



Michigan Department of Natural Resources – Procurement Services
 P.O. Box 30028, Lansing, MI 48909
 OR
 525 W. Allegan, Lansing, MI 48933

NOTICE OF CONTRACT NO. 751B5500026
Between
STATE OF MICHIGAN
and

Required by authority of 1984 PA 431, as amended.

Name and Address of Contractor Michigan State University Office of Sponsored Programs 426 Auditorium Rd., Rm 2 301 Administration Building East Lansing, MI 48824-2601	Primary Contact Diane Cox	
	Email Coxd@osp.msu.edu	
	Telephone (517) 884-4243	Contractor #, Mail Code *****5984/283

State Contact	Division	Name	Telephone	Email
Contract Manager	Fisheries	Marisa Lay	(517) 284-5837	Laym@michigan.gov
Contract Administrator	Finance and Operations	Jana Harding-Bishop	(517) 284-5938	HardingJ3@michigan.gov

Contract Summary			
Description (Provide a basic but comprehensive description of services) Effects of flow reduction on thermal dynamics of streams: improving an important link in Michigan's Water Withdrawal Assessment Tool (WWAT)			
Initial Term 2 years, 6 months	Effective Date 5/01/2015	Initial Expiration Date 10/31/2017	Available Options 3, 1-year
Payment Terms Net 30	F.O.B. N/A	Shipped N/A	Shipped From N/A
Minimum Delivery Requirements N/A	Alternate Payment Options <input type="checkbox"/> P-Card <input type="checkbox"/> Direct Voucher (DV)		Available to MiDeal Participants <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ESTIMATED CONTRACT VALUE AT TIME OF EXECUTION: \$126,783.00			



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THIS IS NOT AN ORDER: This Contract Agreement is awarded based on a United States Fish and Wildlife Service (USFWS) Grant (T-10-T-5). Orders for delivery will be issued directly by the Michigan Department of Natural Resources through the issuance of a Purchase Order Form.

FOR THE CONTRACTOR:

Michigan State University

 Firm Name
 On-file in DNR Procurement

 Authorized Agent Signature
 Diane Cox, Senior Contract and Grant Administrator

 Authorized Agent (Print or Type)
 4/23/15

 Date

FOR THE STATE:

On-file in DNR Procurement

 Signature
 Laurie Gyorkos/Manager

 Name/Title
 DNR Finance and Operations/Procurement

 Division/Section
 5/4/15

 Date

STATE OF MICHIGAN TERMS AND CONDITIONS

I-A PURPOSE

This contract consists of the State of Michigan's (State) terms and conditions and the work statement (Appendix A). This contract constitutes the complete and exclusive agreement and understanding of the parties as it relates to this transaction. This contract supersedes all proposals, or other prior agreements, and all other communications between the parties relating to this transaction. If there is a conflict between the State's terms and conditions and the Contractor's Proposal, the State's terms and conditions shall take precedence.

The purpose of this contract is to obtain the services of the Department of Fisheries and Wildlife at Michigan State University to conduct research titled: **Effects of flow reduction on thermal dynamics of streams: improving an important link in Michigan's Water Withdrawal Assessment Tool (WWAT)**, **MSU Ref. #140013** in collaboration with Fisheries Division of the Michigan Department of Natural Resources (DNR). Project completion date is **October 31, 2017**

I-B ISSUING OFFICE/CONTRACT ADMINISTRATOR

This contract is issued by the State of Michigan, Department of Natural Resources, Finance and Operations Division (FOD) for Fisheries Division (FD).

FOD is the only office authorized to change, modify, amend, alter, and clarify, etc., the prices, specifications, terms, and conditions of this contract. All requests for changes, modifications, amendments, etc. must be addressed to:

Jana Harding-Bishop, DNR, FOD
3rd Floor, Constitution Hall
P.O. Box 30028
Lansing, MI 48909
(517) 284-5938

I-C CONTRACT STAFFING

Upon receipt of the properly executed contract agreement, it is anticipated that the person named below or any other person so designated be authorized to oversee the contract on a day-to-day basis during the term of the contract. However, oversight of this contract implies no authority to change, modify, clarify, amend, or otherwise alter the prices, terms, conditions, and specifications of this contract.

The DNR Project Managers are:

Gary Whelan, Research Program Manager
Department of Natural Resources
Fisheries Division
P.O. Box 30446
Lansing, MI 48909
Telephone: (517) 284-5840
Fax: (517) 373-0381
Email: whelang@michigan.gov

Dr. Troy Zorn, Co-PI
Marquette Fisheries Research Station
484 Cherry Creek Road
Marquette, MI 49855
Telephone: (906) 249-1611, ext. 308

Email: zornt@michigan.gov

The MSU Principal Investigator (MSU-PI) for this project is listed below. This person is responsible for the administration and research of the project. The MSU-PI does not have the authority to change, modify, clarify, amend, or otherwise alter the prices, terms, conditions, and specifications of the contract as that authority is retained by MSU - Office of Sponsored Programs.

Dr. Daniel Hayes, Assoc. Chair
Department of Fisheries and Wildlife
Michigan State University
334C Natural Resources
East Lansing, MI 48824
Telephone: (517) 432-3781
Email: hayesdan@msu.edu

Dr. Dana Infante, Co-PI
Department of Fisheries and Wildlife
Michigan State University
334E Natural Resources
East Lansing, MI 48824
Telephone: (517) 432-7232
Email: infanted@msu.edu

I-D CONTRACT MANAGER

Marisa Lay
Financial Analyst, DNR, Fisheries Division
P. O. Box 30446
Lansing, MI 48909
Telephone: (517) 284-5837
Email: Laym@michigan.gov

I-E PROGRAM OF WORK

Problem/Need: Water temperature is a critical factor influencing fish metabolism, growth, and survival. For highly-valued stream fishes such as trout, the presence of suitable water temperatures in summer limits where populations can persist and thrive. Reduction of flow in a stream reach typically causes the water temperature in that reach to more quickly equilibrate with ambient air temperature. Excessive flow reduction in summer can increase stream warming rates dramatically, to the extent that they will no longer support coldwater fishes. In Hunt Creek, a tributary to Michigan's Thunder Bay River, 90% reductions in summer baseflow resulted in up to 28-fold increases in downstream warming rates (Nuhfer and Baker 2004). While initial temperatures of Hunt Creek were very cold and the study reach too short to result in adverse effects on the reach's brook trout population, adverse effects would likely have been noted on trout populations further downstream if the diverted water not been returned to the stream.

When assessing the effect of flow reduction on downstream warming for Michigan's Water Withdrawal Assessment Tool (WWAT), Zorn et al. (2008) used a single physical process model, applying it to all stream types. Predictions of warming rates for Hunt Creek from the WWAT's warming model provided an approximation of observed warming rates during the Nuhfer and Baker (2004) study, but no other warming rate data were available for assessing the model's applicability to other stream types. The need for such data was highlighted as an area for further work (Zorn et al. 2008).

Techniques for predicting the impact of water warming on fishes are currently evolving. Describing “optimal” habitat conditions for fish species included the WWAT involved computing the mean and standard deviation in habitat conditions (i.e., July mean temperature, low-flow yield, catchment size) for Michigan streams where each species was most abundant. Through examination of coefficients of variation, Zorn et al. (2008) noted that a species’ mean and standard deviation values might be biased if they were computed from 10 or fewer sites. As a result, they only included species for which 10 optimal sites could be identified (i.e., species needed abundance values >0 at 50 or more sites in the database). Since then, Baker and King (2010) developed techniques for identifying ecological thresholds for species with low occurrence frequencies or highly variable abundances; such characteristics are common in regional stream fish datasets, including the WWAT dataset. These techniques could increase the robustness of fish habitat preference descriptors or allow inclusion of species with limited occurrence in Michigan’s WWAT. Comparison of threshold values between the approaches of Zorn et al. (2008) and Baker and King (2010), could provide useful insights for future updates of the fish response to flow reduction component of the WWAT.

Purpose and Objectives: MSU will support future improvements of the flow-fish response relationships in the WWAT through data collection and analysis. Specifically, our objectives are:

- 1) To quantify and model relationships between air temperature, stream discharge, and downstream warming rates for a representative sample of each of the four thermal categories of streams included in the WWAT (i.e., cold, cold-transitional, warm-transitional, and warm).
- 2) To evaluate model prediction in streams currently experiencing summer water withdrawals.
- 3) To use the WWAT fish-flow modeling dataset to compare the Zorn et al. (2008) and Baker and King (2010) approaches for characterizing optimal July mean temperature, low-flow yield, catchment size conditions for select Michigan fishes.

Expected Results and Benefits: It is commonly accepted that excessive flow reduction may have significant effects on fishes, especially important coldwater species like trout. The downriver warming rate response is probably the weakest link in the initial statewide riverine habitat model set, due to the paucity of data documenting effects of flow reduction on the rate at which stream temperatures equilibrate to ambient air temperatures. Improvements in our understanding via data collection in different types of Michigan streams and temperature-flow modeling will greatly strengthen our ability to manage in the face of impending thermal stressors. Examination of new approaches to describing fish habitat optima will also support future improvements to the WWAT.

Procedure: Rather than undertaking a costly manipulative study on a single (or a few) streams, we will sample seasonal changes in air temperature, upstream and downstream water temperature, and discharge data over the course of 2 years on different Michigan stream types, and use these data to describe changes in warming rates associated with flow and air temperature conditions for several examples of each stream type. We will also collect data during winter on some streams since reduced flows may lead to harsher winter stream environments, and could adversely affect survival of important species, such as steelhead (Seelbach 1986). We will strategically locate study sites to make use of water withdrawal operations currently in effect to create high contrast in our data set, and will locate sites on USGS-gaged reaches when feasible. We will assess how these relationships vary among stream types, model relationships for each type, and provide recommendations (and models if appropriate) for use in future WWAT updates. We will also examine the Baker and King (2010) threshold analysis as an alternative to Zorn et al’s (2008) statistical approach to describing species preferences for July mean temperature, river size, and low-flow yield.

MSU will complete the following tasks under this contract:

- Task 1. Deploy and retrieve loggers.—We will identify sites for sampling based on consideration of proximity to USGS gauging stations as well as stream reaches known to have water withdrawals. We anticipate being able to sample approximately 24 stream reaches (6 reaches in each of the 4 stream type categories). We will deploy and retrieve loggers, and manage logger data following MDNR Fisheries Division Status and Trends protocols. Data will be managed in an MS Access database. Time permitting, we will conduct fish community surveys on select study streams following Status and Trends protocols. These reaches will be selected to complement existing data and broaden coverage across stream types.
- Task 2. Compare fish habitat optima from two approaches.—Using MDNR’s WWAT fish-flow modeling dataset, compare threshold values for representative species for several stream types using the Zorn et al. (2008) and Baker and King (2010) approaches.
- Task 3. Analyze flow and temperature data.—Describe downstream rates of water temperature change for each stream reach as a function of air temperature and flow reduction. Develop models for each stream type and individual reaches (if appropriate). Compare observations to estimates from physical process model used in the WWAT.
- Task 4. Archive temperature and fish survey data.— Upload temperature and fisheries survey data to MDNR’s Fish Collection System (FCS) for archiving.

DNR will provide the following:

- (1) DNR PI will advise and assist the MSU PI on various facets of the study as needed - including serving on graduate committee, sampling design, field sampling, data analysis, manuscript preparation, and publication.
- (2) DNR PI will provide WWAT database for use on Objective 3
- (3) DNR PI as well as Marquette Fisheries Research Station or other Fisheries Division staff as available will assist with field sampling and entry of data into the FCS.

Project Time Line:

- May 2015
 - MSU student hired on project.
 - Sample sites identified and loggers ordered
 - Start analyzing data on fish-habitat relations
- Spring-Summer 2015
 - Deploy loggers
 - Periodically measure flows to calibrate pressure loggers
 - Continue analysis of data on fish-habitat relations
- October 2015
 - Annual progress report
- January 2016
 - Summary of analysis of data collected
 - Provide MDNR data for entry in FCS
 - Review and adjust sampling design as needed
- Spring-summer 2016
 - Deploy loggers
 - Periodically measure flows to calibrate pressure loggers
 - Continue analysis of data on fish-habitat relations
 - Conduct fish assemblage surveys on select streams
- August 2016
 - Draft final report on analysis of data on fish-habitat relations

- October 2016
 - Annual progress, including final report on analysis of data on fish-habitat relations
- December 2016
 - Summary of analyses and plan for final analysis of impacts of flow reduction on temperature
- January 2017
 - Draft final report (draft peer-reviewed manuscript) on impacts of flow reduction on temperature
- May 2017
 - Impacts of flow reduction on temperature manuscript submitted to peer-reviewed journal
- June 2017
 - Manuscript revisions
- July 2017
 - Revised manuscript submitted
- October 2017
 - Final report with citation of peer-reviewed publication that was submitted or published

I-F DELIVERABLES

The MSU PI is responsible for providing annual progress reports and a final report to the DNR Project Manager in written and electronic format by the specified dates(s). A template for these reports will be provided by the DNR Project Manager and submitted reports must use the template or contain all information requested on the template. The reports shall be mailed and transmitted electronically to the DNR Project Manager listed in I-C.

Peer-reviewed publication submission or detailed annual report covering Study Objective 3	September 30, 2015
Master's Thesis and peer-reviewed publication submission covering Study Objectives 1 and 2- completed	September 30, 2016
Final Report	October 31, 2017

I-G PROJECT CONTROL AND REPORTS

The Contractor will carry out this project under the direction and control of the DNR, Fisheries Division.

The DNR Project Manager will meet as needed with the PI for the purpose of reviewing progress and providing necessary guidance in solving problems that arise.

The PI will submit deliverables as listed in Section I-F above, and identify any problems, real or anticipated, which should be brought to the attention of the DNR Project Manager to insure that the contract remains on schedule and will be completed as scheduled.

I-H PRICE PROPOSAL

This is a **fixed price contract** and Contractor may invoice at the end of each fiscal quarter (December 31, March 31, June 30, and September 30) for 25% of the annual DNR contribution to the study (the contract cost). Contractor's fiscal contribution to this study (34%) is the waiver of normal overhead charges per the Agreement between MSU and DNR, executed September 5, 2013.

Budget: The budget breakdown is listed in Attachment A

I-I MODIFICATIONS OF CONTRACT

This contract may be modified if any changes proposed by either party are requested in writing and mutually agreed to by the official representative of the Contractor shown in this contract and the DNR contract administrator. This request is not valid until it is signed by all parties, a Contract Change Notice is issued by the Issuing Office, and a Purchase Order is issued by the DNR.

I-J NO WAIVER OF DEFAULT

The failure of a party to insist upon strict adherence to any term of this contract shall not be considered a waiver or deprive the party of the right thereafter to insist upon strict adherence to that term, or any other term, of this contract.

I-K SEVERABILITY

Each provision of this contract shall be deemed severable from all other provisions, and if one or more of the provisions shall be declared invalid, the remaining provisions of this contract shall remain in full force and effect.

I-L HEADINGS

Captions and headings used in this contract are for information and organization purposes. Captions and headings, including inaccurate references, do not, in any way, define or limit the requirements or terms and conditions of this contract.

I-M RELATIONSHIP OF THE PARTIES

The relationship between the State and the Contractor is that of client and independent contractor. No agent, employee, or servant of the Contractor or any of its subcontractors shall be or shall be deemed an employee, agent, or servant of the State for any reason.

I-N COST LIABILITY

The State of Michigan assumes no responsibility or liability for costs incurred by the Contractor prior to the signing this contract. Total liability of the State is limited to the terms and conditions of this contract.

I-O CONTRACTOR RESPONSIBILITIES

The Contractor is responsible for the performance of all of its obligations under this contract, whether the obligations are performed by the Contractor or a subcontractor. The State reserves the right to approve any subcontractor hired to perform the Contractor's obligations under this contract, and the right to require the Contractor to replace any subcontractor deemed unacceptable by the State. The Contractor is exclusively responsible for adherence by subcontractors to all provisions of this contract. Further, the State will consider the Contractor to be the sole point of contact with regard to contractual matters, including but not limited to payment of any and all costs resulting from the contract.

I-P INFORMATION RELEASE / OWNERSHIP

News Releases

News releases pertaining to this Contract or the services, study, data, or project to which it relates will not be made without prior written State approval, which will not be unduly withheld. MSU may publish information concerning the award of this in the MSU Board of Trustees report only, without prior written consent.

Publication

The Contractor will not use, release, publish or present any analyses, findings, results, or techniques developed under this agreement, or any information derived therefrom until such analyses, findings, or techniques have been reported to the State in the manner prescribed by this agreement. The Contractor will provide the State, for its review, copies of all presentations or articles being submitted for publication at least forty-five (45) days in advance. The State will review the proposed publication and provide comments. A response shall be provided to the Contractor within forty-five (45) days; otherwise, the Contractor may assume that the State has no comments. The Contractor agrees to address any concerns or issues identified by the State with respect to the State-supplied information prior to submission for publication or presentation.

Acknowledgement of State Participation/Support

All publications or oral presentations concerning the analyses, findings, results, or techniques developed under this contract will contain an acknowledgement, of the State's participation and support unless the State requests in writing that their participation and support not be acknowledged. Furthermore, Contractor may not receive fees for any article in excess of the cost of preparation of published article and excluding the cost of the research and compilation that was compensated under the contract.

Ownership of Samples\Equipment

Any samples provided by the DNR for use under this contract will remain the sole property of the DNR and must be returned upon the request of the DNR Project Manager

At the end of the project period, the DNR will retain ownership of any supplies/equipment purchased with funding under this contract and for the purposes of the project which are not consumed while completing the project. The supplies/equipment must be returned to the State upon the request of the DNR Project Manager.

I-Q DISCLOSURE

All information in this contract is subject to the provisions of the Freedom of Information Act, 1976 Public Act No. 442, as amended, MCL 15.231, et seq.

I-R ACCOUNTING RECORDS

The Contractor will be required to maintain project records pertaining to Appendix A 'Work Statement' for three (3) years from the expiration date of this contract, which access shall be made available to the State upon reasonable notice to Contractor.

I-S AUDIT OF CONTRACT COMPLIANCE

The Contractor agrees that the State may, upon 24-hour notice, perform an audit at Contractor's location(s) to determine if the Contractor is complying with the requirements of this contract. The Contractor agrees to cooperate with the State during the audit and produce all records and documentation that verifies compliance with the requirements of this contract.

I-T SAFETY AND ACCIDENT PREVENTION

In performing work under this contract on State premises, the Contractor shall conform to any specific safety requirements contained in this contract or as required by law or regulation. The Contractor shall take any additional precautions as the State may reasonably require for safety and accident prevention purposes. Any

violation of such safety requirements, rules, laws, or regulations shall be a material breach of this contract and shall be grounds for cancellation of this contract in accordance with the Cancellation provisions contained herein.

I-U TAXES

Employment Taxes

Contractors are expected to collect and pay all applicable federal, state, and local employment taxes.

Sales and Use Taxes Contractors are required to be registered to remit sales and use taxes on taxable sales of tangible personal property or services delivered into the State.

I-V GENERAL INDEMNIFICATION

Each party to this contract must seek its own legal representative and bear its own costs; including judgments, in any litigation that may arise from performance specific to each party's responsibilities. It is specifically understood and agreed that neither party will indemnify the other party in such litigation.

I-W INSURANCE REQUIREMENTS

The Contractor shall purchase and maintain such insurance as will protect them from claims set forth below which may arise out of, or result from, the Contractor's operations under the Contract (Purchase Order), whether such operations be by themselves or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

NOTE: CONTRACTOR MAY SUBMIT EVIDENCE OF SELF-INSURANCE AND/OR AMENDMENT OF EXISTING LIABILITY COVERAGE IN FULFILLMENT OF ABOVE PROVISIONS, IF THE STATE ACCEPTS THE EVIDENCE OR AMENDED LIABILITY COVERAGE AS PROVIDING COMPARABLE PROTECTION OF THE STATE'S INTEREST.

The Contractor is required to provide proof of the minimum levels of insurance coverage as indicated below. The purpose of this coverage shall be to protect the State from claims which may arise out of, or result from, the Contractor's performance of services under the terms of this Contract, whether such services are performed by the Contractor, or by any subcontractor, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

The Contractor waives all rights against the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents for recovery of damages to the extent these damages are covered by the insurance policies the Contractor is required to maintain pursuant to this contract, unless such damages are the result of the negligence or omission of the State of Michigan.

The insurance shall be written for not less than any minimum coverage herein specified or required by law, whichever is greater.

BEFORE THE CONTRACT IS SIGNED BY BOTH PARTIES OR BEFORE THE PURCHASE ORDER IS ISSUED BY THE STATE, THE CONTRACTOR MUST FURNISH TO THE DNR, FS, CERTIFICATE(S) OF INSURANCE VERIFYING INSURANCE COVERAGE. THE CERTIFICATE MUST BE ON THE STANDARD "ACCORD" FORM. THE CONTRACT OR PURCHASE ORDER NUMBER MUST BE SHOWN ON THE CERTIFICATE OF INSURANCE TO ASSURE CORRECT FILING. All such Certificate(s) shall contain a provision indicating that coverage afforded under the policies WILL NOT BE CANCELLED OR MATERIALLY CHANGED without prior written notice having been given to the DNR, FS. Such NOTICE must include the CONTRACT NUMBER affected.

The Contractor is required to provide the type and amount of insurance checked () below:

- 1. Commercial General Liability with the following minimum coverage:
\$2,000,000 General Aggregate Limit other than Products/Completed Operations
\$2,000,000 Products/Completed Operations Aggregate Limit
\$1,000,000 Personal & Advertising Injury Limit
\$1,000,000 Each Occurrence Limit
\$500,000 Fire Damage Limit (any one fire)
- 2. If a motor vehicle is used to provide services or products under this Contract, the Contractor must have vehicle liability insurance for bodily injury and property damage as required by law.
- 3. Worker's disability compensation, disability benefit or other similar employee benefit act with minimum statutory limits. NOTE: (1) If coverage is provided by a State fund or if Contractor has qualified as a self-insurer, separate certification must be furnished that coverage is in the state fund or that Contractor has approval to be a self-insurer; (2) Any citing of a policy of insurance must include a listing of the States where that policy's coverage is applicable; and (3) Any policy of insurance must contain a provision or endorsement providing that the insurers' rights of subrogation are waived. This provision shall not be applicable where prohibited or limited by the laws of the jurisdiction in which the work is to be performed.
- 4. Employers liability insurance with the following minimum limits:
\$100,000 each accident
\$100,000 each employee by disease
\$500,000 aggregate disease

I-X NOTICE AND RIGHT TO CURE

In the event of a curable breach by the Contractor, the State shall provide the Contractor written notice of the breach and a time period to cure said breach described in the notice. This section requiring notice and an opportunity to cure shall not be applicable in the event of successive or repeated breaches of the same nature or if the State determines in its sole discretion that the breach poses a serious and imminent threat to the health or safety of any person or the imminent loss, damage or destruction of any real or tangible personal property.

I-Y CANCELLATION

The State may cancel this contract without further liability or penalty to the State, its departments, divisions, agencies, offices, commissions, officers, agents, and employees for any of the following reasons:

1. **Material Breach by the Contractor.** In the event that the Contractor breaches any of its material duties or obligations under this contract, which are either not capable of or subject to being cured, or are not cured within the time period specified in the written notice of breach provided by the State, or pose a serious and imminent threat to the health and safety of any person, or the imminent loss, damage or destruction of any real or tangible personal property, the State may, having provided written notice of cancellation to the Contractor, cancel this contract in whole or in part, for cause, as of the date specified in the notice of cancellation.

In the event the State chooses to partially cancel this contract for cause charges payable under this contract will be equitably adjusted to reflect those services that are cancelled. In the event this contract is cancelled for cause pursuant to this section, and it is therefore determined, for any reason,

that the Contractor was not in breach of contract pursuant to the provisions of this section, that cancellation for cause shall be deemed to have been a cancellation for convenience, effective as of the same date, and the rights and obligations of the parties shall be limited to that otherwise provided in this contract for a cancellation for convenience.

2. **Cancellation for Convenience by the State.** The State may cancel this contract for its convenience, in whole or part, if the State determines that such a cancellation is in the State's best interest. Reasons for such cancellation shall be left to the sole discretion of the State and may include, but not necessarily be limited to (a) the State no longer needs the services or products specified in this contract, (b) relocation of office, program changes, changes in laws, rules, or regulations make performance of the services under this contract no longer practical or feasible, and (c) unacceptable prices for additional services requested by the State. The State may cancel this contract for its convenience, in whole or in part, by giving the Contractor written notice 30 days prior to the date of cancellation. If the State chooses to cancel this contract in part, the charges payable under this contract shall be equitably adjusted to reflect those services that are cancelled.
3. **Non-Appropriation.** The State may cancel this contract in the event that funds to enable the State to effect continued payment under this contract are not appropriated or otherwise made available. The Contractor acknowledges that, if this contract extends for several fiscal years, continuation of this contract is subject to annual appropriation or availability of funds for this contract. If funds are not appropriated or otherwise made available, the State shall have the right to cancel this contract at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of cancellation to the Contractor. The State shall give the Contractor written notice of such non-appropriation or unavailability within 30 days after it receives notice of such non-appropriation or unavailability.
4. **Criminal Conviction.** In the event the Contractor, an officer of the Contractor, or an owner of a 25% or greater share of the Contractor, is convicted of a criminal offense incident to the application for or performance of a State, public or private contract or subcontract; or convicted of a criminal offense including but not limited to any of the following: embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, attempting to influence a public employee to breach the ethical conduct standards for State of Michigan employees; convicted under State or federal antitrust statutes; or convicted of any other criminal offense which in the sole discretion of the State, reflects upon the contractor's business integrity, the State may cancel this contract.
5. **Approvals Rescinded.** In the event any final administrative or judicial decision or adjudication disapproves a previously approved request for purchase of personal services pursuant to Article 11, Section 5 of the Michigan Constitution of 1963, and Chapter 7 of the Civil Service Rules, the State may cancel this contract. Notwithstanding any other provision of this contract to the contrary, the State Personnel Director is authorized to disapprove contractual disbursements for personal services if the Director determines that disbursements under this contract violate Article 11, Section 5 of the Michigan Constitution or violate applicable Civil Service rules or regulations. Cancellation may be in whole or in part and may be immediate as of the date of the written notice to the Contractor or may be effective as of the date stated in such written notice.

I-Z ASSIGNMENT

The Contractor shall not have the right to assign this contract or to assign or delegate any of its duties or obligations under this contract to any other party (whether by operation of law or otherwise), without the prior written consent of the State. Any purported assignment in violation of this section shall be null and void. Further, the Contractor may not assign the right to receive money due under this contract without the prior written consent of DNR Financial Services.

I-AA DELEGATION

The Contractor shall not delegate any duties or obligations under this contract to a subcontractor other than a subcontractor named in the bid unless DNR Financial Services has given written consent to the delegation.

I-BB NON-DISCRIMINATION CLAUSE

In the performance of any contract or purchase order resulting herefrom, the Contractor agrees not to discriminate against any employee or applicant for employment, with respect to their hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, religion, national origin, ancestry, age, sex, height, weight, marital status, physical or mental disability unrelated to the individual's ability to perform the duties of the particular job or position. The Contractor further agrees that every subcontract entered into for the performance of any contract or purchase order resulting herefrom will contain a provision requiring non-discrimination in employment, as herein specified, binding upon each subcontractor. This covenant is required pursuant to the Elliot Larsen Civil Rights Act, 1976 Public Act 453, as amended, MCL 37.2101, et seq, and the Persons with Disabilities Civil Rights Act, 1976 Public Act 220, as amended, MCL 37.1101, et seq, and any breach thereof may be regarded as a material breach of the contract or purchase order.

I-CC UNFAIR LABOR PRACTICES

Pursuant to 1980 Public Act 278, as amended, MCL 423.231, et seq, the State shall not award a contract or subcontract to an employer whose name appears in the current register of employers failing to correct an unfair labor practice compiled pursuant to Section 2 of the Act. This information is compiled by the United States National Labor Relations Board.

A Contractor of the State, in relation to the contract, shall not enter into a contract with a subcontractor, manufacturer, or supplier whose name appears in this register. Pursuant to Section 4 of 1980 Public Act 278, MCL 423.324, the State may void any contract if, subsequent to award of the contract, the name of the Contractor as an employer, or the name of the subcontractor, manufacturer or supplier of the Contractor appears in the register.

I-DD SURVIVOR

Any provisions of this contract that impose continuing obligations on the parties shall survive the expiration or cancellation of this contract for any reason.

I-EE PERFORMANCE REVIEWS

DNR may review with the contractor their performance under the contract. Performance reviews shall be conducted quarterly, semi-annually or annually depending on contractor's past performance with the State. Performance reviews shall include, but are not limited to, quality of service being delivered and provided, timeliness, percentage of completion, accuracy of billings, customer service, completion, and submission of required paperwork, and other requirements of the contract.

Upon a finding of poor performance, which has been documented by DNR Financial Services, the Contractor shall be given an opportunity to respond and take corrective action. If corrective action is not taken in a reasonable amount of time as determined by DNR Financial Services, the contract may be canceled for default.

I-FF ELECTRONIC PAYMENT AVAILABILITY

Electronic transfer of funds is available to State contractors. Contractor is required to register with the State electronically at <http://www.cpexpress.state.mi.us>. Public Act 533 of 2004 requires all payments made by the State of Michigan be transitioned to Electronic Funds Transfers (EFT).

I-GG RENEWALS

This contract may be renewed by a written and mutually executed agreement of the parties, in accordance with Section I-I above, not less than 30 days before its expiration. The contract may be renewed for up to three (3) one (1) year periods.

I-HH COMPLIANCE WITH LAWS

The Contractor represents to the best of its knowledge and belief that, in performing the services called for by this Contract, it will not violate any applicable law, rule, or regulation, or any intellectual rights of any third party; including but not limited to, any United States patent, trademark, copyright, or trade secret.

I-II Legal Effect

Contractor must show acceptance of the Contract by signing the Contract and returning it to the Contract Administrator. The Contractor must not proceed with the performance of the work to be done under the Contract, including the purchase of necessary materials, until both parties have signed the Contract to show acceptance of its terms, and the Contractor receives a Contract release/purchase order that authorizes and defines specific performance requirements.

ATTACHMENT A

Proposed Budget

Project Title: "Effects of flow reduction on thermal dynamics of streams: Improving an important link in Michigan's Water Withdrawal Assessment Tool (WWAT)"

Funding for this project is 65% funded by Federal (DOI) and 35% State of Michigan Game and Fish.

2015	
<u>Budget for SWG Contract w/ MSU (237025)</u>	
<u>Salaries and Wages</u>	
MS Grad Student	\$21,600.00
Summer field assistant	\$0.00
Total Salary	\$21,600.00
<u>Benefits</u>	
MS Grad Student	\$13,437.00
Summer field assistant	\$0.00
Total Benefits	\$13,437.00
<u>Field and Lab Supplies</u>	
Temperature and temperature-flow loggers (to be returned to DNR upon completion of the project)	\$9,600.00
Other field supplies, equipment repair, phone, copy, etc.	\$2,000.00
Computer for student and software	\$1,500.00
<u>Meetings/Conferences</u>	
Fees/Meals/Travel	\$2,000.00
<u>Travel/Per diem</u>	
Gas	\$2,000.00
Motel/Housing	\$2,000.00
Meals/food	\$1,000.00
Total	\$7,000.00
Total Direct	\$55,137.00

Project Title: "Effects of flow reduction on thermal dynamics of streams: Improving an important link in Michigan's Water Withdrawal Assessment Tool (WWAT)"

2016

<u>Budget for SWG Contract w/ MSU (237025)</u>	
Salaries and Wages	
MS Grad Student	\$22,248.00
Summer field assistant	\$5,000.00
Total Salary	\$27,248.00
Benefits	
MS Grad Student	\$13,974.00
Summer field assistant	\$300.00
Total Benefits	\$14,274.00
Field and Lab Supplies	
Temperature and temperature-flow loggers (to be returned to DNR)	\$0.00
Other field supplies, equipment repair, phone, copy, etc.	\$2,000.00
Computer for student and software	\$200.00
Meetings/Conferences	
Fees/Meals/Travel	\$2,000.00
Travel/Per diem	
Gas	\$2,000.00
Motel/Housing	\$2,000.00
Meals/food	\$1,000.00
Total	\$7,000.00
Total Direct	\$50,722.00

Project Title: "Effects of flow reduction on thermal dynamics of streams: Improving an important link in Michigan's Water Withdrawal Assessment Tool (WWAT)"

2017

Budget for SWG Contract w/ MSU (237025)

Salaries and Wages

MS Grad Student	\$11,458.00
Summer field assistant	\$0.00
Total Salary	\$11,458.00

Benefits

MS Grad Student	\$7,267.00
Summer field assistant	\$0.00
Total Benefits	\$7,267.00

Field and Lab Supplies

Temperature and temperature-flow loggers (to be returned to DNR)	\$0.00
Other field supplies, equipment repair, phone, copy, etc.	\$0.00
Computer for student and software	\$200.00

Meetings/Conferences

Fees/Meals/Travel	\$700.00
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Travel/Per diem

Gas	\$600.00
Motel/Housing	\$450.00
Meals/food	\$250.00
Total	\$2,000.00

Total Direct	\$20,924.00
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