



cityofnovi.org

CITY of NOVI CITY COUNCIL

Agenda Item B
November 23, 2009

SUBJECT: Approval to award an amendment to the engineering services contract for additional design phase services related to the Meadowbrook Lake Dam Modifications project to URS Corporation for a not-to-exceed fee of \$16,845.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division *BFL*

CITY MANAGER APPROVAL *[Signature]*

EXPENDITURE REQUIRED	\$16,845
AMOUNT BUDGETED	\$0
APPROPRIATION REQUIRED	\$16,845 (Drain Fund—Fund Balance \$4,516,000)
LINE ITEM NUMBER	210-211.00-805.685

BACKGROUND INFORMATION:

An engineering contract was awarded to URS on October 8, 2007 for engineering services related to modifications to Meadowbrook Lake Dam in the amount of \$39,885 for design engineering and \$17,100 for construction engineering, for a total award of \$56,985. The project was developed to address non-conformance issues identified in a dam safety report from Michigan Department of Environment Quality (DEQ) and to implement recommendations from a 2005 study to address downstream streambank erosion issues.

While the City is not the owner of the dam and is not technically responsible for its maintenance, the improvements will benefit the city and properties downstream. Meadowbrook Lake is not a part of the public drainage system, but it does affect storm water drainage in this area of the city. Because Meadowbrook Lake and the dam are not part of the public system, the project requires easements from four property owners and the Meadowbrook Lake Homeowner's Association (HOA). A permit from the DEQ is also required.

Engineering staff have been working with the HOA for the past two years to complete the design of a project that meets the goals identified by the city from the two reports and conforms to the expectations of the impacted property owners. After four public information meetings and correspondence with the HOA on multiple occasions, staff continues to work with the association property owners to identify and address concerns while attempting to secure the required easements (see Rob Hayes' September 3, 2009 memo for additional information).

The original scope of the engineering contract with URS included the design of the project, obtaining the permit from DEQ, preparing the exhibits for the required easements, and attendance at one public information meeting. A contract amendment in the amount of \$10,900 was approved by City Council on October 20, 2008 to include: modeling and analysis of the Nine Mile culvert downstream of the dam, additional meetings with DEQ staff and residents, additional topographical survey to reconstruct the sidewalk on HOA property, and reimbursement for the DEQ permit application fee.

The project to date has required multiple iterations of the design and easement exhibits, four public information meetings, and additional time from the consultant to respond to HOA questions, issues, and correspondence. The consultant is requesting additional fees for the design phase of the

project for the additional scope of work that has been performed. Because the additional scope could not be defined and in lieu of bringing multiple fee increase requests to City Council, Engineering directed URS to proceed on a time-and-materials basis.

These additional engineering costs can be offset by the construction phase fees, which were previously awarded but may not be needed for some time. Therefore, staff recommends amending the engineering phase services to increase the design phase fees in the amount of \$16,845 for the additional scope needed to finish the design, prepare requested exhibits for the HOA and property owners, and to cover the completed services identified above, including public meetings, permitting and design revisions (see URS letter dated October 5, 2009).

Of the requested \$16,845 of additional fees, \$14,186 has been invoiced for work already completed. The remaining \$2,659 would cover the completion of the plans and specifications for construction bidding. The additional design fees would supplant the previously awarded construction phase fees. The future construction phase fees would be appropriated and awarded at the time of construction contract award based on the fee schedule provided in the newly adopted engineering consultant agreement. The following table summarizes the engineering fees and awards to date:

Original Design Engineering Award (10/8/07)	\$39,885
Contract Amendment 1 (10/20/08)	\$10,900
Authorized Engineering Amount to Date	\$50,785
Additional Work Completed to Date	\$14,186
Future Work Required for Construction Bidding	\$2,659
Total Requested Additional Fees	\$16,845
NEW Design Engineering Contract Total	\$67,630

The HOA continues to have concerns about the secondary spillway construction, and the removal of trees for the construction of the spillway and on the earthen dam to increase the freeboard (or height of the dam above the 100-year flood elevation) to meet the current standards. Engineering staff has provided additional information to the HOA (see Rob Hayes' October 20, 2009 letter) in response to the attached September 9, 2009 letter from the HOA. The additional information demonstrates that the depth of the spillway is minimal and is more of a depression than a swale or ditch as represented by the HOA. The tree removals have been minimized to the extent feasible while still permitting the construction of the swale and work on the earthen dam to increase the freeboard.

The DEQ permit has been issued for the project and if the project proceeds as designed, the design plans will be finalized and the project will be ready for bidding within the budget shown in the table, above. If the HOA has additional concerns or requires additional changes to the design, the feasibility of this project moving forward will need to be examined before additional design effort is expended. The project is 95% complete and is almost ready for bidding once the easements and approvals are acquired from the adjacent properties and the HOA.

RECOMMENDED ACTION: Approval to award an amendment to the engineering services contract for additional design phase services related to the Meadowbrook Lake Dam Modifications project to URS Corporation for a not-to-exceed fee of \$16,845.

	1	2	Y	N
Mayor Landry				
Mayor Pro Tem Gatt				
Council Member Crawford				
Council Member Fischer				

	1	2	Y	N
Council Member Margolis				
Council Member Mutch				
Council Member Staudt				



October 5, 2009

Mr. Brian Coburn, P.E.
City of Novi
Department of Public Service
26300 Delwal Drive
Novi, MI 48375

Reference: Meadowbrook Lake Dam Project – Additional Services

Dear Mr. Coburn:

The following proposal is based on our agreed scope of services to complete Phase I of the Meadowbrook Lake Dam Project. The additional work includes:

- Neighborhood and project meetings
- Permitting
- Additional Design

We estimate the fee to complete Phase I of the work will be \$2,900. This would bring our total contract for design services to approximately \$67,630. The breakdown of our contract is as follows:

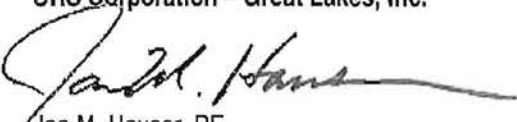
Approved Contract	\$50,785
Paid to Date	\$55,230
Unbilled	\$8,000
Additional Services	\$2,900
Permit Fee	\$1,500

Total Additional Services \$16,845

If you have any questions, please feel free to contact me at (248) 204-4140. We appreciate your consideration of our submittal and look forward to working with you to complete the project.

Sincerely,

URS Corporation – Great Lakes, Inc.



Jan M. Hauser, PE
Vice President / Water Resources

MEMORANDUM



TO: CLAY PEARSON, CITY MANAGER
FROM: ROB HAYES, P.E., DIRECTOR OF PUBLIC SERVICES
SUBJECT: MEADOWBROOK DAM IMPROVEMENT PROJECT UPDATE
DATE: SEPTEMBER 3, 2009

*RH 9/3/09
To Mayor & City Council Members*

*Background on work in progress,
may need to defer if arrangements/
access cannot be made.
CH*

The Meadowbrook Lake Dam Improvement project was authorized in the FY 2007/2008 budget with an original goal of providing additional storm storage in the lake to decrease storm flow impacts downstream that would reduce streambank erosion and sedimentation. As part of the design process, we also identified two major dam deficiencies that must be addressed: 1) the primary spillway's inability to pass flow resulting from a 100-year storm; and, 2) the earthen embankment's insufficient height to prevent overtopping and severe downstream flooding during a 100-year storm event.

Since late 2007, the Engineering Division has worked to complete the project's design based on the amended scope described above, but has yet to receive complete cooperation from the Meadowbrook Lake Homeowners' Association and two residential parcel owners regarding easements. Most of the construction work would be completed on private property; therefore easements are required for MDEQ permitting and project construction.

Between early 2008 and April 2009, a series of meetings was held with the Association leadership and residents to present the scope of the project, discuss the anticipated impacts to private property, and emphasize the need for easements. Although many objections to granting easements have been resolved (by limiting tree removal and improving the existing pathway through the Association's park), several remain, such as the location and size of a drainage swale on park property that would serve as the dam's auxiliary spillway, and the language to be incorporated in the easement documents.

During site visits and at the most recent meeting with the Association in late April, some residents asked why the City felt it had a responsibility to make the planned improvements, which (coupled with the stalemate over easements) prompted us to review our files to definitively determine ownership and long-term maintenance responsibilities for the dam, and to subsequently ask for assistance from the City Attorney's office (see attached letter from Tom Schultz and accompanying cover letter from Rob Hayes to the Association). In short, our finding is that the City of Novi is under no legal obligation to improve or maintain the dam; however, our position remains that the public would significantly benefit from the project's completion should the necessary easements be granted.

The Association held a meeting this past Monday to discuss the project and presumably the City's letters referenced above. To date, we have not received a response from the Association's leadership.

Please let me know if you require any additional information relative to this matter.

cc: Pam Antil, Assistant City Manager
Tom Schultz, City Attorney
Brian Coburn, Sr. Civil Engineer



August 31, 2009

Lynn Kocan, Civics Director
Meadowbrook Lake Subdivision Association
PO Box 242
Novi, MI 48376

Re: Meadowbrook Lake Dam Improvement Project

CITY COUNCIL

Mayor
David B. Landry

Mayor Pro Tem
Bob Gatt

Terry K. Margolis

Andrew Mutch

Kathy Crawford

Dave Staudl

Brian Burke

Director of Public Services/
City Engineer
Rob Hayes

Dear Ms. Kocan:

In response to residents' questions about the City's responsibility for the Meadowbrook Lake Dam, we had the City Attorney review file information to determine the history of the dam, and to identify ownership and long-term maintenance responsibilities. The attached letter from Tom Schultz confirms that the dam is owned by the Meadowbrook Lake Subdivision Association. The letter also states that under the Michigan Dam Safety Act, the subdivision is responsible for the maintenance, inspection and structural integrity of the dam.

Despite not having ownership of or responsibility for the dam, the City has historically made improvements to both the dam and Meadowbrook Lake in the overall interest of the City and property owners downstream. Our studies indicate that, according to the Michigan Dam Safety Act requirements, the dam is deficient in two major areas: 1) the weir (part of the concrete structure) has insufficient capacity to convey the 100-year flood, which means that during a 100-year storm, areas around and upstream of the lake will become flooded; and, 2) the earthen dam lacks proper freeboard (the distance between the top of the earthen dam and the high water elevation), which means that the earthen dam could fail during a 100-year storm and damage properties and threaten lives downstream of the dam.

The proposed project will correct both deficiencies, but in order for the project to begin, we will need easements from the affected property owners and the association. The City has budgeted \$350,000 for the construction of the project with no costs to be borne by the residents or the association. We believe that we can work together to address the outstanding concerns of the property owners and the association to make the project a viable venture that will greatly benefit the public.

Please feel free to contact me at 248-347-0454 with any questions or concerns.

Sincerely,

DEPARTMENT OF PUBLIC SERVICES

Rob Hayes, P.E.
Director of Public Services/City Engineer

Enclosure

Department of Public Services
Field Services Complex
26300 Delwal Drive
Novi, Michigan 48375
248.735.5640
248.735.5659 fax



August 27, 2009

30903 Northwestern Highway
P.O. Box 3010
Farmington Hills, MI 48333-3010
Tel: 248-851-9500
Fax: 248-851-2158
www.secretwardle.com

Thomas R. Schultz
Direct: 248-539-2817
tschultz@secretwardle.com

Rob Hayes, City Engineer
City of Novi
45175 W. Ten Mile Road
Novi, MI 48375

Re: *Meadowbrook Lake Dam Improvement Project*

Dear Mr. Hayes:

You have asked us address the City's rights and/or obligations with regard to a proposed project to improve the dam at the south end of Meadowbrook Lake. The City is concerned that the weir in its current condition and configuration has insufficient capacity to handle a 100-year storm, and that there is a chance that the dam would be breached or overtopped in the even of such a storm, causing flooding downstream. The proposed improvements include replacing the weir and building a "spillway" on its western edge. The weir is on property owned by the Meadowbrook Lake Association; the proposed spillway would be largely on adjacent private lots. You estimate the cost of the improvements at approximately \$350,000.

You have proposed to the Meadowbrook Lake Association that the City undertake the improvements to the weir and take a permanent easement to allow the improved weir to be maintained by the City in the future. You have also approached the private property owners for temporary and permanent easements to construct the spillway. It appears that the Association is unconvinced of the need for the improvements, and some of the private property owners have raised questions about the effectiveness of the design of the proposed improvements. So, no easements have been obtained to do the work.

You have provided us with some historical documents from the City involving the initial construction of, and later improvements to, the Meadowbrook Lake Dam that is part of the Meadowbrook Lake Subdivision. You have asked us to confirm ownership of the dam and indicate who has the responsibility for its maintenance.

Ownership of the Dam

The lake area (identified as an "easement" on the plat) and the dam are owned by the Meadowbrook Lake Subdivision Association. The Meadowbrook Lake Subdivision restrictions confirm this in no uncertain terms (see Paragraph 8[f]):

Mr. Rob Hayes
August 27, 2009
Page 2

"The Meadowbrook Lake and Park are private facilities whereby the Village of Novi has no responsibility whatsoever concerning the control of the water level, improvement, or maintenance thereof and that such responsibility is solely that of the property owners of the Meadowbrook Lake Subdivision, and/or the Association, and is so acknowledged."

Past improvement projects have confirmed this. In order to complete the recent lake dredging project, the City sought and secured approval of the Association. And in connection with the "Middle Rouge River Improvements" in the mid-1980s, which involved improvements to the dam and drainage course, the City secured *temporary* easements from the Association (and certain individual lot owners) allowing it to conduct the work on the dam, though it did secure a permanent easement for the drain improvements south of the dam.

No City Obligation to Conduct the Dam Improvements

We understand that in connection with the earlier improvement projects, the City formally determined that the work done on the lake and/or dam would result in some public benefit, which allowed the City to expend public funds in connection with the improvements. We are not aware of any *obligation* on the part of the City to do so, however. As the owner of the dam, the obligation to maintain it falls to the Association, as noted above, not the City. Again, we are aware of no permanent easement that would allow the City to conduct work on the dam in the normal course.

a. Dam Safety Act

Under the Michigan Dam Safety Act, MCL 324.31501 *et seq.*, the "owner" of a dam is required to submit inspection reports prepared by a licensed engineer (with certain exceptions) regarding the condition of the dam on certain intervals—basically three, four, and five years. MCL 324.31518(1). "Owner" is defined in the act as "a person who owns, leases, controls, operates, maintains, manages, or proposes to construct a dam." MCL 324.31504(5).

If an owner does not submit an inspection report and make the required investigations, either the MDEQ or "a person who would have life or property threatened by a breach of the dam" can do so (and recover their costs of doing so). MCL 324.31518(6). If the MDEQ finds that a condition exists which endangers a dam, it "shall order the owner to take actions that the department considers necessary to alleviate the danger." Under MCL 324.31518(7), if the MDEQ finds an owner to be in violation of the act, it can take various action, including instituting a civil suit and/or criminal action. MCL 324.31525.

Mr. Rob Hayes
August 27, 2009
Page 3

As I understand it, the City has submitted reports to the MDEQ on occasion in the past and/or requested inspections of the dam and received reports from the inspection. It is not clear to us the basis or authority upon which the City has done so. You have asked whether the City is obligated to make such reports in the future. For the reasons stated above—the City is not an “owner” of the dam, has no control of it, and lacks continuing access to it—we conclude that the City does not have such a continuing obligation and that the MDEQ could not order the City to undertake the improvements now being discussed, although it appears possible that the Association, as the owner of the dam, could be ordered to do so. We also recommend that the Association be so notified so that it may meet what appears to be its obligation under the statute.

b. **Responsibility to Downstream Owners**

We obviously can't advise the Association of its obligations to protect downstream owners from the release of water from the dam in a negligent manner. We would suggest that, however, that if the Association has not already done so it should investigate its obligations to the downstream property owners to avoid causing damage as a result of its maintenance of the dam.

Summary

The project as proposed appears to have public benefit, which is what would permit the City to participate as it has in the past. Acquiring a permanent easement to undertake long-term maintenance of the improvements is an appropriate manner of proceeding. In the event the City is ultimately unable to reach agreement on access to complete the project, however, we suggest that appropriate steps be undertaken to confirm with the MDEQ that the City has no ownership of the weir or dam and no authority to undertake the inspections required of to make needed improvements. The Association should be apprised of such notice, for purposes of its further inquiries/correspondence regarding the dam.

I trust this answers your inquiries. If you have any questions, please do not hesitate to call.

Very truly yours,



Thomas R. Schultz

TRS/jes
Enclosure

Mr. Rob Hayes
August 27, 2009
Page 4

cc: Clay Pearson, City Manager
Pamela Antil, Assistant City Manager
Maryanne Cornelius, City Clerk

1286513



Meadowbrook Lake

Subdivision Association

Post Office Box 242

Novi, Michigan 48376

September 9, 2009

Mr. Rob Hayes, City Engineer
City of Novi
45175 West Ten Mile Road
Novi, Michigan 48375

Subject: Meadowbrook Lake Dam Reconstruction Project

Dear Mr. Hayes:

The Meadowbrook Lake Subdivision Association Board of Directors met and reviewed your letter of August 31, 2009. We acknowledge that in the past the City has assumed responsibility for improvements and maintenance of this water retention area that impacts many residents in Novi, as many projects approved by the City have occurred upstream impacting the flow into and out of Meadowbrook Lake.

We realize our park is a flood plain; even with the new design, the park will continue to flood. Of most concern to those residents immediately impacted by the reconstruction project is the swale:

- During the November 2008 meeting with the homeowners, we were told that the swale would "hardly be noticeable." However, the swale slope is not gradual as we were led to believe, but rather has a severe slope with a flat bottom spanning 55 feet. What the residents now foresee is a huge ditch/spillway that will prevent their use and enjoyment of their property and certainly decrease their property values *significantly*.
- The residents conducted their own topographical survey and are concerned that the pitch of the swale from the lake to the stream will be deficient and that there will be standing water in their yards.
- There have been only 2-3 major floods in the last 30 years, with some minor overflows (2-3 times) throughout the year. Currently, the water flows naturally across the area of the proposed swale; however, there is no permanent marker on the residents' properties after the water recedes.

We have the following questions:

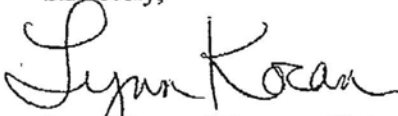
1. Your letter stated the Meadowbrook Lake dam has several deficiencies according to the Michigan Dam Safety Act requirements. Has the city been given a directive to complete these improvements with a date certain for completion or is the City being proactive with this project? Has there been flooding downstream that this project is proposing to address?
2. We were told an improvement to the dam gates would be made allowing for improved manual operation to increase or decrease water flow. Because of this improvement, can the proposed swale be approached differently and reduced in size or, ideally, eliminated from the plan so no residential personal property is negatively impacted?

We would appreciate a more definitive plan that addresses the swale and topography as well as the following:

1. Clarify proposed elevation changes to impacted property via two different perspectives (engineering drawings to scale and an elevation drawing to scale).
2. Clearly identify the impact to the trees, the park, and the path. Just as the DEQ now feels many more trees can be saved than originally thought, we're hopeful there is a better design of the swale area reducing any impact to property values.

Without a definitive plan, we are working with assumptions and ideas that have changed several times. We are hopeful there is a mutually beneficial outcome for the residents of Meadowbrook Lake Subdivision as well as those residents in the City of Novi who are upstream and downstream from us.

Sincerely,



Lynn Kocan, Director, Civics
Meadowbrook Lake Subdivision Association

cc City of Novi City Council Members
✓ Ben Croy
Brian Coburn
Gus and Eileen Charnas, 22674 Ennishore Drive
George and Chris Wilke, 22692 Ennishore Drive
Lawrence and Portia Reuben, 22810 Ennishore Drive
Ben and Sylvia Wright, 22647 Penton Rise Court



October 20, 2009

Lynn Kocan, Civics Director
Meadowbrook Lake Subdivision Association
PO Box 242
Novi, MI 48376

Re: Meadowbrook Lake Dam Improvement Project

CITY COUNCIL

Mayor
David B. Landry

Mayor Pro Tem
Bob Gatt

Terry K. Margolis

Andrew Mutch

Kathy Crawford

Dave Staudt

Brian Burke

Director of Public Services/
City Engineer
Rob Hayes

Dear Ms. Kocan:

The Association's September 9, 2009 letter to us indicated that the residents and others affected by this project require additional explanation of the specific design components of this project. Therefore, this letter and enclosed information are being provided to clarify the issues discussed in the Association's letter. We have enclosed plans with additional details of the project area to help explain the proposed grading. We are also updating the plan to more clearly show the proposed tree removals, and will forward to you once complete.

Realizing that the proposed emergency overflow swale remains a major concern of the residents, we have discussed the potential for alternate designs that do not involve a swale. However, we have not yet identified a feasible, cost-comparable alternative. We have enclosed a set of scale cross-sections that may help the residents better visualize how the swale will look once constructed. As shown on the drawing, the swale will not resemble a ditch, but rather a wide, shallow depression with gradual slopes on either side. The attached cross-sections show that only minor grading is proposed over the majority of the area to be impacted, keeping the swale as shallow as possible. The most significant grading occurs adjacent to the earthen dam, and only involves a maximum change in grade of about two feet.

We have also enclosed a profile of the proposed swale showing it will have a 2% slope from the lake to the outlet, which is similar to the existing flow path but with a consistent slope designed to prevent the standing water that now occurs at several locations.

The improvements being proposed to the underflow gates on the dam are independent of the design of the swale. The gates are only used to lower the lake level to perform maintenance and do not provide any benefit for flood control, which is the primary function of the swale.

The dam's deficiencies we have been referring to are based on the statements provided in the State's inspection reports. The inspection reports list the deficiencies and provide direction to mitigate each deficiency, but the report does not stipulate a date by which the improvements must be complete. Furthermore, the proposed improvements are in response to these known deficiencies, and do not stem from past downstream flooding events. The improvements are being proposed to eliminate the potential for catastrophic flooding downstream in the event of dam failure.

Department of Public Services
Field Services Complex
26300 Delwal Drive
Novi, Michigan 48375
248.735.5640
248.735.5659 fax

cityofnovi.org

We hope that this letter and enclosed information have addressed the questions from your recent correspondence. However, please feel free to contact me at 248-347-0454 with any further questions or concerns that you may have in regard to this matter.

Sincerely,

DEPARTMENT OF PUBLIC SERVICES

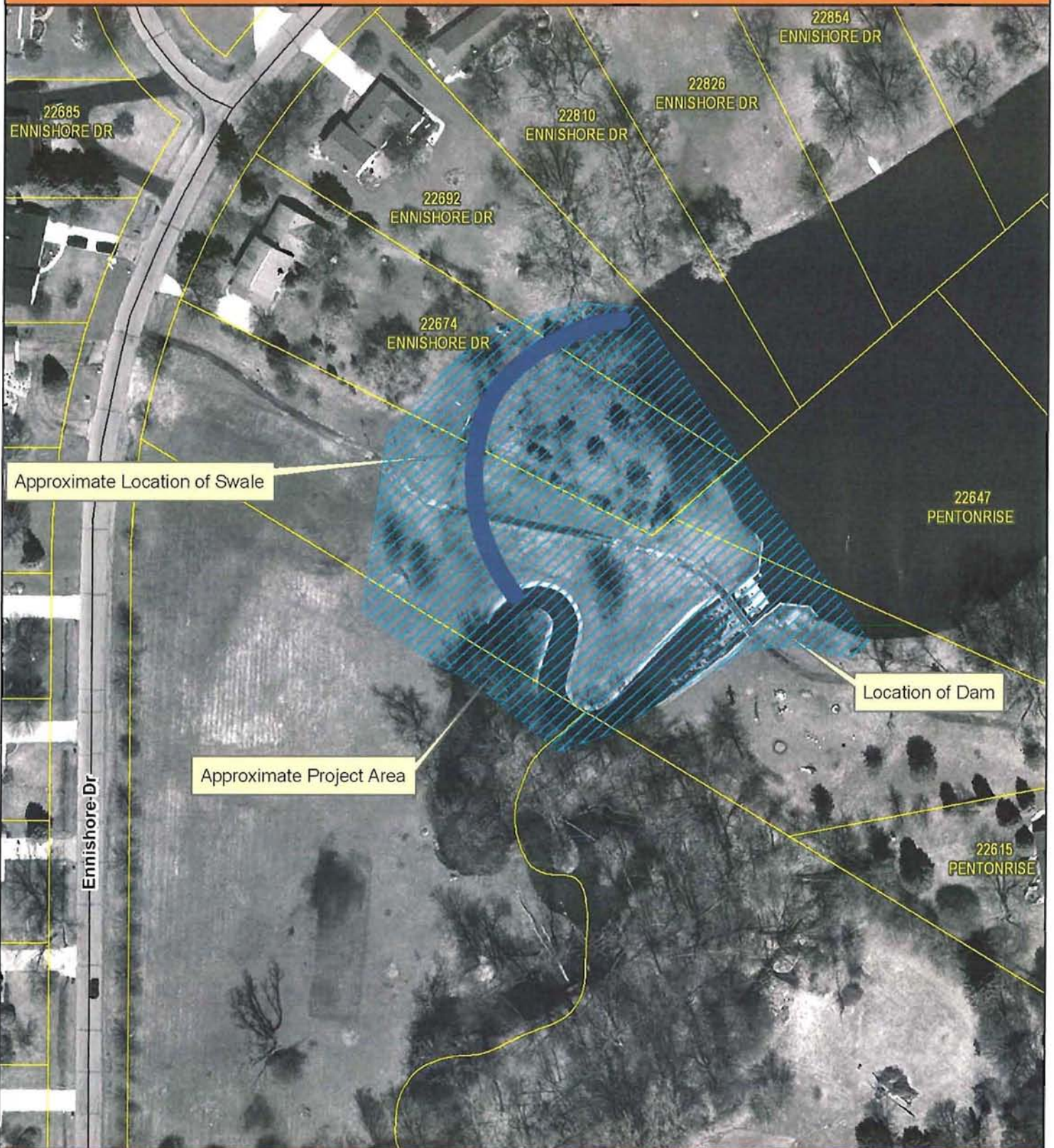
A handwritten signature in black ink, appearing to read 'Rob Hayes', is positioned above the printed name.

Rob Hayes, P.E.
Director of Public Services/City Engineer

Enclosure

LOCATION MAP

Meadowbrook Lake Dam Improvements



Approximate Location of Swale

Approximate Project Area

Location of Dam

CITY OF NOVI

ENGINEERING DEPARTMENT
 45175 W. Fairlane Dr.
 Novi, MI 48375
 (248) 947-2454
 MAP@CITYOFNOVI.COM



1 INCH = 100 FEET

GRAPHIC SCALE: 11/19/20

MAP INTERPRETATION NOTICE

Map information depicted on this information is not a guarantee for any of the primary users. This map was intended to provide a general overview of the project area and is not intended to be used as a legal document. Boundary measurements and other calculations are approximate and should not be used for any purposes not intended by the City of Novi. This map was prepared in accordance with Michigan Public Act 132 of 1997 as amended. Please contact the City Hall Manager for more information on the map.