



CITY of NOVI CITY COUNCIL

Agenda Item H
January 26, 2015

SUBJECT: Approval to award an engineering services agreement for design engineering related to the Orchard Hill Detention Basin Improvements project to URS Corporation, in the amount of \$16,680.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division ^{As} _{BIC}

CITY MANAGER APPROVAL: ^{As}

EXPENDITURE REQUIRED	\$ 16,680
AMOUNT BUDGETED	\$ 26,375
LINE ITEM NUMBER	210-211.00-865.024

BACKGROUND INFORMATION:

The recently completed 2014 Storm Water Master Plan Update identified several recommendations to improve the two Orchard Hill Place storm water basins located on Haggerty Road north of Eight Mile. The improvements include:

- Retrofit of the outlet control structures for each basin to improve their functionality and reduce routine maintenance.
- Repair or replacement of sections of separated pipes at both basins.
- Dredging the eastern basin to restore its storage capacity.
- Cleanout of the vegetation and sediment buildup in the ditch downstream of the eastern basin.

Additionally, staff will work to clarify ownership and maintenance responsibilities for each detention basin going forward as discussed in the 2104 Storm Water Master Plan Update (excerpt attached).

The Agreement for Professional Engineering Services for Public Projects does not contain a fee category for this type of project, but does contain hourly rates for general consulting and survey crews. Therefore, URS' engineering fees are based on a proposal submitted by URS using these hourly rates. The design fees for this project will be \$16,680. 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 over the winter and spring months, and construction of this project is expected to commence in summer or fall 2015.

RECOMMENDED ACTION: Approval to award an engineering services agreement for design engineering related to the Orchard Hill Detention Basin Improvements project to URS Corporation, in the amount of \$16,680.

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

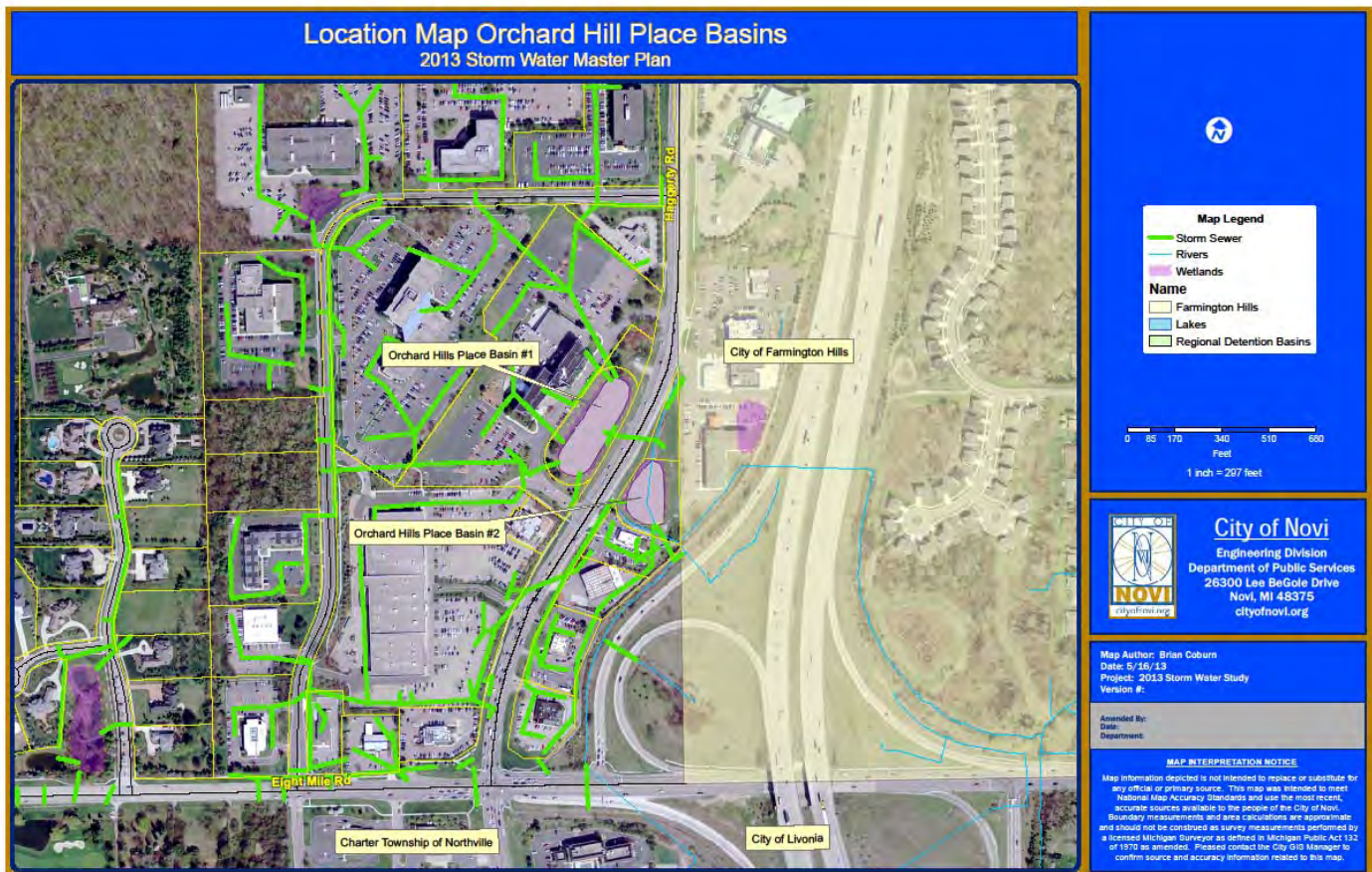
	1	2	Y	N
Council Member Mutch				
Council Member Poupard				
Council Member Wrobel				

SECTION 4 – Orchard Hill Place Basins Condition and Capacity Concerns

INTRODUCTION AND BACKGROUND

This report focuses on two detention basins within the Orchard Hill Place development located west and east of Haggerty Road, north of Eight Mile Road. This report presents the identified problem areas, and recommends improvements to meet the City's expectations for storm water quality, while also reducing routine maintenance frequency.

These two storm water detention basins serve a commercial area in the southeasterly portion of Section 36. The westerly basin (Basin #1) is owned by the City of Novi, but is maintained by the Orchard Hill Place Association. The easterly basin (Basin #2) is owned by the Orchard Hill



Place Association, but maintained by the City of Novi. City of Novi Engineering staff have reviewed the history of this arrangement, but were unable to determine why the ownership and maintenance has traditionally occurred in this manner.

The on-going concerns with the basins include damage at inlet and outlet structures and pipes, sedimentation, and outlet pipe clogging.

FIELD INVESTIGATION

In August 2013, staff from Spalding DeDecker Associates, Inc. (SDA) and Environmental Consulting & Technology, Inc. (ECT) met on-site with the City of Novi Department of Public Services (DPS) staff, to perform a field review of the detention basins.



Basin #1 showed no apparent sediment accumulation. Only two small (~10' to 30' long) areas of shoreline erosion were observed, and they did not appear to be contributing significant amounts of sediment to the basin. DPS staff commented that the Sheraton hotel

See page thru South Slope Basin #1

had intentionally plugged the 6-inch outlet, to turn what would otherwise be a low or potentially dry basin into a pond in front of the hotel. Inlet pipes showed separation at the joints in several locations. Along the south slope side of the basin, the bank/slope was soft and there was



standing water from seepage through the basin side slope. Long term, this seepage could cause issues with bank erosion.

Basin #2 showed signs of a significant accumulation of sediment. Although flow through the outlet structure was observed, there is significant sediment and plant debris in the pond that adversely affects the storage volume and operation of the basin. DPS staff stated that they could not recall if the basin had ever been dredged.



Sediment Accumulation at Basin #2

The DPS staff also stated that the 6-inch diameter outlet pipe of Basin #2 clogs and requires frequent maintenance. There is also pipe separation at the southwest inlet of this basin.

RECOMMENDATIONS

Some conceptual remedial options have been developed for budgeting purposes. It should be noted that a combination of these options should be implemented to result in the most effective improvement. The conceptual remedial options are as follows:

1. Revise ownership and operations: Although this will not address any flooding issues, it will assist with future maintenance if both basins are owned and operated by a single entity. Alternatively, ownership or maintenance responsibilities of the basins could be corrected so Orchard Hill Place Association owns and maintains Basin #1, and the City owns and maintains Basin #2.



2. Dredge Detention Basin #2: Based on the field investigation, there appears to be a significant amount of sediment within the detention basin, reducing surge capacity and leading to maintenance issues with the outlet. Additional volume capacity can be achieved by dredging the basin. In addition, removing the sediment and debris will lower the chances of the outlet pipe becoming clogged.
3. Repair separated inlet pipes: Some pipe joints near the inlets to the basins have separated, which has likely led to surrounding erosion. These joints can be repaired by removal and replacement of pipe sections, or by lining.
4. Retrofit the outlet of Basin #2: The current outlet pipe has a history of clogging which requires frequent maintenance. The grate of the outlet structure should be retrofitted similar to the way other regional detention basin outlets have been retrofitted in the City. Although this does completely prevent the need for maintenance, this retrofit would reduce the maintenance issues that currently arise with this structure.
5. Retrofit outlet of Basin #1 to permit lower water levels: Remove the existing restriction on the outlet to allow the normal water level to be lower and install a standpipe with stone inlet cone. This would restore Basin #1 back to its original design and functionality as a detention basin, with storm surge capacity and fluctuating water levels. Prior to implementing this, it is recommended that the downstream hydraulics be reviewed to ensure that the increase in discharge will not adversely affect the downstream Basin and surrounding area.



6. Downstream Improvements: The area downstream of Detention Basin #2 is overgrown with vegetation and there are areas of sediment buildup. The ditch in this area should be cleaned out to allow for unobstructed discharge from the Basin. Note that portions of this area cross into the City of Farmington Hills and MDOT right-of-way for I-275.

PRELIMINARY ESTIMATES

Option 2. *Dredge Detention Basin #2*

Item Description	Unit	Unit Price	Quantity	Item Cost
Mobilization	LSum	\$5,000	1	\$5,000
Dredge Existing Pond	Cyd	\$10.00	2,600	\$26,000
Dewatering	LSum	\$7,500	1	\$7,500
Restoration	Syd	\$5.00	500	\$2,500
<i>Contingency (25%)</i>				\$10,250
Estimate =				\$51,250

Option 3. *Repair Inlet Pipes with Separation (Cost Included in Above Estimate)*

Item Description	Unit	Unit Price	Quantity	Item Cost
Pipe Repair	Each	\$2,000	4	\$8,000

Option 4. *Reconstruct Outlet of Basin #2 and Repair Separated Inlet Pipes*

Item Description	Unit	Unit Price	Quantity	Item Cost
Mobilization	LSum	\$2,500	1	\$2,500
Outlet Structure	LSum	\$7,500	1	\$7,500
Pipe Separation Repair	Each	\$2,000	4	\$8,000
Restoration	Syd	\$5.00	1,000	\$5,000
<i>Contingency (25%)</i>				\$5,750
Estimate =				\$28,750

SUPPLEMENTAL PROFESSIONAL ENGINEERING SERVICES AGREEMENT

ORCHARD HILL PLACE DETENTION BASIN IMPROVEMENTS

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 improvements proposed for the two Orchard Hill Place detention basins on Haggerty Road, north of Eight Mile 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 \$16,680.
- 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: _____

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.

[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.



January 8, 2015

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

Reference: Orchard Hill Place Detention Basin Improvements

Dear Mr. Croy:

Please find enclosed a copy of our proposed Work Plan and Schedule for the above referenced project. The Work Plan is based on the conditions and recommendation provided in the City of Novi Storm Water Master Plan Update, the Hilton Inn storm sewer drawings and our site visit of December 4, 2014.

As this project does not fall into one of the established categories under our Agreement for Professional Services, we have provided an Estimated Workhour spreadsheet that details the work efforts for the project. Labor on the project will be invoiced under the General Consulting item (for miscellaneous services) at \$105/hour, Survey Crew (1 Man) at \$100/hour and Survey Crew (2 Man) at \$150/hour. The total estimated fee for design and construction phase services (excluding crew days) is \$25,230.

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 M. Hauser, PE
Vice President, Water Resources Department
(248) 204-4140
(248) 705-5797
jan.hauser@aecom.com

WORK PLAN AND SCHEDULE

Background

The City of Novi will be completing a storm water detention basin improvement project within the Orchard Hill Place development located east and west of Haggerty Road, North of Eight Mile Road, in accordance with recommendations in the 2013 Novi Storm Water Master Plan Update.

Two storm water detention basins serve a commercial area in the southeasterly portion of Section 36. The westerly basin (Basin #1) is owned by the City of Novi, but is maintained by the Orchard Hill Place Association. The easterly basin (Basin #2) is owned by the Orchard Hill Place Association, but maintained by the City of Novi.

The proposed work will consist of:

- Repairing or replacing sections of separated inlet pipes for both basins.
- Retrofitting the outlet of Basin #1 to its original design and functionality. This would include installing a standpipe to allow normal water level to be lowered, and removing existing restrictions from the outlet.
- Dredging Basin #2 to regain reduced surge capacity of the detention basin.
- Retrofitting the grate of the outlet structure in Basin #2 to City of Novi Standards.
- Cleanout of vegetation and sediment buildup in the ditch downstream of Basin #2 to allow for unobstructed discharge from the basin.

Surfaces disturbed by the construction will be restored.

Work Plan

This work plan describes our approach to providing engineering services for the Orchard Hill Place Detention Basin improvements. Our approach will focus on meeting the City's needs for storm water quality and quantity and reduce routine maintenance frequency.

WORK PLAN AND SCHEDULE

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:

Task 1: Topographic Survey and Preliminary Design

In this task we will obtain and review existing information, such as existing design and storm detention basin plans, existing condition of detention basins, Novi/Oakland County standard details and specifications and benchmark data; complete a topographic survey of the project area; coordinate with utility companies to obtain information on site utilities.

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.

WORK PLAN AND SCHEDULE

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 (Oakland County WRC, MDEQ, etc.) will be developed and submitted as part of this task.

Task 3: Bid phase assistance

Upon approval of the final design documents, bid documents will be prepared and assistance provided 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

Construction administration services 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;

WORK PLAN AND SCHEDULE

- Administering the soil erosion and sedimentation control plan;
- Attending to resident concerns and complaints, and;
- Preparing record drawings within three 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.

City of Novi

Orchard Hill Place Basin Improvements

Work Hour Estimate

	Project Manager	Project Engineer	Staff Engineer	CADD Technician	Survey Crew (1 Man)	Survey Crew (2 Man)	Clerical	Total Hours
Task 1 - Topo Survey and Preliminary Design								
1.1 Kick-off Meeting	2	0	2	0	0	0	2	6
1.2 Review Existing Information	0	0	2	0	0	0	0	2
1.3 Topographic Survey	0	0	0	0	0	16	0	16
1.4 Topographic Survey Processing	0	0	0	10	0	0	0	10
1.5 Preliminary Design	1	2	10	8	0	0	2	23
1.6 Cost Estimate	0	0	4	0	0	0	0	4
1.7 Preliminary Design Review Meeting	2	0	2	0	0	0	0	4
Task 2 - Plans, Specs and Permitting								
2.1 Final Design	1	4	20	16	0	0	2	43
2.2 Specifications	1	4	8	0	0	0	2	15
2.3 Cost Estimate	0	0	4	0	0	0	0	4
2.4 Final Design Review Meeting	2	0	2	0	0	0	0	4
2.5 Permit Applications	0	0	4	4	0	0	0	8
Task 3 - Bid Phase								
3.1 Pre-Bid Meeting	0	3	3	0	0	0	1	7
3.2 Evaluation of Bids	0	0	4	0	0	0	0	4
3.3 Award to Contractor	0	0	2	0	0	0	0	2
Task 4 - Construction Engineering/Observation								
4.1 Pre-Construction Conference	0	3	3	0	0	0	2	8
4.2 Shop Drawing Review	0	0	8	0	0	0	0	8
4.3 Site Visits/Construction Observation	0	0	4	0	0	0	0	4
4.4 Construction Staking	0	0	0	0	12	0	0	12
4.5 Clarifications/Interpretations	1	4	8	0	0	0	0	13
4.6 Change Orders/Work Change Directives	1	4	8	0	0	0	2	15
4.7 Substitutue or "Or Equal" Review	0	2	4	0	0	0	0	6
4.8 Record Drawings	1	2	4	8	0	0	1	16
Total Hours	12	28	106	46	12	16	14	234

	Hours	Rate	Fee
Design Phase	136	\$105	\$14,280
Construction Phase	70	\$105	\$7,350
Survey Crew (2 Man)	16	\$150	\$2,400
Survey Crew (1 Man)	12	\$100	\$1,200
Total Fee			\$25,230

Project Implementation Schedule

Orchard Hills Place Detention Basin Modifications

