

**AGREEMENT BETWEEN
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.
AND THE CITY OF ANN ARBOR
FOR PROFESSIONAL SERVICES**

The City of Ann Arbor, a Michigan municipal corporation, having its offices at 301 East Huron Street, Ann Arbor, Michigan 48107 ("City"), and Environmental Consulting & Technology, Inc. ("Consultant") a(n) Delaware Corporation with its address at 2200 Commonwealth Boulevard, Suite 300, Ann Arbor, Michigan 48105 agree as follows on this _____ day of _____, 2012.

The Consultant agrees to provide professional services to the City under the following terms and conditions:

I. DEFINITIONS

Administering Service Area/Unit means City of Ann Arbor Systems Planning Unit.

Contract Administrator means Cresson S. Slotten, P.E., acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Deliverables means all Plans, Specifications, Reports, Recommendations, and other materials developed for or delivered to City by Consultant under this Agreement

Project means Management of Millers Creek Sediment Accumulation.

II. DURATION

This Agreement shall become effective on _____, 2012, and shall remain in effect until satisfactory completion of the Services specified below unless terminated as provided for in this Agreement.

III. SERVICES

- A. The Consultant agrees to provide professional engineering services ("Services") in connection with the Project as described in Exhibit A. The City retains the right to make changes to the quantities of service within the general scope of the Agreement at any time by a written order. If the changes add to or deduct from the extent of the services, the contract sum shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.
- B. Quality of Services under this Agreement shall be of the level of professional quality performed by experts regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.

- C. The Consultant shall perform its Services for the Project in compliance with all statutory, regulatory and contractual requirements now or hereafter in effect as may be applicable to the rights and obligations set forth in the Agreement.
- D. The Consultant may rely upon the accuracy of reports and surveys provided to it by the City except when defects should have been apparent to a reasonably competent professional or when it has actual notice of any defects in the reports and surveys.

IV. COMPENSATION OF CONSULTANT

- A. The Consultant shall be paid in the manner set forth in Exhibit B. Payment shall be made monthly, unless another payment term is specified in Exhibit B, following receipt of invoices submitted by the Consultant, and approved by the Contract Administrator.
- B. The Consultant will be compensated for Services performed in addition to the Services described in Section III, only when those additional Services have received prior written approval of the Contract Administrator. Compensation will be on the basis of reasonable time spent and reasonable quantities of materials used, according to the schedule of rates in Exhibit B. The Contract Administrator shall be the sole arbitrator of what shall be considered “reasonable” under this provision.
- C. The Consultant shall keep complete records of time spent and materials used on the Project so that the City may verify invoices submitted by the Consultant. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

V. INSURANCE/INDEMNIFICATION

- A. The Consultant shall procure and maintain during the life of this contract, such insurance policies, including those set forth below, as will protect itself and the City from all claims for bodily injuries, death or property damage which may arise under this contract; whether the acts were made by the Consultant or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:
 - 1. Professional Liability Insurance protecting the Consultant and its employees in an amount not less than \$1,000,000.
 - 2. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident

Bodily Injury by Disease - \$500,000 each employee
Bodily Injury by Disease - \$500,000 each policy limit

3. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, Collapse and Underground Coverage or Pollution. Further, the following minimum limits of liability are required:

\$1,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined

\$2,000,000 Per Job General Aggregate

\$1,000,000 Personal and Advertising Injury

4. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

5. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

B. Insurance required under V.A.3 and V.A.4 of this contract shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.

C. In the case of all contracts involving on-site work, the Consultant shall provide to the City, before the commencement of any work under this contract, documentation demonstrating it has obtained the above mentioned policies. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative;

name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Consultant supplies a copy of the endorsements required on the policies. Upon request, the Consultant shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this contract, the Consultant shall deliver proof of renewal and/or new policies to the Administering Service Area/Unit at least ten days prior to the expiration date.

- D. Any insurance provider of Consultant shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-admitted insurance companies are not acceptable unless approved in writing by the City.
- E. To the fullest extent permitted by law, for any loss not covered by insurance under this contract, the Consultant shall indemnify, defend and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, to its proportionate extent, from any negligent, grossly negligent, reckless and/or intentional wrongful or tortious acts or omissions by the Consultant or its employees and agents occurring in the performance of this Agreement.

VI. COMPLIANCE REQUIREMENTS

- A. Nondiscrimination. The Consultant agrees to comply with the nondiscrimination provisions of Chapter 112 of the Ann Arbor City Code and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate any inequality based upon race, national origin or sex. The Consultant agrees to comply with the provisions of Section 9:161 of Chapter 112 of the Ann Arbor City Code, Exhibit C.

- B. Living Wage. The Consultant is a “covered employer” as defined in Chapter 23 of the Ann Arbor City Code and agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Consultant agrees to pay those employees providing Services to the City under this Agreement a “living wage,” as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3) and specified in Exhibit D; to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23. A copy of selected provisions of Chapter 23 of the Ann Arbor City Code is attached as Exhibit D.

VII. WARRANTIES BY THE CONSULTANT

- A. The Consultant warrants that the quality of its Services under this Agreement shall conform to the level of professional quality performed by experts regularly rendering this type of service.
- B. The Consultant warrants that it has all the skills, experience, and professional licenses necessary to perform the Services specified in this Agreement.
- C. The Consultant warrants that it has available, or will engage, at its own expense, sufficient trained employees to provide the Services specified in this Agreement.
- D. The Consultant warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City including real and personal property taxes.

VIII. TERMINATION OF AGREEMENT

- A. If either party is in breach of this Agreement for a period of fifteen (15) days following receipt of notice from the non-breaching party with respect to a breach, the non-breaching party may pursue any remedies available to it against the breaching party under applicable law, including but not limited to, the right to terminate this Agreement without further notice.
- B. The City may terminate this Agreement if it decides not to proceed with the Project by notice pursuant to Article XII. If the Project is terminated for reasons other than the breach of the Agreement by the Consultant, the Consultant shall be compensated for reasonable time spent and reasonable quantities of materials used prior to notification of termination.

- C. Consultant acknowledges that, if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds for this Project. If funds to enable the City to effect continued payment under this Agreement are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to the Consultant. The Contract Administrator shall give the Consultant written notice of such non-appropriation within thirty (30) days after it receives notice of such non-appropriation.
- D. The remedies provided in this Agreement will be cumulative, and the assertion by a party of any right or remedy will not preclude the assertion by such party of any other rights or the seeking of any other remedies.

IX. OBLIGATIONS OF THE CITY

- A. The City agrees to give the Consultant access to the Project area and other City-owned properties as required to perform the necessary Services under this Agreement.
- B. The City shall notify the Consultant of any defects in the Services of which the Contract Administrator has actual notice.

X. ASSIGNMENT

- A. The Consultant shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Consultant shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under the Agreement unless specifically released from the requirement, in writing, by the City.
- B. The Consultant shall retain the right to pledge payment(s) due and payable under this Agreement to third parties.

XI. NOTICE

All notices and submissions required under this Agreement shall be by personal delivery or by first-class mail, postage prepaid, to the address stated in this Agreement or such other address as either party may designate by prior written notice to the other. Notice shall be considered delivered under this Agreement when personally delivered to the Contract Administrator or placed in the U.S. mail, postage prepaid to the Administering Service Area/Unit, care of the Contract Administrator.

XII. CHOICE OF LAW

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction. The parties submit to the jurisdiction and venue of the Circuit Court for Washtenaw County, State of Michigan, or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Southern Division, with respect to any action arising, directly or indirectly, out of this Agreement or the performance or breach of this Agreement. The parties stipulate that the venues referenced in this Agreement are convenient and waive any claim of non-convenience.

XIII. OWNERSHIP OF DOCUMENTS

Upon completion or termination of this Agreement, all documents (i.e., deliverables) prepared by or obtained by the Consultant as provided under the terms of this Agreement shall be delivered to and become the property of the City. Original basic survey notes, sketches, charts, drawings, partially completed drawings, computations, quantities and other data shall remain in the possession of the Consultant as instruments of service unless specifically incorporated in a deliverable, but shall be made available, upon request, to the City without restriction or limitation on their use. The City acknowledges that the documents are prepared only for the Project. Prior to completion of the contracted Services the City shall have a recognized proprietary interest in the work product of the Consultant.

Unless otherwise stated in this Agreement, any intellectual property owned by Consultant prior to the effective date of this Agreement (i.e., preexisting information) shall remain the exclusive property of Consultant even if such Preexisting Information is embedded or otherwise incorporated in materials or products first produced as a result of this Agreement or used to develop Deliverables. The City's right under this provision shall not apply to any Preexisting Information or any component thereof regardless of form or media.

XIV. CONFLICT OF INTEREST

Consultant certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Consultant further certifies that it presently has no personal or financial interest, and shall not acquire any such interest, direct or indirect, which would conflict in any manner with its performance of the Services under this Agreement.

XV. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance will be prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

XVI. EXTENT OF AGREEMENT

This Agreement, together with any affixed exhibits, schedules or other documentation, constitutes the entire understanding between the City and the Consultant with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements or understandings whether written or oral. Neither party has relied on any prior representations, of any kind or nature, in entering into this Agreement. This Agreement may be altered, amended or modified only by written amendment signed by the Consultant and the City.

FOR CONSULTANT

FOR THE CITY OF ANN ARBOR

By _____

By _____
John Hieftje, Mayor

Its

By _____
Jacqueline Beaudry, City Clerk

Approved as to substance

Steven D. Powers, City Administrator

Craig Hupy, Interim Public Services Administrator

Approved as to Form and Content

Stephen K. Postema, City Attorney

EXHIBIT A

SCOPE OF SERVICES

MANAGEMENT OF MILLERS CREEK SEDIMENT ACCUMULATION

Project Approach

The ECT Team has relied upon its extensive experience with the Millers Creek watershed to develop a cost-effective work plan for this project. We propose to build on previous works to reduce overall project costs including the FEMA floodplain model (HEC-RAS) and Millers Creek Improvement Plan data and modeling (SWMM). The ECT Team will augment previous work but only to the extent necessary to address the issue of sediment accumulation in the Ruthven Nature Preserve and other areas within Millers Creek. The work plan reflects this focused effort to collect the limited data necessary to evaluate channel erosion and deposition processes over time, add necessary detail to the HEC-RAS model, and estimate sediment loading due to channel erosion processes. Much of the data collected will be used to validate the sediment transport results produced by HEC-RAS. In other words, the HEC-RAS model results should approximate observed and measurable conditions.

Particle size analysis conducted on sediment samples collected at Ruthven Nature Preserve indicate that Millers Creek is transporting sand, gravel and small cobble throughout the system. These coarse materials are transported primarily as bed load. The wash load from the watershed is comprised of finer silts and clays that are transported primarily as suspended load. Given the low percentage of silts and clays (i.e. suspended load) in the Ruthven sediment samples and dominance of coarse materials it appears that bed load transport is the primary sediment load and transport component of concern. While management of wash load (and watershed hydrology) is an important factor to restoring the Millers Creek watershed, short and long term sediment management strategies for the Ruthven sediment accumulation area and other sediment accumulation areas will need to focus primarily on bed load transport and erosion processes within the channels of Millers Creek.

While bed load is the most important component of the sediment load and accumulation at Ruthven, the wash load is still an important aspect of the annual sediment load. Restoration of the Millers Creek watershed will require reductions in the wash load as addressed in the Millers Creek Improvement Plan. The Improvement Plan provides a model estimated annual sediment loading to Millers Creek from the wash load that will be used to estimate the total annual sediment load when combined with the estimated annual bed load. The ECT Team believes that the 2004 XP-SWMM estimate of annual wash load is still applicable given the limited changes in the watershed since 2004.

The ECT Team proposes to use the sediment transport functions of HEC-RAS to develop a long-term sediment transport model of Millers Creek spanning an eight year period between 2004 and 2012 (to present). This period has been selected because stream conditions can be accurately known in 2004 and 2012. In 2004, cross-section surveying was done to support development of the FEMA floodplain model (HEC-RAS). In 2012, a subset of those cross-sections can be resurveyed to document existing conditions. Existing conditions at each cross-section can then

be used to estimate rates of erosion and deposition within the channels of Millers Creek and validate the HEC-RAS sediment transport model.

HEC-RAS provides a cost-effective tool for predicting sediment transport with sufficient detail to develop sediment management options. More complex sediment transport models exist, but can be data intensive and expensive to develop. In contrast, the HEC-RAS model has already been developed for the system by Spicer for FEMA's floodplain map modernization study and is readily available. In addition, HEC-RAS is a more powerful tool for evaluating sediment transport than XP-SWMM. The sediment transport functions of HEC-RAS will allow the ECT team to cost-effectively simulate observed system behavior. Once the model is validated and simulating observed behavior, it can be used to establish the baseline conditions leading to sediment accumulation at Ruthven and to evaluate the potential effectiveness of management recommendations. Additionally, the model will identify areas prone to aggradation (storing sediment load) and degradation (producing sediment load). Understanding how the sediment is transported throughout the stream network is critical for developing management recommendations.

The ECT Team has developed its proposed technical work plan to help the City of Ann Arbor answer the following questions:

- 1) Is the sediment loading/transport in Millers Creek excessive? If so, why?
 - a. Is excessive sediment loading and transport causing the problem at Ruthven or is the problem caused by infrastructure?
 - b. What are the highest sediment contributors and where are they located (priority-based approach)?
- 2) What can be done in the channel and in the watershed to reduce sediment loading and transport long-term?
 - a. Consider maintenance activities and potential watershed improvements.
- 3) Where is sediment accumulating currently and why?
- 4) Can Millers Creek be altered at the Huron High School and Ruthven Nature Preserve to improve sediment transport and eliminate/reduce sediment accumulation in the channel?
 - a. Are the culverts under Geddes Road & Huron Parkway contributing to the problem? Can they be altered to improve the problem?
- 5) If Millers Creek cannot be altered to eliminate/reduce sediment accumulation, what short-term changes can be made to manage the sediment cost-effectively until long-term controls are implemented in the watershed?
 - a. For example, are there opportunities to "force" sediment accumulation in an area that can be easily maintained in the short term?

Task 1 – Baseline Determination and Information Gathering

The ECT Team will collect and review existing information, conduct a field investigation, and update the existing HECRAS hydraulic model to support the evaluation of sediment loading and transport within Millers Creek. Work proposed within this task includes all work necessary to develop a baseline condition for sediment loading and transport within Millers Creek. Modeling and geomorphic analysis will be used to estimate the annual average sediment load for Millers

Creek and to replicate observed system behavior in terms of sediment transport. The proposed scope-of-work for Task 1 is discussed in detail in the following sub-tasks.

Review Recommendations from the Millers Creek Improvement Plan

The ECT Team will tabulate and review recommendations from the Millers Creek Improvement Plan that are proposed within the City's right-of-ways. To determine which recommendations are beneficial and applicable, recommended projects that reduce sediment loading to Millers Creek will be selected and used throughout the study. The Improvement Plan, including data, results, conclusions and recommendations will be used by the ECT Team as a reference throughout the project to inform the study and decision making.

Review and Summarize Existing Data

The ECT Team will review and summarize existing survey and topographical data as well as data collected for the Millers Creek Improvement Plan, the 2005 FEMA Map Modernization Project, and the 2007 Millers Creek Streambank Stabilization Project. We will use this information to focus our data collection efforts in the areas that will yield the most valuable information.

The ECT Team will use cross-section survey data collected by Spicer Group under direct contract with the City of Ann Arbor. The survey work is expected to be conducted in late March or early April, prior to the temporary sediment removal project at Ruthven.

Engineering Field Investigation

The ECT Team will perform an engineering field investigation of the entire stream network to collect additional data and assess the geomorphology of the stream network on a reach-by-reach basis.

In order to support the sediment transport model, we need to characterize the composition of bed and bank materials. We will collect at least one sediment sample from the stream bed on a reach-by-reach basis and wherever the bed composition material changes. We will also collect one sample from an actively eroding streambank on a reach-by-reach basis and wherever the soil composition of eroding streambanks changes. We may also collect sediment samples from depositional bars throughout the watershed. All of the sediment samples will be used as input for the HEC-RAS model. In addition, the soil, sediment, and bar samples can be compared to the particle size distribution of the Ruthven sediment samples. This comparison will tell us where in the stream network sediment accumulating at Ruthven could be coming from (i.e. source identification). Using this approach and given our intimate knowledge with Millers Creek, we expect to collect 30 soil/sediment samples throughout the stream network. The soil and sediment samples will be submitted to a qualified lab for grain size analysis using the sieve method.

During the field investigation, the ECT Team will also be locating, documenting, and characterizing indicators of active channel incision, lateral migration, and aggradation. Observed conditions will be photographed and characterized. These observations will be important to validation of the HEC-RAS model results which will characterize reaches of

the stream network as erosional or depositional. Examples include undercut storm sewer outfalls, exposed utilities, abandoned culverts, exposed and undercut tree roots, and point bars. Along with repeat cross-section surveys (see Field Survey sub-task below), this information will allow the ECT Team to estimate rates of erosion and sediment loading from channel processes. For example, ECT knows that storm sewer outfalls in the Hubbard to Glazier Way reach had been undercut by approximately two feet. Knowing those structures were originally installed in 1965, we can estimate a bed degradation rate of approximately 0.04 feet per year. Assuming a reach length of 1,000 feet and channel width of 20 feet, a bed erosion rate of 0.04 feet per year would produce 800 cubic feet (approximately one ton) of sediment per year from bed erosion alone. This type of analysis can yield estimates of sediment loading on a reach-by-reach basis from channel processes. Taken cumulatively, these estimates can yield an annual sediment load for the entire stream network.

Cross-section Surveying

The ECT Team originally proposed three (3) crew days to collect cross-section survey data. Only one (1) crew day is planned under the Final Work Plan. One (1) surveying crew day will be used by the ECT Team to conduct additional cross-section surveys on an as-needed basis during model updating and validation. All surveying will be conducted in conformity with the City of Ann Arbor Public Services Area's Standards and its Geodetic Control Manual.

The ECT Team will use cross-section survey data collected by Spicer Group under direct contract with the City of Ann Arbor. The survey work is expected to be conducted in late March or early April, prior to the temporary sediment removal project at Ruthven. Spicer will use two (2) crew days to complete cross-section surveys prior to June 1, 2012, the projected project start date.

The additional or new cross-section survey data will be used to add detail to the existing HEC-RAS model in the vicinity of the Huron High School and Ruthven Nature Preserve, and to add three tributary channels to the HECRAS model: 1) Lake Haven Reach, 2) Baxter Reach, and 3) Plymouth Reach (see Figure 5.1 of the Millers Creek Improvement Plan). These tributaries were not modeled by FEMA for the 100-year floodplain mapping. Adding the tributaries does not increase modeling costs substantially, but does provide much more reliable model predictions while allowing the same method to be used for sediment transport analysis throughout the entire stream network.

In addition, the cross-section survey data will be used in comparison to 2003-2004 survey data to estimate erosion or aggradation rates and estimate sediment loading due to channel processes.

Refine the HEC-RAS Model

The ECT Team will refine the existing HEC-RAS model and validate the model using known conditions as objective evidence.

The sediment transport module and functions will be developed by inputting soil and sediment particle size distribution data obtained during the Engineering Field Investigation

sub-task. Long term rainfall data will be added to the HEC-RAS model so that it can be converted to a long term sediment transport model. Within HEC-RAS, rainfall data is used to introduce real-time variability to steady-state flow inputs based on actual recorded rainfall patterns and watershed hydrology. New channel geometry from cross-section surveys will be added to increase detail in the Ruthven and Huron High School area and for tributaries not currently included in the FEMA HEC-RAS model.

Observations and data that will be used as objective evidence for model validation includes water stage from recorders, estimated erosion and aggradation rates, and erosional or aggradational conditions documented within the stream network. The process of validation requires adjustments of the model until the predictions are in reasonable agreement with objective evidence. Once validated, the model can simulate observed system behavior and can be used for characterizing baseline sediment transport conditions, making further predictions, or evaluating outcomes. For example, the model should be able to simulate observed sediment accumulation at Ruthven reasonably well.

Determine Sediment Accumulation Baseline Condition & Annual Sediment Loading Rate

The long term sediment transport HEC-RAS model developed as a part of the previous subtask will be used to help determine the baseline sediment accumulation condition of the creek and the annual sediment load produced by Millers Creek. The annual sediment load will be quantified in terms of tons per year and compared within the validated HEC-RAS model based on historical surveyed cross sections and existing surveyed cross sections. Wash-off sediment loads predicted by the XP-SWMM model will be added to the sediment transport load predicted by HEC-RAS to estimate the total annual sediment load to Millers Creek (from watershed and channel processes).

Task 2 – Management Recommendations

In consultation with the City staff, the ECT Team will develop three sets of recommendations (i.e. option sets) for sediment loading, transport, and accumulation in Millers Creek. Recommendations will include both system wide and lower reach recommendations, including watershed improvement projects, in-stream projects and maintenance activities. In addition to overall sediment management recommendations, ECT will provide specific recommendations for the culvert under Huron Parkway, Ruthven Nature Preserve and the two culverts under Geddes Road. The details of specific sub-tasks proposed are discussed below.

Develop Three Option Sets for Managing Sediment in Millers Creek

The long term sediment transport HEC-RAS model developed under Task 1 will be used to identify recommendations for managing sediment accumulation in Millers Creek. The model will provide insight into the areas most prone to aggradation and erosion within Millers Creek. This information will be critical for developing appropriate and effective management recommendations to address sediment loading and transport problems. The ECT Team will consider construction projects and maintenance activities to address the most severe sediment loading and areas of excessive sediment deposition. System-wide and lower reach recommendations will be included. Specific recommendations for the Ruthven Nature Preserve, Huron Parkway culvert, and Geddes Road culverts will be developed. The

sediment transport model (HEC-RAS) will be used to evaluate potential management recommendations within Millers Creek and adjacent lands. Recommendations included in the Millers Creek Improvement Plan will also be considered.

Three complete sets of management recommendations will be developed to provide a clear method for evaluating construction versus management options. Option set 1 will include all recommendations for reducing sediment loading within Millers Creek, including streambank stabilization, grade control structures and other in-river or watershed improvement projects. Option 2 will include recommendations for continued maintenance which may include construction of sediment traps or baffle boxes along with regular sediment removal. Option 3 will include a targeted combination of sediment source reduction and sediment management recommendations.

For each option set, the potential annual reduction in sediment accumulation at Ruthven (through source control or physical removal) will be determined. For example, if a long-term management recommendation reduces sediment load to Millers Creek by 1,000 cubic feet through erosion control, the rate of sediment accumulation at Ruthven is expected to decrease proportionally. The ECT Team will use the HEC-RAS model to quantify the reduction in sediment accumulation as a result of management recommendations. This information will be used to evaluate and prioritize the option sets under Task 3

Evaluate Environmental Impacts and Permitting Requirements

In addition to quantifying the sediment loading reduction for each management recommendation option, the ECT Team will identify the environmental and permitting requirements associated with each option. This information will be used to evaluate and prioritize the option sets under Task 3.

Identify Opportunities for Accessibility Improvements to Ruthven Nature Area

If any of the management recommendations present an opportunity to improve maintenance access and pedestrian use of the Ruthven Nature Preserve, those opportunities will be identified and discussed as part of the recommendation.

Task 3 – Cost Estimates and Prioritization of Options

Once the City and Technical Team have agreed to the three option sets, the ECT Team will develop cost estimates, identify permit requirements, and prioritize the option sets. The details of specific sub-tasks proposed are discussed below.

Develop Planning Level Cost Estimates

For each of the three (3) management option sets, planning level cost estimates will be developed. The cost estimates will include design, permitting, construction, and maintenance costs as applicable.

Evaluate Implications of Required Permits and Environmental Impacts

The implications of identified permitting requirements and environmental impacts for each management recommendation under the three options will be identified and discussed. ECT will offer its professional opinion based on permitting experience with similar types of projects with regard to the potential and degree of difficulty to obtain the necessary permit and mitigate for unavoidable environmental impacts.

Prioritize Management Option Sets

The ECT Team will prioritize the three option sets based on criteria developed along with the Technical Team. It is important to develop consensus with regard to prioritization criteria and the relative importance of those criteria. Likely criteria include overall reduction of sediment accumulation, construction costs, long-term maintenance costs, feasibility, permitting, environmental and ecological impacts, and other project benefits/impacts. Consensus on the relative importance of these possible criteria is important to project success.

Deliver Final Products

ECT will provide three complete copies of the Management of Millers Creek Sediment report (and any supporting documentation) and one complete electronic submission of all files and data in their original format and as analyzed. Electronic submittals will include the HEC-RAS model files that can be used by the City for future modeling.

Task 4 – Project Meetings & Public Involvement

This project has three components to the participation and involvement portion of the study. The ECT Team understands that we will meet with City staff and the Technical Team on four occasions to discuss the scope of work and progress towards completing the study. In addition, ECT understands that one meeting will be held to discuss the project with a Focus Group to be created by the City. Finally the public will have an opportunity to obtain information and express their views in two public meetings.

Technical Team Meetings

The ECT Team will meet with City staff and the Technical Team on four different occasions to discuss the project. At the present time, ECT understands that the meetings will have the following purposes.

- Project Kickoff: scope-of-work, schedule, communication, meeting planning
- Baseline Conditions & Information Gathering: progress, findings, meeting planning
- Management Recommendations & Options: discuss/refine option sets and prioritization criteria
- Option Prioritization & Costs: discuss methods and findings and refine if necessary, meeting planning

The ECT Team will prepare agenda, exhibits, maps, etc. as necessary for each meeting and will distribute the information to the members of the Technical Team prior to the meetings. Following the meeting, the ECT Team will prepare and distribute minutes to members of the

Technical Team. The minutes and information presented at the meeting will be in a format suitable for posting on the City's website for viewing by the public or for distribution by the Technical Team/City.

Focus Group Meetings

The ECT Team will prepare and attend one meeting with the Focus Group to obtain the goals, viewpoints and concerns of the members of the focus group. The content of the meeting with the Focus Group will be discussed with the Technical Team and will be developed with the Team's advice and counsel. The format of the Focus Group meetings will be developed with the Technical Team. The ECT Team will prepare minutes of the meeting in a format suitable for posting on the City's website and will distribute copies of the minutes to interested stakeholders.

Public Meetings

We have a significant depth of experience with planning and facilitating public meetings and ECT is prepared to attend two public meetings to present a description of the baseline conditions and to present the final prioritization of options and construction costs as presented in the RFP.

The format for each of the public meetings will be developed with the Technical Team and may consist of different formats depending on the goal of the meeting and the desired outcome.

Fees

The attached table contains a list of personnel from each Team firm with labor hours and cost by task. The work associated with this work plan shall be done on a time-and-materials basis for a not to exceed cost of \$46,026, unless authorized by the City.

Schedule

The ECT Team proposes the following attached project schedule. Based on the scope-of-work and required meetings, we estimate a project completion date of September 11, 2012.

SCHEDULE

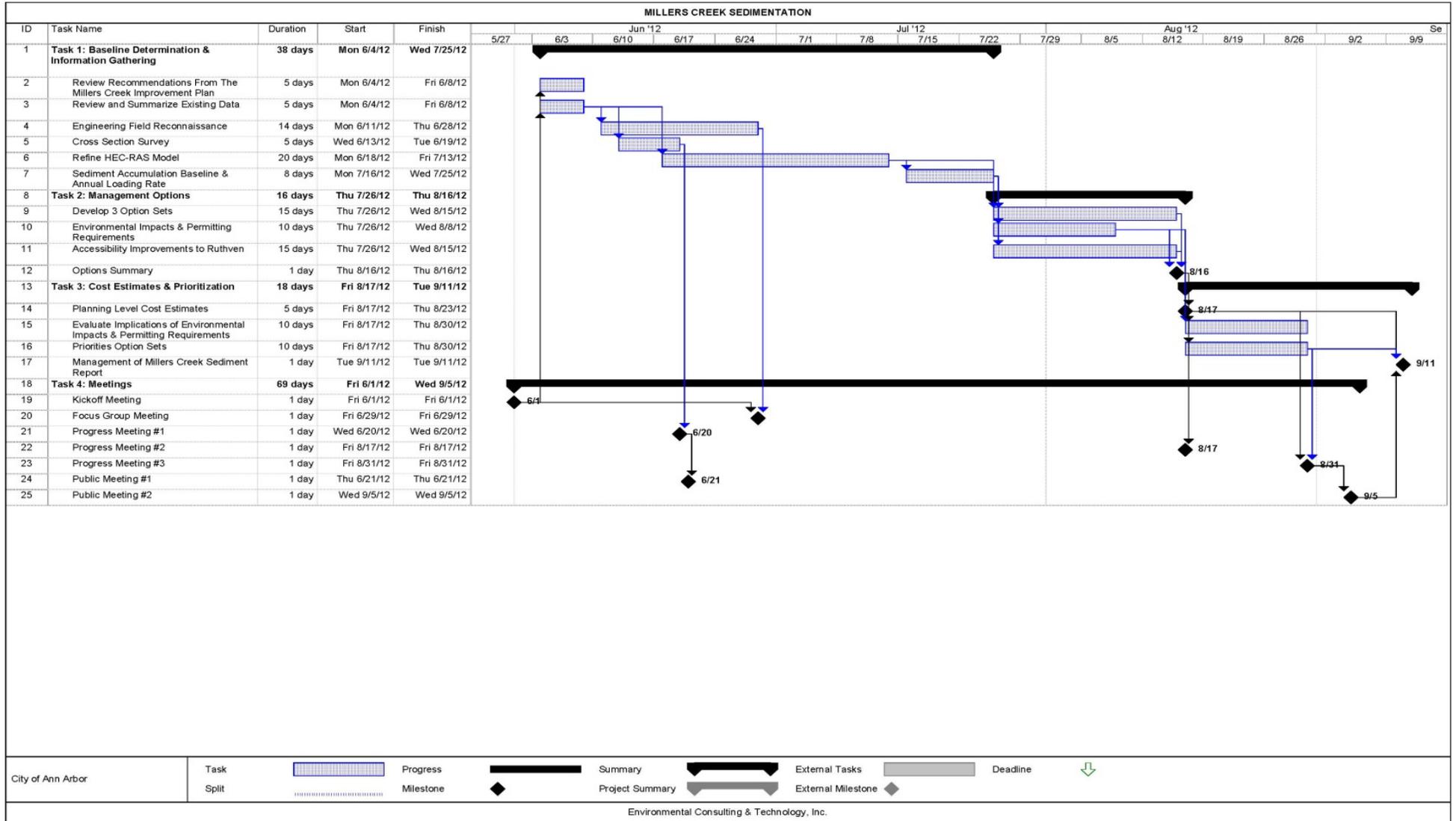


EXHIBIT B
FEE SCHEDULE

City of Ann Arbor: Millers Creek												
		Task 1: Baseline Determination and		Task 2: Management Options		Task 3: Cost Estimates and		Task 4: Meetings		Project Totals		
ECT Professional Services	Rates	Hours	Labor Cost	Hours	Labor Cost	Hours	Labor Cost	Hours	Labor Cost			
VP/Principal Engineer/Scientist	\$45	12	\$540	16	\$720	8	\$360	8	\$360	\$0	44	\$1,980
Staff Engineer/Scientist	\$35	40	\$1,400	40	\$1,400	8	\$280	32	\$1,120	\$0	120	\$4,200
Sr. Associate Engineer/Scientist	\$30	24	\$720	32	\$960	16	\$480	8	\$240	\$0	80	\$2,400
Associate Engineer/Scientist	\$25	8	\$200	12	\$300	4	\$100	12	\$300	\$0	36	\$900
Administrative Support	\$20	2	\$40	2	\$40	2	\$40	2	\$40	\$0	8	\$160
Sub totals		86	\$2,900	102	\$3,420	38	\$1,260	62	\$2,060	0	288	\$9,640
Government Audited Overhead @ 169.44%			\$4,914		\$5,795		\$2,135		\$3,490	\$0		\$16,334
Cost (Labor & Overhead)			\$7,814		\$9,215		\$3,395		\$5,550	\$0		\$25,974
Fee Cost @ 15%			\$1,172		\$1,382		\$509		\$833	\$0		\$3,896
Total Labor Cost			\$8,986		\$10,597		\$3,904		\$6,383	\$0		\$29,870
ECT Expenses:												
Mileage (at Fed rate currently \$0.555/mile)			\$50		\$0		\$0		\$50			\$100
Lab Analysis			\$750		\$0		\$0		\$0			\$750
ECT Sub Mark up @ 5%			\$515		\$104		\$0		\$110	\$0		\$729
Expense Total			\$1,315		\$104		\$0		\$160	\$0		\$1,579
ECT Totals			\$10,301		\$10,701		\$3,904		\$6,543	\$0		\$31,449
Sub Consultants:												
Spicer Professional Services												
	Rates	Hours	Labor Cost	Hours	Labor Cost	Hours	Labor Cost	Hours	Labor Cost		Hours	Labor Cost
Principal in Charge	\$155	12	\$1,860		\$0		\$0	2	\$310	\$0	14	\$2,170
Project Manager	\$135	34	\$4,590	8	\$1,080		\$0	14	\$1,890	\$0	56	\$7,560
Proejct Engineer	\$113	8	\$904	2	\$226		\$0		\$0	\$0	10	\$1,130
Design Engineer	\$97	12	\$1,164	8	\$776		\$0		\$0	\$0	20	\$1,940
Survey Project Manager	\$127	1	\$127		\$0		\$0		\$0	\$0	1	\$127
Survey Tech III	\$75	2	\$150		\$0		\$0		\$0	\$0	2	\$150
Survey Crew (per day)	\$1,500	1	\$1,500		\$0		\$0		\$0	\$0	1	\$1,500
Sub Totals			\$10,295		\$2,082		\$0		\$2,200	\$0		\$14,577
PROJECT TOTALS			\$20,596		\$12,783		\$3,904		\$8,743	\$0		\$46,026

EXHIBIT C

FAIR EMPLOYMENT PRACTICE

The consultant, its agents or sub-contractors, shall comply with all requirements of Chapter 112 of Title IX of the Code of the City of Ann Arbor and in particular the following excerpts therefrom:

9:161 NONDISCRIMINATION BY CITY CONTRACTORS

- (1) All contractors proposing to do business with the City of Ann Arbor shall satisfy the nondiscrimination administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All contractors shall receive approval from the Director prior to entering into a contract with the City, unless specifically exempted by administrative policy. All City contractors shall take affirmative action to insure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon race, national origin or sex.
- (2) Each prospective contractor shall submit to the City data showing current total employment by occupational category, sex and minority group. If, after verifying this data, the Director concludes that it indicates total minority and female employment commensurate with their availability within the contractor's labor recruitment area, i.e., the area from which the contractor can reasonably be expected to recruit, said contractor shall be accepted by the Director as having fulfilled affirmative action requirements for a period of one year at which time the Director shall conduct another review. Other contractors shall develop an affirmative action program in conjunction with the Director. Said program shall include specific goals and timetables for the hiring and promotion of minorities and females. Said goals shall reflect the availability of minorities and females within the contractor's labor recruitment area. In the case of construction contractors, the Director shall use for employment verification the labor recruitment area of the Ann Arbor-Ypsilanti standard metropolitan statistical area. Construction contractors determined to be in compliance shall be accepted by the Director as having fulfilled affirmative action requirements for a period of six (6) months at which time the Director shall conduct another review.
- (3) In hiring for construction projects, contractors shall make good faith efforts to employ local persons, so as to enhance the local economy.
- (4) All contracts shall include provisions through which the contractor agrees, in addition to any other applicable Federal or State labor laws:
 - (a) To set goals, in conference with the Human Resources Director, for each job category or division of the work force used in the completion of the

City work;

- (b) To provide periodic reports concerning the progress the contractor has made in meeting the affirmative action goals it has agreed to;
 - (c) To permit the Director access to all books, records and accounts pertaining to its employment practices for the purpose of determining compliance with the affirmative action requirements.
- (5) The Director shall monitor the compliance of each contractor with the nondiscrimination provisions of each contract. The Director shall develop procedures and regulations consistent with the administrative policy adopted by the City Administrator for notice and enforcement of non-compliance. Such procedures and regulations shall include a provision for the posting of contractors not in compliance.
- (6) All City contracts shall provide further that breach of the obligation not to discriminate shall be a material breach of the contract for which the City shall be entitled, at its option, to do any or all of the following:
- (a) To cancel, terminate, or suspend the contract in whole or part and/or refuse to make any required periodic payments under the contract;
 - (b) Declare the contractor ineligible for the award of any future contracts with the City for a specified length of time;
 - (c) To recover liquidated damages of a specified sum, said sum to be that percentage of the labor expenditure for the time period involved which would have accrued to minority group members had the affirmative action not been breached;
 - (d) Impose for each day of non-compliance, liquidated damages of a specified sum, based upon the following schedule:

<u>Contract Amount</u>	<u>Assessed Damages Per Day of Non-Compliance</u>
\$ 10,000 - 24,999	\$25.00
25,000 - 99,999	50.00
100,000 - 199,999	100.00
200,000 - 499,999	150.00
500,000 - 1,499,999	200.00
1,500,000 - 2,999,999	250.00
3,000,000 - 4,999,999	300.00
5,000,000 - and above	500.00

- (e) In addition the contractor shall be liable for any costs or expenses incurred by the City of Ann Arbor in obtaining from other sources the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under this contract.

EXHIBIT D
LIVING WAGE REQUIREMENTS

If a "covered employer," Contractor will comply with all the requirements of Chapter 23 of the Ann Arbor City Code (Sections 1:811 B 1:821), in particular but not limited to the following sections thereof:

1:813. Definitions.

For purposes of this Chapter, the following definitions shall apply:

- (1) "Contractor/vendor" is a person or entity that has a contract with the City primarily for the furnishing of services where the total amount of the contract or contracts with the City exceeds \$10,000 for any 12month period. "Contractor/vendor" does not include a person or entity that has a contract with the City primarily for the purchase of goods or property, or for the lease of goods or property to or from the City.
- (2) "Covered Employee" means a person employed by a covered employer to perform services which are covered or funded by the contract with or grant from the City; provided, however, that persons who are employed pursuant to federal, state or local laws relating to prevailing wages shall be exempt from this Chapter.
- (3) "Covered Employer" means a contractor/vendor or grantee that has not been granted an exemption from this Chapter pursuant to Section 1:817.
- (4) "Employee" means an individual who provides personal services performed for wages under any contract calling for the performance of personal services, whether written or oral, express or implied. The term "employee" does not include any individual who volunteers to perform services for an employer if
 - (a) The individual receives no compensation or is paid expenses, reasonable benefits, or a nominal fee to perform the services for which the individual volunteered; and
 - (b) Such services are not the same type of services which the individual is employed to perform for such employer.
- (5) "Employee Health Benefits" or "Health Benefits" means providing health care benefits for employees (or employees and their dependents) at employer cost or making an employer contribution toward the purchase of such health care benefits for employees (or employees and their dependents), provided that the employer cost or contribution equals no less than \$1 an hour for the average work week of such employee, and provided further that any employee payment or contribution toward health care shall not exceed 50 cents an hour for the average work week for such employee.

- (6) "Grant" means any form of financial assistance to a "Grantee" as set forth and defined in Section 1:813(7). "Grant" does not include financial assistance used for the purchase or lease of property or other nonpersonnel costs.
- (7) "Grantee" is a person or entity that is a recipient of any financial assistance from the City in the form of any federal, state or local grant program administered by the City, revenue bond financing, tax increment financing, tax abatement, tax credit, direct grant, or any other form of financial assistance that exceeds \$10,000 for any 12month period, including any contractors, subcontractors, or leaseholders of the grantee whose contract, subcontract or lease with the grantee exceeds \$10,000 for any 12month period.
- (8) "Living Wage" means a wage equal to the levels established in Section 1:815.
- (9) "Person" means any individual, copartnership, corporation, association, club, joint adventure, estate, trust, and any other group or combination acting as a unit, and the individuals constituting such group or unit.
- (10) "\$10,000 for any 12 month period" is computed by taking the total amount of the contract, grant or loan and dividing it by the number of months the contract, grant or loan covers.

1:814. Applicability.

- (1) This Chapter shall apply to any person that is a contractor/vendor or grantee as defined in Section 1:813 that employs or contracts with five (5) or more individuals; provided, however, that this Chapter shall not apply to a nonprofit contractor/vendor or nonprofit grantee unless it employs or contracts with ten (10) or more individuals.
- (2) This Chapter shall apply to any grant, contract, or subcontract or other form of financial assistance awarded to or entered into with a contractor/vendor or grantee after the effective date of this Chapter and to the extension or renewal after the effective date of this Chapter of any grant, contract, or subcontract or other form of financial assistance with a contractor/vendor or grantee.

1:815. Living Wages Required.

- (1) Every contractor/vendor or grantee, as defined in Section 1:813, shall pay its covered employees a living wage as established in this Section.
 - (a) For a covered employer that provides employee health care to its employees, the living wage shall be \$11.83 an hour, or the adjusted amount hereafter established under Section 1:815(3).

- (b) For a covered employer that does not provide health care to its employees, the living wage shall be \$13.19 a hour, or the adjusted amount hereafter established under Section 1:815(3).
- (2) In order to qualify to pay the living wage rate for covered employers providing employee health care under subsection 1:815(1)(a), a covered employer shall furnish proof of said health care coverage and payment therefor to the City Administrator or his/her designee.
- (3) The amount of the living wage established in this Section shall be adjusted upward no later than April 30, 2002, and every year thereafter by a percentage equal to the percentage increase, if any, in the federal poverty guidelines as published by the United States Department of Health and Human Services for the years 2001 and 2002. Subsequent annual adjustments shall be based upon the percentage increase, if any, in the United States Department of Health and Human Services poverty guidelines when comparing the prior calendar year's poverty guidelines to the present calendar year's guidelines. The applicable percentage amount will be converted to an amount in cents by multiplying the existing wage under Section 1.815(1)(b) by said percentage, rounding upward to the next cent, and adding this amount of cents to the existing living wage levels established under Sections 1:815(1)(a) and 1:815(1)(b). Prior to April 1 of each calendar year, the City will notify any covered employer of this adjustment by posting a written notice in a prominent place in City Hall, and, in the case of a covered employer that has provided an address of record to the City, by a written letter to each such covered employer.

1:816. Employees Covered.

A covered employer shall pay each of its employees performing work on any covered contract or grant with the City no less than a living wage as defined in Section 1:815.

1:817. Exemptions.

Notwithstanding any other provisions in this Chapter, the following exemptions shall apply:

- (1) Sweat equity contracts for home construction or rehabilitation grant will not subject the grantee to coverage under this Chapter. Housing construction or rehabilitation grants or contracts that are passed through to a contractor in their entirety are exempt from the provisions of this Chapter, even when the City participates in the selection of the contractor.
- (2) For any contract or grant, the City Council may grant a partial or complete exemption from the requirements of this Chapter if it determines one of the following:

- (a) To avoid any application of this Chapter that would violate federal, state or local law(s); or
 - (b) The application of this Chapter would cause demonstrated economic harm to an otherwise covered employer that is a nonprofit organization, and the City Council finds that said harm outweighs the benefits of this Chapter; provided further that the otherwise covered nonprofit employer shall provide a written plan to fully comply with this Chapter within a reasonable period of time, not to exceed three years, and the City Council then agrees that granting a partial or complete exemption is necessary to ameliorate the harm and permit the nonprofit organization sufficient time to reach full compliance with this Chapter.
- (3) A loan shall be considered a grant under this ordinance only to the extent that a loan is provided at below market interest rates and then only the difference between the amount of the loan and the present value of the payments thereunder, discounted over the life of the loan, shall be treated as financial assistance under this ordinance.
- (4) A payment of funds for the purpose of purchasing services, property, or goods on behalf of individuals being assisted by a covered employer or potentially covered employer (sometimes known as a "pass through" grant) that is used for said purchases shall not be considered a grant; such funds shall be considered a grant only to the extent that any such funds are retained by the covered employer or potentially covered employer to provide financial assistance and support to its own operations.

1:818. Monitoring and Enforcement.

- (1) Every covered employer shall agree to the payment of a living wage as a condition of entering into or renewing a covered contract or grant with the City, shall agree to post a notice regarding the applicability of this Chapter in every work place or other location in which employees or other persons contracted for employment are working, and shall agree to provide payroll records or other documentation as deemed necessary within ten (10) business days from the receipt of the City's request. All City contracts and grants covered by this Chapter shall provide that a violation of the living wage requirements of this Chapter shall be a material breach of the contract or grant. The Human Rights Office of the City shall monitor the compliance of each contractor/vendor or grantee under procedures developed by the Human Rights Office and approved by the City Administrator.
- (2) Each covered employer shall submit to the Human Rights Office of the City information regarding number of employees and applicable wage rates of its employees covered by this Chapter in such manner as requested by that office. At the request of the Human Rights Office, any contractor/vendor or grantee shall

provide satisfactory proof of compliance with the living wage provisions of this Chapter.

- (3) Any person may submit a complaint or report of a violation of this Chapter to the Human Rights Office. Upon receipt of such a complaint or report, the Human Rights Office shall investigate to determine if there has been a violation.

1:819. Penalties and Enforcement.

- (1) A violation of any provision of this Chapter is a civil infraction punishable by a fine of not more than \$500.00 plus all costs of the action. The Court may issue and enforce any judgment, writ, or order necessary to enforce this Chapter, including payment to the affected employee or employees of the difference between wages actually paid and the living wage that should have been paid, interest, and other relief deemed appropriate.
- (2) Each day upon which a violation occurs shall constitute a separate violation.
- (3) In addition to enforcement under Subsections (1) and (2), the City shall have the right to modify, terminate, and/or seek specific performance of any contract or grant with an affected covered employer or to cancel, terminate or suspend the contract in whole or in part and/or to refuse any further payments under the contract or grant;
- (4) Nothing contained in this Chapter shall be construed to limit in any way the remedies, legal or equitable, which are available to the City or any other person for the correction of violations of this Chapter

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1:821. Other Provisions.

- (1) No affected covered employer shall reduce the compensation, wages, fringe benefits, or leave available to any covered employee or person contracted for employment in order to pay the living wage required by this Chapter.

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- (3) No employee covered by a federal, state or local law requiring the payment of prevailing wages shall be covered by this Chapter.
- (4) This Chapter shall not be construed to apply to any person or entity that is a tax exempt religious, educational or charitable organization under state or federal law, but is not a contractor/vendor or grantee as defined in Section 1:813.
- (5) This Chapter shall not be applicable to the establishment and/or continuation of the following if developed specifically for high school and/or college students:

- (a) A bona fide training program;
- (b) A summer or youth employment program;
- (c) A work study, volunteer/public service, or internship program.

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