



**CITY of NOVI CITY COUNCIL**

**Agenda Item D  
January 12, 2015**

**SUBJECT:** Approval to award engineering design services to URS Corporation for the design of the Nine Mile Road Water Main Extension between Novi Road and Center Street in the amount of \$31,074.

**SUBMITTING DEPARTMENT:** Department of Public Services, Engineering Division *BT*  
 Department of Public Services, Water and Sewer Division *TDK*

**CITY MANAGER APPROVAL:** *[Signature]*

<b>EXPENDITURE REQUIRED</b>	<b>\$ 31,074</b>
<b>AMOUNT BUDGETED</b>	<b>\$ 499,000</b>
<b>LINE ITEM NUMBER</b>	<b>592-592.00-974.099</b>

**BACKGROUND INFORMATION:**

This project involves the construction of approximately 2,400 feet of 16-inch water main along Nine Mile Road between Center Street and Novi Road. This water main extension was recommended in the 2008 Water System Master Plan to improve the reliability of the water system by creating an additional looped connection.

URS' engineering fees are based on the fixed fee schedule established in the Agreement for Professional Engineering Services for Public Projects. The design fees for this project will be \$31,074 (7.25% of the estimated construction cost of \$428,612.75). The construction phase engineering fees will be awarded at the time of construction award and will be based on the construction contractor's bid price and the fee percentage established in the Agreement for Professional Engineering Services for Public Projects. A draft of the Supplemental Professional Engineering Services Agreement for this project is enclosed and includes the project scope and schedule.

The project will be designed and right-of-way acquisition will occur over the winter months. Construction of this project is expected to commence in summer 2015.

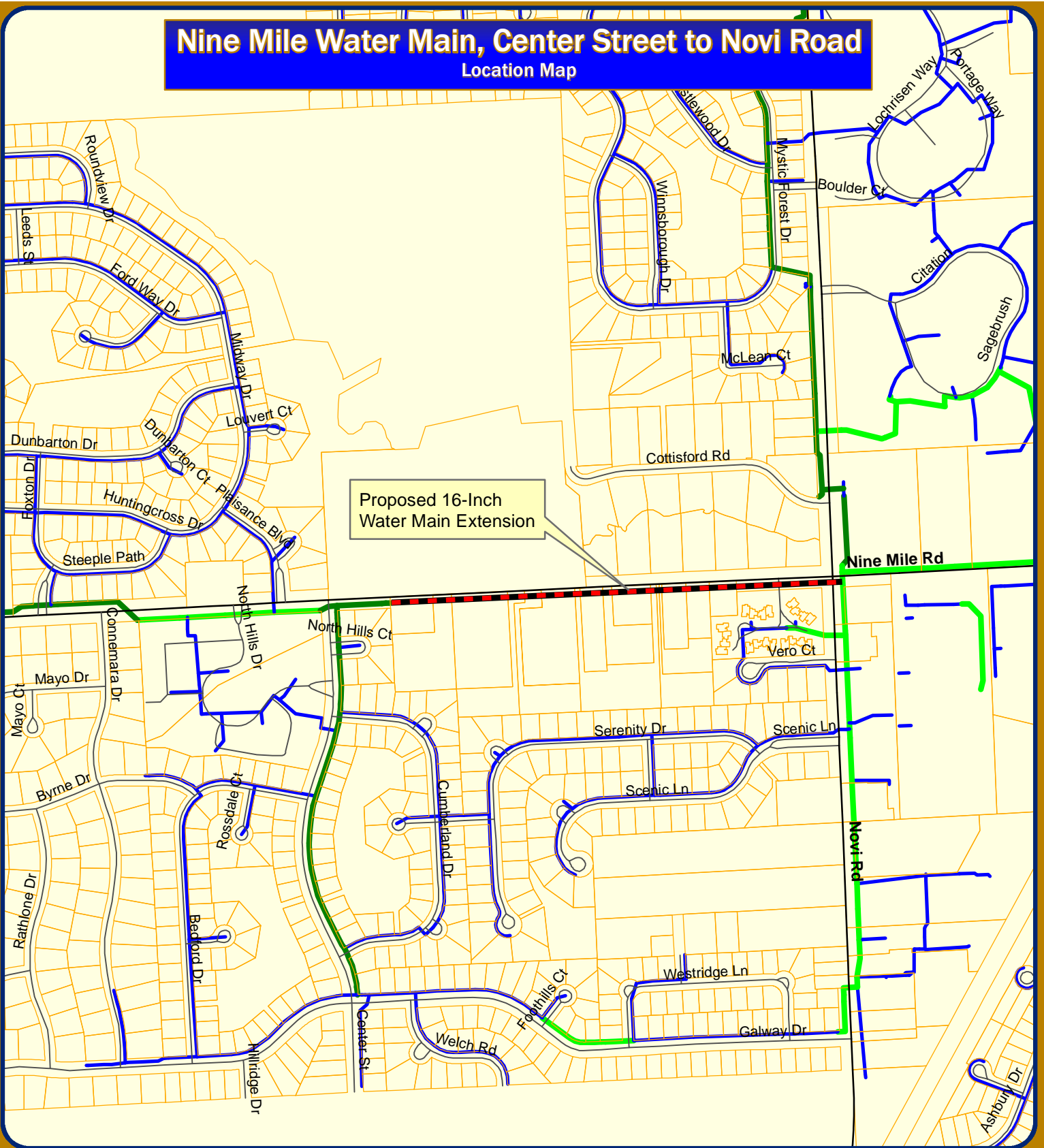
**RECOMMENDED ACTION:** Approval to award engineering design services to URS Corporation for the design of the Nine Mile Road Water Main Extension between Novi Road and Center Street in the amount of \$31,074.

	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Casey				
Council Member Markham				

	1	2	Y	N
Council Member Mutch				
Council Member Poupard				
Council Member Wrobel				

# Nine Mile Water Main, Center Street to Novi Road

## Location Map



Proposed 16-Inch  
Water Main Extension

Map Author: Croy  
Date: 1/5/15  
Project: Nine MI WM  
Version #: v1.0

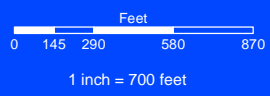
**MAP INTERPRETATION NOTICE**

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

**Map Legend**

**Existing Water Mains**

- 8-Inch
- 12-Inch
- 16-Inch



**City of Novi**  
Engineering Division  
Department of Public Services  
26300 Lee BeGole Drive  
Novi, MI 48375  
cityofnovi.org

**SUPPLEMENTAL PROFESSIONAL ENGINEERING SERVICES AGREEMENT**

**NINE MILE WATER MAIN – CENTER STREET TO NOVI ROAD**

This Agreement shall be considered as made and entered into as of the date of the last signature hereon, and is between the City of Novi, 45175 W. Ten Mile Road, Novi, MI 48375-3024, hereafter, “City,” and URS Corporation – Great Lakes., whose address is 27777 Franklin Road, Suite 2000, Southfield, MI 48034, hereafter, “Consultant.”

**RECITALS:**

This Agreement shall be supplemental to, and hereby incorporates the terms and conditions of the AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES FOR PUBLIC PROJECTS, and attached exhibits, entered into between the City and the Consultant on December 17, 2012.

The project includes the design and the preparation of plans and specifications for the extension of water main from the existing stub east of Center Street to the existing main along Novi Road.

NOW, THEREFORE, in consideration of the foregoing, the City and Consultant agree as follows:

**Section 1. Professional Engineering Services.**

For and in consideration of payment by the City as provided under the “Payment for Engineering Services” section of this Agreement, Consultant shall perform the work described in the manner provided or required by the following Scope of Services, which is attached to and made a part of this Agreement as Exhibit A, all of said services to be done in a competent, efficient, timely, good and workmanlike manner and in compliance with all terms and conditions of this Agreement.

Exhibit A                      Scope of Services

**Section 2. Payment for Professional Engineering Services.**

1. Basic Fee.
  - a. Design Phase Services: The Consultant shall complete the design phase services as described herein for a lump sum fee of \$31,074.42, which is 7.25% of the estimated construction cost (\$428,612.75) as indicated on the Design and Construction Engineering Fee Curve.
  - b. Construction Phase Services will be awarded at the time of construction award, should it occur.

2. Payment Schedule for Professional Engineering Services Fee.

Consultant shall submit monthly statements for professional engineering services rendered. The statements shall be based on Consultant's estimate of the proportion of the total services actually completed for each task at the time of billing. The City shall confirm the correctness of such estimates, and may use the City's own engineer for such purposes. The monthly statements should be accompanied by such properly completed reporting forms and such other evidence of progress as may be required by the City. Upon such confirmation, the City shall pay the amount owed within 30 days.

Final billing under this agreement shall be submitted in a timely manner but not later than three (3) months after completion of the services. Billings for work submitted later than three (3) months after completion of services will not be paid. Final payment will be made upon completion of audit by the City.

3. Payment Schedule for Expenses.

All expenses required to complete the scope of services described herein, including but not limited to costs related to mileage, vehicles, reproduction, computer use, etc., shall be included in the basic fee and shall not be paid separately. However, as compensation for expenses that are not included in the standard scope of services, when incurred in direct connection with the project, and approved by the City, the City shall pay the Consultant its actual cost times a factor of 1.15.

**Section 4. Ownership of Plans and Documents; Records.**

1. Upon completion or termination of this agreement, all documents prepared by the Consultant, including tracings, drawings, estimates, specifications, field notes, investigations, studies, etc., as instruments of service shall become the property of the City.

2. The City shall make copies, for the use of the Consultant, of all of its maps, records, laboratory tests, or other data pertinent to the work to be performed by the Consultant under this Agreement, and also make available any other maps, records, or other materials available to the City from any other public agency or body.

3. The Consultant shall furnish to the City, copies of all maps, records, field notes, and soil tests that were developed in the course of work for the City and for which compensation has been received by the Consultant.

**Section 5. Termination.**

1. This Agreement may be terminated by either party upon 7- days' prior written notice to the other party in the event of substantial failure by the other party to fulfill its obligations under this agreement through no fault of the terminating party.

2. This Agreement may be terminated by the City for its convenience upon 90 days' prior written notice to the Consultant.

3. In the event of termination, as provided in this Article, the Consultant shall be paid as compensation in full for services performed to the date of that termination, an amount calculated in accordance with Section 2 of this Agreement. Such amount shall be paid by the City upon the Consultant's delivering or otherwise making available to the City, all data, drawings, specifications, reports, estimates, summaries, and that other information and materials as may have been accumulated by the Consultant in performing the services included in this Agreement, whether completed or in progress.

**Section 6. Disclosure.**

The Consultant affirms that it has not made or agreed to make any valuable gift whether in the form of service, loan, thing, or promise to any person or any of the person's immediate family, having the duty to recommend, the right to vote upon, or any other direct influence on the selection of consultants to provide professional engineering services to the City within the two years preceding the execution of this Agreement. A campaign contribution, as defined by Michigan law shall not be considered as a valuable gift for the purposes of this Agreement.

**Section 7. Insurance Requirements.**

1. The Consultant shall maintain at its expense during the term of this Agreement, the following insurance:

- A. Worker's Compensation insurance relative to all Personnel engaged in performing services pursuant to this Agreement, with coverage not less than that required by applicable law.
- B. Comprehensive General Liability insurance with maximum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate and minimum Property Damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- C. Automotive Liability insurance covering all owned, hired, and non-owned vehicles with Personal Protection insurance to comply with the provisions of the Michigan No Fault Insurance Law including Residual Liability insurance with minimum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate minimum property damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- D. The Consultant shall provide proof of Professional Liability coverage in the amount of not less than \$1,000,000 (One Million Dollars) per claim and/or aggregate, and Environmental Impairment coverage. The retroactive date indicated on the policy shall either be unlimited, or, shall be the date that the Consultant established its initial coverage.

In the event that Consultant is sold or dissolved, Consultant shall provide purchase, at its expense, a "tail" or extended reporting period for the professional liability coverage for a period not less than 5 years.

2. The Consultant shall be responsible for payment of all deductibles contained in any insurance required hereunder.

3. If during the term of this Agreement changed conditions or other pertinent factors should in the reasonable judgment of the City render inadequate insurance limits, the Consultant will furnish on demand such additional coverage as may reasonably be required under the circumstances. All such insurance shall be effected at the Consultant's expense, under valid and enforceable policies, issued by the insurers of recognized responsibility which are well-rated by national rating organizations and are acceptable to the City.

4. All policies shall name the Consultant as the insured and shall be accompanied by a commitment from the insurer that such policies shall not be canceled or reduced without at least thirty (30) days prior notice to the City.

With the exception of professional liability, all insurance policies shall name the City of Novi, its officers, agents, and employees as additional insured. Certificates of Insurance evidencing such coverage shall be submitted to Sue Morianti, Purchasing Manager, City of Novi, 45175 West Ten Mile Road, Novi, MI 48375-3024 prior to commencement of performance under this Agreement and at least fifteen (15) days prior to the expiration dates of expiring policies.

5. If any work is sublet in connection with this Agreement, the Consultant shall require each subconsultant to effect and maintain at least the same types and limits of insurance as fixed for the Consultant.

6. The provisions requiring the Consultant to carry said insurance shall not be construed in any manner as waiving or restricting the liability of the Consultant under this Agreement.

**Section 8. Indemnity and Hold Harmless.**

A. The Consultant agrees to hold harmless and indemnify the City, its officers, agents, employees from and against all claims, demands, suits liability, losses, damages or costs (including reasonable attorney fees and costs) arising out, of or resulting from the Consultant's tortious or negligent acts, errors, or omissions in performing this Agreement.

B. The City agrees, to the extent permitted by law, to indemnify and hold harmless the Consultant, its officers, partners, employees, stockholders, and sub-consultants (collectively Consultant) from and against any and all claims, suits, demands, liability, losses, damages or costs, including reasonable attorney's fees and costs arising out of or resulting from the City's tortious or negligent acts or errors in performing this Agreement.

C. Section 8(B) of this Agreement shall not apply to individual design and/or construction management projects.

The Consultant agrees that it is its responsibility and not the responsibility of the City to safeguard the property and materials used in performing this Agreement. Further, this Consultant agrees to hold the City harmless for any loss of such property and materials used pursuant to the Consultant's performance under this Agreement.

**Section 9. Nondiscrimination.**

The Consultant shall not discriminate against any employee, or applicant for employment because of race, color, sex, age or handicap, religion, ancestry, marital status, national origin, place of birth, or sexual preference. The Consultant further covenants that it will comply with the Civil Rights Act of 1973, as amended; and the Michigan Civil Rights Act of 1976 (78. Stat. 252 and 1976 PA 4563) and will require a similar covenant on the part of any consultant or subconsultant employed in the performance of this Agreement.

**Section 10. Applicable Law.**

This Agreement is to be governed by the laws of the State of Michigan and the City of Novi Charter and Ordinances.

**Section 11. Approval; No Release.**

Approval of the City shall not constitute nor be deemed release of the responsibility and liability of Consultant, its employees, associates, agents and subconsultants for the accuracy and competency of their designs, working drawings, and specifications, or other documents and services; nor shall that approval be deemed to be an assumption of that responsibility by the City for any defect in the designs, working drawings and specifications or other documents prepared by Consultant, its employees, subconsultants, and agents.

After acceptance of final plans and special provisions by the City, Consultant agrees, prior to and during the construction of this project, to perform those engineering services as may be required by City to correct errors or omissions on the original plans prepared by Consultant and to change the original design as required.

**Section 12. Compliance With Laws.**

This Contract and all of Consultants professional services and practices shall be subject to all applicable state, federal and local laws, rules or regulations, including without limitation, those which apply because the City is a public governmental agency or body. Consultant represents that it is in compliance with all such laws and eligible and qualified to enter into this Agreement.

**Section 13. Notices.**

Written notices under this Agreement shall be given to the parties at their addresses on page one by personal or registered mail delivery to the attention of the following persons:

City: Rob Hayes, P.E., Director of Public Services and Maryanne  
Cornelius, Clerk, with a copy to Thomas R. Schultz, City Attorney

Consultant: Jan M. Hauser, P.E., Vice President Water/Wastewater

**Section 14. Waivers.**

No waiver of any term or condition of this Agreement shall be binding and effective unless in writing and signed by all parties, with any such waiver being limited to that circumstance only and not applicable to subsequent actions or events.

**Section 15. Inspections, Notices, and Remedies Regarding Work.**

During the performance of the professional services by Consultant, City shall have the right to inspect the services and its progress to assure that it complies with this Agreement. If such inspections reveal a defect in the work performed or other default in this Agreement, City shall provide Consultant with written notice to correct the defect or default within a specified number of days of the notice. Upon receiving such a notice, Consultant shall correct the specified defects or defaults within the time specified. Upon a failure to do so, the City may terminate this Agreement by written notice and finish the work through whatever method it deems appropriate, with the cost in doing so being a valid claim and charge against Consultant; or, the City may preserve the claims of defects or defaults without termination by written notice to Consultant.

All questions which may arise as to the quality and acceptability of work, the manner of performance and rate of progress of the work, and the interpretation of plans and specifications shall be decided by the City. All questions as to the satisfactory and acceptable fulfillment of the terms of this agreement shall be decided by the City.

**Section 16. Delays.**

No charges or claims for damages shall be made by the Consultant for delays or hindrances from any cause whatsoever during the progress of any portions of the services specified in this agreement, except as hereinafter provided.

In case of a substantial delay on the part of the City in providing to the Consultant either the necessary information or approval to proceed with the work, resulting, through no fault of the Consultant, in delays of such extent as to require the Consultant to perform its work under changed conditions not contemplated by the parties, the City will consider supplemental compensation limited to increased costs incurred as a direct result of such delays. Any claim for supplemental compensation must be in writing and accompanied by substantiating data.

When delays are caused by circumstances or conditions beyond the control of the Consultant as determined by the City, the Consultant shall be granted an extension of time for such reasonable period as may be mutually agreed upon between the parties, it being understood, however, that the permitting of the Consultant to proceed to complete the services, or any part of them, after the date to which the time of completion may have been extended, shall in no way operate as a waiver on the part of the City of any of its rights herein set forth.

**Section 17. Assignment.**

No portion of the project work, heretofore defined, shall be sublet, assigned, or otherwise disposed of except as herein provided or with the prior written consent of the City. Consent to sublet, assign, or otherwise dispose of any portion of the services shall not be construed to relieve the Consultant of any responsibility for the fulfillment of this agreement.

**Section 18. Dispute Resolution.**

The parties agree to try to resolve any disputes as to professional engineering services or otherwise in good faith. In the event that the parties cannot resolve any reasonable dispute, the parties agree to seek alternative dispute resolution methods agreeable to both parties and which are legally permissive at the time of the dispute. The parties agree to use their best efforts to



resolve any good faith dispute within 90 (ninety) days notice to the other party. In the event the parties cannot resolve that dispute as set forth above, they may seek such remedies as may be permitted by law.

WITNESSES

URS Corporation – Great Lakes

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
By:  
Its:

The foregoing \_\_\_\_\_ was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_,  
20\_\_\_\_, by \_\_\_\_\_ on behalf of \_\_\_\_\_  
\_\_\_\_\_.

\_\_\_\_\_  
Notary Public  
\_\_\_\_\_ County, Michigan  
My Commission Expires: \_\_\_\_\_

WITNESSES

CITY OF NOVI

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
By:  
Its:

The foregoing \_\_\_\_\_ was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,  
by \_\_\_\_\_ on behalf of the City of Novi.

\_\_\_\_\_  
Notary Public  
Oakland County, Michigan  
My Commission Expires: \_\_\_\_\_

DRAFT

## **EXHIBIT A - SCOPE OF SERVICES**

Consultant shall provide the City professional engineering services in all phases of the Project to which this Agreement applies as hereinafter provided. These services will include serving as the City's professional engineering representative for the Project, providing professional engineering consultation and advice and furnishing customary civil, structural, mechanical and electrical engineering services and customary engineering services incidental thereto, as described below.

**A. Basic Services.**

1. See attached.

**B. Performance.**

1. The Consultant agrees that, immediately upon the execution of this Agreement, it will enter upon the duties prescribed in this agreement, proceed with the work continuously, and make the various submittals on or before the dates specified in the attached schedule. The City is not liable and will not pay the Consultant for any services rendered before written authorization is received by the Consultant.
2. The Consultant shall submit, and the City shall review and approve a timeline for submission of plans and/or the completion of any other work required pursuant to this Scope of Services. The Consultant shall use its best efforts to comply with the schedule approved by the City.
3. If any delay is caused to the Consultant by order of the City to change the design or plans; or by failure of the city to designate right-of-way, or to supply or cause to be supplied any data not otherwise available to the Consultant that is required in performing the work described; or by other delays due to causes entirely beyond the control of the Consultant; then, in that event, the time schedules will be adjusted equitably in writing, as mutually agreed between the City and the Consultant at the moment a cause for delay occurs.
4. Since the work of the Consultant must be coordinated with the activities of the City (including firms employed by and governmental agencies and subdivisions working with the City), the Consultant shall advise the City in advance, of all meetings and conferences between the Consultant and any party, governmental agency, political subdivision, or third party which is necessary to the performance of the work of the Consultant.



December 18, 2014

City of Novi  
Department of Public Services  
Ben Croy, P.E., Civil Engineer  
Field Services Complex  
26300 Lee BeGole Drive  
Novi, MI 48375

**Reference: Nine Mile Road Water Main**

Dear Mr. Croy:

Please find enclosed a copy of our proposed Work Plan, Schedule and Estimated Construction Cost for the above referenced project. Our proposal is based on the conceptual layout and utility plans provided and the site visit conducted on December 4, 2014.

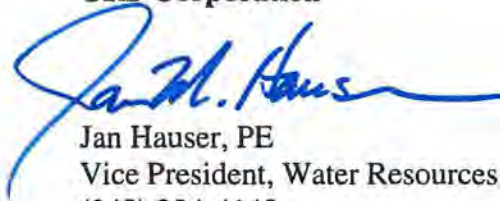
From our site visit, it is assumed that the new 16-inch water main will be installed along the south side of the road, by trenchless technology to minimize surface disruption.

URS is available to begin this project immediately upon authorization in the form of a Supplemental Agreement under our Agreement for Professional Engineering Services for Public Projects.

If you have any questions, please feel free to contact me at (248) 204-4140. URS appreciates the opportunity to work with the City of Novi on this project.

Sincerely,

**URS Corporation**



Jan Hauser, PE  
Vice President, Water Resources Department  
(248) 204-4140  
(248) 705-5797  
[jan.hauser@urs.com](mailto:jan.hauser@urs.com)

Attachments:

## WORK PLAN AND SCHEDULE

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### **Background**

The City of Novi will be completing a water main loop by installing a new main on Nine Mile Road between Center Street and Novi Road. The water main project will consist of installing a 16-inch water main, with isolation gate valves and wells, hydrants and service connections. The water main is currently proposed to run within the existing right-of-way on the south side of Nine Mile Road. Due to existing utilities, recent road reconstruction, mature trees, etc., it is likely that the main will be installed using trenchless technologies. Surfaces disturbed by the construction will be restored.

### **Work Plan**

This work plan describes URS' approach to providing engineering services for the Nine Mile Road Water Main. Our approach will focus on meeting the City's needs for looping of mains as described in the Water Master Plan.

Components of the engineering services include the following:

- Topographic survey
- Preliminary design
- Construction plans and specifications
- Permitting
- Bid phase assistance
- Construction phase services

To complete this project in an efficient manner URS proposes to break it into four tasks.

**Task 1:** Topographic survey and preliminary design;

**Task 2:** Preparation of construction plans and specifications and permitting;

**Task 3:** Bid phase assistance

**Task 4:** Construction Administration.

Each of these four tasks has specific subtasks and deliverables that are described in the following paragraphs:

## WORK PLAN AND SCHEDULE

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### **Task 1: Topographic Survey and Preliminary Design**

In this task URS will obtain and review existing information, such as the Nine Mile Road Reconstruction plans and City of Novi/Oakland County standard details and specifications and will coordinate with utility companies to obtain information on site utilities. A complete topographic survey of the project area will be conducted, establishing horizontal and vertical control and locating surface features. Utility locations will be surveyed following flagging under the Miss Dig program.

Based on the survey and utility information, an existing site plan will be prepared, indicating site contours, utility locations and elevations, benchmark data and property boundary information. Preliminary design (30%) will be completed to illustrate the location and extent of the proposed improvements.

**Deliverables** will include preliminary plans, specifications and a cost estimate to meet the City's desire to review 30% complete plans.

### **Task 2: Preparation of construction plans/specifications and permitting**

After reviewing and discussing the preliminary plans with the City, the concepts and comments in the preliminary plans will be finalized into plans suitable for bidding and construction. An updated construction cost estimate will be prepared. Specifications and a Soil Erosion and Sedimentation Control (SESC) plan will be developed for the construction activities during this phase.

**Deliverables** for this phase will include final plans, specifications, updated cost estimate and a SESC plan. Plans will be provided to the City at 90% completion for review. Comments and changes will be incorporated and final plans completed for bidding. Permit applications (RCOC, MDEQ, etc.) will be developed and submitted as part of this task.

## WORK PLAN AND SCHEDULE

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### **Task 3: Bid phase assistance**

Upon approval of the final design documents, URS will prepare bid documents and provide assistance to the City with bidding of the project. Bidding assistance will include coordinating and facilitating the pre-bid meeting, preparing contract addenda, making plan revisions, responding to bidder inquiries, review of bids and preparing a recommendation of award.

### **Task 4: Construction administration**

URS will provide construction administration services that will include the activities listed below.

- Reviewing shop drawings;
- Coordinating/ running pre-construction meeting;
- Reviewing compliance with contract documents;
- Consultation with City Engineering staff;
- Interpretation of plans and specifications;
- Preparation and certification of pay estimates;
- Construction Staking;
- Construction inspection during active construction;
- Administering the soil erosion and sedimentation control plan;
- Attend to resident concerns and complaints, and;
- Prepare record drawings within 3 months of construction completion.

**Deliverables** for this task include meeting minutes, daily inspection reports, and preparation of record drawings.

### **Schedule**

A bar chart schedule for completion of the design of the improvements is attached.

URS Corporation

City of Novi, MI

Nine Mile Water Main - Center to Novi

Preliminary Opinion of Probable Cost

Wednesday, December 10, 2014

ITEM DESCRIPTION	QUANTITIES	UNIT	UNIT PRICE	TOTAL PRICE
Mobilization	1	LS	\$5,000.00	\$ 5,000.00
Bonds and Insurance	1	LS	\$3,000.00	\$ 3,000.00
General Conditions	1	LS	\$20,000.00	\$ 10,000.00
Silt Fence	2,500	LF	\$4.00	\$ 10,000.00
Clearing & Grubbing	0.06	ACR	\$4,000.00	\$ 240.00
Borrow Fill	22.00	BCY	\$20.00	\$ 440.00
Backfill	140.00	ECY	\$10.00	\$ 1,400.00
Backfill Trench	140.00	LCY	\$5.00	\$ 700.00
Dewatering	20.00	DAY	\$200.00	\$ 4,000.00
Excavation	111.00	BCY	\$5.00	\$ 555.00
Directional Drilling mobilization to site	2.00	EA	\$2,500.00	\$ 5,000.00
Directional Drilling unit set up per drill	3.00	EA	\$1,500.00	\$ 4,500.00
Directional Drilling activity	2,400.00	LF	\$15.00	\$ 36,000.00
Directional Drilling mud trailer	20.00	DAY	\$1,500.00	\$ 30,000.00
Fire Hydrants	5.00	EA	\$2,500.00	\$ 12,500.00
6-Inch Ductile Iron Water Main	100.00	LF	\$40.00	\$ 4,000.00
6-Inch Cast Iron Gate Valves	5.00	EA	\$1,100.00	\$ 5,500.00
16-Inch HDPE Water Main	2,400.00	LF	\$60.00	\$ 144,000.00
16-Inch Ductile Iron Fittings	5.00	EA	\$5,000.00	\$ 25,000.00
Topsoil Placement	300.00	SY	\$5.00	\$ 1,500.00
Borrow Topsoil	50.00	BCY	\$30.00	\$ 1,500.00
Asphaltic Concrete	6,000.00	SF	\$5.00	\$ 30,000.00
Hauling Soil	222.00	LCY	\$6.00	\$ 1,332.00
<b>SUB-TOTAL</b>				<b>\$ 336,167</b>
<b>Contingency</b>			25%	\$ 84,041.75
<b>Escalation</b>			2%	\$ 8,404
<b>TOTAL ESTIMATED CONSTRUCTION COST (NON-ENGINEERING)</b>				<b>\$ 428,613</b>
<b>ENGINEERING COSTS:</b>				
Construction Engineering			6.5%	\$ 27,859.84
Design Engineering			7.25%	\$ 31,074.44
<b>TOTAL ESTIMATED PROJECT COST (ENGINEERING + NON-ENGINEERING)</b>				<b>\$ 487,547</b>



Project Implementation Schedule

9 Mile Road Water Main

