolina, the prior NCA sample frames were replaced by geographic information system (GIS) layers provided by the organizations that manage the coastal waters in these areas, ensuring that prior areas sampled in NCA were not excluded and any differences from the previous sample frames to the current sample frame are clearly identified in this NCCA 2020 sample frame. For the Californian Province excluding San Francisco Bay, the GED sample frame was changed to match a 2004 sample frame used for the NCA 2004 study. In 2013, the sample frame was updated to include information related to 1999-2001 and 2005-2006 NCA sample frames. This update was necessary to provide the information required to estimate change between the periods of 2010 and 2015. The sample frame for the Great Lakes sites was obtained from EPA ORD Mid-Continent Ecology Division (MED).

Please refer to the **NCCA 2020: Site Evaluation Guidelines** for more detailed information on the target population and exclusion criteria.

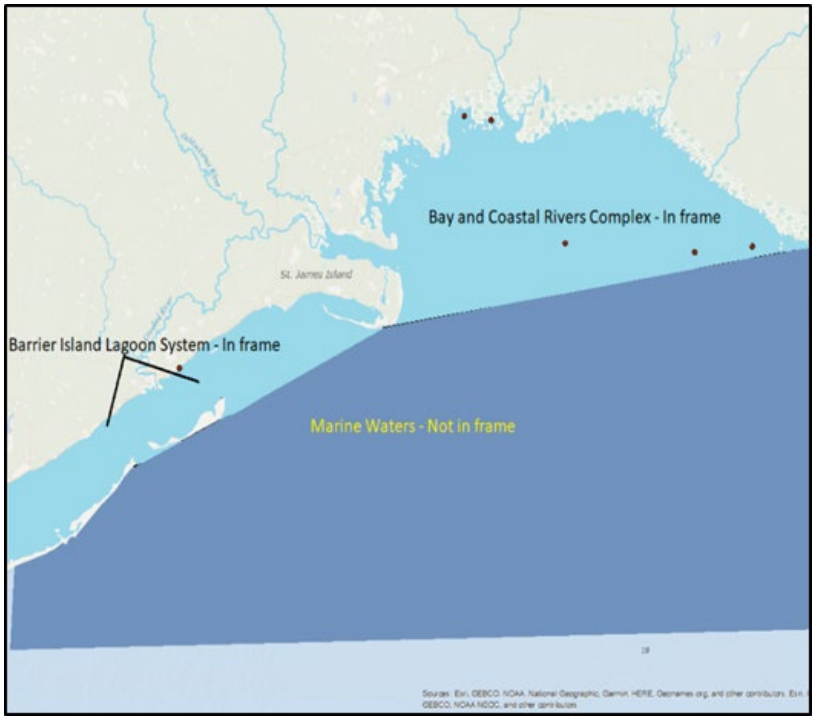


Figure 2.1 Example of an estuarine system comprised of an embayment plus a complex of bays and tidal rivers and creeks

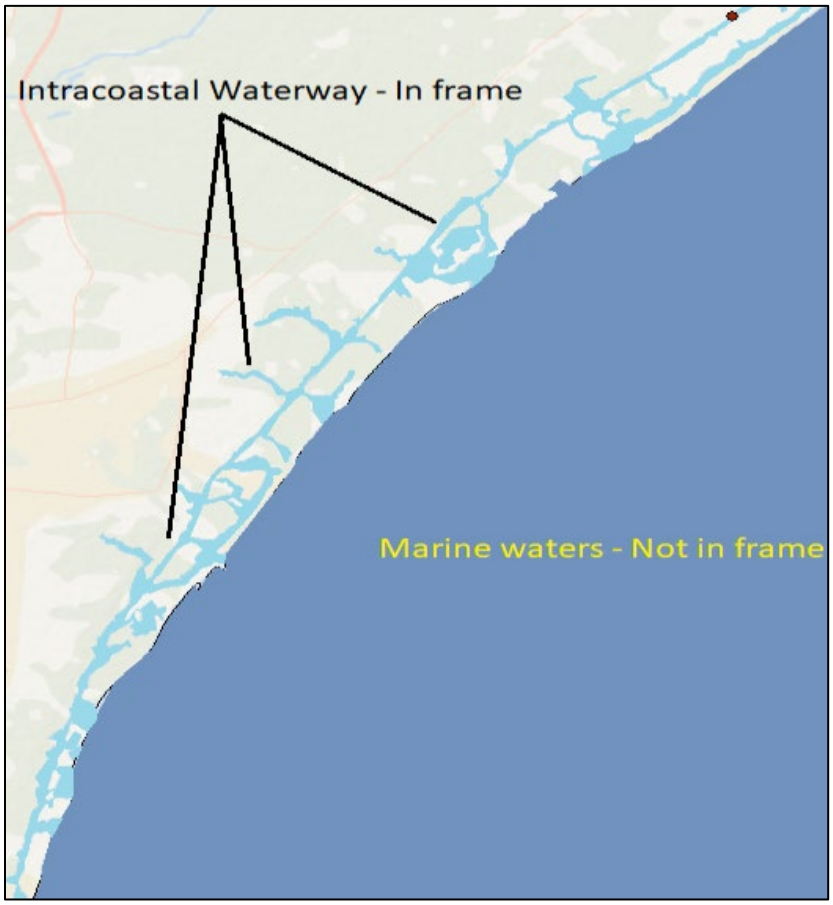


Figure 2.2 Example of an intra-coastal estuarine system

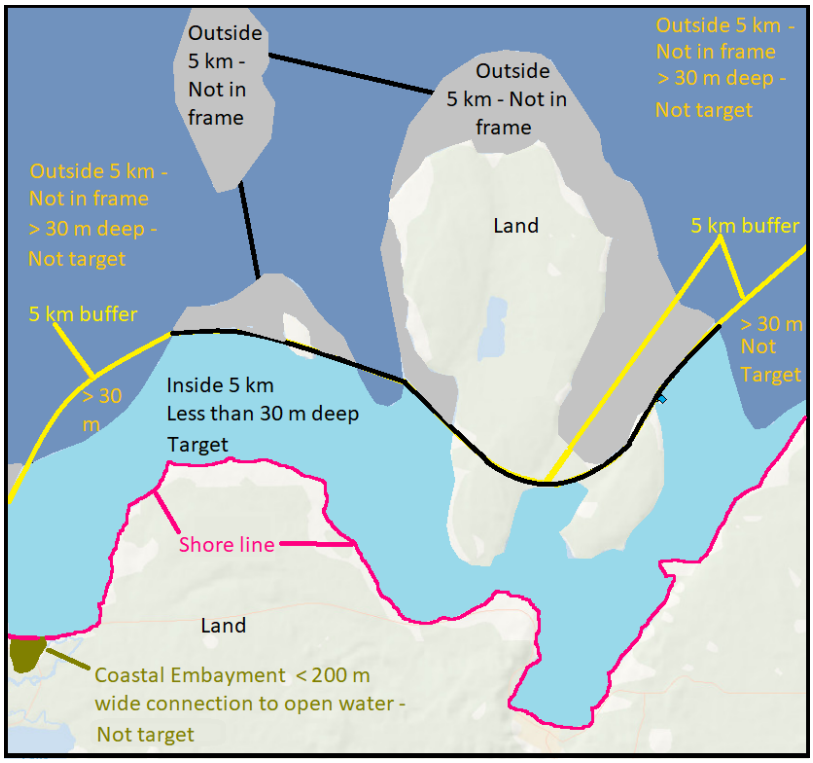


Figure 2.3 Hypothetical Great Lakes Nearshore target population.

2.3 Site Evaluation

Base site sampling points were drawn using a Generalized Random Tessellation Stratified (GRTS) survey design, a stratified design that gives all points within a target population equal probability of selection. Each point selected as a sample site is designated the "X-site" and represents the point at which sample collections are targeted.

2.3.1 Site Sample-ability

X-sites will be found in waterbodies of varied sizes and shapes depending on coastal morphology. Site depth and salinity are considered when the initial site draw is made; therefore, those conditions should not generally be a factor when choosing to replace a planned sampling site. However, there may be instances when a field crew determines that an X-site does not meet the operational definition of an estuary in marine environments, or lacustrine and nearshore coastal waters in the Great Lakes. Sampleable sites must:

- Have access to open water;
- Be navigable using a shallow-draw boat. Typically this means that the depth of the X-site is generally ≥ 1 meter. Actual sampleable depths, however, may be adjusted based on the vessel and sampling equipment being used, and wave action at the site observed by the field crew.

If the specific site does not fit the definition of a sampleable site, and every attempt to relocate a site within the margin provided has been made (**see Section 5.1.3**), complete

the appropriate "Non-Sampleable-Permanent" category on the Verification Form in the NCCA App. Document the reason for not sampling the site in the comments section of the form. Add any additional explanation as required. (For complete details on the site evaluation process, refer to the **NCCA Site Evaluation Guidelines**).

2.3.2 REPLACING SITES

It is likely that some sites will be determined to be unsampleable; therefore, a number of backup sites, in the form of an oversample list, are provided to each state/organization. A site can be deemed unsampleable for any number of reasons, including being too shallow to properly operate sampling equipment or in the middle of a navigational channel where it is unsafe.

When a site is determined to be unsampleable, field crews will document the sampling status of the site and select the next oversample site within the same stratum (i.e., same state and estuary type or Great lake) and the same base year (Base 10 sites must be replaced with Base 10 oversamples sites and Base 20 sites must be replaced with Base 20 oversamples sites). This process maintains the probabilistic integrity of the survey. This process is handled through the Site Evaluation Spreadsheets that EPA Headquarters (HQ) has provided for each state/organization. These spreadsheets are available on the NARS SharePoint site. Please refer to the **NCCA Site Evaluation Guidelines** for more detailed information on determining site sampling status and completion of the Site Evaluation Spreadsheets. These updated spreadsheets will be turned in when sampling is completed, or throughout the field season should it be necessary for communicating the replacement of specific sites to EPA HQ and the Contractor Field Logistics Coordinator (FLC).

If a dropped site is designated as a revisit site (designated "RVT2" in the panel code), then the replacement site takes on the RVT2 assignment. That is the replacement site must be visited twice in 2020.

If a site is generally sampleable, but one or more indicators cannot be collected (e.g., no fish caught or site is too deep to collect sediment), the site should not be dropped. Rather, the crew will mark that indicator as not collected and document the reason why the indicator could not be collected in the comment area of the NCCA App. See **Section 13** and **Section 14** for information regarding the collection of sediment and fish samples, the two indicators which crews most likely may experience difficulty collecting.

2.4 DESCRIPTION OF NCCA INDICATORS

Indicators for the 2020 survey will basically remain the same as those used in 2015 and other past coastal surveys, with a few modifications. Additionally, sample collection methods and laboratory methods will reflect freshwater and saltwater matrices to account for marine and Great Lakes sampling.

2.4.1 IN SITU WATER COLUMN MEASUREMENTS

2.4.1.1 Hydrographic Profile

Measurements for dissolved oxygen (DO), pH, salinity (at marine sites) or conductivity (at freshwater sites), and temperature will be taken with a calibrated water quality meter or

multi-parameter sonde at each site. Measurements will be taken at specific depth intervals within 37 meters of the X-site. The specific location of the profile (and subsequently the area where several samples are collected) is referred to as the Y-location. This information will be used to detect extremes in condition that might indicate impairment.

2.4.1.2 Light Attenuation

A Photosynthetically Active Radiation (PAR) meter will be used to obtain a vertical profile of light in order to calculate the light attenuation coefficient at each station. PAR measurements are taken at the same depths as other water column indicators.

2.4.1.3 Secchi Disk Transparency

A Secchi disk is a commonly used black and white patterned disk used to measure the clarity of water within a visible distance.

2.4.2 WATER CHEMISTRY (CHEM) AND ASSOCIATED MEASUREMENTS

Water chemistry measurements will be used to determine nutrient enrichment, as well as classification of trophic status. Parameters measured include total and dissolved nitrogen and phosphorus.

2.4.2.1 Chlorophyll-a (WCHL)

Chlorophyll-*a* is the green pigment used in photosynthesis by plants and algae. Its measurement is used to determine algal biomass in the water.

2.4.2.2 Dissolved Nutrients (NUTS)

A portion of the filtrate produced from the processing of the chlorophyll-*a* sample will be collected in the field and processed in the laboratory for dissolved nutrients.

2.4.2.3 Phytoplankton Assemblage (PHYT)

Phytoplankton are plant microorganisms that float in the water, such as certain algae, and are the primary source of energy in most lake systems (Schriver et al. 1995). Phytoplankton are highly sensitive to environmental changes in ecosystems (e.g., turbidity and nutrient enrichment). **Phytoplankton will be collected in Great Lakes sites only.**

2.4.3 ALGAL TOXINS (CYLINDROSPERMOPSIN AND MICROCYSTINS [MICX] and MICROCYSTINS [MICZ])

Algae are microscopic organisms found naturally at low concentrations in freshwater and marine systems. They often form large blooms under optimal conditions, potentially affecting water quality as well as human health and natural resources. *Microcystis*, for example, is one organism that produces microcystin, a potent liver toxin. One water sample is taken to analyze for both cylindrospermopsin and microcystins, and another will be taken specifically for microcystin.

2.4.4 UNDERWATER VIDEO (UVID)

At Great Lakes sites only, crews will use an underwater video camera array to capture one minute of video focused on the substrate at the Y-location. Video will be used in the lab to visually document the bottom composition, and record the presence or absence of zebra mussels, *Cladophora*, or other organisms. If the benthic macroinvertebrate sample

is collected at a location other than the Y-Location, a second video focused on the substrate at the benthos collection location will be taken.

2.4.5 SEDIMENT ASSESSMENT, (SEDG, SEDC, SEDX, SEDO, AND D15N)

Sediment grab samples will be obtained to measure sediment composition (e.g., grain size [SEDG] and percent moisture, organic content, etc. [SEDC]), toxicity [SEDX], and contaminant chemistry [SEDO] in order to determine sediment condition. The nitrogen stable isotope ratio [D15N] in sediment will be measured to evaluate its utility as a measure of anthropogenic development in watersheds of estuaries and will also be collected at marine sites only.

2.4.6 BENTHIC MACROINVERTEBRATE ASSEMBLAGE (BENT)

Benthic macroinvertebrates are bottom-dwelling animals without backbones ("invertebrates") that are large enough to be seen with the naked eye ("macro"). Examples of macroinvertebrates include: aquatic worms, mollusks, and crustaceans. Populations in the benthic assemblage respond to a wide array of stressors in different ways so that it is often possible to determine the type of stress that has affected a macroinvertebrate assemblage (Klemm et al., 1990). Because many macroinvertebrates have relatively long life cycles of a year or more and are relatively immobile, the structure of the macroinvertebrate assemblage is a response to exposure of present and/or past conditions. The benthic macroinvertebrate data will serve as the basis for assessing aquatic community health.

2.4.7 ENTEROCOCCI FECAL INDICATOR (ENTE)

Enterococci are bacteria that are endemic to the guts of warm blooded creatures. These bacteria, by themselves, are not considered harmful to humans but often occur in the presence of potential human pathogens (the definition of an indicator organism). Epidemiological studies of marine and fresh water bathing beaches have established a direct relationship between the density of Enterococci in water and the occurrence of swimming-associated gastroenteritis.

2.4.8 FISH TISSUE (FTIS, FPLG, HTIS)

The fish tissue indicator [FTIS], which measures bioaccumulation of persistent toxics and is also referred to as the ecofish sample, is used to estimate the ecological risks associated with fish consumption by wildlife. In this study fish will be collected and whole body tissue will be homogenized and analyzed to estimate concentrations of target contaminants. Various studies have been conducted on contaminants in different tissues of the fish (e.g., whole fish, fillets, or livers). For this study the focus will be on analyzing whole fish [FTIS] for contaminants to generate data for ecological purposes. At revisit sites, ecofish samples will only be targeted during visit 1. If a successful collection is not possible at visit 1, crews should attempt to collect ecofish at visit 2.

Crews will also collect fish tissue plugs [FPLG] at all NCCA Sites. The plugs will be sent to the lab for analysis of mercury contamination levels to assess the risk to humans of consuming fish tissue. If the fish plug sample is taken from fish other than those being collected for ecological analysis, the fish will be released back into the waters from which they were collected. At revisit sites, fish plug samples will only be targeted during visit 1.

If a successful collection is not possible at visit 1, crews should attempt to collect fish plugs at visit 2.

In the Great Lakes only, additional fish composite samples will be collected at all of the 225 probabilistic nearshore Great Lakes sites (prefix = NGL20), all 38 Great Lakes island sites (prefix = ISA20), and all 12 Great Lakes park sites (prefix = NPA20) for a combined total of 275 sites. Fillet tissue from these samples will be homogenized in the lab and analyzed to generate fish contamination data related to human health [HTIS]. Fish submitted in the human health fish tissue sample should remain intact and fish plugs are not to be taken from these fish. At Great Lakes revisit sites crews that are unsuccessful at collecting the human health fish tissue sample during visit 1 are expected to attempt the collection of that sample during visit 2, but HTIS will only be collected at one of the two visits to a revisit site. Note that human health fish tissue samples will **NOT** be collected at Great Lakes enhancement sites other than those listed above.

2.4.9 OCEAN AND COASTAL ACIDIFICATION RESEARCH INDICATOR

2.4.9.1 Total Alkalinity (ALKT)

At marine sites only, crews will collect a water sample in two bottles for the measurement of total alkalinity. Total alkalinity (TA) is a characteristic of seawater that, in combination with other measurements, can be used to calculate total pH (i.e., coastal acidification) and the availability of carbonate ions used by marine organisms to produce structural materials such as corals and shells. TA is also used to calculate the fate of carbon that enters coastal waters in various forms and is useful as a direct indicator of seawater buffering capacity. TA is defined differently from the alkalinity measurements typically used in freshwater monitoring. In addition, the above seawater calculations are sensitive to tiny errors in TA determination, so monitoring programs aim for extreme care in the collection, handling, and analysis of TA samples.

2.5 SUPPLEMENTAL MATERIAL TO THE FIELD OPERATIONS MANUAL

The Field Operations Manual describes field protocols and daily operations for crews to use in the NCCA. Following these detailed protocols will ensure consistency across regions and reproducibility for future assessments. Before sampling a site, crews should prepare a **Site Packet** for each site containing pertinent information to successfully conduct sampling. This site packet typically includes a road map or navigation chart and a set of directions to the site, topographic/bathymetric maps, land owner access forms (where applicable), sampling permits (if needed), site evaluation forms, and other information necessary to ensure an efficient and safe sampling day.

The primary means of data collection during the 2020 NCCA will be through a specifically designed application for use on iOS devices (e.g., the NCCA App).Within the NCCA App, there are a number of information (i) buttons that contain tables, figures, pictures, and other information summarizing field activities and protocols from the Field Operations Manual. Field crews are also required to keep the equipment manuals (probes, etc.) available in the field for reference and for possible protocol clarification.

Large-scale and/or long-term monitoring programs such as those envisioned for national surveys and assessments require a rigorous Quality Assurance (QA) program that can be implemented consistently by all participants throughout the duration of the monitoring period. QA is a required element of all EPA-sponsored studies that involve the collection of environmental data (USEPA 2000a, 2000b). Field crews will be provided a copy of the integrated **Quality Assurance Project Plan** (QAPP). The QAPP contains more detailed information regarding QA/Quality Control (QC) activities and procedures associated with general field operations, sample collection, measurement data collection for specific indicators, data reporting activities, and the information management plan for this project. For more information on the QA procedures, refer to the *National Coastal Condition Assessment 2020: Quality Assurance Project Plan (EPA-841-R-14-003)*.

2.6 Recording Data and Other Information

Field data and sample information must be **recorded completely, accurately, and consistently**. The cost of a sampling visit coupled with the short index period severely limits the ability to resample a site if the initial records are inaccurate. Incorrect information can result in substantially increased time to process information from the electronic field forms to the **National Aquatic Resource Surveys Information Management** (NARS IM) system. Guidelines for recording field measurements are presented in **Table 2.1**.

All samples need to be identified and tracked, and associated information for each sample must be recorded. To assist with sample identification and tracking, packing slips and sample labels with sample ID numbers are preprinted and provided by EPA.

2.6.1 Electronic Field Forms

Field crews will utilize the **NCCA App** to complete data collection. The NCCA App is available in the iTunes store and will come preloaded on iPads that will be distributed to all non-contract field crews. These iPads will be designated for crew use during the 2020 season and will be returned to EPA at the end of the field season.

The NCCA App is the required format for data submission as it reduces processing time required in scanning paper field forms, prevents data entry errors, eliminates redundant entry of common fields, eliminates issues caused by illegible entries, and provides validation checks of data entry fields. In addition, the NCCA App generates all sample IDs based on the initial entry of the CHEM sample ID and includes fish pick lists for consistent naming of fish species. If field crews are utilizing this form of data entry, they will upload site sketches of their sites to the NARS SharePoint site.

2.6.2 Paper Field & Tracking Forms

Paper field forms are only to be used if the App fails and will be provided prior to the field season. Paper packing slips (provided with label packets in site kits) must be included in every cooler to maintain chain of custody.

Table 2.1 Guidelines for recording field measurements & tracking information

Activity	Guidelines
Field Measurements	

Data Recording	• If recording using the NCCA App, populate all values in the App
	• If recording using paper forms (in the event of an App failure):
	  • Record measurement values and observations on data forms preprinted on water-resistant paper.
	  • Use No. 2 pencil only (fine-point indelible markers can be used if necessary) to record information on forms.
	  • Record data and information using correct format as provided on data forms.
	  • Be sure to **accurately** record site and sample IDs.
	  • For all primary sampling visits indicate the event as Visit 1. For revisit sites use Visit 2 to indicate the second sampling event during the same season.
	  • Print legibly (and as large as possible). Clearly distinguish letters from numbers (e.g., 0 versus O, 2 versus Z, 7 versus T or F, etc.), but do not use slashes.
	  • When recording comments, print or write **legibly**. Make notations in comments field only; avoid marginal notes. Be concise, but avoid using abbreviations or "shorthand" notations. If you run out of space, attach a sheet of paper with the additional information, rather than trying to squeeze everything into the space provided on the form.

Data Comments	• Comment fields are found throughout the App and associated with every sample and all key data points. • Use the provided areas to make comments about any data or sample that will explain any deviation for normal protocol or will otherwise assist data reviewers in better understanding the data. • Be as clear as possible in your comments to convey all necessary information.
Sample Labels	• Use adhesive labels with preprinted sample IDs and follow the standard recording format for each type of sample. • Use a fine tipped permanent marker to record information on label. Cover the completed label with clear tape. • Record sample ID from label and associated collection information in Sample Collection form in the App
Sample Collection and Tracking	
Sample Comments	• Comment fields are found throughout the App and associated with every sample and all key data points. • Use the provided areas to make comments about any data or sample that will explain any deviation for normal protocol or will otherwise assist data reviewers in better understanding the data. • Be as clear as possible in your comments to convey all necessary information.
Review of Labels and Data Collection Forms	• Before leaving site, compare information recorded on labels and sample collection form to ensure agreement and accuracy. • Before leaving site, review labels and App data for accuracy, completeness, and legibility. • The Field Crew Leader must review all data on the App. Submission of data to NARS IM confirms review.

2.7 DATA MANAGEMENT

All field crews will be given access to the **NARS SharePoint** site. This site will be a resource for field crews to access important NCCA documentation as well as for facilitating document transfer to and from field crews.

2.8 SAFETY AND HEALTH

Sample collection and analysis can pose significant risks to personal safety and health. This section describes recommended training, communications, safety considerations, safety equipment and facilities, and safety guidelines for field operations.

2.8.1 GENERAL CONSIDERATIONS

Important considerations related to field safety are presented in **Table 2.2**. The Field Crew Leader is responsible for ensuring that all field personnel have successfully completed the necessary safety courses and follow all safety policies and procedures. Please follow your own agency's health and safety protocols. Additional sources of information regarding safety-related training include the American Red Cross (2006), the National Institute for Occupational Safety and Health (1981), and U.S. Coast Guard (1989).

Field crew members should become familiar with the hazards involved with sampling equipment and establish appropriate safety practices prior to their use. Make sure all equipment is in safe working condition. Personnel must consider and prepare for hazards associated with the operation of motor vehicles, boats, winches, tools, and other incidental equipment. Boat operators must meet any state requirements for boat operation and be familiar with U.S. Coast Guard rules and regulations for safe boating contained in the pamphlet, "*Federal Requirements for Recreational Boats*," available from a local U.S. Coast Guard Director or Auxiliary or State Boating Official (U.S. Coast Guard, 1989). While on the water, all crew members must wear Personal Flotation Devices (PFD). All boats with motors must be equipped with fire extinguishers, boat horns, PFDs, and flares or other U.S. Coast Guard approved signaling devices.

Table 2.2 General health & safety considerations

Recommended Training	• First aid and cardiopulmonary resuscitation (CPR) • Vehicle safety (e.g., operation of 4-wheel drive vehicles, trailering boats, etc.) • Field safety (weather, personal safety, navigation, site reconnaissance prior to sampling) • Equipment design, operation, and maintenance • Handling of chemicals and other hazardous materials
Communications	• Check-in schedule • Sampling itinerary (vehicle used & description, time of departure & return, travel route and destination) • Contacts for police, ambulance, hospitals, fire departments, search and rescue personnel • Emergency services available near each sampling site and base location • Cell (or satellite) phone and VHF radio.
Personal Safety	• Field clothing and other protective gear including PFDs for all crew members • Medical and personal information (allergies, personal health conditions) • Personal contacts (family, telephone numbers, etc.) • Physical exams and immunizations

Prior to beginning a sampling day, each field crew must develop an **Emergency Communications Plan**. This plan will include contacts for police, fire departments, emergency medical services, hospitals, and search and rescue personnel. In addition, the plan must include daily check-in procedures with personnel who will not be in the field. A copy of the plan should be filed with a supervisor, safety specialist, or other staff member who is not in the field. All field personnel must be fully aware of all lines of communication and able to initiate emergency communications if needed. Field crew members must carry clothing and equipment to protect from exposure to different weather conditions. Inadequate clothing could lead to hypothermia, heat exhaustion, or heat stroke. Field personnel must be able to swim. A PFD and suitable footwear must be worn at **all** times while on board a boat.

2.8.2 Safety Equipment

Crews may face many hazards when working in coastal areas. Broken glass or other sharp objects may be embedded in the substrate. Infectious agents and toxic substances may be present in the water or sediment. Dangerous weather may approach with little warning. Vessels can lose power and navigation.

Field crews must stock appropriate safety apparel such as gloves, foul weather gear, safety glasses, etc., and use them when necessary. All vessels must have first aid kits, fire extinguishers, and blankets available in the field, and crew members must be trained in how to use them. All crews must carry cellular or satellite telephones and all crew members must be proficient in how to use them. Crews must carry supplies such as clean water, anti-bacterial soap, and ethyl alcohol for cleaning exposed body parts that may have been contaminated by pollutants in the water.

2.8.3 Safety Guidelines for Field Operations

Personnel participating in field activities must be in sound physical condition and have a physical examination annually or in accordance with organizational requirements.

Field crew members must become familiar with the health hazards associated with collecting, preserving, and storing field samples. All surface waters and sediments are considered potential health hazards due to the potential presence of toxic substances or pathogens, and chemical fixing and/or preserving agents are often comprised of hazardous materials. In addition, chemical wastes can be flammable, explosive, toxic, caustic, or chemically reactive. Therefore, all chemical wastes must be discarded according to standardized health and hazards procedures (e.g., National Institute for Occupational Safety and Health [1981]; U.S. EPA [1986]).

During the course of field research activities, field crews may observe violations of environmental regulations, discover improperly disposed hazardous materials, or observe or be involved with an accidental spill or release of hazardous materials. In such cases proper actions must be taken and field personnel must not expose themselves to something harmful.

The following safety guidelines should be applied:

First and foremost, protect the health and safety of all personnel. Take necessary steps to avoid injury or exposure to hazardous materials. If you have been trained to take action such as cleaning up a minor fuel spill during fueling of a boat, do it. However, you should always err on the side of personal safety.

Field personnel should never disturb or retrieve improperly disposed hazardous materials from the field to bring them back to a facility for "disposal". To do so may worsen the impact, incur personal liability for the crew members and/or their respective organizations, cause personal injury, or cause unbudgeted expenditure of time and money for proper treatment and disposal of the material. Notify the appropriate authorities so they may properly respond to the incident. For most environmental incidents, the following emergency telephone numbers should be provided to all field crews: State or Tribal department of environmental quality or protection, U.S. Coast Guard, and the U.S. EPA regional office. In the event of a major environmental incident, the National Response Center may need to be notified at 1-800-424-8802.

2.8.4 General Safety Guidelines for Field Operations

- At least two crew members must be present during all sample collection activities, and no one should be left alone while out on the water.
- Use caution and wear a suitable PFD.
- Use caution using the Ponar-type samplers. The jaws are sharp and may close unexpectedly.
- Exposure to water and sediments should be minimized as much as possible. Use gloves if necessary, and clean exposed body parts as soon as possible after contact.
- All electrical equipment must bear the approval seal of Underwriters Laboratories and must be properly grounded to protect against electric shock.
- Use appropriate protective equipment (e.g., gloves, safety glasses) when handling and using hazardous chemicals.
- Crews working in areas with venomous snakes must check with the local Drug and Poison Control Center for recommendations on what should be done in case of a bite from a venomous snake.
- Any person allergic to bee stings, other insect bites, or plants (i.e., poison ivy, oak, sumac, etc.) must take proper precautions and have any needed medications handy.
- Field personnel should be familiar with the symptoms of hypothermia and know what to do in case symptoms occur. Hypothermia can kill a person at temperatures much above freezing (up to 10°C or 50°F) if he or she is exposed to wind or becomes wet. Immersion in the cool waters experienced during the summer along most of the marine coasts and Great Lakes can also rapidly result in hypothermia.
- Field personnel should be familiar with the symptoms of heat/sun stroke and be prepared to move a suffering individual into cooler surroundings and hydrate immediately.
- Handle and dispose of chemical wastes properly. Do not dispose of any chemicals in the field.

3 INTRODUCTION TO SAMPLING

This Field Operations Manual describes procedures for collecting samples for the NCCA 2020. Overall, the same indicators will be collected at both estuarine and coastal freshwater Great Lakes sites, though some of the sampling will be conducted using different equipment. Field crews at all Great Lakes sites will collect additional water samples to be analyzed for phytoplankton, whole fish composite samples to analyze fillets for human health risks, and will record underwater video of the bottom substrate.

This section presents a general overview of the field activities and guidelines for field operations, recording data, and labeling samples. This section also describes field crew makeup and other sampling considerations.

3.1 SITE VISIT DURATION

NCCA field methods are designed to be completed in one field day. Depending on the time needed for sampling and travel, crews may require an additional day to complete sampling, pre-departure and post-sampling activities (e.g., cleaning equipment, repairing gear, shipping samples, and traveling to the next site). Remote sites with lengthy or difficult approaches may require more time, and field crews must plan accordingly. Conversely, some sites may be in relatively close proximity to each other, allowing multiple sites to be sampled in a single day.

3.2 FIELD CREW MAKEUP

A field crew typically consists of three to four people. However, a minimum of two people may be able to properly execute sampling activities. To ensure safety, at least two people are always required in a boat when conducting field work for the NCCA. In order to organize field activities efficiently, each field crew should define roles and responsibilities for each crew member prior to beginning field activities. One crew member is primarily responsible for boat operation and navigation. Additional crew members assist with sample collection/processing and/or provide logistical support.

3.3 SAMPLING SEQUENCE

The field crew arrives at the site in the early morning to complete the sampling in a single day. The typical sampling scenarios are shown in **Figure 3.1** and **Figure 3.2**.

3.4 SAMPLING CONSIDERATIONS

3.4.1 CONSIDERATIONS FOR FISH TISSUE COLLECTION

The sequence of daily field activities may differ depending on whether the field crew is collecting fish that day or another day, or using active (trawling, seining, hook and line, etc.) or passive (gill net, hoop net, long-lines, etc.) fish collection methods. Other minor modifications to the sampling scenario may be made by crews; however, the sequence of sampling events presented in the following figures (depending on the type and timing of

fish collection) should be adhered to and is based on the need to protect some types of samples from contamination and to minimize holding times once samples are collected.

3.4.2 Listed Species Considerations

Field crews have the potential to encounter federally listed species and critical habitats that are protected under the Endangered Species Act (ESA) while conducting field sampling. Field crew leads are expected to have an understanding of the federally listed species and their critical habitats and state species of concern that have the potential to occur at or near a given sampling site, including habitats that will be used to access the sampling site. Crew leads are responsible for making their crew members aware of potential occurrences of listed species and their critical habitat. Efforts should be made to minimize risks to listed species and their critical habitats and avoid the take[a] of listed species while implementing the NCCA field protocols. For example, crews are expected to:

- abide by all boating speed regulations, including "No Wake" and "Minimum Wake" zones;
- remain a respectful distance from marine mammals and sea turtles[b];
- designate a marine animal spotter for when the boat is in motion;
- understand the circumstances when it would be necessary to shut down a vessel due to the presence of a listed species;
- allow a listed species to naturally move away from the sampling area (do not herd or harass);
- immediately release listed taxa if they are unintentionally collected while implementing the sediment, benthic macroinvertebrate, or fish tissue sampling protocols (do not preserve); and
- implement additional limitations that may be established in the scientific sampling permits.

These best practices are not an exhaustive list of requirements for field crews. Regulations and guidelines that have been developed for marine life viewing provide useful risk minimization practices when boating in area that may support listed manatee, whales, turtles, sea lions, and sharks. Field crews are expected to be aware of the recommendations and guidelines that apply in a given state and for a given species. Additional information on boating best practices is available on the NOAA Fisheries Marine Life Viewing page and provided by the Florida Fish and Wildlife Conservation Commission.

3.4.3 Considerations for Enterococci Collection

Enterococci levels tend to be highest in the morning prior to high levels of solar irradiation; therefore, these samples must be collected as early in the day and with as

[a] "Take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

[b] For whales, remain at least 100 yards away unless other restrictions apply (e.g., 200 yards from killer whales in Washington State inland waters). For seals, sea lions or turtles in the water, or on shore, remain at least 50 yards away. To learn more, visit the Marine Mammal Viewing Guidelines and Distances page, as well as 50 CFR 216.3 and 50 CFR 224.103

little water and sediment disturbance as possible. Regardless of when the Enterococci samples are collected, **crews must complete filtration within six hours of collection. Enterococci samples not filtered within six hours of collection must be discarded, recollected, and filtered.**

3.4.4 OTHER CONSIDERATIONS

Crew members responsible for collecting water chemistry, sediment grabs, and fish tissue must remember to **not** apply sunscreen or other chemical contaminants until after each of these samples is collected to avoid compromising the integrity of the sample (or implement measures to reduce contamination by such chemicals if applied such as washing, wearing long gloves, etc.).

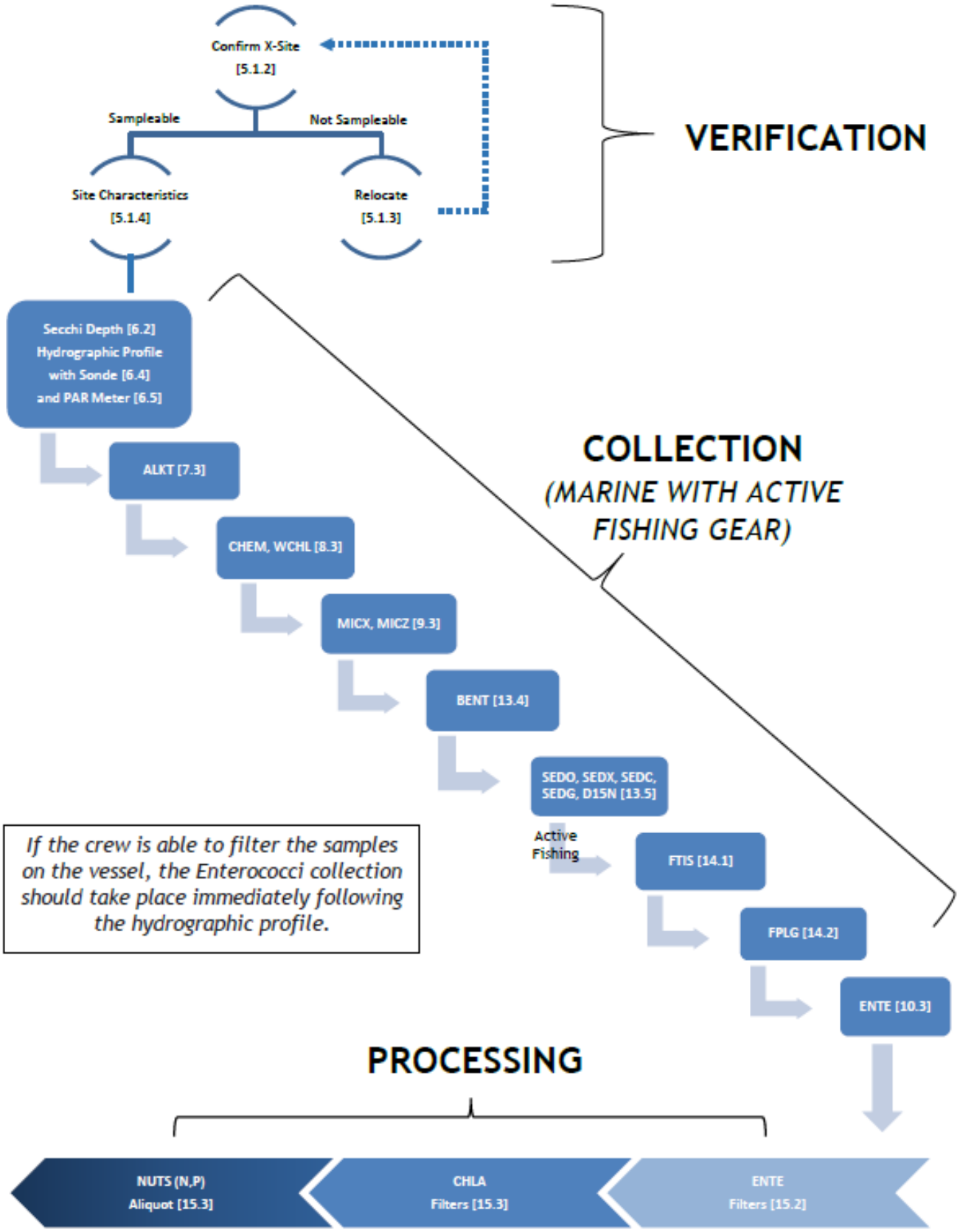
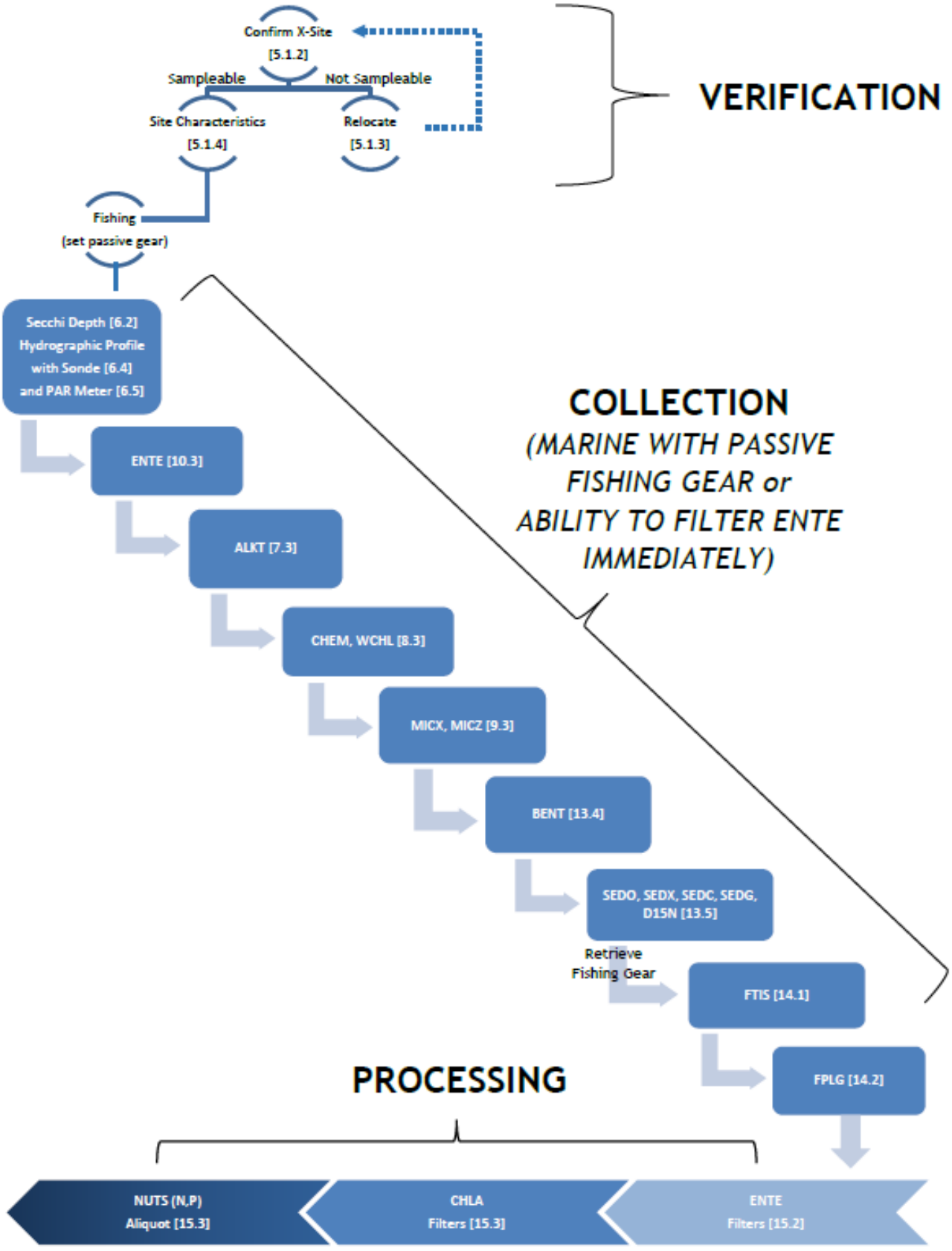


Figure 3.1 Marine Field Sampling Scenario - Active Fishing Methods



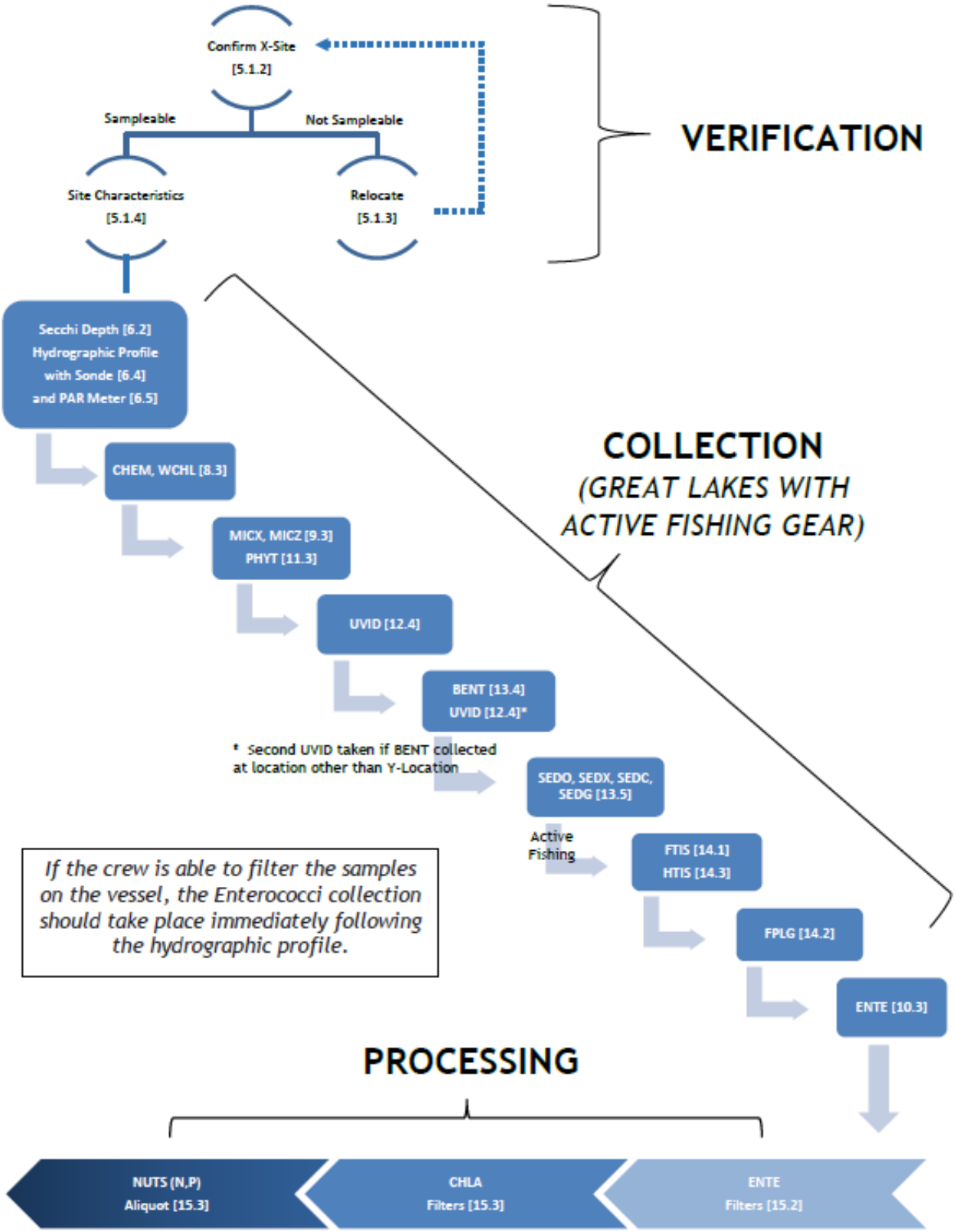


Figure 3.3 Great Lakes Field Sampling Scenario - Active Fishing Methods

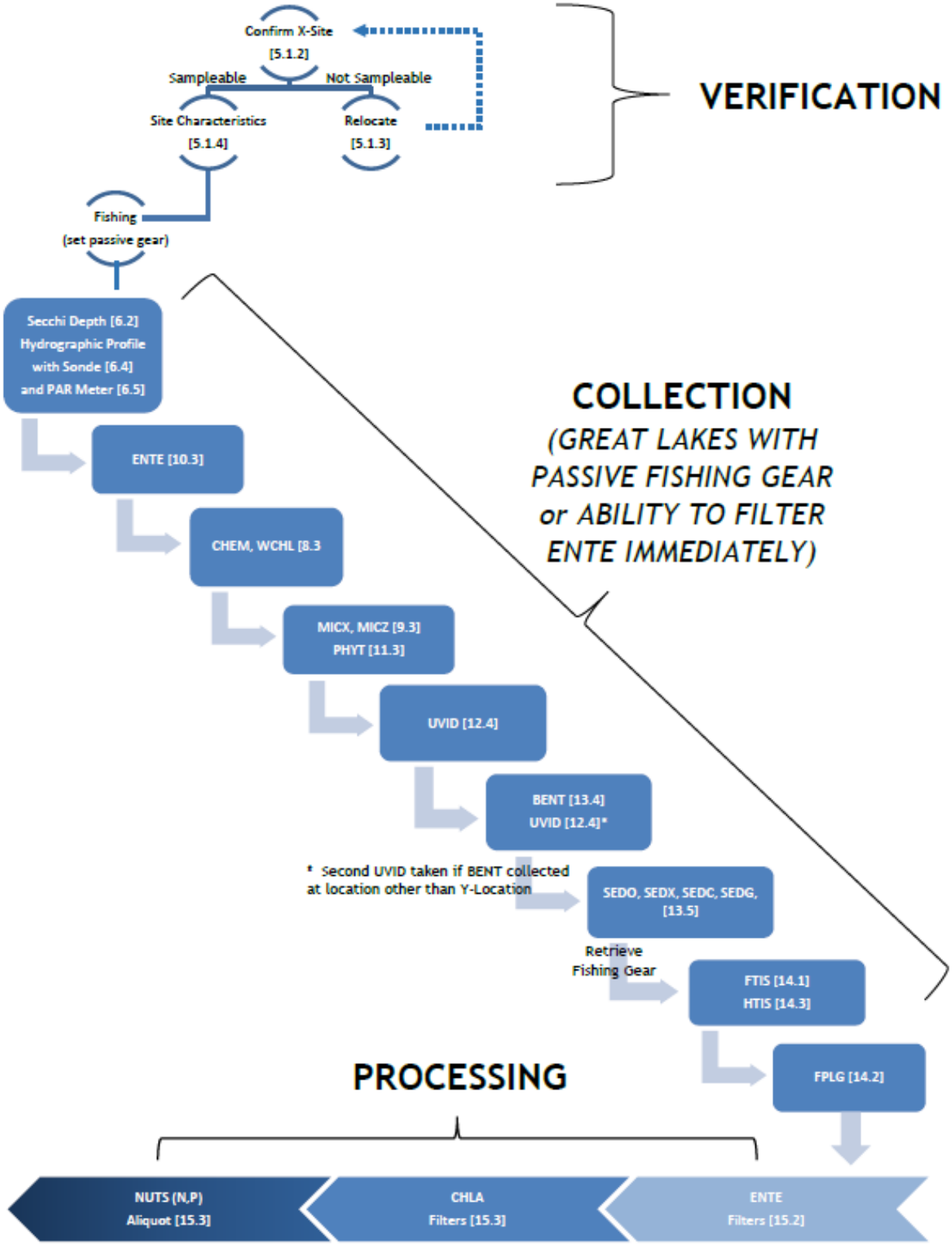
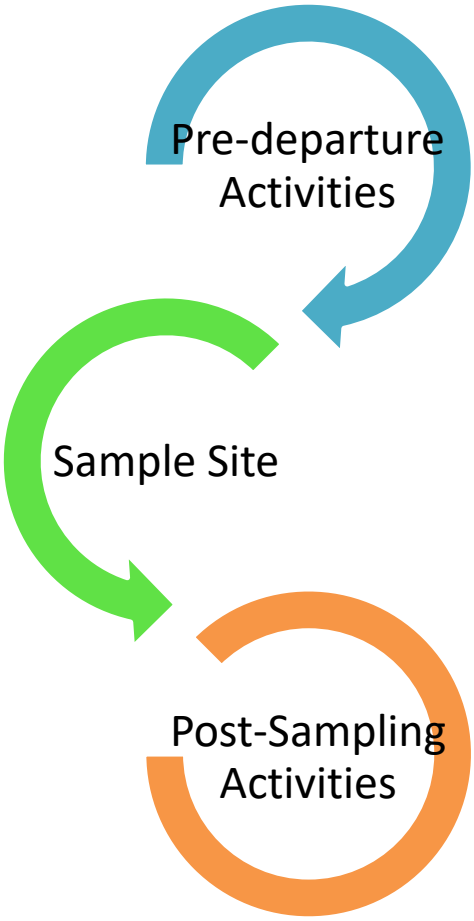


Figure 3.4 Great Lakes Field Sampling Scenario - Passive Fishing Methods or Ability to Filter Samples Immediately

4 PRE-DEPARTURE ACTIVITIES

Field crews conduct a number of activities at their base site (i.e., office or laboratory, camping site, or hotel) before departure to the site and after returning from the field (Figure 4.1). Before leaving the base site, the crews must know: (1) where they are going; (2) that the site is accessible and that, if necessary, they have permission to sample it; (3) that equipment and supplies needed to complete the sampling effort are available and in good working order; and (4) any and all federally listed species that have the potential to occur at the sites. After sampling, crews must ensure that: (1) samples are labeled, packed, and shipped appropriately; (2) the sampling event is communicated to EPA via the NCCA App submissions; and (3) equipment and supplies are cleaned and replenished as necessary.



- **Pre-departure Activities**
  - **Crew Leader** - Prepare daily itinerary
  - **Whole Crew** - Site verification
  - **Crew Members** - Instrument checks & calibration, equipment & supplies preparation

- **Post-Sampling Activities**
  - **Crew Leader**
    - Review forms and labels
    - File status report via App data submission
  - **Crew Members**
    - Filter, preserve & inspect samples
    - Clean boats with 1-10% bleach solution
    - Perform safety checks on boat (when trailering between one water body to distinctly different water body)
    - Clean (and repair, if needed) sampling gear
    - Charge iPad or replace batteries
    - Refuel vehicle and boat
    - Obtain ice and other consumable supplies as needed
    - Package and ship samples & data forms

Figure 4.1 Overview of base site activities

Pre-departure activities are included here, while post-sampling activities are also discussed in **Section 15: Final Site Activities** and **Section 16: Post-Sampling Activities.**

Pre-departure activities include the development of a daily itineraries, instrument checks and calibration, and equipment and supply preparation.

4.1 Daily Itineraries

Field Crew Leaders are responsible for developing daily itineraries and site information, which are compiled as a **Site Packet**. This site packet typically includes maps, navigational charts, contact information, copies of permission letters, permits, access instructions, location of FedEx offices, and location and contact information of hospitals or other emergency services. If applicable and per field crew's standard operating procedures, Site Packets should include information on federally listed species that may occur at the site, how to avoid them, and actions to be taken if they are encountered. Additional pre-sampling activities include confirming the best access routes, calling the landowners or local contacts, confirming lodging plans, and coordinating rendezvous locations with individuals who must meet with field crews prior to accessing a site.

Also, the Field Crew Leader must identify appropriate boat ramps or marinas and gas docks. If the crew is planning a multiple day/multiple site trip, information for each day and site must be developed and compiled into separate site packets.

4.2 Instrument Checks and Calibration

Each field crew must test and calibrate instruments prior to sampling. Equipment can be calibrated either prior to departure for the site or at the site. However, due to variations in elevation, DO probes must be calibrated at the site. The field crew will verify site location using a global positioning system (GPS) receiver. They will collect measurements using a Photosynthetically Active Radiation (PAR) meter and a multi-parameter unit for measuring DO, pH, temperature, salinity (recorded at marine sites) and conductivity (measured at freshwater sites). Field crews must have access to backup instruments if any instruments fail the manufacturer performance tests or calibrations. Prior to departure, field crews must perform the following checks and calibrations:

- If using a hand-held GPS unit, turn on the GPS receiver and check the batteries. Replace batteries immediately if a battery warning is displayed. Boat-mounted GPS units run off of the boat electrical system.
- Test and calibrate the multi-parameter meter (or sonde). Each field crew must refer to and follow the manufacturer's calibration and maintenance procedures to calibrate multi-parameter meters according to manufacturer specifications. Once each week, crews must verify that the meter is functioning properly by performing manufacturer recommended internal diagnostic readouts (e.g., pH millivolts, cell constants, and/or other diagnostic readings). Records of these checks should be saved in a logbook or other documentation. For those meters that do not have internal check capabilities, crews will need to verify on a weekly basis that the meter is measuring pH and conductivity properly by measuring a commercially available Quality Check Solution (QCS) with properties similar to YSI 5580 confidence solution.

- Ensure that the PAR meter's handheld display unit has fresh batteries, that the unit is functioning properly, and that the correct calibration factors are entered for each probe.
  ***Note**: Calibration factors are supplied by the manufacturer and are specific to each individual probe. PAR sensors require no field calibration; however, they should be returned to the manufacturer at least every two years for calibration. Field crews must use the procedures for the initial setup of the LI-COR Datalogger (**Section** 4.2.1) to verify the setup of the unit or to enter coefficient values should a new sensor need to be installed.*
- Crews operating in the Great Lakes must ensure that batteries of the underwater cameras and lights are charged and all components are correctly attached to the frame.

4.2.1 Initial Assembly and Setup Procedures for LI-COR frame, sensor and Datalogger

Field crews must use a pre-configured LI-COR system. Use the following instructions to assemble the system if needed and the following section to reconfigure the LI-COR if needed.

4.2.1.1 Assembly of the LI-COR lowering frame and sensor (from LI-COR 2006)

For NCCA, crews will need to attach one LI-192 Underwater Quantum Sensor to the LI-COR lowering frame. **IMPORTANT**: Do not use the LI-COR underwater cable to support the sensor and lowering frame, as damage to the cable can result. The lowering line provided in your base kit should be used to support the lowering frame and sensor by attaching the in-line clip to the suspension ring at the top of the lowering frame. In addition, the cable should not be bent sharply near the sensor.

The lowering frame provides for the placement of two sensors, however, NCCA crews will only attach a single underwater sensor. Each LI-COR underwater sensor has three 6-32 tapped mounting holes on the underside of the sensor for connection to the mounting ring (**Figure 4.2**). Corrosion resistant mounting screws are used with each sensor.

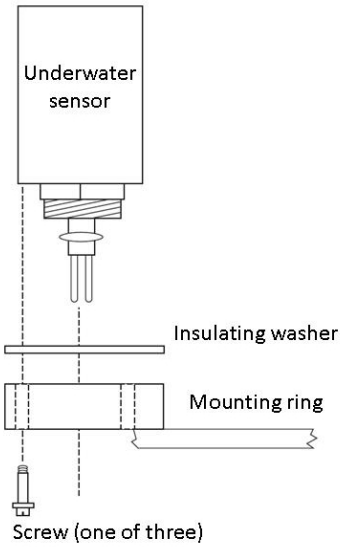


Figure 4.2 Attachment of the underwater sensor to the mounting rings (adapted from LI-COR, 2006)

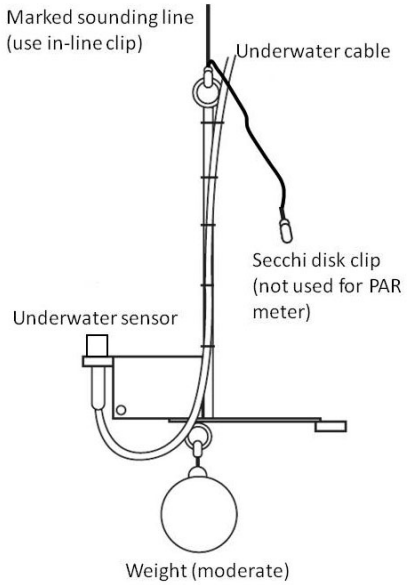


Figure 4.3 Lowering frame assembly with sensor, weight, and lowering line (adapted from LI-COR, 2006)

The underwater sensor will be attached using the mounting ring on the fin of the lowering frame (**Figure 4.3**). To accommodate for any tilting of the frame and to ensure a straight downward direction, a compact weight should be attached to the weight ring at the bottom of the frame. Depending upon the speed of the current, moderate weights will often suffice (4 kg). Weights over 25 kg should be avoided.

Once the sensor is installed to the mounting ring using the three screws and insulating washer, plug the underwater cable into the sensor by aligning the sensor pins and tightening the threaded connection. There is a yellow etched mark on the sensor bottom that should be aligned with the raised nub on the cable. If the underwater sensor begins reading negative values at startup, this likely indicates that the plug on the bottom of the underwater sensor is plugged in backwards.

The underwater cable should be attached to the frame such that approximately 25 cm of cable forms a smooth arc to the underwater sensor connector and is restrained from being flexed or supporting any weight. Additionally, the cable must be securely attached to the shaft of the lowering frame at multiple points so that the cable does not slip and put strain on the sensor connector. However, the cable cannot be clamped so tightly as to damage it. Possible methods to use are numerous nylon cable ties along the length of the shaft, or a tight wrap of lightweight cord around the shaft and cable, starting at the suspension ring and extending downward at least 25 cm.

4.2.1.2 Setup Procedures for LI-COR LI-1400 Datalogger

The following example demonstrates the process for configuring the LI-1400 (with the instrument keypad) to view or log instantaneous data from a single LI-190SA Quantum Sensor.

Example 1a. Configure channel I1 for a LI-COR LI-190SA Quantum Sensor with calibration multiplier of -125.0µmols-1m-2/µAmp (Each sensor has a unique multiplier value supplied from the factory)

1. Connect the Quantum LI-190 ambient light sensor to the BNC connector on top of the LI-1400 labeled I1.
2. Turn on the LI-1400 meter.
3. Press the [Setup] key.
4. Use the left ([←]) or right ([→]) arrow keys to navigate to "SETUP CHANNELS".
5. Press the [Enter] key to begin the sensor setup.
6. Use the left ([←]) or right ([→]) arrow keys to navigate to "I1=Light", press Enter".
7. Using the [Shift] key and the number/ letter keys, type a description for this channel. This description could describe the type of sensor (i.e., "QUANTUM"), or describe what the reading will be used for in the NCCA sampling (i.e., "AMB").
8. Press the down ([↓]) arrow key to enter the multiplier. The multiplier value is found on the Certificate of Calibration provided with the sensors. Each sensor must have a unique certificate and calibration multiplier value.
9. Press the down ([↓]) arrow key; enter "AMB" for the unit label.
10. Press the down ([↓]) arrow key; select "1 sec" to display instantaneous values. The running average parameter will not be used, but could be set here to any desired value.
11. Press the down ([↓]) arrow key; select "Log Routin=none"
12. The remaining options do not need to be set as they apply only when using a Log Routine.
13. Repeat this entire procedure for channel I2 to setup the underwater sensor ("I2=Light") using "UW" as the label for the channel.

4.3 EQUIPMENT AND SUPPLY PREPARATION

Field crews must check the inventory of forms, supplies, and equipment prior to departure using **Appendix A**; use of the lists is mandatory. Inventory extra site kits prior to each site visit to ensure sufficient back-up supplies are available. Store extra site kits in the vehicle and/or boat so that replacement supplies will be readily available in case of loss or damage while at the sampling site.

- Obtain sufficient wet and dry ice for sample preservation and storage.
- Pack meters, probes, and sampling gear, taking care to do so in a way that minimizes physical shock and vibration during transport.
- Pack stock solutions as described in **Table 4.1** below. Follow the regulations of the Occupational Safety and Health Administration (OSHA).

Field crews must request site kits through the supply request form at least two weeks prior to sampling. Site kits will include sample labels, packing slips, and necessary shipping labels for sampling one site and are specific to either a marine or Great Lakes

site. Great Lakes crews sampling at designated human health whole fish tissue sites will also need to request a whole fish tissue sampling kit along with the site kit. Crews will automatically receive extra labels and paper form packets as a backup to electronic data collection prior to sampling, and can request additional as needed. **Field Crew Leaders MUST provide a general schedule to the EPA and the Contractor Field Logistics Coordinator two weeks prior to initiating sampling for the season.**

***Note**: Site kits for all sites to be sampled in 2020 cannot be provided at the beginning of the field season. Consequently, site kits will be provided to crews as requested throughout the index period.*

The site kit includes sample jars, bottles, and other supplies (see complete list in **Appendix A: Equipment and Supplies Lists**). After receipt, please inventory the site kit against these lists. If items are missing, damaged, or incorrect, please request replacement supplies using the supply request form or by contacting the Contractor Field Logistics Coordinator. The Contractor Field Logistics Coordinator will send replacement supplies as quickly as possible.

Table 4.1 Stock solutions, uses & methods for preparation

Solution	Use	Preparation
Bleach (1-10%)	Clean nets, gear, and inside of boat	Add 10 - 100 mL bleach to 1 L distilled water.
Quality Check Solution for multi-parameter sonde	Weekly check of meter calibration *In place of weekly internal meter checks*	No preparation needed (if purchased as ready-to-use solution)
Buffered Formalin	Preserve benthic samples	Add 8 tablespoons Borax to 2 gallons 100% Formalin (37% formaldehyde) solution. FOR USE AT ALL SITES: Add ¼ teaspoon Rose Bengal crystals to above solution.
Lugol's Solution	Preserve phytoplankton samples (Great Lakes sites only)	None (included in GL base kits); Lugol's Iodine solution is light sensitive. Take care to avoid exposure to direct light.

5 INITIAL SITE PROCEDURES

Upon arriving at the site, the field crew must confirm that it is the correct site and determine if the site meets the criteria for sampling and data collection activities. The crew verifies site access, safety, and general conditions to determine if the site can be sampled within the swing of the anchored boat.

***Note**: Inability to collect samples for sediment, benthic, or fish indicators does not disqualify a site from meeting sample criteria. See **Section 2.3.1** to determine site sampleability.*

5.1 SITE VERIFICATION

5.1.1 EQUIPMENT & SUPPLIES

Table 5.1 Equipment & supplies: site verification

For locating and verifying site	sampling permit and landowner access (if required) site packet, including access information, site spreadsheet with map coordinates, navigational charts with "X-site" marked NCCA Fact Sheets for public outreach GPS unit (preferably one capable of recording waypoints) with manual, reference card, extra battery pack
For recording measurements	Verification form in App fine-tipped indelible markers (for labels) clipboard

5.1.2 SITE VERIFICATION PROCEDURES

1. Create a waypoint in the GPS unit that corresponds to the target X-site coordinates provided by EPA in the Site Evaluation Spreadsheet. This process can be completed in the office.
2. Navigate the sampling vessel as close as possible to the target X-site using GPS (you must be no more than 0.02 nautical miles (nm) or 37 meters from the target X-site). Compare the target X-site coordinates with the GPS coordinates displayed at the sampling site.
    - Sampling may start when the sampling vessel is within 37 meters of the X-site. This distance provides the desired level of precision which is approximately equal to that of the GPS receiver without differential fix correction.
    - With the exception of fish tissue and sediment samples (see **Section 5.4**) crews are expected to collect all samples within a circle of 0.02 nm radius around the X-site. This allowable deviation distance accounts for typical "anchor swing" of the sampling vessel.
3. Anchor the sampling vessel in such a way as to minimize the possibility of the anchor(s) dragging or becoming dislodged.
4. Once the anchor has been set and the vessel is essentially stationary, verify that the X-site is still within 0.02 nm or 37 meters. This location (where

sampling will begin) is referred to as the Y-location. If the X-site is not within 0.02 nm or 37 meters, reposition the vessel by following the steps outlined above.

5. Determine if the site is sampleable. See **Section 2.3** for specific guidelines.
   - If not sampleable, proceed to **Section 5.1.3**.
   - If sampleable, proceed to the steps below and then to **Section 5.1.4**. Record the time of arrival to the Y-location on the Verification Form in the App.
6. Record the coordinates of the Y-location on the Verification Form in the App form in decimal degrees in the NAD 83 datum.
7. Record the number of satellites fixed as ≤3 or ≥4.
8. After anchoring, and throughout all subsequent sampling efforts, monitor the GPS to ensure that the sampling vessel stays within the proper X-site radius.
9. Indicate any and all methods that were used to verify that you are at the correct location.
10. Measure and record the water depth at the Y-location on the Verification Form in the App. Make sure an accurate depth reading is taken at the site to ensure the depth is adequate to conduct sampling.

5.1.3 SITE RELOCATION

Every attempt should be made to sample within a 0.02 nm (~37 m) radius of the X-site. If the proposed initial sampling location is not sampleable, then relocate using the following guidelines:

1. The Field Crew Leader should choose a specific compass heading (e.g., north, south, east, west) and slowly motor the vessel in that direction.
2. After moving approximately 15-20 m, assess the relocated area using the Site Verification guidelines given above.
3. Should the relocated area fail to meet the "sampleable" definition, then this process may be continued using the same heading out to 37 meters from the X-site.
4. If no suitable sampling location is found along the first chosen heading, return to the X-site and follow a new heading until an acceptable sampling location is found.
5. If after a sufficient amount of effort is expended and no suitable sampling location is found, then the determination may be made that the site is unsampleable.
6. If the site is non-sampleable or inaccessible and cannot be relocated within the designated area, indicate the reason on the Verification Form in the App. No further sampling activities are conducted at this site.
7. Replace the original site with the next oversample site on the estuary/state list.
8. Return to **Section 5.1.2.**

5.1.4 SITE CHARACTERISTICS

1. If the site is sampleable, record the sampling status and method being used (marine or Great Lakes).
2. Record the general habitat type and the dominant bottom type present at the sampling site.

- At many sites, it may not be possible to record the bottom type until after the sediment collections are performed.

3. Record the presence and type of debris (if any), submerged aquatic vegetation (SAV) present, and/or macroalgae present in the area.
4. Make any general comments about the site that may be important during the data review portion of the assessment or any unusual characteristics about the site, including weather conditions.
5. Record directions to the launch site from an easily recognizable location (city or major road intersection).
6. Draw a simple sketch of the area.
   - Include the relative locations of the shoreline, launch point, X-site, Y-location, and, if different from the Y-location, sediment and fish collection locations. If sediment and fish were collected at different locations from each other, please indicate them separately (see **Section 5.4**). Include any other specific attributes of the site that may be important during data analysis.
   - A printed or copied section of a map with the pertinent information may be submitted in place of the scene sketch.
   - Upload this sketch/map to the NARS SharePoint site when you submit your data forms.
7. Record the names of the Field Crew Leader, fish taxonomist, and all crew members. The same name may be recorded twice if the Field Crew Leader is also the fish taxonomist.

5.2 SITE PHOTOGRAPH

Although not required, EPA encourages crews to take site photographs, especially if the site is associated with unusual natural or man-made features.

- Date-stamp any site photographs and include the site ID.
- Alternatively, start the photograph sequence with one image of an 8.5 × 11 inch piece of paper with the site ID, waterbody name, and date printed in large, thick letters.
- Keep a brief photograph log (site ID, number of photographs, time and date if not stamped by camera) and describe the subject of each photo *if it is not self-explanatory*.
- Field crews can upload these photos to the NARS SharePoint site.

5.3 SAMPLE COLLECTION

Even when the field crew makes every attempt to collect all samples, there will be some circumstances that will prevent all samples from being collected. When site conditions limit full completion of the standard sampling protocol, crews prioritize sample collection and follow a “checklist” for determining the order of sample completion:

1. Measure *in situ* water parameters and collect all water samples at all sites.

2. Collect benthic grab samples at all sites. Any size sediment grab is acceptable as long as it meets the definition of a "successful benthic grab" (see **Section 13.3).**
   Note: *Acceptable means:*
   a) A sediment grab that meets the criteria for benthic samples; or
   b) Enough sediment can be collected that will allow the crew to obtain the surficial sub-sample required for the sediment composite to send to the laboratory for abiotic indicator analysis (e.g., organics/metals, TOC, grain size, toxicity, δN^{15} isotopes in benthic organic matter).
3. Collect sediment composite material of sand-sized sediment grain or smaller (preferred size). If an acceptable sediment grab cannot be obtained at the Y-location or within a 37 m radius around the X-site, move to a secondary sediment collection area following the procedures in **Section 5.4.1** below. Flag and note the reason for limited/missing sediment samples. In the case of limited sediment, prioritize sample distribution in the following order of preference:
   a) Toxicity [SEDX]
   b) Organics/Metals [SEDO]
   c) Total Organic Carbon [SEDC]
   d) Silt/Clay (Grain Size) [SEDG]
   e) Nitrogen Isotopes [D15N] at marine sites only
   Indicate if any of the sediment samples were not successfully collected by marking the "no sample collected" box(es) in the App for each pertinent sample and supplying a reason for not collecting in the adjacent comment field.
4. Collect fish for ecological contaminant [FTIS] analysis. For the ecological assessment, fish collections are targeted to areas within a 500 m radius of the X-site. After unsuccessful attempts within this area, crews may move outside of this radius and attempt to collect fish up to 1000 meters from the X-site (see **Section 5.4.2**). Unsuccessful deployment of fish collection gear or the absence of fish in the catch should not necessarily be used as a determining factor for rendering a site unsampleable.
5. Collect fish tissue plugs [FPLG].
6. Collect human health fish tissue sample [HTIS] at targeted Great Lakes sites. If suitable fish cannot be collected within 1000 meters of the X-site, crews may move out to a maximum of 1500 meters from the X-site in an effort to collect the human health fish tissue sample.

5.4 Secondary Sediment or Fish Collection Zones

All water, benthos, sediment, and fish samples are expected to be collected at the same location (the Y-location), which is as close to the X-site as possible (within the 37 meter radius around the X-site). However, circumstances may require the field crew to relocate to a secondary location to collect an acceptable sediment grab and/or fish sample. If benthos, sediment, and/or fish are collected from a secondary or tertiary location, *in situ*

measurements and water collections do not need to be resampled. Guidelines for relocating to a secondary sample collection zone are covered in the sections below.

5.4.1 SEDIMENT SAMPLES

1. If an acceptable sediment grab cannot be obtained at the Y-location where water samples were collected, move the vessel within the 37 m radius margin (of the X-site) and try to obtain the sediment sample. Use the site relocation method described previously (**Section 5.1.3**). On the **Sample Collection** form in the App, indicate the sediment collection zone by filling in the "within 37 m from X-site" bubble.
2. In cases where sediment sampling cannot be successfully conducted within 37 m of the X-site, grabs may be taken in a secondary sediment collection zone (e.g., > 37 m radius but within a 100 m radius (~0.05 nm) of the X-site) without re-collecting the water samples (**Figure 5.1**).
   Draw a second circle with a 100 m radius from the X-site on the site sketch or map. Place a mark on the map showing the relative location of the sediment collection zone and the approximate distance and direction from the X-site. Indicate in the comments section approximately how far and in what direction from the X-site the sediment was collected. On the **Sample Collection** form in the App, indicate the sediment collection location by filling in the "between 37-100 m from X-site" bubble. The data will be flagged for subsequent review.
3. Crews may use the same relocation procedures to move out to a maximum distance of 500 m from the X-site to locate suitable sediment sampling locations (after attempting to collect sediment from within the primary and secondary zones). Draw a 500 m radius circle on the site sketch or map indicating the sediment collection area and the approximate distance and direction from the X-site. Indicate in the comments section approximately how far and in what direction from the X-site the sediment was collected. On the **Sample Collection** form in the App, indicate the sediment collection zone by filling in the "between 100-500 m from X-site" bubble. The data will be flagged for subsequent review.
4. If a suitable location to collect sediment samples has not been found after a minimum of three collection attempts inside each of the acceptable relocation radii, sediment sampling is considered “complete” for the site. All appropriate explanations must be completed within the App, as well as pertinent "no sample collected" boxes.

***Note**: The Field Crew Leader may choose to make additional sediment grab attempts.*

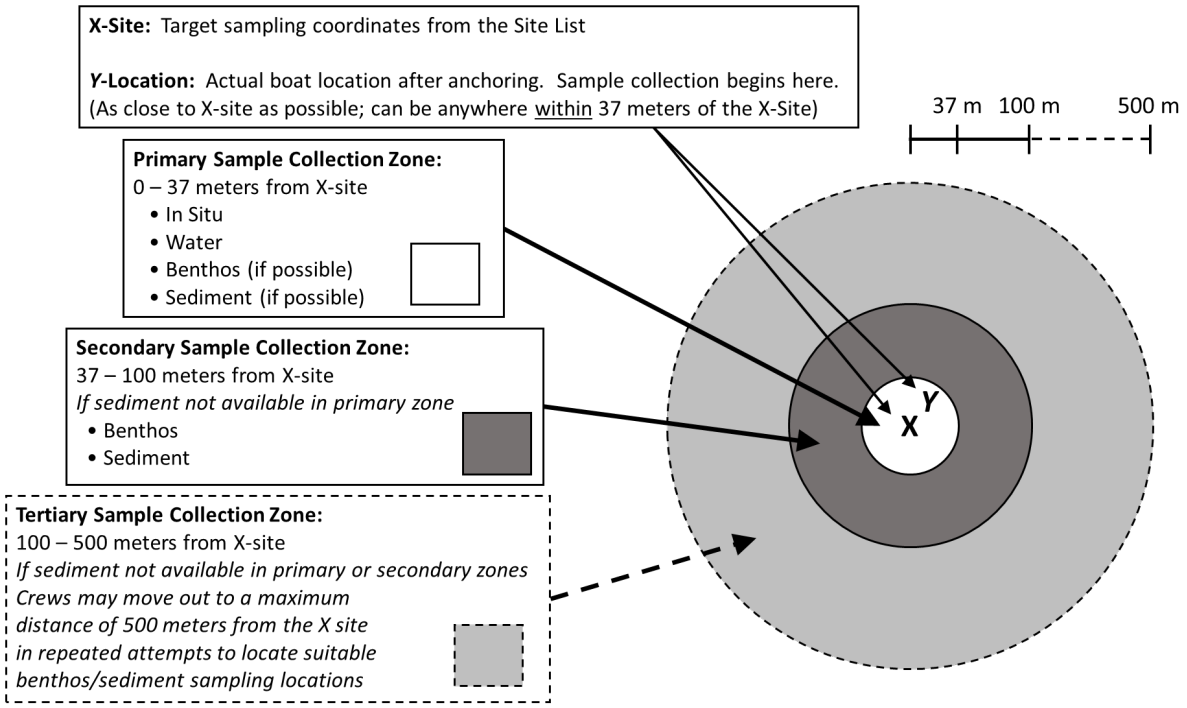


Figure 5.1 Primary, secondary and tertiary sample collection zones

5.4.2 Fish Samples

The primary fish collection zone at all sites is a radius 500 m from the X-site. Secondary fish tissue collection sites may be selected up to an additional 500 m beyond the original 500 m radius at all estuarine and Great Lakes sites (**Figure 5.2**).

Please observe the following guidelines when considering sampling locations for fish samples:

1. In order to move to a secondary fish tissue collection site, crews must be unsuccessful at obtaining target fish during a reasonable portion of the three hours allotted to fishing (at least 30 minutes and no more than two hours) within the original 500 m radius.
2. The crew must have attempted several sampling locations within the primary 500 m radius without success in order to move to the secondary fish collection zone.
3. When relocating crews should concentrate on signs of fish presence such as schools of bait fish just below the surface, predator activity or prey escape behavior on the surface of the water, overhead shading or favorable underwater habitat structure or bathymetric features within an additional 500 m from the X-site.
4. Record the coordinates of the site where fish were ultimately caught.
5. For the collection of the human health fish tissue sample ONLY, crews may move out to a maximum of 1500 meters from the X-site.

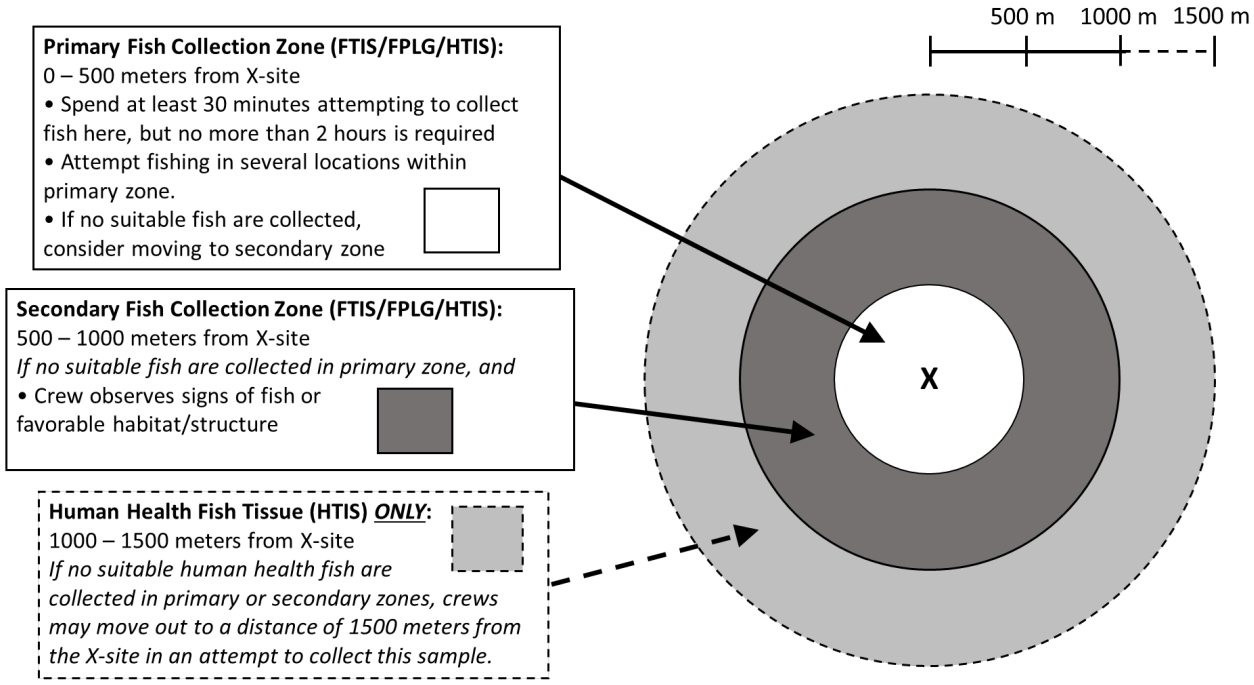


Figure 5.2 Primary and secondary fish collection zones

14 FISH TISSUE COLLECTION

Crews collect fish at all NCCA sites. At revisit sites, ecological contamination of fish tissue or ecofish (FTIS) and fish tissue plugs (FPLG) collection should be attempted during visit 1. If a crew is unsuccessful collecting FTIS or FPLG during visit 1, then attempt to collect during visit 2. At Great Lakes revisit sites, crews that are unsuccessful at collecting the human health fish tissue (HTIS) sample during visit 1 are expected to attempt the collection of that sample during visit 2. Labs analyze whole body (also known as "ecological fish" or "ecofish") tissue samples for concentrations of organic and inorganic contaminants. The results provide information about the ecological risks to wildlife associated with fish consumption. Refer to **Section 14.1** for detailed information regarding ecofish sample collection.

In addition to whole fish samples collected at all sites for ecological risk purposes, crews will also collect fish tissue plugs at all non-enhancement sites. These plugs can be taken from fish collected for the ecofish sample or crews can allow the fish to be released after the tissue plug sample is collected. The sample is analyzed for mercury concentrations and used to provide a measure of human health risk at all sites. Refer to **Section 14.2** for a detailed discussion of fish tissue plug collection.

Finally, crews at all 225 probabilistic nearshore Great Lakes sites (sites whose prefix begins with NGL20), all 38 Great Lakes island sites (sites whose prefix begins with ISA20), and all 12 Great Lakes park sites (sites whose prefix begins with NPA20) will collect a fish composite sample to analyze contaminants in fillet tissue for human health applications (HTIS). Refer to **Section 14.3** for detailed information regarding samples collected for human health fish tissue contaminant analysis. Note that human health fish tissue samples will **NOT** be collected at Lake Erie (LEA20) or Green Bay (GBA20) intensification sites.

When target fish are plentiful, crews in the Great Lakes will be able to submit specimens for both the ecofish and human health fish tissue collections. If specimens are less plentiful, crews may be able to split the sample between the two whole fish collection types and still meet the minimum criteria for each sample. For those instances, apply the fish distribution scheme described in Section 14.3.2.

At all sites and for all sample types, crews are never to collect species that are federally listed as threatened or endangered under the Endangered Species Act for tissue samples. If a federally listed species (e.g., fish, mammal, sea turtle, etc.) is encountered while fishing (netted, hooked, etc.), crew members are expected to immediately release the individual following identification in an area where it is unlikely to be captured again and cease sampling for five minutes to allow the individual to safely leave the area. Record the encounter with the listed species by selecting the ESA button in the NCCA App and record the species, number of individuals, and condition of the individuals. Prior to restarting fish collection, field crews should evaluate whether alternative fishing methods that are less likely to encounter listed species are available.

14.1 ECOLOGICAL CONTAMINATION FISH TISSUE COLLECTION [FTIS]

14.1.1 SUMMARY OF METHOD

Ecological fish tissue collection protocols require crews to collect at least five individuals of the target species, yielding a minimum of 300 g total mass from each site. These fish are to be collected within a 500 meter radius of the X-site (may expand to 1000 meters if needed – see below and **Figure 5.2**). Crews may collect these samples using any reasonable method (e.g., otter trawl, hook and line, gill net, seine, etc.) that is most efficient and the best use of available time on station.

For each attempted fish collection method, record equipment details, start and stop times, and fishing location(s) on the Eco Fish Collection form in the App. Also record sample ID, species retained, and specimen lengths on the Eco Fish Collection form in the App. Crews will also indicate the date of collection and the coordinates of the location where fish were ultimately caught.

Secondary fish tissue collection zones for ecofish and/or fish plugs may be selected up to an additional 500 m beyond the original 500 m radius at all estuarine and Great Lakes sites. Please observe the following guidelines:

1. In order to move to a secondary fish tissue collection zone, crews must be unsuccessful at obtaining target fish during a reasonable portion of the three hours allotted to fishing (at least 30 minutes and no more than two hours) within the original 500 m radius.
2. The crew must have attempted to collect fish at several sampling locations within the original 500 m radius without success.
3. When relocating crews should concentrate on signs of schools of bait fish just below the surface, predator activity or prey escape behavior on the surface of the water, overhead shading or favorable underwater habitat structure or bathymetric features within an additional 500 m from the X-site.
4. For collection of the human health fish tissue sample ONLY (if applicable), crews may move out to a maximum of 1500 meters from the X-site in an effort to collect this sample.
5. If fish are collected in more than one zone fill in the bubble of the zone where the majority of the fish were collected and describe the proportions of fish collected from each zone in the comments section for each sample in the App.

Crews working in each of the regional areas— Northeast, Southeast, Gulf, West Coast, and Great Lakes — collect different target fish species based on biogeographically specific lists. **Recommended Primary** and **Secondary** target species are given by region in the following tables:

- Northeast – **Table 14.2**
- Southeast – **Table 14.3**
- Gulf of Mexico – **Table 14.4**
- West – **Table 14.5**
- Great Lakes – **Table 14.6**

If a full composite sample is not collected after three hours of effort, crews may terminate the sampling, record the details of the sample, and submit as many fish as possible. If the target species are unavailable, the fisheries biologist selects an alternative available species (i.e., a species that is commonly present in the study area and in sufficient numbers to yield a composite) to obtain a fish composite sample. However, all attempts should be made to collect the targeted species if at all possible. Alternative fish species should be limited to bony fish. Cartilaginous fish and Moray eels (Family Muraenidae) should not be submitted for this indicator or for the fish plug sample. Regardless of the species that is ultimately collected, all fish in the composite MUST be of the same species and meet size requirements.

Crews are expected to know and be able to identify the federally listed species and state species of concern that have the potential to occur at a given sampling site. If a listed species is visually observed prior to initiating the sampling, allow the species to naturally depart the area without herding or harassing. If a listed species is encountered (stunned, netted, hooked, etc.), crews are expected to immediately release the fish following identification in an area where it is unlikely to be captured again and cease sampling for five minutes to allow the fish to safely leave the area.

Crews may spend additional time fishing (i.e., more than three hours) if desired. It is not recommended that crews purchase fish specimens dockside unless they can document that the purchased fish came from an area in close proximity to the X-site (i.e., within 1000 meters).

Crews identify specimens to species and measure the total length to the nearest millimeter. They record the taxonomic name (genus-species) and the length of each fish in the App. The preferred minimum length for a specimen for ecological risk purposes is 100 mm with a preferred length range of 100 – 400 mm. All individuals must be of similar size, such that the smallest individual in the composite is no less than 75% of the total length of the largest individual. Up to 20 individuals (a total of 300 g of whole body tissue is needed) should be collected and retained for analysis. If it is suspected that 20 individuals will yield less than 300 g total weight, additional specimens should be collected. The lengths of any additional fish should be recorded in the comment fields provided in the fish sample collection form in the App. At Great Lakes sites where crews will collect both ecological fish tissue and human health fish tissue samples, but they collect 10 or fewer fish, they must follow the fish distribution scheme described in **Section 14.3.2**.

14.1.2 EQUIPMENT AND SUPPLIES

Table 14.1 Equipment & supplies: eco fish tissue collection

For collecting fish composite sample	scientific collection permit Otter trawl (or other device to collect sufficient sample) sampling vessel (including boat, motor, trailer, oars, gas, and all required safety equipment) Coast Guard-approved personal flotation devices Global Positioning System (GPS) unit nitrile gloves livewell and/or buckets measuring board (millimeter scale) scale (in grams)
For storing and preserving fish composite sample	zip-top bag(s) (plastic, 2 gallon) Plastic bag (large, composite) zip-top bag(s) (sandwich size) – for labels cooler plastic cable tie dry ice or wet ice (for temporary transport) side cutter (cleaned with phosphate-free detergent such as Liquinox between sites)
For documenting the fish composite sample	NCCA App fish tissue sample labels fine-tipped indelible markers (for labels) Tyvek label tag with grommet clear tape strips

The procedures for collecting and processing ecological fish composite samples are presented below. If fish plugs are to be collected from specimens in the ecofish collection, complete the steps in **Section 14.2** before packaging the ecofish collection.

***Note**: Do not handle any food, drink, sunscreen, or insect repellant until after the composite sample has been collected, measured and bagged (or implement measures to reduce contamination by such chemicals if applied such as washing, wearing long gloves, etc.).*

1. Put on clean nitrile gloves before handling the fish.
2. Rinse potential target species/individuals in ambient water to remove foreign material from the external surface and place them in clean holding containers (e.g., livewells, buckets).
3. Select at least five fish, with a minimum total weight of 300 grams, to include in the eco fish composite. If needed, 20 or more fish may be composited to reach the minimum weight of 300 grams. The selected fish must meet the following criteria:

    - All fish are of the same species.
    - The preferred specimen length is between 100 and 400 mm; if after sufficient fishing only smaller or larger fish of the target species are available, those will be accepted.

- All fish are of similar size, so that the smallest individual in a composite is no less than 75% of the total length of the largest individual.
- All fish for one site visit are collected as close to the same time as possible, but no more than one week apart.

***Note**: Individual fish may have to be frozen until all fish to be included in the composite are available for delivery to the designated laboratory.*

4. Identify the fish to species and record the scientific name on the Eco Fish Collection form in the App.
   ***Note**: Accurate taxonomic identification is essential in assuring and defining the composited organisms submitted for analysis. Individuals from different species may not be composited in a single sample. Submit only one species per site.*
5. Measure each individual fish from the anterior-most part of the fish to the tip of the longest caudal fin ray (when the lobes of the caudal fin are depressed dorsoventrally) to determine total body length in millimeters.
6. Record collection method and equipment details, start and stop times, and fishing location(s) on the Eco Fish Collection form in the App. Record sample ID, species name, and specimen lengths on the Eco Fish Collection form in the App. Make sure the sample ID recorded on the collection form match those on the sample labels.
7. While wearing clean nitrile gloves, remove each fish retained for analysis from the clean holding container(s). If needed, dispatch larger fish using the most humane method available.
8. Place all fish from the composite in a two-gallon zip-top bag. Take care to prevent fish spines from piercing the bag. If spines are likely to puncture the bag, break off or clip the spines with a side-cutter or other appropriate tool (cleaned with phosphate-free detergent such as Liquinox and rinsed with ambient site water before use at each site) and place the spine in the bag with the fish. Use additional bags if all the fish collected for a composite will not fit in a single two-gallon bag.
9. Weigh the composite bag(s) to determine if enough fish have been collected to reach a minimum weight of 300 grams.
10. Prepare interior and exterior FTIS sample labels for the two-gallon bag(s), ensuring that the label information matches the information recorded on the Eco Fish Collection form in the App. **Be sure to record <u>scientific name</u> and <u>minimum and maximum lengths</u> on the labels**.
    - Place the interior label inside a small (sandwich-size) zip-top bag and place the bag inside the two-gallon bag with the fish composite.
    - Affix the exterior label to the two-gallon bag and cover with clear plastic tape. If additional two-gallon bags are used, fill out extra labels with the same sample ID and information for each bag and label accordingly (i.e., bag 2 of 2).
11. Double-bag all specimens in the composite by placing all two-gallon bag(s) from the site inside a large plastic bag.

12. Prepare a sample label for the outer bag, ensuring that the label information matches the information recorded on the Eco Fish Collection form in the App. **Be sure to record scientific name and minimum and maximum lengths on the sample label.**
13. Affix the sample label to a Tyvek tag and cover with clear plastic tape. Thread a cable tie through the grommet in the Tyvek tag and seal the outer bag with the cable tie.

14.1.3 Sample Storage and Shipping Preparation

1. After the sample is packaged, immediately place it on dry ice for shipment.
   - Check the "frozen" box on the Eco Fish Collection form in the App to confirm that the sample has been frozen.
   - Packaged samples may be placed on wet ice in coolers if they will be transported to a laboratory or other interim facility to be frozen before shipment.
   - Samples may be stored on wet ice for a maximum of 24 hours.
   - Freeze the samples within 24 hours of collection at ≤-20°C and store the frozen samples until shipment within two weeks of sample collection. Crews may ship the frozen fish sample along with the other frozen samples from the site using a cooler with a dry ice insert or they may ship the ecofish separately. Frozen samples should be packed on at least 20 pounds of layered dry ice and shipped to the batched sample lab via priority overnight delivery service.

Table 14.2 Northeast region primary and secondary marine target species - whole body fish tissue collection (Ecofish)

NORTHEAST REGION PRIMARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Ictaluridae	*Ameiurus catus*	White catfish	Primary
	Ictalurus punctatus	Channel catfish	Primary
Moronidae	*Morone americana*	White perch	Primary
Paralichthyidae	*Paralichthys dentatus*	Summer flounder	Primary
Pleuronectidae	*Pseudopleuronectes americanus*	Winter flounder	Primary
Sciaenidae	*Cynoscion regalis*	Gray weakfish	Primary
	Sciaenops ocellatus	Red drum	Primary
Sparidae	*Stenotomus chrysops*	Scup	Primary
NORTHEAST REGION SECONDARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Achiridae	*Trinectes maculatus*	Hogchoaker	
Anguillidae	*Anguilla rostrata*	American eel	Secondary
Atherinopsidae	*Menidia menidia*	Atlantic silverside	
Batrachoididae	*Opsanus tau*	Oyster toadfish	
Ephippidae	*Chaetodipterus faber*	Atlantic spadefish	
Moronidae	*Morone saxatilis*	Rock fish (or striped bass)	Secondary
Mugulidae	*Mugil cephalus*	Black mullet	
Pomatomidae	*Pomatomus saltatrix*	Bluefish	Secondary
Sciaenidae	*Bairdiella chrysoura*	Silver perch	
	Menticirrhus saxatilis	Northern kingfish	
Serranidae	*Centropristis striata*	Black sea bass	
Triglidae	*Prionotus carolinus*	Northern searobin	
	Prionotus evolans	Striped searobin	

** Indicates whether species also occurs in the primary or secondary fish plug list (see **Table 14.8**).*

Table 14.3 Southeast region primary and secondary marine target species - whole body fish tissue collection (Ecofish)

SOUTHEAST REGION PRIMARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Ariidae	*Ariopsis felis*	Hardhead sea catfish	Primary
	Bagre marinus	Gafftopsail sea catfish	Primary
Paralichthyidae	*Paralichthys albigutta*	Gulf flounder	Primary
	Paralichthys dentatus	Summer flounder	Primary
	Paralichthys lethostigma	Southern flounder	Primary
Sciaenidae	*Cynoscion arenarius*	Sand weakfish (or seatrout)	Primary
	Cynoscion nebulosus	Speckled trout	Primary
	Cynoscion regalis	Gray weakfish	Primary
	Leiostomus xanthurus	Spot croaker	Primary
Sparidae	*Lagodon rhomboides*	Pinfish	
SOUTHEAST REGION SECONDARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Cichlidae	*Tilapia mariae*	Spotted tilapia	
Haemulidae	*Haemulon aurolineatum*	Tomtate	
Sciaenidae	*Bairdiella chrysoura*	Silver perch	
	Menticirrhus americanus	Southern kingfish	
Serranidae	*Centropristis striata*	Black sea bass	

** Indicates whether species also occurs in the primary or secondary fish plug list (see **Table 14.8**).*

Table 14.4 Gulf region primary and secondary marine target species - whole body fish tissue collection (Ecofish)

GULF REGION PRIMARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Ariidae	*Ariopsis felis*	Hardhead sea catfish	Primary
	Bagre marinus	Gafftopsail sea catfish	Primary
Paralichthyidae	*Paralichthys albigutta*	Gulf flounder	Primary
	Paralichthys dentatus	Summer flounder	Primary
	Paralichthys lethostigma	Southern flounder	Primary
Sciaenidae	*Cynoscion arenarius*	Sand weakfish (or seatrout)	Primary
	Cynoscion nebulosus	Speckled trout	Primary
	Cynoscion regalis	Gray weakfish	Primary
	Leiostomus xanthurus	Spot croaker	Primary
	Micropogonias undulatus	Atlantic croaker	Primary
	Sciaenops ocellatus	Red drum	Primary
Sparidae	*Lagodon rhomboides*	Pinfish	
GULF REGION SECONDARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Carangidae	*Caranx hippos*	Crevalle jack	
	Chloroscombrus chrysurus	Atlantic bumper	
Diodontidae	*Chilomycterus schoepfii*	Burrfish	
Gerreidae	*Eucinostomus gula*	Silver jenny	
Haemulidae	*Orthopristis chrysoptera*	Pigfish	
Ictaluridae	*Ictalurus furcatus*	Blue catfish	
Lepisosteidae	*Lepisosteus oculatus*	Spotted gar	
Lutjanidae	*Lutjanus griseus*	Gray snapper	
Sciaenidae	*Pogonias cromis*	Black drum	
Serranidae	*Diplectrum formosum*	Sand perch	
Triglidae	*Prionotus scitulus*	Leopard searobin	

** Indicates whether species also occurs in the primary or secondary fish plug list (see **Table 14.8**).*

Table 14.5 Western region primary and secondary marine target species - whole body fish tissue collection (Ecofish)

WESTERN REGION PRIMARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Atherinopsidae	*Atherinops affinis*	Topsmelt silverside	
Cottidae	*Leptocottus armatus*	Pacific staghorn sculpin	Primary
	Oligocottus rimensis	Saddleback sculpin	
Cynoglossidae	*Symphurus atricaudus*	California tonguefish	
Embiotocidae	*Cymatogaster aggregata*	Shiner perch	Primary
	Embiotoca lateralis	Striped seaperch	Primary
Gasterosteidae	*Gasterosteus aculeatus*	Three-spined stickleback	
Paralichthyidae	*Citharichthys sordidus*	Pacific sanddab	Primary
	Citharichthys stigmaeus	Speckled sanddab	Primary
	Paralichthys californicus	California flounder	Primary
Pleuronectidae	*Isopsetta isolepis*	Butter sole	
	Parophrys vetulus	English sole	Primary
	Platichthys stellatus	Starry flounder	Primary
	Psettichthys melanostictus	Pacific sand sole	
Sciaenidae	*Genyonemus lineatus*	White croaker	Primary
Serranidae	*Paralabrax nebulifer*	Barred sand bass	Primary
	Paralabrax maculatofasciatus	Spotted sand bass	Primary
WESTERN REGION SECONDARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Batrachoididae	*Porichthys notatus*	Plainfin midshipman	
	Porichthys myriaster	Specklefin midshipman	
Embiotocidae	*Amphistichus argenteus*	Barred surfperch	Secondary
Paralichthyidae	*Xystreurys liolepis*	Fantail sole	
Pleuronectidae	*Hypsopsetta guttulata*	Diamond turbot	Secondary
	Microstomus pacificus	Dover sole	Secondary
	Lepidopsetta bilineata	Rock sole	
	Lyopsetta exilis	Slender sole	
Sciaenidae	*Umbrina roncador*	Yellowfin croaker	

** Indicates whether species also occurs in the primary or secondary fish plug list (see **Table 14.8**).*

Table 14.6 Great Lakes primary and secondary target species - whole body fish tissue collection (Ecofish)

GREAT LAKES PRIMARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Catostomidae	*Moxostoma macrolepidotum*	Shorthead redhorse	Primary
Centrarchidae	*Ambloplites rupestris*	Rock bass	Primary
	Lepomis gibbosus	Pumpkinseed	Primary
	Lepomis macrochirus	Bluegill	Primary
	Micropterus dolomieu	Smallmouth bass	Primary
	Pomoxis annularis	White crappie	
	Pomoxis nigromaculatus	Black crappie	
Cottidae	*Cottus bairdii*	Mottled sculpin	
	Cottus cognatus	Slimy sculpin	
Cyprinidae	*Couesius plumbeus*	Lake chub	
	Cyprinus carpio	Common carp	Primary
	Pimephales notatus	Bluntnose minnow	
Esocidae	*Esox lucius*	Northern pike	Primary
	Esox masquinongy	Muskellunge	Primary
Gadidae	*Lota lota*	Burbot	Primary
Gasterosteidae	*Gasterosteus aculeatus*	Three-spined stickleback	
Gobiidae	*Neogobius melanostomus*	Round goby	
	Proterorhinus marmoratus	Tubenose goby	
Ictaluridae	*Ameiurus nebulosus*	Brown bullhead	Primary
	Ictalurus punctatus	Channel catfish	Primary
	Noturus flavus	Stonecat	
Moronidae	*Morone americana*	White perch	Primary
	Morone chrysops	White bass	Primary
Osmeridae	*Osmerus mordax*	American/ rainbow smelt	
Percidae	*Gymnocephalus cernuus*	Ruffe	
	Perca flavescens	Yellow perch	Primary
	Percina caprodes	Logperch	
	Sander canadensis	Sauger	
	Sander vitreus	Walleye	Primary
Percopsidae	*Percopsis omiscomaycus*	Trout-perch	
Salmonidae	*Coregonus artedi*	Cisco/ lake herring	
	Coregonus clupeaformis	Lake whitefish	Primary
	Oncorhynchus gorbuscha	Pink salmon	
	Oncorhynchus kisutch	Coho salmon	Primary
	Oncorhynchus mykiss	Rainbow trout	Primary
	Oncorhynchus tshawytscha	Chinook salmon	Primary
	Salvelinus namaycush	Lake trout	Primary
Sciaenidae	*Aplodinotus grunniens*	Freshwater drum	Primary
GREAT LAKES SECONDARY ECOFISH TARGET SPECIES			
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**	**FISH PLUG LIST***
Catostomidae	*Catostomus catostomus*	Longnose sucker	
	Catostomus commersonii	White sucker	Secondary
	Moxostoma anisurum	Silver redhorse	
Centrarchidae	*Micropterus salmoides*	Largemouth bass	
Clupeidae	*Alosa pseudoharengus*	Alewife	
	Dorosoma cepedianum	American gizzard shad	
Cyprinidae	*Cyprinella spiloptera*	Spotfin shiner	
	Luxilus cornutus	Common shiner	
	Notropis stramineus	Sand shiner	
Esocidae	*Esox niger*	Chain pickerel	
Fundulidae	*Fundulus diaphanus*	Banded killifish	
	Fundulus majalis	Striped killifish	
Ictaluridae	*Ameiurus melas*	Black bullhead	
Salmonidae	*Prosopium cylindraceum*	Round whitefish	
	Salmo trutta	Brown trout	Secondary
	Salvelinus fontinalis	Brook trout	
	Salvelinus fontinalis x namaycush	Splake	

** Indicates whether species also occurs in the primary or secondary fish plug list (see **Table 14.9**).*

14.2 FISH TISSUE PLUG [FPLG]

14.2.1 SUMMARY OF METHOD

Because many fish spend their entire life in a particular water body, they can be important indicators of water quality, especially for toxic pollutants (e.g., pesticides and trace elements). Toxic pollutants, which may be present in the water column or sediments at concentrations below our analytical detection limits, can be found in fish tissue above detection limits due to bioaccumulation.

Typical fish tissue collection methods require the fish to be sacrificed, whether it be a whole fish or a skin-on fillet tissue sample. This can be problematic when there is a need to collect large trophy-sized fish for contaminant analysis or when a large sample size is necessary for statistical analysis. The following method collects fish tissue plugs instead of a skin-on fillet. One fish tissue plug for mercury analysis will be collected from each of two fish of at least 190 mm of the same species (one plug per fish) from the target list (below) at every site. These fish are collected during the ecological fish tissue collection effort (**Section 14.1**). In order of preference, fish tissue plugs should be collected from 1) an ecological fish specimen that will be sent to the lab (when size and species requirements overlap), or 2) (if all required HTIS and FTIS specimens have been collected) a live fish that will be released after the plug has been collected. When possible, select larger individuals from which to collect the fish plugs. **Do not remove fish plugs from specimens that are part of the human health fish composite sample collection.** A tissue plug sample is collected by inserting a biopsy punch into a de-scaled area of dorsal muscle section of a fish. After the plug has been collected, ecofish specimens are frozen according to the protocol in **Section 14.1**; if a plug is collected from a live fish, antibiotic salve is placed over the wound and the fish is released.

14.2.2 EQUIPMENT AND SUPPLIES

Table 14.7 lists the equipment and supplies necessary for field crews to collect fish tissue plug samples. Record the fish tissue plug sampling data in the Fish Tissue Plug Samples section of the Eco Fish Collection form in the App.

Table 14.7 Equipment & supplies: fish tissue plugs

For fish tissue plug samples	antibiotic salve cooler with dry ice cooler with wet ice dip net biopsy punch (sterile, disposable) fish collection gear (trawl, nets, livewell, etc.) disposable forceps (sterile) glass scintillation vial (20 mL) nitrile gloves measuring board aspirator bulb scale (in grams) scalpel (disposable, sterile)
For recording measurements	NCCA App fish tissue plug sample label fine-tipped indelible markers (for labels) clear tape strips

14.2.3 SAMPLING PROCEDURE

The fish tissue plug indicator samples will be collected using the same gear and procedures used to collect the ecological and/or human health fish tissue samples, and collection occurs within the same area as other fish collections. Samples should be taken from the species listed in the target list (primary and secondary species) found in **Table 14.8** and **Table 14.9**. When ecofish specimens meet the size (190 mm) and species requirements for fish plug samples, the plugs should be taken from the ecofish prior to placing on ice. If ecofish specimens do not meet the size and species requirement for fish plugs, fish plugs should be taken from live fish and the fish are released with antibiotic salve on the wound, as in step 14 below. If the recommended primary and secondary species are unavailable, the fisheries biologist will select an alternative species (i.e., a species that is commonly consumed by people in or around the study area, with specimens that have a minimum length of 190 mm) to obtain a sample from the species that are available. Alternative fish species should be limited to bony fish. Cartilaginous fish and Moray eels (Family Muraenidae) should not be submitted for this indicator or for the ecofish sample. The alternative genus and species must be written in to the NCCA App. In no instance should fish plugs be removed from specimens submitted for the human health fish tissue sample.

In order of preference, crews should try to submit species from 1) the Primary Target List; 2) the Secondary Target List; and 3) any other commonly consumed, available fish. It is recognized that there are species not on these lists that may be culturally or regionally important food sources, essential to subsistence fishers or increasingly popular among food trends. For these reasons, the guidance for selecting species for fish plug samples is purposefully inclusive.

Please note: There are no invertebrate organisms on this list. Crab, shrimp, mollusks, lobsters, etc., will not be used in assessment of mercury content in fish plugs. If invertebrate species are submitted for FPLG samples, those data will be reported as MISSING for the associated sites.

The procedures for collecting and processing fish plug samples are presented below.

1. Spread out a cooler liner bag on a flat surface for your workspace.
2. Prepare the FPLG sample label with Site ID, date collected, and visit number.
3. Attach the completed label to the 20 milliliter scintillation vial and cover with clear tape.
4. Put on clean nitrile gloves before handling the fish.
   ***Note**: Do not handle any food, drink, sunscreen, or insect repellant until after the plug samples have been collected (or implement measures to reduce contamination by such chemicals if applied such as washing, wearing long gloves, etc.).*
5. Rinse potential target species/individuals in ambient water to remove any foreign material from the external surface and place in clean holding containers (e.g., livewells, buckets). Return non-target fishes or small specimens to the water.
6. Retain two individuals of the same target species from each site. The fish should be:

   - large enough to collect a fish plug yielding ~ 0.5 grams (wet weight) of tissue,
   - on the recommended primary or secondary target list (if not available select an alternative species present),
   - both the same species,
   - both satisfy legal requirements of harvestable size (or weight) for the sampled water body, or at least be of consumable size and
   - of similar size, so that the smaller individual is no less than 75% of the total length of the larger individual,
   - at least 190 mm in length.

   NOTE: Whenever possible, larger specimens should be selected over smaller specimens.

7. Remove one fish retained for analysis from the clean holding container(s) (e.g., livewell) using clean nitrile gloves.
8. Measure the fish to determine total body length. Measure total length of the specimen in millimeters from the anterior-most part of the fish to the tip of the longest caudal fin ray (when the lobes of the caudal fin are depressed dorsoventrally). The minimum acceptable length for a fish used for any fish plug sample is 190 mm.
9. Weigh the fish in grams using the fish weigh scale.
10. Note any anomalies (e.g., lesions, cuts, sores, tumors, fin erosion) observed on the fish.

11. Record sample ID, species, and specimen length and weight in the Fish Tissue Plug Samples section of the Eco Fish Collection form in the App.
12. On a meaty portion of the left side, dorsal area of the fish between the dorsal fin and the lateral line, clear a small area of scales with a sterile disposable scalpel.
13. Wearing clean nitrile gloves, insert the 8 mm biopsy punch into the dorsal muscle of the fish through the scale-free area. The punch is inserted with a slight twisting motion cutting the skin and muscle tissue. Once full depth of the punch is achieved, a slight bending or tilting of the punch is needed to break off the end of the sample. Remove biopsy punch taking care to ensure sample remains in the punch.
    Note: *The full depth of the punch should be filled with muscle tissue, which should result in collecting a minimum of 0.25 to 0.35 grams of fish tissue for mercury analysis.*
14. If the fish is to be released, apply a generous amount of antibiotic salve to the plug area and gently return the fish to the water. If the fish is part of the ecofish collection, return the fish to the ecofish holding area without the application of antibiotic.
15. Using an aspirator bulb placed on the end of the biopsy punch, give a quick squeeze, blowing the tissue sample into the 20 mL scintillation vial.
16. Place the vial with sample immediately on dry ice for temporary storage.
17. Repeat steps 2-15 for the second fish, to collect a second fish plug sample. Place the second plug in the same scintillation vial as the first. The two plugs should provide at least 0.5 grams of tissue. NOTE: If two qualifying fish cannot be caught, both plugs may be taken from the same fish.
18. Replace the lid and seal tightly with electrical tape, insert the vial into the "bubble bag" to protect it from breakage, and then place it into the zip-top bag. Place the sample in a cooler with dry ice
19. Dispose of gloves, scalpel, and biopsy punch.

14.2.4 SAMPLE STORAGE

1. Keep the samples frozen on dry ice or in a freezer at ≤-20°C until shipment.
2. Frozen samples will subsequently be packed on dry ice and shipped to the batched sample laboratory via priority overnight delivery service within one week of collection. Please see **Appendix C: Shipping and Tracking Guidelines** for next steps.

Table 14.8 Primary and secondary marine target species for fish plug collection

PRIMARY MARINE FISH PLUG TARGET SPECIES		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**
Ariidae	*Ariopsis felis*	Hardhead sea catfish
	Bagre marinus	Gafftopsail sea catfish
Cottidae	*Leptocottus armatus*	Pacific staghorn sculpin
Embiotocidae	*Cymatogaster aggregata*	Shiner perch
	Embiotoca lateralis	Striped seaperch
Ictaluridae	*Ameiurus catus*	White catfish
	Ictalurus punctatus	Channel catfish
Moronidae	*Morone americana*	White perch
Paralichthyidae	*Citharichthys sordidus*	Pacific sanddab
	Citharichthys stigmaeus	Speckled sanddab
	Paralichthys albigutta	Gulf flounder
	Paralichthys californicus	California flounder
	Paralichthys dentatus	Summer flounder
	Paralichthys lethostigma	Southern flounder
	Parophrys vetulus	English sole
	Platichthys stellatus	Starry flounder
Pleuronectidae	*Pseudopleuronectes americanus*	Winter flounder
Sciaenidae	*Cynoscion arenarius*	Sand weakfish (or seatrout)
	Cynoscion nebulosus	Speckled trout
	Cynoscion regalis	Gray weakfish
	Genyonemus lineatus	White croaker
	Leiostomus xanthurus	Spot croaker
	Micropogonias undulatus	Atlantic croaker
	Sciaenops ocellatus	Red drum
Serranidae	*Paralabrax maculatofasciatus*	Spotted sand bass
	Paralabrax nebulifer	Barred sand bass
Sparidae	*Stenotomus chrysops*	Scup
SECONDARY MARINE FISH PLUG TARGET SPECIES		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**
Anguillidae	*Anguilla rostrata*	American eel
Embiotocidae	*Amphistichus argenteus*	Barred surfperch
	Amphistichus rhodoterus	Redtail surfperch
	Embiotoca jacksoni	Black perch
	Hyperprosopon argenteum	Walleye surfperch
Moronidae	*Morone saxatilis*	Rock fish (or striped bass)
Paralichthyidae	*Hippoglossina oblonga*	Fourspot flounder
Pleuronectidae	*Hippoglossoides platessoides*	American dab
	Hypsopsetta guttulata	Diamond turbot
	Limanda ferruginea	Yellowtail flounder
	Microstomus pacificus	Dover sole
Pomatomidae	*Pomatomus saltatrix*	Blue fish
Sciaenidae	*Menticirrhus undulatus*	California whiting
Scorpaenidae	*Scorpaena guttata*	California scorpionfish
	Sebastes caurinus	Copper rockfish
	Sebastes entomelas	Widow rockfish
	Sebastes flavidus	Yellowtail rockfish
	Sebastes melanops	Black rockfish
	Sebastes mystinus	Blue rockfish
	Sebastes paucispinis	Bocaccio
Serranidae	*Paralabrax clathratus*	Kelp bass

Table 14.9 Primary and secondary Great Lakes target species for fish plug collection

PRIMARY GREAT LAKES FISH PLUG TARGET SPECIES		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**
Catostomidae	*Moxostoma macrolepidotum*	Shorthead redhorse
Centrarchidae	*Ambloplites rupestris*	Rock bass
	Lepomis gibbosus	Pumpkinseed
	Lepomis macrochirus	Bluegill
	Micropterus dolomieu	Smallmouth bass
Cyprinidae	*Cyprinus carpio*	Common carp
Esocidae	*Esox lucius*	Northern pike
	Esox masquinongy	Muskellunge
Ictaluridae	*Ameiurus nebulosus*	Brown bullhead
	Ictalurus punctatus	Channel catfish
Gadidae	*Lota lota*	Burbot
Moronidae	*Morone americana*	White perch
	Morone chrysops	White bass
Percidae	*Perca flavescens*	Yellow perch
	Sander vitreus	Walleye
Salmonidae	*Coregonus clupeaformis*	Lake whitefish
	Oncorhynchus kisutch	Coho salmon
	Oncorhynchus mykiss	Rainbow trout
	Oncorhynchus tshawytscha	Chinook salmon
	Salvelinus namaycush	Lake trout
Sciaenidae	*Aplodinotus grunniens*	Freshwater drum
SECONDARY GREAT LAKES FISH PLUG TARGET SPECIES		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**
Catostomidae	*Catostomus commersonii*	White sucker
Ictaluridae	*Ictalurus furcatus*	Blue catfish
Salmonidae	*Salmo trutta*	Brown trout

14.3 HUMAN HEALTH FISH TISSUE COLLECTION [HTIS] *(GREAT LAKES NEARSHORE AND LAKE MICHIGAN ENHANCEMENT SITES ONLY)*

14.3.1 SUMMARY OF METHOD

Field crews collect human health fish composite samples at all 225 of the Great Lakes nearshore sites (i.e., sites whose prefix begins with NGL20), all 38 Great Lakes island sites (sites whose prefix begins with ISA20), and all 12 Great Lakes National Park sites (sites whose prefix begins with NPA20). This will result in human health fish tissue being targeted at 45 sites per lake, plus the 38 island sites and 12 park sites in Lake Michigan. If a Great Lake site has been designated as a human health fish tissue site and is dropped, a replacement site is identified following procedures described in Section **2.3.2** and human health fish tissue should be collected at the replacement site. At revisit sites in the Great Lakes, crews that are unsuccessful at collecting the human health fish tissue sample (HTIS) during visit 1 are expected to attempt the collection of that sample during visit 2. Note that human health fish tissue samples will **NOT** be collected at Lake Erie (LEA20) and Green Bay (GBA20) enhancement sites.

Labs analyze fillet tissue for mercury, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS), and fatty acids.

This section contains the sampling procedures and target species for human health fish composite collection. Note that the human health fish species table (**Table 14.11**) includes 25 primary target species and 18 secondary fish species. Field crews must attempt to collect a primary target species wherever possible. If primary target species are not available at a particular site, then the field crew collects a composite of one of the secondary fish species. In the event that a crew is unable to collect fish which are on the human health species list, then the field crew should contact the Great Lakes Human Health Fish Tissue Manager or Great Lakes Fish Tissue Trainer.

As with the ecological fish tissue samples, crews collect human health fish tissue samples using any reasonable method that represents the most efficient or best use of the available time on station (e.g., hook and line, gill net, or otter trawl). However, in contrast to the allowable procedures for ecological fish tissue samples, **crews may not purchase fish for human health fish tissue collection**. Record sample collection information on the Human Health Fish Collection form in the App.

For each attempted fish collection method, record equipment details, start and stop times, and fishing location(s) on the Human Health Fish Collection form in the App. Record sample ID, species retained, and specimen lengths on the Human Health Fish Collection form in the App.

Identify and measure the specimens collected for each composite sample. Record the scientific name (genus and species) and total length for each specimen on the Human Health Fish Collection form in the App. Human health fish composites should consist of five similarly sized (i.e., the total length of the smallest specimen is no less than 75% of the total length of the largest specimen) adult fish of the same species. The minimum acceptable length for a fish in any composite sample is 190 mm. Field crews should make every effort to consistently obtain five fish for the human health fish composite sample;

however, a sample of fewer than five fish is acceptable. Conversely, for the exceptions where field crews collect five fish that are small, they should collect up to five additional fish (for an overall composite of up to 10 fish) to provide adequate tissue for analysis.

Fish submitted as part of the human health fish composite sample should remain intact and be submitted as whole specimens. **Crews should not take fish plugs from human health fish tissue specimens**.

14.3.2 Fish Tissue Distribution Scheme

Ideally, at Great Lakes sites where crews will collect both human health fish tissue samples (HTIS) and ecological fish tissue samples (FTIS), they will successfully collect 10 or more fish of the same species that are each ≥190 mm in length. That would allow them to retain 5 fish for the HTIS sample and 5 (or more) for the FTIS sample. However, if 10 fish are not available at a site, field teams will apply a fish distribution or "fish-splitting" scheme. It is important to understand that the 5 HTIS fish must be the same species and the 5 FTIS fish must be the same species, but the HTIS sample and the FTIS sample from a site may be different species. (Note that the following fish distribution scheme would only apply when the same species of fish is collected and available for both human health and ecological samples).

If only a single fish is collected at a site, it should be retained as the Ecological (FTIS) sample.

If sampling yields two fish of the same species, one will be the Human Health (HTIS) sample and one will be the FTIS sample. If an odd number of fish of the same species are collected at a site, the "extra" fish should be included in the HTIS sample. For example, if sampling yields three fish of the same species, two of them will be saved as the HTIS sample and one fish will be retained as the FTIS sample (See **Figure 14.1**). Obviously, in cases where an even number of fish (of the same species) are collected from a site, the number of specimens will be split evenly between the HTIS sample and the FTIS sample.

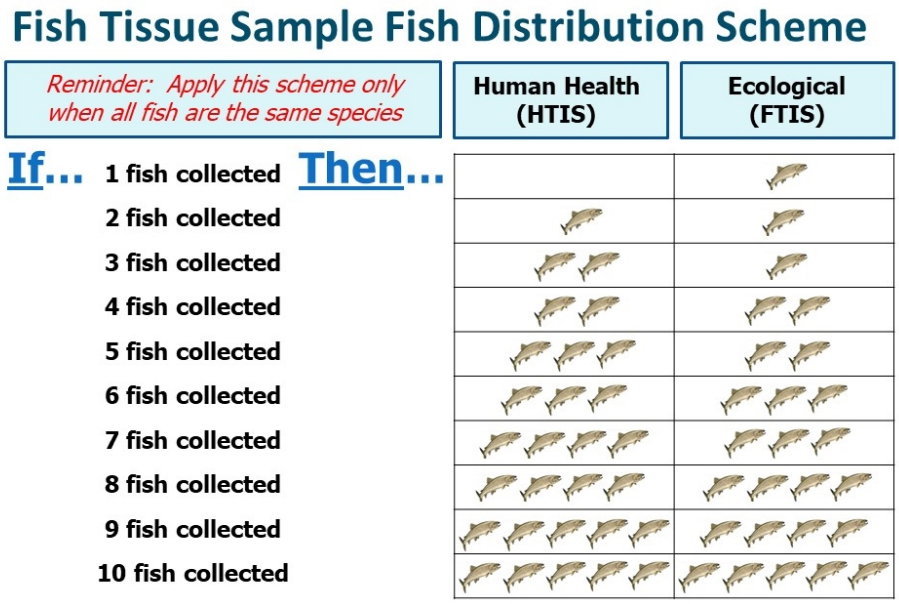


Figure 14.1 Fish Tissue Distribution Scheme to be used at all Great Lake Sites with the prefix NGL20, ISA20, or NPA20.

14.3.3 EQUIPMENT AND SUPPLIES

Table 14.10 lists the equipment and supplies necessary for field crews to collect human health fish composite samples. Additional human health fish collection supplies can be ordered through the Supply Request Form. A list of frequently asked questions and responses will be provided with the fish sampling supplies to clarify situations that field crews may encounter while collecting human health fish composites. Detailed procedures for collecting and processing fish composite samples are presented below.

Table 14.10 Equipment & supplies: human health fish tissue collection

For collecting fish composite sample	scientific collection permit gill net, otter trawl, hook and line (or other device to collect sufficient sample) sampling vessel (including boat, motor, trailer, oars, gas, and safety equipment) nitrile gloves Coast Guard-approved personal floatation devices Global Positioning System (GPS) livewell and/or buckets measuring board (millimeters)
For storing and preserving fish composite sample	aluminum foil (solvent rinsed) polyethylene tubing (food-grade) large plastic (composite) bags coolers plastic cable ties dry ice (for preservation) or wet ice (for temporary transport)
For documenting the fish composite sample	NCCA App human health fish tissue sample labels fine-tipped indelible markers (for labels) Tyvek label tag with grommet clear tape strips

14.3.4 SAMPLING PROCEDURE

Note: *Do not handle any food, drink, sunscreen, or insect repellant until after the composite sample has been collected, measured, and wrapped (or implement measures to reduce contamination by such chemicals if applied such as washing, wearing long gloves, etc.).*

1. Put on clean nitrile gloves before handling the fish.
2. Rinse potential target species/individuals in ambient water to remove foreign material from the external surface and place them in clean holding containers (e.g., livewells, buckets).
3. For each human health fish composite sample, select five whole fish. Criteria for inclusion in the human health fish composite sample:
   a) All fish are of the same primary target species or secondary fish species (See **Table 14.11**)
   Note: *It is essential that field crews accurately identify the organisms submitted for analysis. Do not submit organisms from different species in a single sample.*
   b) All fish are adult fish; and
   c) All fish are of similar size, so that the smallest individual in a composite is no less than 75% of the total length of the largest individual. The minimum acceptable fish length is 190 mm.
4. Measure each fish selected for the composite from the anterior-most part of the fish to the tip of the longest caudal fin ray (when the lobes of the caudal fin are depressed dorsoventrally) to determine total body length in millimeters.
5. On the Human Health Fish Collection form in the App:
   - Ensure the sample identification number is entered.
   - Check the boxes verifying that all samples are of similar length and the same species.
   - Record species selected for analysis, individual specimen lengths (total length in mm), and any relevant comments. Extra rows are provided in the App in the event that additional specimens are collected to ensure adequate tissue for analysis (refer to Frequently Asked Questions for further clarification).
   - Make sure the sample ID and specimen numbers recorded in the App match those on the sample labels.
6. Wearing clean nitrile gloves, remove each fish selected for analysis from the clean holding container(s). If needed, dispatch each fish using the most humane method available.
7. Wrap each whole fish in extra heavy-duty aluminum foil, with the dull side in contact with the fish (foil is solvent rinsed and baked and will be provided by EPA).
8. Prepare a sample label for each sample specimen, ensuring that the label information matches the information recorded on the Human Health Fish Collection form in the App. **Be sure to record the fish genus and species and specimen length on each label.**

9. Cut separate lengths of food grade tubing (provided by EPA) long enough to contain each individual fish, allowing extra length on each end to seal with cable ties. Place each foil-wrapped specimen into the appropriate length of tubing. Seal the ends of each tube with a plastic cable tie. Attach the appropriate sample label to the plastic tubing by wrapping clear tape around the label and then completely around the wrapped fish (so that the clear tape wraps over itself).
10. Double-bag the entire set of specimens in the composite by placing all fish composited from the site inside a large plastic bag (provided by EPA). If additional bags are required for large fish specimens or fish samples, please use plastic bags of similar thickness as those provided by EPA.
11. Prepare a Sample Identification Label for the outer bag, ensuring that the label information matches the information recorded on the Human Health Fish Collection form in the App. **Be sure to record fish genus and species and specimen length range on the label.**
12. Affix the sample label to a composite bag tag (Tyvek tag) and cover with clear plastic tape. Thread a cable tie through the grommet in the tag and seal the outer bag with the cable tie.

14.3.5 Sample Storage and Shipping Preparation

1. After the fish sample is packaged, keep the sample chilled using either of the following options (**option "a" preferred):**
   a) (**preferred option**) immediately place the fish sample in a cooler of dry ice until it can be properly frozen (at ≤-20°C in a laboratory or other interim facility) or shipped to Microbac Laboratories (Baltimore, MD);
      - If fish samples are held on dry ice in the field, the field crew should replenish the supply of dry ice at least daily until the samples can be properly frozen or shipped.
      - Keep all specimens designated for a particular fish composite sample in the same cooler for transport.
   b) (**alternate option for temporary holding or transport)** immediately place the fish sample in a cooler with wet ice (for temporary holding only).
      - Packaged fish samples may be placed on wet ice in coolers if they will be immediately transported to a nearby laboratory or other interim facility to be frozen before shipment (wet ice should be replenished frequently before it melts).
      - Keep all specimens designated for a particular fish composite sample in the same cooler for transport.
2. Crews have two options for freezing and shipping fish composite samples, depending on site logistics:
   a) Ship the samples via priority overnight delivery service (i.e., Federal Express), packed on dry ice, so that they arrive at Microbac Laboratories (Baltimore, MD) within 24 hours from the time of sample collection. Do NOT ship on Fridays, Saturdays, or the day before federal holidays. Fish samples must be packed on sufficient dry ice (**50 pounds minimum**, with blocks of dry ice layered to ensure direct contact between fish and dry ice) to keep

them frozen for up to 48 hours. Do not use dry ice pellets for shipping human health fish samples. Remember to record the tracking number on the Tracking Form in the App before submitting it to NARS IM.

b) Freeze the fish samples within 24 hours of collection at ≤-20°C and store the frozen samples until shipment within two weeks of sample collection. If fish samples cannot be stored in a freezer within 24 hours of collection, the field crew should replenish the supply of dry ice in the cooler containing the samples, at least daily, until the samples can be properly frozen or shipped. Frozen fish samples will subsequently be packed on at least 50 pounds of layered blocks of dry ice and shipped to Microbac Laboratories (Baltimore. MD) via priority overnight delivery service. Refer to reminders in option 2a (above) about not shipping on Fridays, Saturdays, or the day before federal holidays and about including sample tracking numbers on App tracking forms.

Table 14.11 Primary and secondary Great Lakes target species for human health fish tissue collection

PRIMARY HUMAN HEALTH FISH TISSUE TARGET SPECIES		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**
Centrarchidae	*Ambloplites rupestris*	Rock bass
	Micropterus dolomieu	Smallmouth bass
	Micropterus salmoides	Largemouth bass
	Pomoxis annularis	White crappie
	Pomoxis nigromaculatus	Black crappie
Cyprinidae	*Cyprinus carpio*	Common carp
Esocidae	*Esox lucius*	Northern pike
	Esox masquinongy	Muskellunge
	Esox niger	Chain pickerel
Ictaluridae	*Ictalurus punctatus*	Channel catfish
Gadidae	*Lota lota*	Burbot
Moronidae	*Morone americana*	White perch
	Morone chrysops	White bass
Percidae	*Perca flavescens*	Yellow perch
	Sander canadensis	Sauger
	Sander vitreus	Walleye
Salmonidae	*Coregonus clupeaformis*	Lake whitefish
	Oncorhynchus gorbuscha	Pink salmon
	Oncorhynchus kisutch	Coho salmon
	Oncorhynchus tshawytscha	Chinook salmon
	Oncorhynchus mykiss	Rainbow trout
	Salmo salar	Atlantic salmon
	Salmo trutta	Brown trout
	Salvelinus namaycush	Lake trout
Sciaenidae	*Aplodinotus grunniens*	Freshwater drum
SECONDARY HUMAN HEALTH FISH TISSUE TARGET SPECIES		
FAMILY	**SCIENTIFIC NAME**	**COMMON NAME**
Catostomidae	*Carpiodes cyprinus*	Quillback
	Catostomus catostomus	Longnose sucker
	Catostomus commersonii	White sucker
	Hypentelium nigracans	Northern hogsucker
	Ictiobus cyprinellus	Bigmouth buffalo
	Ictiobus niger	Black buffalo

Centrarchidae	*Lepomis cyanellus*	Green Sunfish
	Lepomis gibbosus	Pumpkinseed
	Lepomis gulosus	Warmouth
	Lepomis macrochirus	Bluegill
	Lepomis megalotis	Longear Sunfish
Ictaluridae	*Ameiurus melas*	Black bullhead
	Ameiurus natalis	Yellow bullhead
	Ameiurus nebulosus	Brown bullhead
Salmonidae	*Coregonus artedi*	Cisco/ lake herring
	Coregonus hoyi	Bloater
	Prosopium cylindraceum	Round whitefish
	Salvelinus fontinalis	Brook trout

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Administrative Conditions

A. CORRESPONDENCE CONDITION

The terms and conditions of this agreement require the submittal of reports, specific requests for approval, or notifications to EPA. Unless otherwise noted, all such correspondence should be sent to the following email addresses:

- Federal Financial Reports (SF-425):
  LVFC-grants@epa.gov AND Alicia Sanders, sanders.alicia@epa.gov
- MBE/WBE reports (EPA Form 5700-52A):
  Adrianne Callahan, Callahan.adrianne@epa.gov AND Alicia Sanders, sanders.alicia@epa.gov
- All other forms/certifications/assurances, Indirect Cost Rate Agreements, Requests for Extensions of the Budget and Project Period, Amendment Requests, Requests for other Prior Approvals, updates to recipient information (including email addresses, changes in contact information or changes in authorized representatives) and other notifications:
  Alicia Sanders, sanders.alicia@epa.gov AND Dertera Collins, collins.dertera@epa.gov
- Payment requests (if applicable): Alicia Sanders, sanders.alicia@epa.gov AND Dertera Collins, collins.dertera@epa.gov
- Quality Assurance documents, workplan revisions, equipment lists, programmatic reports and deliverables: Dertera Collins, collins.dertera@epa.gov

B. GENERAL TERMS AND CONDITIONS

The recipient agrees to comply with the current EPA general terms and conditions available at:
https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-october-1-2018
These terms and conditions are in addition to the assurances and certifications made as a part of the award and the terms, conditions, or restrictions cited throughout the award.

The EPA repository for the general terms and conditions by year can be found at
http://www.epa.gov/grants/grant-terms-and-conditions.

C. DISADVANTAGED BUSINESS ENTERPRISE (DBE): UTILIZATION OF SMALL, MINORITY AND WOMEN'S BUSINESS ENTERPRISES (MBE/WBE)

GENERAL COMPLIANCE, 40 CFR, Part 33

The recipient agrees to comply with the requirements of EPA's Disadvantaged Business Enterprise (DBE) Program for procurement activities under assistance agreements, contained in 40 CFR, Part 33.

REPORTING PROVISION

MBE/WBE reporting is required annually for assistance agreements where there are funds budgeted for procuring construction, equipment, services and supplies, including funds budgeted for direct procurement by the recipient or procurement under subawards or loans in the "Other" category, that exceed the threshold amount of $150,000, including amendments and/or modifications.

Based on EPA's review of the planned budget, this award does not meet the condition above and is not subject to the reporting requirements of the Disadvantaged Business Enterprise (DBE) Program. However, if during the performance of the award the total of all funds expended for direct procurement by

the recipient and procurement under subawards or loans in the "Other" category exceeds $150,000, annual reports will be required in accordance with the reporting paragraph below and you are required to notify your grant specialist for additional instructions.

The recipient also agrees to request prior approval from EPA for procurements that may activate DBE Program reporting requirements.

This provision represents an approved deviation from the MBE/WBE reporting requirements as described in 40 CFR, Part 33, Section 33.502; however, the other requirements outlined in 40 CFR Part 33 remain in effect, including the Good Faith Efforts requirements as described in 40 CFR Part 33 Subpart C and Fair Share Objectives negotiation as described in 40 CFR Part 33 Subpart D and explained below.

MBE/WBE REPORTING, 40 CFR, Part 33, Subpart E
When required, MBE/WBE reports must be submitted annually. The recipient agrees to complete and submit a "MBE/WBE Utilization Under Federal Grants, Cooperative Agreements and Interagency Agreements" report (EPA Form 5700-52A) on an annual basis. All procurement actions are reportable, not just that portion which exceeds $150,000.

When completing the annual report, recipients are instructed to check the box titled "annual" in section 1B of the form. For the final report, recipients are instructed to check the box indicated for the "last report" of the project in section 1B of the form. Annual reports are due by October 30th of each year. Final reports are due by October 30th or 90 days after the end of the project period, whichever comes first.

The reporting requirement is based on total procurements. Recipients with expended and/or budgeted funds for procurement are required to report annually whether the planned procurements take place during the reporting period or not. If no budgeted procurements take place during the reporting period, the recipient should check the box in section 5B when completing the form.

MBE/WBE reports should be sent to:

Adrianne M. Callahan, Region 5 MBE/WBE Coordinator
USEPA, Acquisition and Assistance Branch
77 West Jackson Boulevard (MC-10J)
Chicago, IL 60604

The current EPA Form 5700-52A can be found at the EPA Office of Small Business Program's Home Page at http://www.epa.gov/osbp/dbe_reporting.htm

FAIR SHARE OBJECTIVES, 40 CFR, Part 33, Subpart D
A recipient must negotiate with the appropriate EPA award official, or his/her designee, fair share objectives for MBE and WBE participation in procurement under the financial assistance agreements.

In accordance with 40 CFR, Section 33.411 some recipients may be exempt from the fair share objectives requirements described in 40 CFR, Part 33, Subpart D. Recipients should work with their DBE coordinator, if they think their organization may qualify for an exemption.

Current Fair Share Objective /Goal
The dollar amount of this assistance agreement or the total dollar amount of all of the recipient's financial assistance agreements in the current federal fiscal year from EPA is $250,000, or more. The **MINNESOTA POLLUTION CONTROL AGENCY** has negotiated the following, applicable MBE/WBE fair share objectives/goals with EPA as follows:

MBE: 2% **WBE**: 2%

Negotiating Fair Share Objectives /Goals
In accordance with 40 CFR, Part 33, Subpart D, established goals/objectives remain in effect for three

fiscal years unless there are significant changes to the data supporting the fair share objectives . The recipient is required to follow requirements as outlined in 40 CFR Part 33, Subpart D when renegotiating the fair share objectives/goals.

SIX GOOD FAITH EFFORTS , 40 CFR, Part 33, Subpart C
Pursuant to 40 CFR, Section 33.301, the recipient agrees to make the following good faith efforts whenever procuring construction, equipment, services and supplies under an EPA financial assistance agreement, and to require that sub-recipients, loan recipients, and prime contractors also comply. Records documenting compliance with the six good faith efforts shall be retained:

(a) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

(b) Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process . This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

(c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

(d) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

(e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.

(f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

CONTRACT ADMINISTRATION PROVISIONS , 40 CFR, Section 33.302
The recipient agrees to comply with the contract administration provisions of 40 CFR, Section 33.302.

BIDDERS LIST, 40 CFR, Section 33.501(b) and (c)
Recipients of a Continuing Environmental Program Grant or other annual reporting grant, agree to create and maintain a bidders list. Recipients of an EPA financial assistance agreement to capitalize a revolving loan fund also agree to require entities receiving identified loans to create and maintain a bidders list if the recipient of the loan is subject to, or chooses to follow, competitive bidding requirements. Please see 40 CFR, Section 33.501 (b) and (c) for specific requirements and exemptions.

D. EXTENSION OF PROJECT /BUDGET PERIOD EXPIRATION DATE

EPA has not exercised the waiver option to allow automatic one-time extensions for non-research grants under 2 CFR 200.308 (d)(2). Therefore, if a no cost time extension is necessary to extend the period of availability of funds (budget period), the recipient must submit a written request, including a justification as to why additional time is needed, revised timelines and milestones, and an estimated date of completion, to the EPA prior to the budget/project period expiration dates.

The extension request should be submitted to the EPA Project Officer with a courtesy copy to the EPA

Grants Management Specialist.

Programmatic Conditions

A. PERFORMANCE REPORTING AND FINAL PERFORMANCE REPORT

Performance Reports - Content

In accordance with 2 CFR 200.328, the recipient agrees to submit performance reports that include brief information on each of the following areas: 1) A comparison of actual accomplishments to the outputs/outcomes established in the assistance agreement work plan for the period; 2) The reasons why established outputs/outcomes were not met; and 3) Additional pertinent information, including, when appropriate, analysis and explanation of cost overruns or high-unit costs.

Additionally, the recipient agrees to inform EPA as soon as problems, delays, or adverse conditions which will materially impair the ability to meet the outputs/outcomes specified in the assistance agreement work plan are known.

For State Categorical Program Grants Only : Interim performance and final progress reports must prominently display the three Essential Elements for state work plans: 1) Strategic Plan Goal; (2) Strategic Plan Objective; and (3) Workplan Commitments plus time frame.
(See Grants Policy Issuance 11-03 State Grant Workplans and Progress Reports for more information)

Performance Reports - Frequency

The recipient agrees to submit **annual** performance reports electronically to the EPA Project Officer within 90 days after the annual reporting period ends on ***July 1, 2020***. The final project report is due within 90 days of the budget/project period end date.

B. CYBERSECURITY

(a) The recipient agrees that when collecting and managing environmental data under this assistance agreement, it will protect the data by following all applicable State law cybersecurity requirements .
(b) (1) EPA must ensure that any connections between the recipient's network or information system and EPA networks used by the recipient to transfer data under this agreement, are secure.

For purposes of this Section, a connection is defined as a dedicated persistent interface between an Agency IT system and an external IT system for the purpose of transferring information. Transitory, user-controlled connections such as website browsing are excluded from this definition .

If the recipient's connections as defined above do not go through the Environmental Information Exchange Network or EPA's Central Data Exchange, the recipient agrees to contact the EPA Project Officer (PO) and work with the designated Regional/Headquarters Information Security Officer to ensure that the connections meet EPA security requirements, including entering into Interconnection Service Agreements as appropriate. This condition does not apply to manual entry of data by the recipient into systems operated and used by EPA's regulatory programs for the submission of reporting and/or compliance data.

(2) The recipient agrees that any subawards it makes under this agreement will require the subrecipient to comply with the requirements in (b)(1) if the subrecipient's network or information system is connected to EPA networks to transfer data to the Agency using systems other than the Environmental Information Exchange Network or EPA's Central Data Exchange. The recipient will be in compliance with this condition: by including this requirement in subaward agreements; and during

subrecipient monitoring deemed necessary by the recipient under 2 CFR 200.331(d), by inquiring whether the subrecipient has contacted the EPA Project Officer. Nothing in this condition requires the recipient to contact the EPA Project Officer on behalf of a subrecipient or to be involved in the negotiation of an Interconnection Service Agreement between the subrecipient and EPA.

C. GEOSPATIAL DATA STANDARDS

All geospatial data created must be consistent with Federal Geographic Data Committee (FGDC) endorsed standards. Information on these standards may be found at www.fgdc.gov.

D. QUALITY ASSURANCE MANAGEMENT PLAN

In accordance with 2 CFR 1500.11, the recipient shall continue to implement and adhere to the Quality Management Plan (QMP) submitted to EPA. The QMP should be updated annually or as necessary based on the EPA QA/R-2: EPA Requirements for Quality Management Plans. This quality assurance requirement applies to all grants, cooperative agreements, contracts and interagency agreements that involve the use of environmental data.

If not included under the approved QMP, a stand-alone QAPP is required for those projects/activities that result in the collection, production and/or use of environmental information, metrics or data. The recipient agrees to ensure that an approved site specific QAPP is completed for each project. No environmental data collection, production, or use may occur until the QAPP is reviewed and approved by the EPA Project Officer and Quality Assurance Regional Manager or through authorized delegation under an EPA approved recipient QMP based on procedures documented in the QMP. A copy of the approved QAPPs must be retained with the recipient's official records for this Agreement.

Quality Assurance Project Plan

EPA will develop and provide to all partners the Quality Assurance Project Plan (QAPP), Field and Laboratory Standard Operating Procedures (SOPs), and other necessary documents for participation in the National Aquatic Resource Surveys. All active participants must verify that they will abide by the EPA protocols. If the state or tribe is planning to conduct some or all the laboratory work, Part B of the workplan should indicate that the state or tribe will work with the Agency to document, establish, and implement appropriate quality assurance and data management consistent with the national QAPP/SOPs. A certification form to confirm adherence to nationwide protocols will be available no later than March 2020. For states and tribes that request support through APS or in-kind services for all aspects of the survey, no certification is required. (Applicable to Part B).

E. COMPETENCY POLICY

Competency of Organizations Generating Environmental Measurement Data

In accordance with Agency Policy Directive Number FEM-2012-02, Policy to Assure the Competency of Organizations Generating Environmental Measurement Data under Agency-Funded Assistance Agreements,
Recipient agrees, by entering into this agreement, that it has demonstrated competency prior to award, or alternatively, where a pre-award demonstration of competency is not practicable, Recipient agrees to demonstrate competency prior to carrying out any activities under the award involving the generation or use of environmental data. Recipient shall maintain competency for the duration of the project period of this agreement and this will be documented during the annual reporting process. A copy of the Policy is available online at
https://www.epa.gov/sites/production/files/2015-03/documents/competency-policy-aaia-new.pdf or a copy may also be requested by contacting the EPA Project Officer for this award.

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

SWIFT Contract No.: 156953
PO #: 3000024108
Agency Interest ID: 20595
Project Activity #: PRO20190001

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

This Agreement is between the **Minnesota Pollution Control Agency,** 520 Lafayette Road North St. Paul, MN 55155 ("MPCA") and the **Minnesota Department of Health,** 601 Robert Street North St. Paul, MN 55155 ("MDH").

Agreement

1 Term of Agreement

1.1 ***Effective date*: July 1, 2019**, or the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2, whichever is later.

1.2 ***Expiration date*: June 30, 2020**, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2 Scope of Work

A. MDH Duties:

1. Perform environmental sample analysis for MPCA throughout the span of this Agreement.
2. Generate and provide MPCA with the data elements and reports for each sample MDH analyses pursuant to this Agreement.
3. A list of MDH's common laboratory tests, including analysis name, method reference, matrix, and pricing are contained in **Attachment 1,** which is attached and incorporated into this Agreement. Other laboratory tests that MDH has the capability to perform but are not listed or priced in **Attachment 1**, may be agreed upon by written consent from both parties.
4. Upon written consent from both parties, methods and/or technologies for sample analysis may be altered from those listed in **Attachment 1**, as long as the change is compliant with all applicable regulations and the pricing for each test remains unchanged.
5. Perform the environmental sample analysis performed pursuant to this Agreement using methods approved by the most recent update of 40 CFR part 136 or final update of SW-846 or referenced by permit, where applicable.
6. Upon request by MPCA, MDH shall make available within five (5) days, in writing, all MDH environmental sample analytical standard operating procedures.
7. Perform analysis and provide evaluation data reports within the requested turnaround times specified in **Attachment 2,** which is attached and incorporated into this Agreement. If MDH cannot comply with any of the requirements set forth in **Attachment 2**, it shall notify the MPCA Program Liaison of the sample number(s) and parameter(s) affected and the corrective actions, if any, to be taken. The MPCA and MDH Liaisons will mutually agree on a method of resolution of any problems no later than five (5) days after notification.
8. Notwithstanding this or any other provision in this Agreement, MDH may in its sole discretion, refuse to accept any sample from MPCA for analysis which MDH determines it is unable to analyze for reasons including but not limited to safety concerns or the inability of the analyte or matrix to be analyzed at MDH facilities. The MDH Program Manager agrees to immediately notify the MPCA Program Liaison if MDH is unable to accept for analysis any or all samples or if MDH cannot meet priority timelines, as listed in **Attachment 2**.
9. Provide emergency environmental sample data by phone or electronic format as soon as the analysis is completed and the required data elements are reviewed, and provide a PDF of the results within three (3) business days via email to the MPCA Liaison following completion of review process for all analyses requested on the work order.
10. The MDH reports completed for each sample analyzed must comply with all the report requirements set forth in Minn. R. Ch. 4740.2095, excluding requirements for certification by MDH, documentation related to a commissioner-designated identification number, or identifying test results for which the laboratory is not certified.
11. Reports completed and sent to MPCA for each sample within the turnaround times listed on Attachment 2, must contain:

a. A statement of the condition of the samples upon receipt at the laboratory.
b. The MPCA project name and number, and the two-letter MDH program code.
c. The MPCA field or sample number and the associated laboratory sample number.
d. A copy of the original chain of custody (COC) form accompanying the samples to the laboratory.
e. Dates of sample preparation and analyses.
f. A narrative or data qualifiers discussing any irregularities found during the analyses, any problems encountered and corrective actions taken.
g. If applicable, associated quality control information including the matrix spike/matrix spike duplicate recoveries, duplicate sample concentrations, relative percent difference (RPD) values, qualifiers for out-of-control samples, sample blank concentrations (including trip, method, and field blanks), surrogate recoveries, and laboratory control sample recoveries.

Format reports as PDF and Electronic Data Deliverables (EDD) documents, and maintain a website for the environmental retrieval of public data, according to program-specific requirements. These program-specific requirements can be related to data quality objectives, grant or legislatively stipulated requirements, or other state or federal regulatory requirements associated with the data or other information provided by Public Health Laboratory. Electronic versions of the COC will be maintained by MDH. Web-based data retrieval will be available from the MDH Laboratory Information Management System (LIMS) (Element). The MPCA has developed an Environmental Quality Information System (EQuIS) format for an EDD. This format is called the MPCA LAB MN and is available on a website hosted by EarthSoft (http://www.earthsoft.com/products/edp/edp-format-for-mnpca/). MDH must submit all EDDs to MPCA to be consistent with this format.

12. Provide copies of applicable environmental laboratory analytical Proficiency Test (PT) or Performance Evaluation (PE) data in a timely manner following receipt of the evaluation from third-party vendors.
13. Provide in a timely manner and upon request, copies of the data from any relevant inter-laboratory study in which MDH participates.
14. Implement COC procedures suitable for accepting, handling, tracking, storing, and securing MPCA environmental samples submitted for possible civil and/or criminal enforcement actions. MPCA shall appropriately identify samples being submitted for possible civil and/or criminal enforcement actions on the chain of custody form. MDH reserves the right to reject any and all such MPCA environmental samples that lack appropriate documentation and/or signatures for legal transfer of custody.
15. Provide appropriate staff to testify as fact witnesses concerning MDH's sample handling, analysis, data generation, data reporting, interpretation of data results, and chain of custody when such samples analyzed pursuant to this Agreement are part of a civil and/or criminal enforcement action and when requested to do so by MPCA. MDH does not agree, pursuant to this Agreement, to serve as an expert witness in any civil or criminal litigation to which the MPCA may be a party.
16. Provide the appropriate number of environmental sample containers and preservatives, to be used by MPCA for collecting and providing samples for analysis pursuant to this Agreement. MDH will comply with Global Harmonized System requirements, which are Occupational Safety and Health Administration labeling requirements for all hazardous chemicals, when shipping preservatives to either the MPCA or any of its designated clients.
17. Provide, upon request to the MDH Program Manager, consistent with applicable professional and laboratory accreditation standards, the necessary technical expertise, guidance, and observations regarding any occurrences that may affect sample integrity or data quality for analytical methods MDH performs.
18. MDH may, at its discretion, agree to provide data assessment, verification, and validation assistance within the scope of this Agreement to MPCA upon request. These additional services may be subject to an additional hourly charge as outlined in **Attachment 1** under Administrative Consult.
19. Upon request, MDH shall provide monthly data reports or data status reports.
20. Dispose of MPCA environmental samples following routine laboratory analysis per the MDH retention schedule. For MPCA environmental samples deemed hazardous or otherwise requiring special handling and/or disposal methods, MDH reserves the right to assess an additional sample disposal fee as outlined in **Attachment 1**.
21. Seek and obtain all relevant certifications from nationally recognized laboratory certification authorities, acceptable to the MPCA, for the list of priority analyses provided in **Attachment 3**, which is attached and incorporated into this Agreement. MDH shall keep the MPCA Principal Liaison informed of the status of this certification process through the submittal of quarterly status reports.

22. Maintain all raw and supporting data pursuant to this Agreement for five (5) years, and make available to MPCA upon request.
23. Dispose of ambient surface water samples and analytical waste produced from running the sample analysis performed pursuant to this Agreement that contain or are suspected of containing one or more aquatic invasive species (AIS) according to the established MDH autoclave protocol. MPCA and anyone sampling on behalf of MPCA shall clearly identify AIS samples both on the sample bottle and on the accompanying lab form. Should MDH staff suspect a sample may be an AIS sample but is not identified as such, MDH may treat such sample as an AIS sample and bill MPCA according to the price specified in the current MDH environmental laboratory price list in **Attachment 1**. MDH will notify MPCA prior to any billing for an AIS sample that is not identified correctly via e-mail to an Authorized Representative.
24. Only report results between the Reporting Limit and the Method Detection Limit (MDL) and qualify those results with a 'J' qualifier, meaning that it is an estimated value, when this is requested on the chain of custody form or requested in writing for a specific project. Otherwise, all results will be reported to the Reporting Limit. Depending on the PFAS method utilized, PFAS results shall be reported down to the MDL regardless of whether a report to the MDL or any other limit is requested on the chain of custody form.
25. Report Tentatively Identified Compounds (TIC) only when MPCA specifically requests a report as to a TIC for a specific organic analysis on the chain of custody form. Otherwise, MDH shall not report any TICs as part of any other analysis. Once a report is requested by MPCA, the report shall be provided via e-mail on an excel spreadsheet within five (5) business days of the request.
26. Meet the requirements specified in project-specific Quality Assurance Project Plans (QAPP) and follow the policies and requirements posted on the MPCA Quality System Web Page: http://www.pca.state.mn.us/index.php/about-mpca/mpca-overview/agency-strategy/mpca-quality-system.html.
27. Be responsible for work and actions performed by subcontractors on MPCA samples to be analysis pursuant to this Agreement.
    a. MDH shall not award any subcontract work for MPCA samples to any other organization, subdivision, association, individual, corporation, partnership, or group of individuals or other such entity unless the appropriate MPCA project manager has provided written approval. MPCA shall respond to any MDH request to subcontract MPCA sample analysis within three (3) business days of the initial request from MDH. MDH shall bill MPCA for any sample analysis conducted by a subcontractor according to the current MDH price list in **Attachment 1**.
    b. All subcontracts shall contain provisions for MPCA inspection access to the subcontractor's books, documents, and records directly pertinent to the subcontracted analytical services.
    c. No subcontract or delegation of work shall relieve or discharge MDH from any obligation, provision, or liability under this Agreement.
    d. MPCA reserves the right to review all Standard Operating Procedures and Quality Assurance/Quality Control (QA/QC) manuals directly pertinent to the subcontracted analytical services and check references, and may, at its discretion, deny approval of subcontracting of the Contract.

B. MPCA Duties:

1. Submit environmental samples, corresponding documentation, and related materials consistent with all applicable MDH standard operating procedures and protocols.
2. Submit COCs at a minimum according to the current MDH Sample Acceptance Policy (https://mn.mdh.mastercontrol.com/mastercontrol/main/index.cfm?event=showFile&ID=EWE6ZV6YPFG6RFGAV5&static=false&mcuid=ANONYMOUS&mcsid=6LBF44RI4VEBRNXR3S).
3. Provide sample transport and shipment coolers to any submitter of MPCA samples to MDH. MDH will return such coolers within five (5) days of MPCA request.
4. Inform MDH of any known hazard associated with environmental samples submitted to MDH for analysis on the COC form.
5. Prioritize samples by indicating the priority status on the COC. The COC will indicate whether a sample is standard, priority or emergency status. MPCA program Liaisons will review priority requests and notify MDH if status should be changed.

6. Provide projected workload and/or budget estimates for each of the MPCA project codes to MDH for workload planning purposes by no later than April 15th of the current fiscal year.
7. MPCA shall notify MDH, in a timely manner, of any changes to the original estimated total budget established for environmental laboratory service for the contracted fiscal year.
8. Provide any project-specific quality assurance plans to MDH 15 business days prior to sending MDH work that must comply with the QAPP.
9. When multiple analytical methods are available for any particular sample, MPCA shall identify on the lab request form which method MDH should use for sample analysis. If none is specified, MDH will either conduct the analysis according to standard protocols and procedures or contact MPCA for method clarification prior to sample processing.

C. MPCA and MDH Joint Duties:

1. MPCA and MDH agree to provide Liaisons to coordinate the exchange of information.
2. MPCA and MDH agree to follow the Business Rules as listed in **Attachment 4**, which is attached and incorporated into this Agreement.
3. MPCA and MDH agree to keep current the emergency response contacts and their telephone numbers as listed in **Attachment 5**, which is attached and incorporated into this Agreement.
4. Both parties agree to provide technical support to the other in terms of method development, problem solving, and joint projects.
5. MPCA grants MDH permission to share all PFC-containing data with the designated staff person in MDH's Site Assessment and Consultation Unit. In addition, MPCA grants MDH permission to share all PFC-containing data from Public Water Systems (PWSs) with the designated staff person in the MDH Drinking Water Protection Division. The Program Codes where this is applicable are **PE, PL, QW, SO, TB and TM**.

3 Consideration and Payment

1. MPCA will promptly pay all valid obligations under this Agreement as required by Minnesota Statutes § 16A.124. MPCA will make undisputed payments no later than 30 days after receiving the MDH invoices for services performed. If an invoice is incorrect, defective or otherwise improper, MPCA will notify MDH within 10 days of discovering the error. After MPCA receives the corrected invoice, MPCA will pay MDH within 30 days of receipt of such invoice.
2. MDH shall bill MPCA on a monthly basis for all services performed pursuant to this Agreement, according to the price list included in **Attachment 1**.
3. MDH shall provide MPCA with a projected price list for the upcoming fiscal year by May 1 of the current fiscal year.
4. MPCA shall pay MDH a premium for priority and emergency samples as listed within Attachment 2.
5. MPCA shall reimburse MDH for technical consultation, special reports writing, staff factual testimony services, analytical method development services, and modification of an analytical report level or reporting to the minimum detection level at the administrative consultation rate as specified in **Attachment 1**.
6. MPCA shall reimburse MDH for requested analytical method development services at the unit developmental rate as specified in **Attachment 1**.
7. MPCA and MDH agree to negotiate the fee for any special project work requested of MDH by MPCA, and shall execute an amendment to this Agreement should the additional special project be outside the scope of this Agreement or result in fees exceeding the Total Obligation as specified below.

4 Conditions of Payment

All services provided by MDH under this Agreement must be performed to MPCA's satisfaction, as determined at the sole discretion of MPCA's Authorized Representatives. No payment will be made for work that does not comply with sampling and analytical protocols or has not been performed in accordance with all applicable Federal and State laws, rules, regulations, and the terms of this Agreement.

MPCA will promptly pay MDH after MDH presents an itemized invoice for the services actually performed and the State's Authorized Representative accepts the invoiced services. Invoices must be submitted timely and according to the following schedule: monthly or at least quarterly. Invoices will reference the SWIFT Contract number, Purchase

Order number, and the name of the State's Authorized Representative and will be submitted electronically to: mpca.ap@state.mn.us.

The Total Obligation of MPCA for all compensation and reimbursements to MDH under this Agreement over the length of the Agreement will not exceed **$2,000,000.00 (Two Million Dollars and Zero Cents)**.

5 Authorized Representative

The MPCA Authorized Representatives for the purpose of administration of this Agreement are:

Principal Liaison: **Helen Waquiu**, Supervisor, Environmental Data Quality Unit, 520 Lafayette Road, Saint Paul, Minnesota 55155, helenwaquiu@state.mn.us, 651-757-2286, or her successor;

Program Manager: **Kelly G. O'Hara,** Program Coordinator, Environmental Analysis & Outcomes Division, 520 Lafayette Rd. N., St. Paul, MN 55155, kelly.ohara@state.mn.us, 651-247-1054;

Program Liaison: **Sandy McDonald,** Quality Assurance Coordinator, Environmental Analysis & Outcomes Division, 520 Lafayette Rd. N., St. Paul. MN 55155, sandy.mcdonald@state.mn.us, 651-757-2560.

If MPCA's Authorized Representatives change at any time during this contract, MPCA must notify MDH within 30 days.

MDH Authorized Representatives for the purposes of administration of this Agreement are:

Principal Liaison: **Paul Moyer**, Environmental Laboratory Manager, Public Health Laboratory Division, 601 Robert St. N., St. Paul, MN 55164, paul.moyer@state.mn.us, 651-201-5669;

Program Manager: **Cori Dahle**, Environmental Laboratory Operations Supervisor, Public Health Laboratory Division, 601 Robert St. N., St. Paul, MN 55164, cori.dahle@state.mn.us, 651-201-5214;

Program Liaison: **Shane Olund,** Quality Assurance Officer, Public Health Laboratory Division, 601 Robert St. N., St. Paul, MN 55164, shane.olund@state.mn.us, 651-201-5537 or delegate.

If MDH's Authorized Representatives change at any time during this contract, MDH must notify MPCA within 30 days.

6 Amendments

Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original Agreement, or their successors in office.

7 Liability

Each party will be responsible for its own acts and behavior and the results thereof.

8 Termination

Either party may terminate this Agreement at any time, with or without cause, upon 30 days' written notice to the other party.

9. Data Practices

MDH and MPCA must comply with the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, as it applies to all data created, collected, received, stored, used, maintained, or disseminated under this Agreement.

[Remainder of this page intentionally left blank.]

1. STATE ENCUMBRANCE VERIFICATION

Individual certifies that funds have been encumbered as required by Minn. Stat. §§ 16A.15 and 16C.05.

Signed: _____

Date: 6/18/19

2. MINNESOTA DEPARTMENT OF HEALTH

By: Todd M Goetze TODD GOETZE
(with delegated authority)

Title: ACCOUNTING DIRECTOR

Date: 6.20.19

3. MINNESOTA POLLUTION CONTROL AGENCY

By: Dana Vandenbosch
(with delegated authority)

Title: Assistant Division Director

Date: 6/25/19

ATTACHMENT 1

SWIFT Contract No.: 156953
Agency Interest ID: 20595
Project Activity #: PRO20190001

DEPARTMENT OF HEALTH

Minnesota Department of Health
Public Health Laboratory Division
FY 2020 Price List

General Chemistry

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Acetate IC	EPA 300.1	Non-potable Water	22
Alkalinity, Bicarbonate as $CaCO_3$ [1]	SM 2320 B 22nd ED SM 2320 B-1997	Drinking Water Non-potable Water	0
Alkalinity, Carbonate as $CaCO_3$ [1]	SM 2320 B 22nd ED SM 2320 B-1997	Drinking Water Non-potable Water	0
Alkalinity as $CaCO_3$	SM 2320 B 22nd ED SM 2320 B-1997	Drinking Water Non-potable Water	18
Ammonia-N	EPA 350.1	Drinking Water Non-potable Water	18
Ammonia-N, Dissolved	EPA 350.1	Drinking Water Non-potable Water	18
Biochemical Oxygen Demand (BOD)	Hach 10360	Non-potable Water	59
Bromide 300.1	EPA 300.1	Drinking Water Non-potable Water	18
Carboneous Biochemical Oxygen Demand (CBOD)	Hach 10360	Non-potable Water	62
Chemical Oxygen Demand	EPA 410.4	Drinking Water Non-potable Water	29
Chemical Oxygen Demand, Dissolved	EPA 410.4	Drinking Water Non-potable Water	29
Chloride 300.1	EPA 300.1	Drinking Water Non-potable Water	18
Chlorophyll *a*	SM 10200 H-2001	Non-potable Water	44
Chlorophyll *a* Lab Filter	SM 10200 H-2001	Non-potable Water	71
Color	SM 2120 B 22nd ED	Drinking Water	16

[1] Calculation. Requires Total Alkalinity & pH for analysis.

FY20 PRICE LIST

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
	SM 2120 B-1997	Non-potable Water	
Conductivity	SM 2510 B 22nd ED SM 2510 B-1997	Drinking Water Non-potable Water	15
Cyanide	EPA 335.4	Drinking Water Non-potable Water	98
Cyanide, Free	SM 4500-CN^- F 22nd ED	Drinking Water	35
Dissolved Organic Carbon (DOC)	SM 5310 C 22nd ED SM 5310 C-2000	Drinking Water Non-potable Water	22
Fluoride	SM 4500-F^- C 22nd ED SM 4500-F^- C-1997	Drinking Water Non-potable Water	20
Fluoride, Dissolved	SM 4500-F^- C 22nd ED SM 4500-F^- C-1997	Drinking Water Non-potable Water	20
Kjeldahl Nitrogen as N (TKN)	EPA 351.2	Drinking Water Non-potable Water	37
Kjeldahl Nitrogen as N, Dissolved (TKN)	EPA 351.2	Drinking Water Non-potable Water	37
Lab Filtered	MDH	Drinking Water Non-potable Water	20
Nitrate + Nitrite Nitrogen	SM 4500-NO_3^- F 22nd ED SM 4500- NO_3^- F -2011	Drinking Water Non-potable Water	18
Nitrate + Nitrite Nitrogen, Dissolved	SM 4500-NO_3^- F 22nd ED SM 4500- NO_3^- F -2011	Drinking Water Non-potable Water	18
Nitrite	SM 4500-NO_2^- B 22nd ED SM 4500-NO_2^- B-2000	Drinking Water Non-potable Water	28
Nitrite, Dissolved	SM 4500-NO_2^- B 22nd ED SM 4500-NO_2^- B-2000	Drinking Water Non-potable Water	28
Orthophosphate as Phosphate	EPA 365.1	Drinking Water	22
Orthophosphate as Phosphorus	SM 4500-P G-1999	Non-potable Water	22
Orthophosphate, Dissolved as Phosphate	EPA 365.1	Drinking Water	22
Orthophosphate, Dissolved as Phosphorus	SM 4500-P G-1999	Non-potable Water	22
pH	SM 4500-H^+ B 22nd ED SM4500-H^+ B-2000	Drinking Water Non-potable Water	15
Pheophytin *a*	SM 10200 H-2001	Non-potable Water	15
Phosphorus as Phosphate	SM 4500P I 22nd ED	Drinking Water	20
Phosphorus as Phosphorus	EPA 365.1	Non-potable Water	20
Phosphorus as Phosphorus, Dissolved	EPA 365.1	Non-potable Water	20
Silica	SM 4500-SiO_2 C 22nd ED SM 4500-SiO_2 C-1997	Drinking Water Non-potable Water	41

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Silica, Dissolved	SM 4500-SiO_2 C 22nd ED SM 4500-SiO_2 C-1997	Drinking Water Non-potable Water	41
Solids, Suspended	SM 2540 D 22nd ED SM 2540 D-1997	Drinking Water Non-potable Water	25
Solids, Suspended Volatile [2]	SM 2540 E 22nd ED SM 2540 E-1997	Drinking Water Non-potable Water	40
Solids, Total Dissolved	SM 2540 C 22nd ED SM 2540 C-1997	Drinking Water Non-potable Water	38
Solids, Total	SM 2540B 22nd ED SM 2540B-1997	Drinking Water Non-potable Water	31
Solids, Total Volatile [2]	SM 2540 E 22nd ED SM 2540 E-1997	Drinking Water Non-potable Water	48
Sulfate	EPA 300.1	Drinking Water Non-potable Water	18
Total Organic Carbon (TOC)	SM 5310 C 22nd ED SM 5310 C-2000	Drinking Water Non-potable Water	22
Turbidity	SM 2130 B 22nd ED SM 2130 B-2001	Drinking Water Non-potable Water	20
UV Absorbance @ 254 nm	SM 5910 B 22nd ED SM 5910 B-2000	Drinking Water Non-potable Water	35
UV Absorbance @ 440 nm	MDH	Drinking Water Non-potable Water	35
UV Absorption, specific [3]	Calculation	Drinking Water Non-potable Water	0

Microbiology

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Coliform – MPN – QT	SM 9223 B 22nd ED	Drinking Water	26
Coliform – PA	SM 9223 B 22nd ED	Drinking Water	17
Coliform – PA (Surface Source Waters)	SM 9223 B 22nd ED	Drinking Water	17
E. coli – MPN – QT	SM 9223 B-1997	Non-potable Water	26

[2] Includes price of Total Suspended Solids or Total Solids analysis.
[3] Calculation. Requires UV Absorbance @ 254 nm & Dissolved Organic Carbon (DOC) for analysis.

Metals

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Aluminum	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Aluminum, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Antimony	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Antimony, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Arsenic	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Arsenic, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Barium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Barium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Beryllium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Beryllium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Boron	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Boron, Dissolved	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Cadmium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Cadmium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Calcium	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Calcium, Dissolved	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Calcium as $CaCO_3$	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Calcium as $CaCO_3$, Dissolved	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Chromium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Chromium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Cobalt	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Cobalt, Dissolved	EPA 200.8	Drinking Water	16

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
	EPA 200.8, EPA 6020	Non-potable Water	
Copper	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Copper, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Copper, Low Level	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Copper, Low Level, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Hardness	SM 2340 B 22nd ED SM 2340 B-1997	Drinking Water Non-potable Water	16
Hardness, Dissolved (6010B)	SM 2340B-1997	Non-potable Water	16
Iron	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Iron, Dissolved	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Iron, Low Level	EPA 200.7	Drinking Water Non-potable Water	16
Iron, Low Level, Dissolved	EPA 200.7	Drinking Water Non-potable Water	16
Lab Filtered	MDH	Drinking Water Non-potable Water	20
Lead	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Lead, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Lithium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Lithium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Magnesium	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Magnesium, Dissolved	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Magnesium as $CaCO_3$	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Magnesium as $CaCO_3$, Dissolved	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Manganese	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Manganese, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Mercury 245.1	EPA 245.1	Drinking Water Non-potable Water	67

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Mercury 245.1, Dissolved	EPA 245.1	Drinking Water Non-potable Water	67
Methyl Mercury	EPA 1630	Non-potable Water	150
Methyl Mercury , Dissolved	EPA 1630	Non-potable Water	150
Mercury, Ultra Low Level	EPA 1631E	Drinking Water Non-potable Water	80
Mercury, Ultra Low Level, Dissolved	EPA 1631E	Drinking Water Non-potable Water	80
Metals Quick Scan (Not Regulatory Compliant)	MDH	Drinking Water Non-potable Water	7
Molybdenum	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Molybdenum, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Nickel	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Nickel, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Potassium	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Potassium, Dissolved	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Selenium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Selenium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Silver	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Silver, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Sodium	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Sodium, Dissolved	EPA 200.7 EPA 200.7, EPA 6010B	Drinking Water Non-potable Water	16
Strontium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Strontium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Thallium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Thallium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Titanium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Titanium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Uranium	EPA 200.8	Drinking Water Non-potable Water	25
Vanadium	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Vanadium, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Zinc	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Zinc, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16

Radiochemistry

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Alpha and Beta, gross	MDH	Air Wipe	45
Alpha and Beta, gross	EPA 900.0	Drinking Water Non-potable Water	80
Alpha, gross	EPA 900.0	Drinking Water Non-potable Water	75
Gamma	SM 7120 B 22nd ED	Air Biological Materials Drinking Water Solid and Chem. Mat. Wipe	127
Gamma	SM 7120 B-1997	Non-potable Water	127
Ni-63 Wipes	MDH	Wipe	46
Radium 226/228	EPA 903.0/904.0	Drinking Water	235
Strontium, Milk	EPA 520/5-84-006	Biological Material	300
Strontium Solid Phase	SRW01VBS	Non-potable Water	180
Tritium	EPA 600/4-75-008	Drinking Water Non-potable Water	85

Organic Chemistry

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
1,4-Dioxane	MDH	Drinking Water Non-potable Water	125
BNAs in Water	EPA 505/EPA 525.3	Drinking Water	320
Carbamates in Water	EPA 531.1	Drinking Water	145
EDB & DBCP in Water	EPA 504.1	Drinking Water Non-potable Water	145
Glyphosate in Water	EPA 547	Drinking Water	125
HAA in Water	EPA 552.2	Drinking Water	230
Herbicides in Water	EPA 515.4	Drinking Water	240
PFC Expanded List in Water	MDH	Drinking Water Non-potable Water	319
THMs in Water	EPA 524.3	Drinking Water	85
VOCs in Water 524, Low Level	EPA 524.3	Drinking Water Non-potable Water	95
VOCs in Water 524, Low Level MDL	EPA 524.3	Drinking Water Non-potable Water	95
VOCs in Water 8260	EPA 8260D	Drinking Water Non-potable Water	95
VOCs in Water 8260, MDL	EPA 8260D	Drinking Water Non-potable Water	95

Additional Analyses for Prior Approval

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Acrylamide in Water	MDH	Drinking Water Non-potable Water	TBD [4]
Anatoxin-a Low Level	Abraxis Method 520060	Non-potable Water	175
Arsenic Speciation	MDH	Drinking Water	90
Arsenic Speciation, Dissolved	MDH	Drinking Water	90
Blood Metals	MDH	Biological Materials	TBD [4]
BTZs and BTHs in Water	MDH	Non-potable Water	TBD [4]
BPA and BPS in Solids	MDH	Solid and Chem. Mat.	TBD [4]
Cyanide in Whole Blood	MDH	Biological Materials	TBD [4]
Drugs in Water	MDH	Non-potable Water	TBD [4]
Designer Drug Panel	MDH	Biological Materials	TBD [4]
Environmental Phenols in Urine	MDH	Biological Materials	TBD [4]
Extractable Iron in Sediment	MDH	Solid and Chem. Mat.	45
Fatty Acids in Plasma	MDH	Biological Materials	TBD [4]
Formaldehyde	MDH	Non-potable Water Solid and Chem. Mat.	TBD [4]
HBCD	MDH	Solid and Chem. Mat.	TBD [4]
Heterotrophic Plate Count	SimPlate	Drinking Water Non-potable Water	TBD [4]
Mercury in Bloodspots	MDH	Biological Materials	TBD [4]
Mercury in Urine	MDH	Biological Materials	TBD [4]
Metals in Urine	MDH	Biological Materials	TBD [4]
Microcystin	Abraxis Method 520011	Non-potable Water	60
Microcystin Potable	EPA 546	Drinking Water	55
Multi Drug Panel	MDH	Biological Materials	TBD [4]
Opioid Panel	MDH	Biological Materials	TBD [4]
PFCs in Serum	MDH	Biological Materials	TBD [4]
Sand	Petrology of Sedimentary Rocks, 2nd ED	Drinking Water Non-potable Water	50
Sulfide	SM 4500-S^{2-} E-2000	Non-potable Water	45
Sulfide, Acid-Volatile	SM 4500-S^{2-} J-2000	Solid and Chem. Mat.	65
Tin	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16

[4] Contact lab for current price.

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Tin, Dissolved	EPA 200.8 EPA 200.8, EPA 6020	Drinking Water Non-potable Water	16
Total Organic Carbon (TOC) Combustible	SM 5310 B-2000 SM 5310 B -2000	Non-potable Water Solid and Chem. Mat.	22
VOCs in Blood/Serum	MDH	Biological Materials	TBD [4]

[4] Contact lab for current price.

Operations and Quality Control

Analysis Name	Method Reference	Matrix	FY 20 Price ($)
Administrative Consult [5]	MDH	Air Drinking Water Non-potable Water Solid and Chem. Mat. Wipe	100 [5]
Administrative Fee [6]	MDH	Air Drinking Water Non-potable Water Solid and Chem. Mat. Wipe	Varies [6]
Autoclave, Sample disposal	MDH	Air Drinking Water Non-potable Water	5
Civil Chain of Custody	MDH	Air Drinking Water Non-potable Water Solid and Chem. Mat.	25
Criminal Chain of Custody	MDH	Air Drinking Water Non-potable Water Solid and Chem. Mat.	35
Developmental Rate [5]	MDH	Air Drinking Water Non-potable Water Solid and Chem. Mat. Wipe	100 [5]
Sample Containers [7]	MDH	Air Drinking Water Non-potable Water Solid and Chem. Mat.	5 [7]
Special Handling/Disposal Fee	MDH	Air Drinking Water Non-potable Water Wipe	20
Subcontract [8]	MDH	Drinking Water Non-potable Water Solid and Chem. Mat.	Varies [8]

[5] This analysis is billed on a per hour basis.
[6] This fee is charged per subcontracted sample and will range from $5 to $20 based on the total per sample subcontract amount.
[7] Price is charged per sample container not returned to MDH PHLD Environmental Lab for analysis.
[8] This analysis is billed based on subcontract lab fee for the analysis requested and the current MDH indirect rate.

Attachment 2

Maximum Analytical Times and Priority Options

	Standard		Priority *	Emergency**
	Water	Soil/Sed.	Water/Soil	
Wet Chemistry and Microbiology	21 days	25 days	7 days	3 days
Metals	21 days	25 days	7 days	3 days
Organics				
Volatiles	21days	25 days	7 days	1 day
Non-Volatiles	21 days	25 days	7 days	3 days
Radiation				
Gamma	25 days	25 days	7 days	3 days
Alpha/Beta	70 days	N/A‡	35 days	5 days
All other Radchem analysis	70 days	N/A‡	35 days	N/A‡

‡N/A= Not applicable
Days= Monday-Friday (excluding State Holidays)
Normal Business Hours= 8:00 a.m. to 4:30 p.m.

Analytical Time: Length of time elapsed between the time the laboratory receives the sample and sample request form and the time the analytical data is available to Minnesota Pollution Control Agency (MPCA).

* Priority samples are assessed a 50% surcharge
** Emergency samples are assessed a 100% surcharge when accepted and analyzed during regular laboratory business hours and are assessed a 150% surcharge at all other times.

MPCA may request that priority and emergency sample analytical data be phoned or emailed as soon as analysis has been reviewed and finalized.

Minnesota Department of Health (MDH) agrees to provide MPCA with a data report within five (5) days following completion of all analyses requested on the work order.

MDH and MPCA agree to negotiate special project data report times.
MPCA acknowledges that unusual or difficult sample matrices may require additional time for preparation, extraction, digestion, or analysis. MDH agrees to inform MPCA when this occurs and give MPCA an estimated time of completion and any additional charges.

MDH shall accept emergency response samples within a four-hour notice period, twenty-four hours a day, including weekends and holidays. Emergency response samples are samples of public health significance submitted for analysis outside either the laboratory's normal compliance monitoring scope of work or project plan.

Attachment 3

Priority Analyses for Certification

Analysis Name	Reference Method	Method performed by MDH	Matrix
Total Suspended Solids	Approved Method for CWA	SM 2540 D-1997	Non-potable Water
Total Volatile Suspended Solids	Approved Method for CWA	SM 2540 E-1997	Non-potable Water
Total Phosphorus	Approved Method for CWA	EPA 365.1, Rev 2.0	Non-potable Water
Nitrate + Nitrite-N	Approved Method for CWA	EPA 353.2, Rev 2.0	Non-potable Water
PFC	Performance-based Method	MDH SOP	Non-potable Water
VOCs	EPA Method 8260	EPA 8260D, Rev 4	Non-potable Water
Chlorophyll-A	Std. Methods 10200 H	SM 10200 H-2001	Non-potable Water
TKN, Kjeldahl Nitrogen, Total	Approved Method for CWA	EPA 351.2, Rev 2.0	Non-potable Water
Turbidity	Approved Method for CWA	SM 2130 B-2001	Non-potable Water
Orthophosphate	Approved Method for CWA	SM 4500P G-1999	Non-potable Water
Ammonia	Approved Method for CWA	EPA 350.1, Rev 2.0	Non-potable Water
E Coli	Approved Method for CWA	SM 9223 B-1997	Non-potable Water
BOD	Approved Method for CWA	Hach 10360 Revision 1.2, September 2011	Non-potable Water
pH	Approved Method for CWA	SM 4500-H+B-2000	Non-potable Water
Chloride by IC	Approved Method for CWA	EPA 300.1, Rev 1.0	Non-potable Water
Sulfate by IC	Approved Method for CWA	EPA 300.1, Rev 1.0	Non-potable Water
Magnesium, Total	Approved Method for CWA	EPA 200.7, Rev 4.4	Non-potable Water
Calcium, Total	Approved Method for CWA	EPA 200.7, Rev 4.4	Non-potable Water
Alkalinity, Total	Approved Method for CWA	SM 2320B-1997	Non-potable Water
Hardness as CaCO3- (Ca + Mg)	Approved Method for CWA	SM 2340B-1997	Non-potable Water
1,4-Dioxane	Performance-based Method	MDH SOP	Non-potable Water

Attachment 4

Business Rules

1. Minnesota Department of Health (MDH) agrees to notify Minnesota Pollution Control Agency (MPCA) of any sample(s) submitted after the sample(s) holding time(s) have been exceeded. MDH and MPCA will follow the business rule agreed to for disposition of such samples. MDH will continue to process sample(s) received after the holding time(s) have been exceeded and appropriately qualify all analytical results, except for MPCA Remediation and Enforcement Programs (program codes **PA, PB, PD, PE, PF, PJ, PL, PZ, QD, QF, QW, QS, QT, QU, QV, QX, RG, RT, SB, SO, TB, and TM**). The analyses for these samples must be approved by the Project Manager or selected delegate before analysis can proceed.
2. MDH will identify the sample temperature upon receipt on the final report but will not notify MPCA upon sample arrival when the sample receipt temperature exceeds 6°C, except for MPCA Remediation and Enforcement Programs (program **PA, PB, PD, PE, PF, PJ, PL, PZ, QD, QF, QW, QS, QT, QU, QV, QX, RG, RT, SB, SO, TB, and TM**). For the MPCA Remediation Program, if any deviations for method requirements are noted the laboratory must document the problem and notify the client to verify whether the sample will still meet project data quality objectives. Client authorization to proceed with the analysis must be documented.
3. MPCA agrees to submit environmental samples with at least fifty percent (50%) of the holding time remaining for analysis. If samples are received with less than 50% remaining MDH cannot guarantee the analysis will be completed within the holding time. In these situations, the MPCA will identify the samples that the MPCA will require to be analyzed within holding time and the MDH is allowed to charge priority fees. MPCA and MDH agree to assess the impact of this business rule on a quarterly basis. This rule does not apply to analyses with an EPA regulated holding time of 48 hours or less.
4. MPCA agrees to notify MDH at least 24 hours prior to the anticipated delivery of environmental samples with holding times of 48 hours or less. Should MPCA fail to give MDH such notification, MDH agrees to make a good-faith effort to analyze such samples within their respective maximum holding times according to the specifications set forth in this attachment.
5. Analyses with regulated hold times of 48 hours or less must be received with a minimum of 4 hours remaining with prior notification of sample arrival to ensure proper sample processing. If less than 4 hours remains PHL will make all attempts to process the sample within the holding time; however it cannot guarantee the sample(s) will be analyzed within the holding time. MPCA and MDH will meet to establish a procedure to insure that, if a sample discrepancy is found during processing, it does not result in a delay for proceeding with analysis.
6. When applicable, data reports shall include atypical information pertaining to the sample analysis, including, but not limited to, exceedance of analysis holding times, broken or spilled sample containers, or samples lacking the required preservative

Attachment 5
Emergency Contact List

MINNESOTA DEPARTMENT OF HEALTH (PUBLIC HEALTH LAB):		
	WORK	**CELL**
General Environmental M-F 8:00 am to 4:30 pm	651-201-5300	
CT/Rad Cell (24 Hours) Chemical terrorism and radiation emergency response		612-282-3750
Paul Moyer Environmental Lab Manager	651-201-5669	651-470-4229
Jeff Brenner Inorganic Chemistry Unit Supervisor	651-201-5353	651-263-3486
Ron Brown Sample Receiving Unit Supervisor	651-201-5058	
Cori Dahle Operations Unit Supervisor	651-201-5214	612-868-4157
Shane Olund Quality Assurance Officer	651-201-5357	
Betsy Edhlund Organic Chemistry Unit Supervisor	651-201-5302	
Stefan Saravia Biomonitoring and Emerging Contaminants Unit Supervisor	651-201-5579	
Myra Kunas Public Health Laboratory Asst. Director	651-201-5583	
Joanne Bartkus Public Health Laboratory Director	651-201-5256	

MINNESOTA POLLUTION CONTROL AGENCY:		
	WORK	***PAGER/CELL***
Mike Mondloch *Remediation, Closed Landfill Unit Supervisor*	*651-757-2578*	
Dorene Fier-Tucker *Remediation, Emergency Management Unit Supervisor*	*651-757-2161*	*612-840-4684*
Jennifer Thoreson *Environmental Analysis & Outcomes, WQ QAC* *Wastewater Laboratory Program Coordinator*	*651-757-2805*	
Kelly O'Hara *Environmental Analysis & Outcomes*	*651-247-1054*	*651-247-1054*
Sandy McDonald *Environmental Analysis & Outcomes, QAC*	*651-757-2560*	*612-226-8870*
Helen Waquiu *Environmental Analysis & Outcomes, Quality Unit Supervisor*	*651-757-2286*	

Office of the Revisor of Statutes

2018 Minnesota Statutes

Authenticate PDF

115A.557 COUNTY WASTE REDUCTION AND RECYCLING FUNDING.

Subdivision 1. **Distribution; formula.** Any funds appropriated to the commissioner for the purpose of distribution to counties under this section must be distributed each fiscal year by the commissioner based on population, except a county may not receive less than $55,000 in a fiscal year. If the amount available for distribution under this section is less or more than the amount available in fiscal year 2001, the minimum county payment under this section is reduced or increased proportionately. For purposes of this subdivision, "population" has the definition given in section 477A.011, subdivision 3. A county that participates in a multicounty district that manages solid waste and that has responsibility for recycling programs as authorized in section 115A.552, must pass through to the districts funds received by the county in excess of the minimum county payment under this section in proportion to the population of the county served by that district.

Subd. 2. **Permissible expenditures.** (a) A county receiving money distributed by the commissioner under this section may use the money only for the development and implementation of programs to:

(1) reduce the amount of solid waste generated;

(2) recycle the maximum amount of solid waste technically feasible;

(3) create and support markets for recycled products;

(4) remove problem materials from the solid waste stream and develop proper disposal options for them;

(5) inform and educate all sectors of the public about proper solid waste management procedures;

(6) provide technical assistance to public and private entities to ensure proper solid waste management;

(7) provide educational, technical, and financial assistance for litter prevention;

(8) process mixed municipal solid waste generated in the county at a resource recovery facility located in Minnesota;

(9) compost source-separated compostable materials, including the provision of receptacles for residential composting;

(10) prevent food waste or collect and transport food donated to humans or to be fed to animals; and

(11) process source-separated compostable materials that are to be used to produce class I or class II compost, as defined in Minnesota Rules, part 7035.2836, after being processed in an anaerobic digester, but not to construct buildings or acquire equipment.

(b) Beginning in fiscal year 2015 and continuing thereafter, of any money distributed by the commissioner under this section to a metropolitan county, as defined in section 473.121, subdivision 4, that exceeds the amount the county was eligible to receive under this section in fiscal year 2014: (1) at least 50 percent must be expended on activities in paragraph (a), clauses (9) to (11); and (2) the remainder must be expended on activities in paragraph (a), clauses (1) to (7) and (9) to (11) that advance the county toward achieving its recycling goal under section 115A.551.

Subd. 3. **Eligibility.** (a) To be eligible to receive money distributed by the commissioner under this section, a county shall within one year of October 4, 1989:

(1) create a separate account in its general fund to credit the money; and

(2) set up accounting procedures to ensure that money in the separate account is spent only for the purposes in subdivision 2.

(b) In each following year, each county shall also:

(1) have in place an approved solid waste management plan or master plan including a recycling implementation strategy under section 115A.551, subdivision 7, and a household hazardous waste management plan under section 115A.96, subdivision 6, by the dates specified in those provisions;

(2) submit a report by April 1 of each year to the commissioner, which may be submitted electronically and must be posted on the agency's website, detailing for the previous calendar year:

(i) how the money was spent including, but not limited to, specific recycling and composting activities undertaken to increase the county's proportion of solid waste recycled in order to achieve its recycling goal established in section 115A.551; specific information on the number of employees performing SCORE planning, oversight, and administration; the percentage of those employees' total work time allocated to SCORE planning, oversight, and administration; the specific duties and responsibilities of those employees; and the amount of staff salary for these SCORE duties and responsibilities of the employees; and

(ii) the resulting gains achieved in solid waste management practices; and

(3) provide evidence to the commissioner that local revenue equal to 25 percent of the money sought for distribution under this section will be spent for the purposes in subdivision 2.

(c) The commissioner shall withhold all or part of the funds to be distributed to a county under this section if the county fails to comply with this subdivision and subdivision 2.

Subd. 4. **Report.** The commissioner shall report on how the money was spent and the resulting statewide improvements in solid waste management to the senate and house of representatives committees having jurisdiction over ways and means, finance, environment and natural resources, and environment and natural resources finance. The report shall be included in the report required under section 115A.411.

History: *1Sp1989 c 1 art 19 s 1; 1991 c 337 s 26; 1992 c 593 art 1 s 17,54; 1994 c 585 s 13; 1994 c 639 art 5 s 3; 1995 c 247 art 1 s 19,20; 1996 c 470 s 27; 2000 c 490 art 10 s 1; 1Sp2001 c 2 s 125; 2002 c 374 art 6 s 2; 2004 c 284 art 2 s 11; 1Sp2005 c 1 art 2 s 161; 2009 c 37 art 1 s 42; 2012 c 272 s 69; 2014 c 312 art 13 s 28,29; 1Sp2015 c 4 art 4 s 109*

SWIFT Contract No.: 159051
Agency Interest ID: 224687
Project Activity #: PRO20190004

MANAGEMENT AND BUDGET
MANAGEMENT ANALYSIS AND DEVELOPMENT

MAD Project Number: 2020-002
INTERAGENCY AGREEMENT
for MANAGEMENT ANALYSIS AND DEVELOPMENT SERVICES

Requesting Agency: Minnesota Pollution Control Agency- Resource Management & Assistance Division
MAD Contact: Lisa Anderson

Accounting Information: Business Unit – G1001, Financial Dept ID – G1031500, APPRID – G100085, Fund – 5200, Accounts - 670011.

Agency:	Fiscal Year:	Vendor Number: ID G100000000, Location 001
Total Amount of Contract: $64,960.00	Amount of Contract First FY:	
Commodity Code: 80101500	Commodity Code:	Commodity Code:
Object Code:	Object Code:	Object Code:
Amount:	Amount:	Amount:

Accounting Distribution 1:	**Accounting Distribution 2:**	**Accounting Distribution 3:**
Fund:	Fund:	Fund:
Appr:	Appr:	Appr:
Org/Sub:	Org/Sub:	Org/Sub:
Rept Catg:	Rept Catg:	Rept Catg:
Amount:	Amount:	Amount:

Processing Information: (Some entries may not apply.) Begin Date: 7/1/2019 End Date: 6/30/~~2019~~ 2021

Contract: 1159051/06-06-2019 BN
Number/Date/Entry Initials

Order: 3000024199 Joleen M Lenz
Number/Date/Signatures
[Individual signing certifies that funds have been encumbered as required by Minn. Stat. §§16A.15 and 16C.05]

This is an agreement between the Minnesota Pollution Control Agency- Resource Management & Assistance (Requesting Agency) and Minnesota Management and Budget, Management Analysis and Development (Division).

Minnesota Management and Budget, 658 Cedar Street, Centennial Office Building, Room 300, St. Paul, MN 55155
Telephone: 651-259-3800 • Fax: 651-797-1311 • TTY: 800-627-3529 • http://mn.gov/mmb/mad

1. Services to be Performed:

The Division agrees that it will provide a project team to provide the services and/or perform the tasks outlined in the attached project proposal, which is incorporated and made part of this agreement.

2. Contacts:

The following persons will be the primary contacts for all matters concerning this agreement.
Management Analysis and Development: Lisa Anderson Requesting Agency: Candice McElroy

3. Consideration and Terms of Payment:

In consideration for all services performed and materials provided, the Requesting Agency agrees to pay the Division as follows:

Up to 464 hours at a rate of $140.00 per hour as documented by invoice prepared by the Division. The total amount the Division will invoice under this agreement shall not exceed $64,960.00.

The Requesting Agency will pay the Division for services performed within 30 days of receipt of invoices submitted by the Division. The invoices will be submitted according to the following schedule:

Payment to be requested by invoice based on actual hours of service performed in the previous month, with cumulative payments not to exceed the total agreed amount listed above.

4. Condition of Payment:

All services provided by the Division under this agreement must be performed to the Requesting Agency's satisfaction, as determined at the sole discretion of the Requesting Agency's Authorized Representative.

5. Effective Dates:

This agreement is effective July 1, 2019, or when all necessary approvals and signatures have been obtained pursuant to MN Stat. 16C.05 subd. 2, whichever occurs later, and shall remain in effect until June 30, 2021, or until all obligations have been satisfactorily fulfilled, whichever comes first.

6. Termination:

This agreement may be terminated by the Requesting Agency or the Division at any time with thirty (30) days written notice to the other party. In this event, the Division shall receive payment on a pro rata basis for the work performed.

7. Requesting Agency's Authorized Representatives:

The Requesting Agency's authorized representatives for the purposes of this agreement are Candice McElroy. This person shall have final authority for accepting the Division's services and if the services are satisfactory, will certify this on each invoice submitted as part of number 3.

8. Interagency Agreement Authorization:

Pursuant to Minnesota Statutes, Sections 16A.055 Subd. 1a.; 43A.55 Subd. 2.; and 471.59, the Division is authorized to enter into this agreement.

9. Amendments:

Any amendments to this agreement will be in writing and will be executed by the same parties who executed the original agreement, or their successors in office.

10. State Audit:

The books, records, documents, and accounting practices and procedures of the Division relevant to this agreement, shall be subject to examination by the Requesting Agency and either the Minnesota Legislative Auditor or State Auditor, as appropriate, for a minimum of six years.

11. Liability:

Each party will be responsible for its own acts and behavior and the results thereof.

Approved:

1. Requesting Agency	2. Management Analysis and Development
By: Katie Smith	By: Renda E Rappa
Title: Asst. Division Director	Title: Business Manager
Date: 6/14/19	Date: May 23, 2019

MANAGEMENT AND BUDGET
MANAGEMENT ANALYSIS AND DEVELOPMENT

Proposal

Minnesota Pollution Control Agency—
Minnesota GreenCorps Evaluation
May 23, 2019

Proposal prepared by:
Lisa Anderson
651-259-3824
Lisa.Anderson@state.mn.us

Enterprise Director, MAD

Ryan Church

Assistant Director

Beth Bibus

Contact Information

Telephone: 651-259-3800
Email: Management.Analysis@state.mn.us
Fax: 651-797-1311
Website: mn.gov/mmb/mad

Address:
658 Cedar Street
Centennial Office Building
Room 300
Saint Paul, Minnesota 55155

Management Analysis and Development

Management Analysis and Development is Minnesota government's in-house fee-for-service management consulting group. We have over 30 years of experience helping public managers increase their organizations' effectiveness and efficiency. We provide quality management consultation services to local, regional, state, and federal government agencies and public institutions.

Alternative Formats

This document can be made available in alternative formats upon request. Call 651-259-3800.

Background

The Minnesota GreenCorps is a statewide program coordinated by the Minnesota Pollution Control Agency. It annually places approximately 40 AmeriCorps members in various host sites across the state with the goal "to preserve and protect Minnesota's environment while training a new generation of environmental professionals."[1] Members work on projects under the focus areas of air pollution reduction, waste reduction, recycling, organics management, green infrastructure improvements, and community readiness and outreach. In the current funding cycle, the program is focused on connecting members with projects that are "designed to have positive environmental impacts, be sustainable long-term at the community level, and build the capacity of communities to adapt and become more resilient to threats posed by a changing climate."[2]

MPCA is committed to evaluating and improving the program and has made ongoing investments and changes, including undergoing independent evaluations of the program in 2013 and 2017 and making subsequent improvements to program definition and administration. MPCA is required to conduct and submit another evaluation with its 2020 application for renewed federal funding to sustain the program.

MPCA asked Management Analysis & Development (MAD) to conduct the independent evaluation of the program, with specific attention to the following two research questions:

1. To what extent do structures served by GreenCorps members in the area of Air Pollutant Reduction demonstrate reductions in energy usage as a result of member support?
2. Does Minnesota GreenCorps build capacity at host site organizations?

MAD began data collection in fiscal year 2019 by creating a list of buildings to be retrofitted for continued tracking and by conducting an initial survey of 2018-19 host sites to assess their current capacity. MAD also worked with MPCA to develop a plan for continued evaluation work, including additional data collection, data analysis, and reporting of findings and recommendations. This proposal is to complete the independent evaluation.

Products

MAD will:

- work with host sites to ensure accurate, up-to-date data for building retrofits and analyze retrofit data, collaborating with partner agencies and organizations when necessary;
- continue to administer and analyze pre- and post- surveys and evaluate changes in host site capacity;

[1] https://www.pca.state.mn.us/waste/minnesota-greencorps, Accessed April 15, 2019.
[2] Ibid.

- collect stories and suggestions for improvement from people involved with GreenCorps, such as host sites, to inform program operations;
- draft a report of findings and recommendations for use in the next GreenCorp recompete process.

Activities, Timeline, and Project Costs

The overall timeline for the project would be July 1, 2019 (or when the interagency agreement is signed) through June 30, 2021, with approximately $35,000 of the contract budget planned for Fiscal Year 2020, and $30,000 planned for Fiscal Year 2021, based on current budget projections. If the interagency agreement is not signed by July 1, 2019, MAD would work with the client to revise the timeline and project scope as necessary based on consultant availability and client needs.

Activities	Hours
Develop and maintain a project plan, including periodic check-ins with the client.	33
Collect and analyze building retrofit data.	65
Administer and analyze pre- and post-surveys of host sites.	75
Develop methods to collect qualitative data, such as interviews or focus groups, and extract themes for continuous improvement.	120
Draft a final report summarizing findings and recommendations	100
Subtotal	393
Project management, including client communication (18%)	71
Total hours	**464**
Total costs: (464 hours times $140)	$ 64,960

Documentation

Management Analysis and Development would provide the draft copy and the final document in Adobe Acrobat (PDF) format.

Clients and Consultants

The primary client contact would be Candice McElroy. The MAD project lead would be Lisa Anderson; other MAD consultants would also provide services to the client.

Client Responsibilities

MPCA would provide timely access to key staff and program data. MAD assumes that the client will be engaged at key stages of the project, such as data collection tool development, program data analysis, and report and recommendations review.

Data Practices

Information collected during this project would be subject to the Minnesota Data Practices Act, Minnesota Statutes §13.64. The final report would be public. Data on individuals (such as interview or survey data) is private data. Client staff would not be present at interviews or focus groups, and would not have access to any data that identifies individuals.

Billing and Cost Calculations

Management Analysis and Development bills at the Minnesota Management and Budget-approved rate of $140 an hour. The client would be billed only for actual hours worked and for expenses actually incurred, and the costs of the project will not exceed the total reflected above without pre-arranged amendment. If the scope of the project expands after the work begins, an interagency agreement amendment would be required to cover the anticipated additional hours and/or to extend the end date of the contract.

SWIFT Contract No.: 159529
Agency Interest ID: 224687
Project Activity #: PRO20190005

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

Pursuant to Minnesota Statutes, Sections 4.045, 16A.055, and 471.59, this is an agreement between Minnesota Management & Budget (MMB) and the Pollution Control Agency (PCA).

1. **Services to be Performed:**
Minnesota Management and Budget will provide staffing and support for the Children's Cabinet (Minnesota Statutes, section 4.045), including the coordination of interagency efforts seeking to ensure that all Minnesota children are healthy, safe, and prepared to achieve their full potential.

Authorized Agents:
The following persons will be the primary contacts and authorized agents for all matters concerning this agreement.

MMB: Erin Bailey, Assistant Commissioner – Children's Cabinet, or his/her successor, 400 Centennial Office Building, 658 Cedar Street, St. Paul, MN 55155, Erin.Bailey@state.mn.us, 651-201-8044.

PCA: Peter Tester, Deputy, or his/her successor designated by the Commissioner, 520 Lafayette Road, St. Paul, MN, 55155, peter.tester@state.mn.us, 651-757-2014.

2. **Consideration and Terms of Payment:**
In consideration for services provided, the Requesting Agency agrees to contribute to this effort as follows:

TOTAL COST: $5,000

You will receive an annual invoice from MMB in July 2019. This invoice should be paid within 30 days of receipt.

3. **Term of Agreement:**
This agreement is effective July 1, 2019, and shall remain in effect until June 30, 2020.

4. **Amendments:**
Any amendments to this agreement will be in writing and will be executed by the same parties who executed the original agreement, or their successors in office.

Approved:

1. Agency Signature	2. Minnesota Management & Budget
By: Cynthia Quinn	By:
Title: ASST. DIVISION DIRECTOR	Title: ASST Commissioner
Date: 6-17-2019	Date: 06/27/19

Swift ID: 162592
PO #: 3000024650
Agency ID #: 224687
Activity #: PRO20190009

MANAGEMENT AND BUDGET
MANAGEMENT ANALYSIS AND DEVELOPMENT

AMENDMENT to INTERAGENCY AGREEMENT for MANAGEMENT ANALYSIS and DEVELOPMENT SERVICES AGREEMENT NUMBER 2020-019

WHEREAS, the State of Minnesota, **Minnesota Pollution Control Agency – Resource Management and Assistance Division**, has an interagency agreement identified as **2020-019 (SWIFT 162592, Order: 3000024650)** with Minnesota Management and Budget, Management Analysis and Development (Division), for consulting services; and

WHEREAS, the Requesting Agency and the Division agree that the above-referenced contract should be amended; and

WHEREAS, Paragraph(s) **3 & 5** of the original contract shall be amended to read:

3. Consideration and Terms of Payment:

In consideration for all services performed and materials provided, the Requesting Agency agrees to pay the Division as follows:

> Up to ~~283~~ 383 hours at a rate of $140.00 per hour as documented by invoice prepared by the Division. The Division will also invoice up to $3,600.00 for travel, mileage and car rental costs that may be incurred. The total amount the Division will invoice under this agreement shall not exceed ~~$43,220.00~~ $57,220.00.

The Requesting Agency will pay the Division for services performed within 30 days of receipt of invoices submitted by the Division. The invoices will be submitted according to the following schedule:

> Payment to be requested by invoice based on actual hours of service performed in the previous month, with cumulative payments not to exceed the total agreed amount listed above.

5. Effective Dates:

This agreement is effective July 1, 2019, or when all necessary approvals and signatures have been obtained pursuant to MN Stat. 16C.05 subd. 2, whichever occurs later, and shall remain in effect until ~~January 31, 2021~~ April 1, 2021, or until all obligations have been satisfactorily fulfilled, whichever comes first.

Except as herein amended, the provisions of the Original Agreement remain in full force and effect. The Original Agreement and any previous amendments are incorporated into this amendment by reference.

APPROVED:

1. REQUESTING AGENCY	2. DIVISION
By: Shelly Smith Title: Asst. Division Director Date: 3/11/2020	By: Renda E Rappa Title: Business Manager Date: Feb 27, 2020

SWIFT: 165358
PO #: 3000024975
MPCA AI#: 224687; PRO20190010

MANAGEMENT AND BUDGET
MANAGEMENT ANALYSIS AND DEVELOPMENT

MAD Project Number: 2020-071
INTERAGENCY AGREEMENT
for MANAGEMENT ANALYSIS and DEVELOPMENT SERVICES

Requesting Agency: Minnesota Pollution Control Agency MAD Contact: Renda Rappa

Accounting Information: Business Unit – G1001, Financial Dept ID – G1031500, Approp ID – G100085, Fund – 5200, Accounts - 670011

Agency:	Fiscal Year:	
Total Amount of Contract: $54,000.00	Amount of Contract First FY:	
Commodity Code: 023-19-000000	Commodity Code:	Commodity Code:
Object Code:	Object Code:	Object Code:
Amount:	Amount:	Amount:

Accounting Distribution 1:	**Accounting Distribution 2:**	**Accounting Distribution 3:**
Fund:	Fund:	Fund:
Appr ID:	Appr ID:	Appr ID:
Financial Dept ID:	Financial Dept ID:	Financial Dept ID:
Rept Catg:	Rept Catg:	Rept Catg:
Amount:	Amount:	Amount:

Processing Information: (Some entries may not apply.) Begin Date: _____ End Date: _____

Contract: 165388/8/29/19 BLN
Number/Date/Entry Initials

Order: R3301-3000024975/8/30/19
Number/Date/Signatures

[Individual signing certifies that funds have been encumbered as required by Minn. Stat. §§16A.15 and 16C.05]

This is an agreement between the Minnesota Pollution Control Agency (Requesting Agency) and Minnesota Management and Budget, Management Analysis and Development (Division).

1. Services to be Performed:

The Division agrees that through its Master Contract with Wilder Research the Division will sub-contract with Wilder Research to provide the services identified in Exhibit A, which is attached and incorporated into this agreement.

2. Authorized Representatives:

The following persons will be the primary authorized representatives for all matters concerning this agreement.
Management Analysis and Development: Renda Rappa Requesting Agency: Jean Coleman

3. Consideration and Terms of Payment:

In consideration for all services performed and materials provided, the Requesting Agency agrees to pay the Division as follows:

Up to $50,000.00 for deliverables, based on the hours and rates provided by Wilder Research, as identified in Exhibit A. The Division will also invoice up to $4,000.00 for project management. The total amount the Division will invoice under this agreement shall not exceed $54,000.00.

The Requesting Agency will pay the Division for services performed within 30 days of receipt of invoices submitted by the Division. The invoices will be submitted according to the following schedule:

Payment to be requested by invoice based on actual hours of service performed in the previous month, with cumulative payments not to exceed the total agreed amount listed above.

4. Condition of Payment:

All services provided by the Division under this agreement must be performed to the Requesting Agency's satisfaction, as determined at the sole discretion of the State's Authorized Representative.

5. Effective Dates:

This agreement is effective September 3, 2019, or when all necessary approvals and signatures have been obtained pursuant to MN Stat. 16C.05 subd. 2, whichever occurs later, and shall remain in effect until December 31, 2019, or until all obligations have been satisfactorily fulfilled, whichever comes first.

6. Termination:

This agreement may be terminated by the Requesting Agency or the Division at any time with thirty (30) days written notice to the other party. In this event, the Division shall receive payment on a pro rata basis for the work performed.

7. Requesting Agency's Authorized Representative:

The Requesting Agency's authorized agent for the purposes of this agreement is Jean Coleman. This person shall have final authority for accepting the Division's services and if the services are satisfactory, will certify this on each invoice submitted as part of number 3.

8. Interagency Agreement Authorization:

Pursuant to Minnesota Statutes, Sections 16A.055 Subd. 1a.; 43A.55 Subd. 2.; and 471.59, the Division is authorized to enter into this agreement.

9. Amendments:

Any amendments to this agreement will be in writing and will be executed by the same parties who executed the original agreement, or their successors in office.

10. State Audit:

The books, records, documents, and accounting practices and procedures of the Division relevant to this agreement, shall be subject to examination by the Requesting Agency and either the Minnesota Legislative Auditor or State Auditor, as appropriate, for a minimum of six years.

11. Liability:

Each party will be responsible for its own acts and behavior and the results thereof.

Approved:

1. Management Analysis and Development	2. Minnesota Pollution Control Agency
By: Renda E Rappa	By: Christine Quinn
Title: Business Manager	Title: Asst. Division Director
Date: Aug 29, 2019	Date: 8-29-19

Exhibit A

1. Statement of Problems, Opportunities, and Existing Conditions

MPCA seeks an experienced program evaluation consultant (Wilder Research) to provide expertise on a pilot initiative for examining and improving water permitting. MPCA intends to focus on the National Pollutant Discharge Elimination System (NPDES) permitting process, using a participatory evaluation process to engage staff and leaders in the agency. MPCA hopes to use this as a model for other internal evaluation efforts. Wilder Research will provide independent consultation and advice on program evaluation design, collect and analyze data, and write the report; MPCA staff will provide content expertise, identify and recruit participants, and finalize the report.

2. Goals, Objectives, Tasks and Subtasks

Goal: Wilder Research will evaluate the National Pollutant Discharge Elimination System (NPDES) permitting process through primary data collection with key internal and external MPCA stakeholders. Results will be summarized and ready to share with public audiences by November 30, 2019.

OBJECTIVE 1: Conduct NPDES permitting data collection and report findings.

Task A: Planning
Subtask 1: Data collection methods and consultation
Subtask 2: Tool design and consultation (questionnaire and methodology)

Responsible Party: Wilder Research will provide consultation on the data collection methods and work collaboratively with MPCA to design the data collection tools. Wilder Research recommends that the data collection include a brief online survey of internal MPCA stakeholders as well as a more in-depth key informant interview with a sample of up to 25 stakeholders from within and outside of MPCA, as appropriate. We believe this approach will allow the necessary breadth and depth of information needed for this study, while also accommodating the short timeline. Key informant interviews can be a useful method for obtaining detailed information about a topic, and often participants feel comfortable sharing thoughts and opinions with a third party that they may not want to share during a group discussion with peers.

Due to the rapid timeline of this project, we anticipate the tool development will occur through a detailed phone conversation between the Wilder Research project manager and data collection manager and the appropriate point people at MPCA. After the phone call, Wilder Research will draft the tools (e.g., the interview guide and the online survey) and send them to MPCA for one round of revisions.

Task A Timeline:

- September 3rd through 6th – Phone call and tool development
- September 9th through 11th – MPCA reviews and approves tools

Task A cost: $5,000

Task A Deliverables:

- Consultation on data collection methods
- MPCA approved final data collection materials

Task B: Data Collection

Subtask 1. Collect data through key informant interviews and a brief online survey.

Wilder Research responsibilities: Wilder Research will lead the data collection efforts. Wilder staff have extensive experience conducting interviews with busy professionals and having a team of interviewers will allow for greater scheduling flexibility to better accommodate the schedules of the interviewees. Detailed notes will be taken during the interviews to ensure that high-quality information is documented. As noted above, Wilder will attempt to interview up to 25 key informants identified by MPCA.

Wilder will also gather a brief online survey from MPCA staff to gather broad input on the permitting process. The online survey would be anonymous, which would allow respondents to answer questions more openly and honestly. Additionally, this method would allow us to reach a broad representation of staff, including staff from different departments and roles, as appropriate. The survey will be programmed into Wilder's Acuity web survey software. The survey will include primarily closed-ended questions, with an opportunity for one to two open-ended questions. We anticipate a sample of approximately 100 staff will be invited to participate in this survey.

MPCA responsibilities: MPCA staff will identify the appropriate individuals to participate in the online survey (with email addresses) and the key informant interviews (with email addresses and phone numbers). MPCA staff should also reach out to potential interview participants to let them know about the study and that they will be contacted. This step generally leads to a high response rate and more timely responses. MPCA staff will also need to be available to quickly answer questions or provide troubleshooting assistance during data collection. This can include assisting with content questions, supporting recruitment, and identifying solutions if response rates are low.

Task B timeline:

- September 3rd through 10th – MPCA identifies and compiles samples and contact information
- September 10th through 13th – Wilder programs online survey
- September 16th through 27th – Wilder conducts online survey
- September 11th through October 4th – Wilder conducts key informant interviews

Task B Cost: $15,000

- Programming and conducting online survey: $7,000
- Conducting key informant interviews: $8,000

Task B Deliverables:

- Complete dataset from online survey
- Detailed notes from key informant interviews

Task C: Data Analysis

Subtask 1. Prepare datasets and conduct quantitative and qualitative data analysis.

Responsible Party: Wilder Research will use open coding to analyze open-ended interview data. Open coding involves developing categories based on concepts frequently appearing in responses to questions (themes). Within each of those concepts, sub-themes will be identified and coded. This coding will be completed in the software program ATLAS.ti. Close-ended data from the interviews will be entered into a statistical software package (SPSS) and analyzed by our research staff.

Wilder Research will clean the data collected through the online survey to ensure accuracy and completeness. We will then use a combination of open coding to analyze the qualitative survey data along with the statistical software package, SPSS, to analyze the quantitative survey data. We anticipate the quantitative analysis will be descriptive in nature.

Task C Timeline:

- September 30th through October 18th – Wilder analyzes quantitative and qualitative survey data
- October 7th through 25th – Wilder analyzes quantitative and qualitative interview data

Task C Cost: $15,000

- Analysis of survey data: $6,000
- Analysis of interview data: $9,000

Task C Deliverables:

- Key themes from qualitative analysis
- Descriptive analysis output from quantitative data

Task D: Reporting

Subtask 1. Developing a summary of data collected.

Responsible Party: Wilder Research will develop a written summary of the results of the data collection activities described above. This summary will include descriptive results from the quantitative analysis, as well as key themes from the qualitative analysis. It may also include limited quotes from key informants, if they are helpful in articulating the themes. The report will be about 15 pages in length and will include a brief executive summary. MPCA will review the report and provide one round of revisions to Wilder Research. After those revisions are addressed, Wilder Research will submit a final copy of the report.

Task D Timeline:

- October 18th through November 15th – Wilder develops draft report
- November 15th through November 22nd – MPCA reviews report draft and provides edits
- November 25th through November 29th – Wilder revises and submits final report

Task D Cost: $15,000

- Developing draft report: $12,000
- Editing and finalizing report: $3,000

Task D Deliverables:

- Draft report
- Final report

	Administrative Manager	Data Collection Manager	Research Assistant	Data Analyst Manager	Research Scientist	**Total Labor hours**
Task A Total Hours	5	12	5	5	17	**44**
Task B Total Hours	0	42	150	0	22	**214**
Task C Total Hours	0	20	100	50	20	**190**
Task D Total Hours	30	6	35	14	55	**140**
Billing Rates ($/hr)	**$100**	**$100**	**$50**	**$100**	**$150**	**Total Cost**
Task A Total Costs	$500	$1,200	$250	$500	$2,550	$5,000
Task B Total Costs	$0	$4,200	$7,500	$0	$3,300	$15,000
Task C Total Costs	$0	$2,000	$5,000	$5,000	$3,000	$15,000
Task D Total Costs	$3,000	$600	$1,750	$1,400	$8,250	$15,000
Sum Costs	**$3,500**	**$8,000**	**$14,500**	**$6,900**	**$17,100**	**$50,000**

MANAGEMENT AND BUDGET

SWIFT: 167891
PO #:3000025234
TEMPO AI#: 187607
Project ID#: PRO20190018

20CONT03

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

This agreement is between Minnesota Management and Budget (MMB), Enterprise Talent Development (ETD), 658 Cedar Street, 400 Centennial Building, Saint Paul, MN 55155 and the Minnesota Pollution Control Agency (MPCA), 520 Lafayette Road North, Saint Paul, MN 55155.

Agreement

1 Term of Agreement

1.1 ***Effective date:*** Upon execution, the date the State obtains all required signatures under Minnesota Statutes Section 16C.05, subdivision 2.

1.2 ***Expiration date:*** June 30, 2020, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

2 Scope of Work

MMB's Enterprise Talent Development division (ETD) is to provide the services identified below for MPCA employees. The services to be provided include, but may not be limited to:

2.1 ETD will subcontract with Saarthi Simulations, Inc., dba Simulation Powered Learning (SPL), to provide services that include, but may not be limited to:

2.1.1 SPL will meet with MPCA leadership to review project parameters, delivery methods, and goals.

2.1.2 SPL will provide instruction/facilitation, content, computer monitors/laptops, and the course and participant materials for up to two sessions of the two-full-day "Project Management Fundamentals" course.

2.1.2.1 Course description: In this course, participants will receive hands-on experience in learning, applying, practicing and developing fundamental project management skills. Through short lectures, participants are introduced to fundamental project management tools, techniques and concepts, including: Project Charter/Scope, Work Breakdown Structure, Network Diagram, Project Estimation, Critical Path, Gantt/Bar Chart, Resource Planning, Risk Management, Status, Control, and team building. Participants will have the chance to practice and develop their skills by planning and managing a realistic business project through a computer simulation. The learning occurs as participants run a decision-driven simulation comprised of real-life people, project, company, and the daily challenges encountered on any real project. Participants will navigate challenges like cost, schedule, scope, staffing and ongoing interactions with difficult team members and politically motivated stakeholders. After completing this two-day course, participants will earn 14 training hours towards the Project Management Institute's (PMI) 35-hour requirement for Project Management Professional (PMP) Certification. The class, even though it is fundamental, is eligible for Professional Development Units (PDU's) for PMPs towards continuing certification requirements to maintain their PMI certifications. Participants will learn (includes, but is not limited to):

2.1.2.1.1 The five key project variables and how they interact.

2.1.2.1.2 How to plan and manage a project using a proven process and tools, specifically the Project Charter/Scope, Network Diagram, Critical Path and Gantt Chart.

2.1.2.1.3 How to manage potential trade-offs and meet scope, schedule, cost and quality goals.

2.1.2.2 The number of Professional Development Units (PDU's) that each participant will receive upon completion of the course is 14 credits.

2.1.2.3 The maximum number of participants permitted to attend each session is 30.

2.1.2.4 The dates and times that the first session of this course is scheduled to take place is October 30 and 31, 2019, from 8:30 a.m. – 4:30 p.m. both days. (In unforeseen circumstances, the dates and/or times may be subject to change.)

2.1.2.5 The dates and times that the second session of this course is scheduled to take place is November 5 and 6, 2019, from 8:30 a.m. – 4:30 p.m. both days. (In unforeseen circumstances, the dates and/or times may be subject to change.)

2.1.2.6 ETD will provide the room for both sessions. The location in which each session is to take place is the ETD Center, 10 River Park Plaza, Ground Floor, Suite G35, Aristotle Room, Saint Paul, MN 55107.

2.2 ETD will subcontract with Mateffy and Company to provide services that include, but may not be limited to:

2.2.1 Mateffy and Company will provide instruction/facilitation, content, course materials, and will work with ETD to provide copies of the participant materials to all participants for up to two sessions of the half-day "Change Management Survival Guide" course.

2.2.1.1 Course description: In today's business environment, change is continuous. Yet the urgency to enact change is often met with resistance by those most impacted. Join us as we consider how change occurs and how it impacts individuals and organizations. Together we'll experience the feeling of disconnect that change can often bring about, discuss the change process, and learn a framework for successfully driving change. The change formula that we will dive into is based off of a simple six step process that can help us work through projects effectively and help identify root causes of problems using the Action Wheel methodology. We'll work through how this same framework can add value in other areas of life as well.

2.2.1.2 The maximum number of participants permitted to attend each session is 30.

2.2.1.3 The dates and times of these sessions have not yet been determined, but are to be mutually agreed upon by MPCA, Mateffy and Company, and ETD.

2.2.1.4 ETD will provide the room for both sessions once the dates and times of these sessions have been agreed upon by all three parties identified in clause 2.2.1.3. The location in which each session is to take place is the ETD Center, 10 River Park Plaza, Ground Floor, Suite G35, Aristotle Room, Saint Paul, MN 55107.

2.3 ETD will subcontract with Eisele and Associates, Inc., to provide services that include, but may not be limited to:

2.3.1 Eisele and Associates, Inc., will provide instruction/facilitation, content, course materials, and will work with ETD to provide copies of the participant materials to all participants for up to two sessions of the half-day "Power and Influence" course.

2.3.1.1 Course description: Whether participants are leading as an individual contributor or have a team reporting to them, power and influence are critical in getting the work of their organization done. In taking this course, participants will better understand how their personal power and influence can impact both work and goal achievement. Participants will learn the appropriate types of power to use in various contexts, how to influence with and without authority, and how to use power and influence effectively in achieving their career goals. Participants will learn (includes, but may not be limited to):

2.3.1.1.1 The different types of power in the workplace and their personal level of influence within the workplace.

2.3.1.1.2 How to appropriately pair power types with different types of situations and organizational culture.

2.3.1.1.3 Tactful ways that power and influence can help them achieve their career goals.

2.3.1.2 The maximum number of participants permitted to attend each session is 30.

2.3.1.3 The dates and times of these sessions have not yet been determined, but are to be mutually agreed upon by MPCA, Eisele and Associates, Inc., and ETD.

2.3.1.4 ETD will provide the room for both sessions once the dates and times of these sessions have been agreed upon by all three parties identified in clause 2.3.1.3. The location in which each session is to take place is the ETD Center, 10 River Park Plaza, Ground Floor, Suite G35, Aristotle Room, Saint Paul, MN 55107.

2.4 ETD will subcontract with Working Conversations, LLC, to provide services that include, but may not be limited to:

2.4.1 Working Conversations, LLC, will provide instruction/facilitation, content, course materials, and will work with ETD to provide copies of the participant materials to all participants for up to two sessions of the half-day "Holding Difficult Conversations" course.

2.4.1.1 Course description: What if employees had a difficult discussion with someone and instead of getting a defensive response, they thanked the employee? By beginning with the end in mind, participants in this course will learn how to reverse engineer difficult conversations into simple, straightforward discussions that get results. From how they set-up and prepare for the conversation, to the very first words they say, to the conclusion, they can positively impact the way their message is received, as well as the final outcome of their discussion. In this course, participants will be provided with a step-by-step guide for having even the most difficult workplace conversations. Participants will learn (includes, but may not be limited to):

2.4.1.1.1 Steps to achieve immediate positive results in their next difficult conversation.

2.4.1.1.2 Methods to create conditions that make it easier to have difficult conversations.

2.4.1.1.3 Keys on how to build confidence in giving and receiving difficult feedback in performance reviews, peer feedback, and constructive upward feedback.

2.4.1.1.4 Skills to improve how they receive and understand the other person's point of view in a difficult conversation.

2.4.1.2 The maximum number of participants permitted to attend each session is 30.

2.4.1.3 The dates and times of these sessions have not yet been determined, but are to be mutually agreed upon by MPCA, Working Conversations, LLC, and ETD.

2.4.1.4 ETD will provide the room for both sessions once the dates and times of these sessions have been agreed upon by all three parties identified in clause 2.4.1.3. The location in which each session is to take place is the ETD Center, 10 River Park Plaza, Ground Floor, Suite G35, Aristotle Room, Saint Paul, MN 55107.

3 Consideration and Payment

ETD will invoice upon completion and no more than monthly for services and materials actually provided, as per the breakdown of costs listed below, not to exceed **$29,214.00 (Twenty-Nine Thousand, Two Hundred Fourteen Dollars and Zero Cents)**. Invoices are sent directly from SWIFT to mpca.ap@state.mn.us. MPCA is to pay within 30 days of receipt of each invoice.

Table 1: Breakdown of Costs

Deliverables	**Cost of Deliverables (includes ETD 18% admin fee)**	**Room Rental**	**Quantity**	**Subtotal** (not to exceed)
Delivery of 2-day "Project Management Fundamentals" course	$8,260.00/session	$660.00/session	Up to 2 sessions	$17,840.00
Delivery of half-day "Change Management Survival Guide" course	$1,770.00/session	$165.00/session	Up to 2 sessions	$3,870.00
Delivery of half-day "Power and Influence" course	$1,652.00/session	$165.00/session	Up to 2 sessions	$3,634.00
Delivery of half-day "Holding Difficult Conversations" course	$1,770.00/session	$165.00/session	Up to 2 sessions	$3,870.00
TOTAL (not to exceed)				$29,214.00

The payment is to be made to ETD using the applicable vendor number accounting information: **G100000000** Location: **001.**

The total obligation of MPCA for all compensation and reimbursements to ETD under this agreement will not exceed **$29,214.00 (Twenty-Nine Thousand, Two Hundred Fourteen Dollars and Zero Cents)**.

4 Conditions of Payment

All services provided by ETD under this agreement must be performed to MPCA's satisfaction, as determined at the sole discretion of MPCA's Authorized Representative.

5 Authorized Representative

ETD's Authorized Representative is Dr. Kimberly Roan, ETD Director, 658 Cedar Street, 400 Centennial Building, Saint Paul, MN 55155, (651) 201-8212, kimberly.roan@state.mn.us or her successor.

MPCA's Authorized Representative is Dana Vanderbosch, Director, 520 Lafayette Road, Saint Paul, MN 55155, (651) 757-2601, dana.vanderbosch@state.mn.us, or her successor.

6 State Audit

The books, records, documents, and accounting practices and procedures relevant to this agreement, are subject to examination by the State and/or the State Auditor or Legislative Auditor, as appropriate, for a minimum of six years from the end of this agreement.

7 Amendments

Any amendment to this agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original agreement, or their successors in office.

8 Liability

Each party will be responsible for its own acts and behavior and the results thereof.

9 Termination

Either party may terminate this agreement at any time, with or without cause, upon 30 days' written notice to the other party. In this event, ETD shall be entitled to payment, determined on a pro rata basis, for work and/or services satisfactorily performed.

10 Intellectual Property Rights

The parties agree that Intellectual Property Rights under this Agreement shall be governed by clause 10.2 in the Professional and Technical Services Master Contract executed by MMB and 1. Saarthi Simulations, Inc., dba Simulation Powered Learning (SPL); 2. Mateffy and Company; 3. Eisele and Associates, Inc.; and 4. Working Conversations, LLC.

1. STATE ENCUMBRANCE VERIFICATION

Individual certifies that funds have been encumbered as required by Minn. Stat. §§ 16A.15 and 16C.05.

Signed: Michelle Stryker
(Please sign name on line above)

Michelle Stryker
(Please print name on line above)

Date: October 22, 2019

2. MINNESOTA POLLUTION CONTROL AGENCY

By: Doug Wetstein
(With delegated authority – Please sign name on line above)

Douglas Wetstein
(Please print name on line above)

Title: Asst. Division Director

Date: 10/22/2019

3. MINNESOTA MANAGEMENT AND BUDGET

By: _____
(With delegated authority – Please sign name on line above)

Kimberly Ream
(Please print name on line above)

Title: Enterprise Director, ETD

Date: 10/23/19

MANAGEMENT AND BUDGET
MANAGEMENT ANALYSIS AND DEVELOPMENT

MAD Project Number: 2020-136
INTERAGENCY AGREEMENT
for MANAGEMENT ANALYSIS and DEVELOPMENT SERVICES

Requesting Agency: Minnesota Pollution Control Agency MAD Contact: Renda Rappa

Accounting Information: Business Unit – G1001, Financial Dept ID – G1031500, Approp ID – G100085, Fund – 5200, Accounts - 670011

Agency:	Fiscal Year:	
Total Amount of Contract: $36,720.00	Amount of Contract First FY:	
Commodity Code: 023-19-000000	Commodity Code:	Commodity Code:
Object Code:	Object Code:	Object Code:
Amount:	Amount:	Amount:

Accounting Distribution 1:	**Accounting Distribution 2:**	**Accounting Distribution 3:**
Fund:	Fund:	Fund:
Appr ID:	Appr ID:	Appr ID:
Financial Dept ID:	Financial Dept ID:	Financial Dept ID:
Rept Catg:	Rept Catg:	Rept Catg:
Amount:	Amount:	Amount:

Processing Information: (Some entries may not apply.) Begin Date: _____ End Date: _____

Contract: 171474 1/17/2020 KSR Order: 3000025810 Michelle Stark
Number/Date/Entry Initials Number/Date/Signatures

[Individual signing certifies that funds have been encumbered as required by Minn. Stat. §§16A.15 and 16C.05]

This is an agreement between the Minnesota Pollution Control Agency (Requesting Agency) and Minnesota Management and Budget, Management Analysis and Development (Division).

1. Services to be Performed:

The Division agrees that through its Master Contract with More Insight the Division will sub-contract with More Insight to provide the services identified in Exhibit A, which is attached and incorporated into this agreement.

2. Authorized Representatives:

The following persons will be the primary authorized representatives for all matters concerning this agreement.
Management Analysis and Development: Renda Rappa Requesting Agency: Laura Millberg

3. Consideration and Terms of Payment:

In consideration for all services performed and materials provided, the Requesting Agency agrees to pay the Division as follows:

The Division will invoice a fixed fee cost of $2,665.00 per Program Risk Assessment for up to $31,980.00 (12 risk assessments), plus $2,020.00 for the summary report, for services provided by Jeff Smith as identified in Exhibit A. The Division will also invoice up to $2,720.00 for project management. The total amount the Division will invoice under this agreement shall not exceed $36,720.00.

The Requesting Agency will pay the Division for services performed within 30 days of receipt of invoices submitted by the Division. The invoices will be submitted according to the following schedule:

Payment to be requested by invoice based on service performed in the previous month, with cumulative payments not to exceed the total agreed amount listed above.

4. Condition of Payment:

All services provided by the Division under this agreement must be performed to the Requesting Agency's satisfaction, as determined at the sole discretion of the State's Authorized Representative.

5. Effective Dates:

This agreement is effective February 3, 2020, or when all necessary approvals and signatures have been obtained pursuant to MN Stat. 16C.05 subd. 2, whichever occurs later, and shall remain in effect until June 30, 2020, or until all obligations have been satisfactorily fulfilled, whichever comes first.

6. Termination:

This agreement may be terminated by the Requesting Agency or the Division at any time with thirty (30) days written notice to the other party. In this event, the Division shall receive payment on a pro rata basis for the work performed.

7. Requesting Agency's Authorized Representative:

The Requesting Agency's authorized agent for the purposes of this agreement is Laura Millberg. This person shall have final authority for accepting the Division's services and if the services are satisfactory, will certify this on each invoice submitted as part of number 3.

8. Interagency Agreement Authorization:

Pursuant to Minnesota Statutes, Sections 16A.055 Subd. 1a.; 43A.55 Subd. 2.; and 471.59, the Division is authorized to enter into this agreement.

9. Amendments:

Any amendments to this agreement will be in writing and will be executed by the same parties who executed the original agreement, or their successors in office.

10. State Audit:

The books, records, documents, and accounting practices and procedures of the Division relevant to this agreement, shall be subject to examination by the Requesting Agency and either the Minnesota Legislative Auditor or State Auditor, as appropriate, for a minimum of six years.

11. Liability:

Each party will be responsible for its own acts and behavior and the results thereof.

Approved:

1. Management Analysis and Development	2. Minnesota Pollution Control Agency
By: Renda E Rappa	By: Shelly Smith
Title: Business Manager	Title: Asst. Division Director
Date: Jan 16, 2020	Date: 1/23/2020

EXHIBIT A

PROPOSAL

Climate Change Risk Assessment Facilitation

Minnesota Pollution Control Agency

MINNESOTA POLLUTION CONTROL AGENCY

January 8, 2020

in·sight

Our Understanding of Your Situation

In 2018 the Minnesota Pollution Control Agency adopted a new strategic plan goal to "Act on opportunities to increase resilience of communities and the environment to climate change impacts."

In 2019 the MPCA undertook an effort to establish a process by which programs can assess the potential risks of climate change on stakeholders, staff, operations and regulations. MPCA engaged a consultant to assist with establishing this process as well as facilitating the risk assessments with 8 Programs which included:

- Emergency Response
- Feedlots
- Solid Waste
- SSTS
- Stormwater
- Surface Water Ambient
- Wastewater
- Watershed

In 2020, MPCA is now ready to proceed with completing Risk Assessments for the remaining programs and is seeking assistance with facilitation of that effort following the process previously developed.

Our Approach

The More Insight team has direct experience assisting the MPCA with both creating the process and facilitating the risk assessments and due to this is ideally equipped to assist with leading the remaining risk assessments. In keeping with the process established, More Insight will conduct the following activities and deliver the listed deliverables for each Program MPCA decides to proceed with.

Activities include:

- Facilitates Workshop #1 which brainstorm risks and identifies risk themes
- Develops a spreadsheet for individual ranking of risks, then processes and summarizes each Program's resulting assessment of risks
- Facilitates Workshop #2 which reviews the assessment data and identifies potential actions and benefits

Deliverables will include:

- Presentations to support Workshops #1 & 2
- Risk Assessment Report for each Program containing:
    - Themes & Risks
    - Risk Assessment results graphically represented
    - Priorities and Potential Actions
- Summary Climate Change Risk Assessment Report for MPCA Programs

As our team has demonstrated in the past, More Insight is open to considering modifications to our approach to best meet the needs of MPCA. If the Approach is modified the proposed cost (addressed in the next section) may need to be adjusted or renegotiated.

Proposed Cost

More Insight is eager to assist the MPCA with this important project. We are proposing a strong resource that has extensive experience with the State of Minnesota and MPCA.

Proposed Team Member & Role	Proposed Cost
Jeff Smith – Risk Assessment Facilitator	$ 2,665 / Program Risk Assessments + $ 2,020 for the Summary Report

Due to the potential of timeline and funding challenges our proposal is providing a fixed fee cost of $2,665 per Program Risk Assessments. Additionally, MPCA would like a final Summary Report that consolidates all of the information together. The price for the final report is $2,020. It is More Insight's understanding that MPCA's goal is to complete the remaining 12 programs before the end of the Fiscal Year 2020 in June. If timing and funding is available this would bring the total cost to $34,000 to complete all 12 Risk Assessments and the final Summary Report.

We do not anticipate any billable expenses.

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

Pursuant to Minnesota Statutes, Sections 16A.055, 43A.01, 43A.04 and 471.59, this is an agreement between Minnesota Management and Budget and Pollution Control Agency.

1. **Services to be Performed:**
The chief inclusion officer will lead the development and implementation of proactive diversity, equity, and inclusion programs which will support the State's diversity and inclusion strategic plan. The chief inclusion officer will also provide strategic guidance and direction across the enterprise and support the Governor's Diversity, Inclusion, and Equity Council.

Authorized Agents:
The following persons will be the primary contacts and authorized agents for all matters concerning this agreement. MMB: Dennis Munkwitz, Chief Financial Officer, or his successor, 400 Centennial Office Building, 658 Cedar Street, St. Paul, MN 55155, (651) 201-8004. For PCA: Peter Tester, Deputy Commissioner, or his successor, 520 Lafayette Road, St. Paul, MN 55155.

2. **Consideration and Terms of Payment:**
In consideration for the services provided, the Requesting Agency agrees to contribute to this effort as follows:

TOTAL COST for FY 20 = $8,807

You will receive an invoice from MMB for this amount in July 2019. This invoice shall be paid within 30 days of receipt.

3. **Term of Agreement:**
This agreement is effective July 1, 2019, and shall remain in effect until June 30, 2020.

4. **Amendments:**
Any amendments to this agreement will be in writing and will be executed by the same parties who executed the original agreement, or their successors in office.

Approved:

1. Agency Signature	2. Minnesota Management & Budget
By: Peter Tester	By: D. Munkwitz
Title: Deputy Commissioner	Title: CFO
Date: 6/27/19	Date: 6-26-19

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

Pursuant to Minnesota Statutes, Sections 43A.21 and 471.59, this is an agreement between Minnesota Management and Budget and Pollution Control Agency.

1. **Services to be Performed:**
MMB will design and implement training and development programs for executive branch employees to promote individual, group, and agency efficiency and effectiveness. The programs will include but are not limited to mandatory training and development requirements.

Authorized Agents:
The following persons will be the primary contacts and authorized agents for all matters concerning this agreement. MMB: Dennis Munkwitz, Chief Financial Officer, or his successor, 400 Centennial Office Building, 658 Cedar Street, St. Paul, MN 55155, (651) 201-8004. For PCA: Peter Tester, Deputy Commissioner, or his successor, 520 Lafayette Road, St. Paul, MN 55155.

2. **Consideration and Terms of Payment:**
In consideration for the services provided, the Requesting Agency agrees to contribute to this effort as follows:

TOTAL COST for FY 20 = $28,565

You will receive a quarterly invoice from MMB for 25% of this amount, beginning August 2019. Each quarterly invoice shall be paid within 30 days of receipt.

3. **Term of Agreement:**
This agreement is effective July 1, 2019, and shall remain in effect until June 30, 2020.

4. **Amendments:**
Any amendments to this agreement will be in writing and will be executed by the same parties who executed the original agreement, or their successors in office.

Approved:

1. Agency Signature	2. Minnesota Management & Budget
By: Peter Tester	By:
Title: Deputy Commissioner	Title: CFO
Date: 6/27/19	Date: 6-26-19

STATE OF MINNESOTA
INTERAGENCY AGREEMENT

Pursuant to Minnesota Statutes, Sections 43A.09 and 471.59, this is an agreement between Minnesota Management and Budget and Pollution Control Agency.

1. **Services to be Performed:**
The statewide recruiting unit will provide expertise and guidance to cabinet-level agencies in the filling of higher–level positions within the executive branch.

Authorized Agents:
The following persons will be the primary contacts and authorized agents for all matters concerning this agreement. MMB: Dennis Munkwitz, Chief Financial Officer, or his successor, 400 Centennial Office Building, 658 Cedar Street, St. Paul, MN 55155, (651) 201-8004. For PCA: Peter Tester, Deputy Commissioner, or his successor, 520 Lafayette Road, St. Paul, MN 55155.

2. **Consideration and Terms of Payment:**
In consideration for the services provided, the Requesting Agency agrees to contribute to this effort as follows:

TOTAL COST for FY 20 = $12,473

You will receive an invoice from MMB for this amount in July 2019. This invoice shall be paid within 30 days of receipt.

3. **Term of Agreement:**
This agreement is effective July 1, 2019, and shall remain in effect until June 30, 2020.

4. **Amendments:**
Any amendments to this agreement will be in writing and will be executed by the same parties who executed the original agreement, or their successors in office.

Approved:

1. Agency Signature	2. Minnesota Management & Budget
By: Peter Tester	By:
Title: Deputy Commissioner	Title: CFO
Date: 6/27/19	Date: 6-26-19

MINNESOTA
PUBLIC FACILITIES AUTHORITY

STATE OF MINNESOTA
INTERAGENCY AGREEMENT
MPCA-CWSRF Program Administration FY 2020

This agreement is between the Minnesota Public Facilities Authority (the "Authority") and the Minnesota Pollution Control Agency (the "Agency"). Pursuant to Authority Board Resolution 2019-01, hereby incorporated as Exhibit A to this Agreement, and Minnesota Statutes sections 471.59 and 446A.04 subdivision 5, the Authority and the Agency are empowered to enter into this Agreement with one another. The purpose of this Agreement is to support the Clean Water State Revolving Fund ("CWSRF").

Agreement

1. **Term of Agreement**
   1.1 ***Effective date***: July 1, 2019 or the date that all required signatures under Minnesota Statutes Section 16C.05, subdivision 2 are obtained, whichever is later.

   1.2 ***Expiration date***: June 30, 2020.

2. **Scope of Work**
   The Agency shall provide technical and administrative services for the Clean Water State Revolving Fund (CWSRF) for FY 2020. In providing these services, the Agency shall:
   A. Prepare and maintain documentation of program expenditures in compliance with prescribed state and federal standards governing the use of the funds.
   B. Provide reports and documentation to the Authority on program activities and expenditures as needed to prepare annual reports and meet information needs of the Minnesota Legislature or the U.S. Environmental Protection Agency (USEPA).
   C. Provide data to the Authority for entry into the USEPA's CWSRF Benefits Reporting System on the environmental impacts and results of certified projects as needed to comply with the environmental results reporting requirements of USEPA capitalization grant agreements and state reporting requirements.
   D. Maintain compliance with the CWSRF Operating Agreement between the State of Minnesota and the USEPA, and the CWSRF program Interagency Agreement between the Department of Employment and Economic Development, the Agency, and the Authority.
   E. In accordance with the Continuing Disclosure Policy adopted by the Authority on December 12, 2005, immediately notify the Authority Executive Director of any events occurring in the administration of the Program that could be material to the bonds or programs of the Authority, or that could result in the breach of any duties or responsibilities of the Authority or the Agency under any agreements entered into by the Authority, State and Federal law, or regulations applicable to the Authority and its programs.

3. **Consideration and Payment**
   The total obligation of the Authority for all compensation and reimbursements to the Agency under this agreement will not exceed $1,738,080, to be funded from the CWSRF Fee Account in SWIFT Fund 8200. The Agency's account to accept and expend these monies must also be in Fund 8200. All revenues of the Authority, including federal grant funds and fee revenues, are statutorily annually appropriated to the Authority pursuant to Minnesota Statutes 446A.04, subdivision 20.

4. **Conditions of Payment**
   The Authority will transfer funds to the Agency after full execution of this agreement. The Authority will have inquiry access to the Agency's SWIFT accounts to monitor fund usage. No review will be performed by the Authority to determine the eligibility of expenses charged by the Agency.

   All services provided by the Agency under this agreement must be performed to the Authority's satisfaction, as determined at the sole discretion of the Authority's Authorized Representative.

5. **Authorized Representatives**
   The Authority's Authorized Representative is Jeff Freeman, Executive Director, 332 Minnesota Street, Suite W820, St. Paul, MN 55101, 651-259-7465, or successor.

   The Agency's Authorized Representative is Vickie Blomgren, Financial Operations Manager, Operations Division, 520 Lafayette Road, St. Paul, MN 55155-4194, 651-757-2236, or successor.

6. **Amendments**
   Any amendment to this agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original agreement, or their successors in office.

7. **Liability**
   Each party will be responsible for its own acts and behavior and the results thereof.

8. **Termination**
   Either party may terminate this agreement at any time, with or without cause, upon 30 days' written notice to the other party. In the event of such a cancellation, the Agency shall be entitled to payment, determined on a pro rata basis, for work or services satisfactorily performed.

9. **Other Provisions**
   A. The Authority will not be held responsible for the failure of the Department of Management and Budget or USEPA if funds are not released or deposited upon the Authority's request.

   B. This Interagency Agreement does not release the Authority or the Department from their obligations under the program Operating Agreement, including any required corrective action in the event of misuse of funds or use of funds for ineligible purposes.

The remainder of this page is left blank intentionally.

1. PUBLIC FACILITIES AUTHORITY

By _____

Title Executive Director

Date 6/18/19

2. POLLUTION CONTROL AGENCY:

By _____

Title Asst. Division Director

Date 6/24/19

3. ENCUMBERED: Individual signing certifies that funds have been encumbered as required by Minnesota Statute 16A.

By _____

PO date N/A: SWIFT Appropriation Transfer,

PO ID(s) Journal ID 0004829506

Exhibit A to Interagency Agreement: MPCA-CWSRF Program Administration FY 2020

MINNESOTA PUBLIC FACILITIES AUTHORITY
RESOLUTION NUMBER 2019-01

APPROVING THE AUTHORITY'S FY 2020 BUDGET AND AUTHORIZING PREPARATION AND EXECUTION OF AGREEMENTS AND CONTRACTS FOR EXPENSES RELATED TO THE AUTHORITY'S OPERATIONS AND PROGRAMS

WHEREAS, pursuant to Minnesota Statutes Section 446A.03, Subdivision 5, the Executive Director is responsible for staff of the Authority and for carrying out the Authority's responsibilities to manage and implement the funds and programs of the Authority; and

WHEREAS, Minnesota Statutes Section 446A.03, Subdivision 6 authorizes the Authority to enter into agreements for administrative and professional services, and technical support; and

WHEREAS, Minnesota Statutes Section 446A.04, Subdivision 5 authorizes the Authority to collect fees for costs incurred by the Authority and other agencies and departments and to enter into interagency agreements with appropriate agencies and departments to provide funds for the administration of its programs; and

WHEREAS, pursuant to Minnesota Statutes Section 446A.07, the Pollution Control Agency is responsible for various administrative duties with respect to the Clean Water Revolving Fund and loan fees and other monies may be used to the extent permitted under federal law to pay reasonable costs incurred by the Pollution Control Agency for these activities; and

WHEREAS, pursuant to Minnesota Statutes Section 446A.081, the Department of Health is responsible for various administrative duties with respect to the Drinking Water Revolving Fund and loan fees and other monies may be used to the extent permitted under federal law to pay reasonable costs incurred by the Department of Health for these activities.

NOW, THEREFORE BE IT RESOLVED BY THE MINNESOTA PUBLIC FACILITIES AUTHORITY THAT:

1. The Authority's administrative budget for FY 2020 is hereby approved in the total amount of $1,679,000, and the Executive Director is authorized to make line item changes during the year as may be necessary within the overall budget limit; and

2. The Executive Director is authorized to prepare and execute on behalf of the Authority interagency agreements for FY 2020 program administration expenses with the Pollution Control Agency in the amount of $1,738,080 and the Department of Health in the amount of $624,200; and

3. The Executive Director is authorized to prepare and execute on behalf of the Authority an FY 2020 interagency agreement with the Department of Employment and Economic Development for administrative and technical services to support Authority staff and operations; and

4. The Executive Director is authorized to prepare and execute on behalf of the Authority an FY 2020 interagency agreement with the Housing Finance Agency for professional/technical services provided by Paula Rindels; and

5. The Executive Director is authorized to sign contracts, purchase orders, and other agreements necessary and appropriate to manage and implement the funds and programs of the Authority and maintain compliance with state and federal program requirements, securities and tax laws and regulations.

Adopted the 4th day of June, 2019

MINNESOTA PUBLIC FACILITIES AUTHORITY

By: _____
Chair/Member

Attest: _____
Executive Director