



**FISCAL YEAR 2021 GRANT APPLICATION COVER SHEET**

*Authorized by 1994 PA 451*

Tracking Code Number: 2021-001

Project Name: Avon Nature Area Clinton River Bank Stabilization

Project Location (Primary County): Oakland

Water Body Name: Clinton River, HUC: 040900030111

Centroid Latitude: 42°39'48.32"N

Centroid Longitude: 83° 9'21.35"W

Organization Name: City of Rochester Hills

Contact Person: Name Bryan K. Barnett, Title Mayor

Contact's E-Mail: barnettb@rochesterhills.org , Organization Phone: 248-656-4640

Watershed Plan Name: Clinton Main Subwatershed

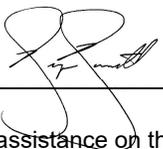
Watershed Plan is approved Yes, for both CMI and 319, Date(s) of approval 2010

Grant Amount Requested:	+ Local Match:	= Project Total:	Match %
<b>\$150000.00</b>	<b>\$48750.00</b>	<b>\$195000.00</b>	<b>25.00%</b>

Senate District Number(s): 12, 13

Representative District Number(s): 45

Person with Grant Acceptance Authority: (Name) Bryan K. Barnett, (Title) Mayor

Signature:  Date: 11/4/2020

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This is page 1 of all proposals. Continue on the next page

**A. Statement of Water Quality Issues/Concerns**

With the urbanization of the Clinton River watershed, impacts from stormwater and increases in the amount and intensity of flows in the Clinton River, have resulted in severe flashiness. While the City of Rochester Hills has continued to manage and restore multiple riparian areas to stabilize stream banks, preserve floodplain, reduce runoff, and promote a green corridor, there are still multiple severe erosion points throughout the community. Two recent road and bridge improvements downstream of the project location expressed the need to control head cutting and related bank erosion. Due to the gravel substrate and the 100 feet of elevation drop along the length of the river across the community, this is becoming a more common occurrence. This project will stabilize a portion of the Clinton River that is forming a natural cutoff by engineering a cutoff channel by anchoring channel bottom grades and utilizing natural stream channel design to reduce excessive sediment loading impacts today and in the future to improve water quality and protect recent downstream restoration efforts.

*Current Water Quality Conditions*

The Clinton River experiences streambank erosion which is a natural process; however, there are areas of excessive erosion that may have serious consequences for impacting water quality and the physical and biological functions of the river system. The Clinton Main Watershed Management Plan (WMP) has identified sediment as a known pollutant/threat impairing the Warm Water Fishery, Indigenous Aquatic Life and Wildlife, and Flood Control (BMP Implementation). The 2018 Integrated Report also states that “sedimentation, nutrient enrichment, and toxic pollutant loading are problems associated with runoff that can impact surface water quality.”

In 2006, using EGLE’s Standard Operating Procedure for Assessing Bank Erosion Potential using Rosgen’s Bank Erosion Hazard Index (BEHI), six sites in the Clinton River were evaluated. This site received a “Fair” BEHI rating which means the site displays some erosion but has a good foundation that will limit future erosion. However, conditions have worsened in the fourteen years since the original watershed evaluation. From 2015 to 2020, approximately 35.5 feet of bank has eroded at project site with an average rate of erosion being 7 feet/year.

*Specific Recommendations Being Implemented*

The Clinton Main WMP has identified streambank erosion as one of four major sources that needs to be addressed to make progress with the water quality pollutant of sediment. The project site is located in subbasin #5 and it has an established TSS pollutant load reduction for natural channel restoration of 600,000 LB/Year (300 Tons/Year). It also recommends using the lineal footage of channel restored as a method for improvement, however, it does not provide a specific target. In addition to natural channel restoration, the WMP provides a target for wetland, floodplain, and riparian buffer protection of 5,000 feet (35 acres) that is estimated to provide a TSS reduction of 7,500 LB/Year (3.75 Tons/Year).

The following table is an excerpt from WMP Table 5.2 that lists the recommended actions needed to address the pollutant sources. The actions listed below are the specific recommendations on management actions that will be addressed with this project:

Excerpt from Table 5.2 Goals, Objectives, Pollutants, Uses, Sources and Causes

<b>Recommended Management Alternative/ Action</b>	<b>Objectives Addressed</b>	<b>Pollutants Addressed</b>	<b>Uses Addressed (Key Below Table)</b>	<b>Sources Addressed</b>	<b>Causes Addressed</b>
8. Streambank Stabilization Program	1C, 2C, 3A, 3B	sediment	NV; FI; WL; PR; TR; HE; RE; FC	Storm water runoff; stream bank erosion; construction site runoff	Removal of vegetation throughout the watershed; increased impervious surfaces; soil erosion; river flashiness; lack of awareness

Recommended Management Alternative/ Action	Objectives Addressed	Pollutants Addressed	Uses Addressed (Key Below Table)	Sources Addressed	Causes Addressed
14. Natural Areas Restoration/ Enhancement Program	5D, 6A, 6B, 7A, 7B, 7C	hydrology; sediment; nutrients; temp; low DO levels; lack of aquatic and/or riparian habitat; loss of natural features	FI; WL; HE; OS; RE	storm water runoff; decreased groundwater recharge; streambank erosion; reduced vegetation canopy in watershed	increased impervious surfaces, inadequate local ordinance or enforcement; removal of vegetation throughout watershed; lack of BMPs

*NV = Navigation; FI = Warmwater / Coldwater fishery; WL = Other indigenous aquatic life and wildlife; PR = Partial body contact recreation, TR = Total body contact recreation (between May 1st & October 31st); HE = Wildlife habitat enhancement; OS = Preservation/protection of remaining open spaces; RE = Enhance recreational opportunities (boating, trails, canoeing); FC = Flood Control (BMP implementation)*

***This project will accomplish these goals.***

*Summary of Watershed Efforts to Date*

The City of Rochester Hills has done the following to meet the goals of the Clinton River Watershed Management Plan:

*Goal 3: Protect and restore Clinton River fisheries-* Realigned Avon Creek (downstream of project site) to provide proper bankfull flows, floodplain elevation, groundwater table recharge and fish passage, lower average water temperature and reduce sediments.

*Goal 4: Improve recreational opportunities-* The City has created two take out points for kayaking and canoeing, including one with a handicap accessible ramp. The city partners with Auburn Hills for the annual Paddlepalooza canoe and kayak race /adventure paddling event, now in its 13<sup>th</sup> year. This event also manages large woody debris using woody debris 101 and 201 methodology.

*Goal 5: Reduce flow variability-* The City of Rochester Hills updated the stormwater standards to include a 25- year basin size, treatment train bio-swales, and rain gardens as well as wetland and natural feature setbacks.

*Goal 7: Protect and mitigate loss of natural features and open spaces in the watershed-* the residents of Rochester Hills passed a greenspace millage to purchase and protect environmentally sensitive areas in the City and to preserve them in an undeveloped state. The residents then voted to repurpose this millage to not only purchase property but to use these funds to help preserve the property purchased. The City of Rochester Hills is in its 30<sup>th</sup> year as a Tree City USA.

*Potential Land Use Conflicts*

All the restoration work will take place on the City’s park property and has no land use conflicts.

**B. Project Goals and Objectives**

In a natural sinuous river, meanders change position by eroding sideways and slightly downstream. The sideways movement occurs because the maximum velocity of the stream shifts toward the outside of the bend, causing erosion of the outer bank. Simultaneously, the reduced velocity at the inside of the meander results in the deposition of coarse sediment, especially sand. Thus, by eroding its outer bank and depositing material along its inner bank, a stream moves

sideways without changing its channel size. Due to the slope of the channel, erosion is more effective on the downstream side of a meander. Therefore, in addition to growing laterally, the bends also gradually migrate down valley.

In Rochester Hills, the Clinton River meanders through areas with utilities adjacent to the stream so it is necessary to address/control the stream meandering to prevent the potential to expose a utility and endanger public safety. This was the case just downstream of the project site where the riverbank had to be restored to protect a water regional sanitary sewer.

In addition to meanders, river conditions can also lead to the development of oxbows. As the water flows around the curves, the outer edge of the water is moving faster than the inner. This creates an erosional surface on the outer bank and a depositional surface on the inner bank (a **point bar**). Where the bends of two meanders meet, they bypass the curve of the river, creating an **oxbow lake** which may then be infilled with overwash sediment. This natural process can result in releasing excess sediment load to the downstream reaches.

The Clinton River at the Avon Nature Area is in the phase of creating a natural cutoff channel and oxbow lake which, if nothing is done, may result in a sediment load of approximately 300 tons to the downstream reach in addition to the current bank erosion rates. The excess sediment load may deposit in the low gradient areas where the velocity drops. The migration of excess sediment load to downstream can interfere the previously constructed pools and other instream structures.

This project proposes to engineer and construct the cut off channel to improve and protect water quality before it happens naturally to prevent migration, control river grades, and prevent an excess of sediment loading to downstream reaches.



5/29/2019 Looking U/S of cutoff forming



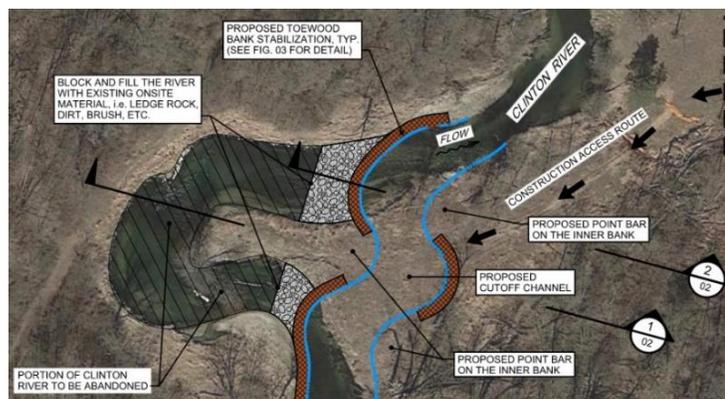
3/1/2018 Looking Downstream



1/1/2020 Looking Downstream

### Outcomes

The proposed stream restoration proposes to engineer the channel the river is seeking to create while using a natural stream design approach incorporating fluvial geomorphology, sediment transport, and aquatic ecology that will be utilized to reconnect the floodplain, stabilize eroding streambanks, improve sediment transport, and provide aquatic habitat and biodiversity. The Avon Nature Area Clinton River Restoration Project proposes to construct approximately 360 feet of new Clinton River stream channel to improve water quality by



reducing sediment loadings and establish a stable hydrologic and ecological stream. The abandoned channel will be blocked with natural materials but will not be filled in to allow for additional flood storage habitat, and high-quality spawning areas for fish. Onsite trees will be utilized for toe wood structures.

The Clinton River Watershed Council (CRWC) is a partner in this project and will track its success according to its management plan standards.

#### *Water Quality Benefits*

This project will reduce total suspended solids by achieving 100% of the annual pollutant load reduction goals for natural stream restoration (300 Tons/Year), improve dissolved oxygen, and improve flood plain connection. Installing grade controls will restore stability to this stretch of the river resulting in protection of nearby utilities, downstream restoration projects such as Avon Creek, and downstream bridges.

The Clinton Main WMP  
Pollutant Load Reduction  
for TSS in subbasin #5 is 300  
tons/year.

This project will achieve  
100% of this goal with the  
engineered construction of  
the bypass channel.

#### *Continuing Water Quality Activities*

CRWC will provide pre and post project monitoring (see the Evaluation section) to determine the health and outcomes of the project within the Clinton River. The City is committed to the long-term operation and maintenance (O&M) of the project area given its location in the Avon Nature Area which is owned and maintained by the City.

### **C. Organization Information**

**The City of Rochester Hills**, comprised of 32.2 square miles, is situated in the east central portion of Oakland County with a population of approximately 70,000. From the city's tagline "Innovative by Nature" to the large oak tree that is found in the city's logo, the natural resources within the City of Rochester Hills has always been a valued and important part of its community. **Tim Pollizzi**, CSM, Water Resource Specialist, has overseen multiple grant opportunities to restore Avon Creek. Mr. Pollizzi will be the primary project manager and will work closely with all the contractors and consultants throughout the project. **Shane Rudolph** will assist with any field work needs from the City of Rochester Hills. He has several years of experience on survey crews and is learning about riparian restoration within the City limits through projects such as this and the previous Avon Creek Restoration projects. **Paul Davis**, P.E., City Engineer/Deputy Public Services Director, will be reviewing and approving any construction change order request and/or billing approvals. As City Engineer, he will also review the site design plan to be familiar with the project and to provide any input during department head staff meetings.

### **D. Partners and Related Funding**

**Hubbell, Roth & Clark, Inc. (HRC)** is a multi-disciplined consulting engineering firm with 100 years of experience focusing on providing high quality engineering and environmental services to local governmental agencies. HRC has represented over 60 Michigan counties, cities, villages, and townships and is currently providing engineering services to approximately 30 Michigan governmental agencies. **James F. Burton, P.E.**, Vice President, is the Principal in Charge of HRC's Environmental Engineering services including stormwater management, habitat restoration, and watershed management planning. He has extensive civil engineering experience and brings an understanding of municipally owned, bid, constructed, and administered projects to the Department. His primary role will be to oversee all aspects of the project. **Lynne Seymour, P.E.**, Environmental Engineering Department Manager, is responsible for the direction/focus of the Environmental Engineering Department, managing the Department's workflow, allocating staff, prioritizing projects, making final QA/QC checks, and making sure environmental projects are handled efficiently, professionally, on time, and on budget. Her primary role will be Project Manager.

**Clinton River Watershed Council (CRWC)** is a non-profit organization dedicated to protecting, enhancing, and celebrating the Clinton River, its watershed and Lake St. Clair. CRWC provides programs and services in the areas of stewardship, watershed management and stormwater education. **Eric Diesing, Watershed Ecologist** primary role and commitments will be to perform environmental monitoring and field-data collection. Mr. Diesing has a Bachelor of Science degree in Environmental Science with a Specialization in Natural Resource Sustainability and Management, a biology minor and has completed level 1 and 2 geomorphology classes with Wildland Hydrology. The CRWC will provide in-kind \$3500 of match with its ongoing programs and receive \$3600 in grant reimbursement as a subconsultant to HRC for the proposed monitoring work.

**E. Evaluation**

CRWC will provide pre and post project monitoring for water quality monitoring using a YSI Multimeter to be determined in coordination with the project team. All monitoring efforts will take place both pre and post project construction and data will be compiled, summarized, and reported on by CRWC staff following project completion. In addition to direct project monitoring sites upstream and downstream, a reference site will be selected for data comparison. These monitoring efforts along with the natural channel design of the project will benefit water quality and evaluation of project successes.

<b>Benthic Community Assessment, Temperature, and Habitat</b>			
<b>Purpose of the monitoring</b>	Evaluate restoration successes for water quality		
<b>Parameters to be measured:</b>	Water quality parameters (DO, temp, pH, conductivity, TDS, Turbidity)		
<b>Number of locations to be sampled:</b>	Three locations: upstream and downstream of the project location, one reference site	<b>Sampling frequency:</b>	Pre and post project completion for a total of 2 site visits at each location

Monitoring parameters will be collected at an upstream and a downstream project location to obtain a representative sample across the project reach. Reference site characteristics will be obtained from a specified reference reach with equivalent width/depth ratio to serve as a project control site. CRWC will rely on previously collected data from impaired sites to strengthen project data evaluation. All data will be available to the project team and interested parties in both report and raw copy versions following project completion.

**F. Project Summary**

The Clinton Main subwatershed, comprised of MS4 communities, is in Oakland County and is approximately 70 square miles with a population of approximately 243,000. Its primary land uses are composed of 27% residential, 15% commercial and approximately 10% of the land area is open water. The Clinton Main Watershed Management Plan has identified sediment as a known pollutant/threat impairing the Warm Water Fishery, Indigenous Aquatic Life and Wildlife, and Flood Control (BMP Implementation). The 2018 Integrated Report also states that “sedimentation, nutrient enrichment, and toxic pollutant loading are problems associated with runoff that can impact surface water quality.” This project will design and construct a cutoff channel to remediate the existing accelerated erosion, reestablish bankfull elevations, control the natural head cutting occurring, and improve water quality by eliminating 300 Tons/Year contributing to 100% of the subwatershed’s TSS Load approval reduction target.

**Avon Nature Area Clinton River Bank Stabilization – Tracking Code 2021-0001**

Work Plan

**Task 1**

Description

**Prepare QAPP**

Develop the Quality Assurance Project Plan (QAPP) for EGLE Approval for project monitoring

Sub-Task(s)

Sub-Task 1: Prepare QAPP.  
Sub Task 2: Submit draft to EGLE for approval at least nine (9) weeks prior to monitoring. Incorporate any edits as necessary. Monitoring will not begin without EGLE approval. Water quality data will be recorded and submitted using the EGLE template.

Percentage of Time  
Responsible Agency  
Resulting Product(s)  
Budget

1%  
CRWC (Subcontractor to HRC)  
Approved QAPP  
Staffing: N/A  
Contractual: \$800  
Supplies, Materials, and Equipment: N/A

**Task 2**

Description

**Design Phase**

Prepare draft and final design engineering plans for the Clinton River. This task will also include the preparation of draft and final specifications for bid.

Sub-Task(s)

Sub-Task 1: Coordinate design with the city, EGLE, partners, and project team.  
Sub Task 2: Perform as-needed survey and supplement with LiDAR data.  
Sub Task 3: Produce draft engineering design package to EGLE at least nine (9) weeks prior to construction. Construction will not begin without EGLE approval.  
Sub Task 4: Produce final engineering design package, electronic copy and three (3) stamped hard copies prior to construction, to EGLE.

Percentage of Time  
Responsible Agency  
Resulting Product(s)  
Budget

8%  
City, HRC  
Engineering plans  
Staffing: \$4,114 (specifications, bidding)  
Contractual: \$13,370  
Supplies, Materials, and Equipment: N/A

**Avon Nature Area Clinton River Bank Stabilization – Tracking Code 2021-0001**

Work Plan

**Task 3**

Description

**Monitoring**

CRWC will provide pre and post project monitoring by performing water quality monitoring using a YSI Multimeter in coordination with the project team. All monitoring efforts will take place both pre and post project construction and data will be compiled, summarized, and reported on by CRWC staff following project completion. In addition to direct project monitoring sites upstream and downstream, a reference site will be selected for data comparison. CRWC will rely on previously collected data from impaired sites to strengthen project data evaluation.

Sub-Task(s)

Sub-Task 1: Pre and post monitoring for water quality parameters (DO, temp, pH, conductivity, TDS, Turbidity).

Sub-Task 2: Submit all data in electronic formats to EGLE.

Percentage of Time

1%

Responsible Agency

Clinton River Watershed Council (Subcontractor to HRC)

Resulting Product(s)

Monitoring results.

Budget

Staffing: N/A

Sub-Contractual: \$2,800 (CRWC Subcontractor to HRC)

Supplies, Materials, and Equipment: N/A

**Task 4**

Description

**Construction Activities**

The City will apply for a permit from EGLE and a SESC permit from Oakland County Water Resources Commissioner. Construction will not commence until all permits are issued. HRC will provide layout for the contractor and both HRC and the City will provide observation of construction activities to ensure the project is constructed per plan and permit requirements.

Sub-Task(s)

Sub-Task 1: Apply and obtain permits.

Sub-Task 2: Stake site.

Sub-Task 3: Construct new channel.

Percentage of Time

87%

Responsible Agency

Contractor, City, HRC

Resulting Product(s)

Construct 360 feet of new Clinton River channel reducing 300 tons of sediment from eroding and depositing downstream.

Budget

Staffing: \$5,895 (Permitting and Observation)

Contractual: \$149,875 Contractor

\$16,456 (Layout and Observation) HRC

Supplies, Materials, and Equipment: N/A

**Avon Nature Area Clinton River Bank Stabilization – Tracking Code 2021-0001**

Work Plan

**Task 5**

Description

**Public Engagement**

CRWC's established programs including Adopt-A-Stream, Weekly Clean and Clinton Clean Up will take place along the project reach several times each year. Adopt-A-Stream, a citizen science water quality monitoring program maintains a site less than 100 feet downstream of the project site and will add additional data to monitoring efforts. Weekly Clean and Clinton Clean Up will assist in removing trash and debris from the project reach and surrounding area. All three of these programs are managed by CRWC and rely on volunteer engagement for widespread impact. The City will design and fabricate a project sign for the project.

Sub-Task(s)

Sub-Task 1: Volunteer efforts.  
Sub-Task 2: Public engagement.

Percentage of Time  
Responsible Agency  
Resulting Product(s)  
Budget

2%  
Clinton River Watershed Council  
Enhanced Public Engagement  
Staffing: \$558  
Contractual: \$3,500 (in-kind match)  
Supplies, Materials, and Equipment: N/A

**Task 6**

Description

**Grant Administration and Closeout**

Prepare pay applications, complete project status reports, final reports, and fact sheets.

Sub-Task(s)

Sub-Task 1: Develop and submit quarterly status reports to EGLE. Reports will be submitted within 30 days of the end of each quarter.  
Sub-Task 2: Submit a completed BMP Form each reporting period in which a site is completed. The BMP form must include the pollutant load calculations for that site.  
Sub-Task 3: Develop and submit a draft final report to EGLE, at least 45 days prior to contract completion.  
Sub-Task 4: Incorporate EGLE comments and submit a final report covering the project's goals, accomplishments and lessons learned within 30 days of end of grant. (Include final monitoring QAPP in submission)  
Sub-Task 5: Submit a draft project fact sheet using the EGLE template 45 days prior to end date of contract. Submit a final project fact sheet with the final report in Sub-Task 3.  
Sub-Task 6: Submit an electronic copy of all before and after project-related photos with the final report.

Percentage of Time  
Responsible Agency  
Resulting Product(s)

1%  
City  
Quarterly reports, copies of all products and deliverables in the quantities and format specified, draft and final project report, draft and final project fact sheet, before and after photos.

Budget

Staffing: \$2,057  
Contractual: N/A  
Supplies, Materials, and Equipment: N/A

**Avon Nature Area Clinton River Bank Stabilization**  
**Timetable**

	Task	2021	
		Sep	Oct-Dec
1	Prepare & Submit QAPP		
	EGLE Review & Approval of QAPP (9 weeks)		
2	Monitoring		
3	Design Phase		
4	EGLE Review of Engineering Plans for BMPs		
5	Project Construction		
6	Grant Administration and Closeout		

	Task	2022			
		Jan-March	Apr-June	July-Sep	Oct-Dec
1	Prepare & Submit QAPP				
	EGLE Review & Approval of QAPP (9 weeks)				
2	Monitoring				
3	Design Phase				
4	EGLE Review of Engineering Plans for BMPs				
5	Project Construction				
6	Grant Administration and Closeout				

	Task	2023			
		Jan-March	Apr-June	July-Sep	Oct-Dec
1	Prepare & Submit QAPP				
	EGLE Review & Approval of QAPP (9 weeks)				
2	Monitoring				
3	Design Phase				
4	EGLE Review of Engineering Plans for BMPs				
5	Project Construction				
6	Grant Administration and Closeout				







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## **Independent Auditors' Report**

To the Honorable Mayor and City Council  
City of Rochester Hills  
Rochester Hills, Michigan

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the City of Rochester Hills, as of and for the year ended December 31, 2018, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the table of contents.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditors' Responsibility**

Our responsibility is to express opinions on these financial statements based on our audit. We did not audit the financial statements of the Older Persons' Commission, which represents 69 percent of assets, 77 percent of net position, and 59 percent of revenues of the aggregate discretely presented component units. Those statements were audited by other auditors whose reports have been furnished to us, and our opinion, insofar as it related to the amounts included for the Older Persons' Commission component unit, is based solely on the report of other auditors. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

### **Opinions**

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely

presented component units, each major fund, and the aggregate remaining fund information of the City of Rochester Hills as of December 31, 2018, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

### **Adoption of New Accounting Standards**

As described in Note 1 to the financial statements, during the year ended December 31, 2018, the City adopted GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefit Plans Other Than Pensions*. Our opinions are not modified with respect to this matter.

### **Required Supplementary Information**

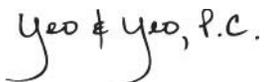
Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, budgetary comparison information, and other postemployment benefit schedules, as identified in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### **Other Supplementary Information**

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the City of Rochester Hills' basic financial statements. The other supplementary information (combining statements and budgetary comparison schedules), as identified in the table of contents, is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The other supplementary information (combining statements and budgetary comparison schedules), as identified in the table of contents, is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The other supplementary information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion the other supplementary information, as identified in the table of contents, is fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory section and statistical section, which are the responsibility of management, have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.



Auburn Hills, MI  
April 25, 2019



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April 24, 2020

To the Honorable Mayor and City Council  
City of Rochester Hills  
1000 Rochester Hills Drive  
Rochester Hills, MI 48309

We have audited the financial statements of the governmental activities, business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of City of Rochester Hills (the City) as of and for the year ended December 31, 2019, and have issued our report dated April 24, 2020. We did not audit the financial statements of the Older Persons' Commission, which represents 68 percent of assets, 76 percent of net position, and 58 percent of revenues of the aggregate discretely presented units. Those statements were audited by other auditors whose reports have been furnished to us. We are required to communicate certain matters to you in accordance with auditing standards generally accepted in the United States of America that are related to internal control and the audit.

Professional standards require that we provide you with information about our responsibilities under auditing standards generally accepted in the United States of America, as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our engagement letter dated January 8, 2020. Professional standards also require that we communicate to you the following information related to our audit.

## **Significant Audit Matters**

### **Qualitative Aspects of Accounting Practices**

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the City are described in the footnotes of the financial statements. The City has adopted the following Governmental Accounting Standards Board Statements effective January 1, 2019:

- Statement No. 84, *Fiduciary Activities*. This Standard improves guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. The focus of the criteria generally is on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exists.
- Statement No. 87, *Leases*. This Statement improves the accounting and financial reporting for leases by governments. This Statement requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases. Under this Statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources.
- Statement No. 88, *Certain Disclosures Related to Debt, including Direct Borrowings and Direct Placements* improves the information that is disclosed in notes to the financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities should be included when disclosing information related to debt. It requires that additional essential information related to debt be disclosed in notes to financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses. It will also require that existing and additional information be provided for direct borrowings and direct placements of debt separately from other debt.

We noted no transactions entered into by the City during the year for which there is lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statement in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the City's financial statements were:

- The useful lives of its capital assets. Useful lives are estimated based on the expected length of time during which the asset is able to deliver a given level of service.
- Net OPEB liability, and related deferred outflows of resources and deferred inflows of resources. The estimate is based on an actuarial report.
- Current and long-term portions of compensated absences are estimated based on historical patterns of how employees use paid time off balances.
- Unearned building permit revenues are estimated based on the work that is anticipated to occur in future years.

We evaluated the key factors and assumptions used to develop these estimates in determining that they are reasonable in relation to the financial statements taken as a whole and free from bias.

The financial statement disclosures are neutral, consistent and clear.

### **Accounting Standards**

The Governmental Accounting Standards Board has released additional Statements. Details regarding these Statements are described in Note 16 of the financial statements.

### **Regulatory Update**

#### **Pension and OPEB Reporting – Form 5572**

Public Act 202 of 2017 required governments to prepare additional reporting for pension and OPEB plans using Form 5572 (due 6 months after the end of your fiscal year). A memo was issued October 21, 2019 by Treasury regarding the application of uniform assumptions. For the purpose of reporting Form 5572, Treasury requires uniform assumptions to be included on Form 5572 for fiscal years ending 2019, if the audited financial statements were based on an actuarial valuation issued after December 31, 2018. Reporting of pension and OPEB liabilities under the uniform assumptions is required no later than fiscal years ending 2020 in all other cases. The full memo can be found at the following address:

[https://www.michigan.gov/documents/treasury/FY\\_2020\\_Uniform\\_Assumptions-Treasurer\\_Approved\\_669313\\_7.pdf](https://www.michigan.gov/documents/treasury/FY_2020_Uniform_Assumptions-Treasurer_Approved_669313_7.pdf)

Uniform assumptions will be used by Treasury to increase comparability of pension and OPEB plans from one municipality to the next. Treasury recommends all actuarial valuations issued after December 31, 2018 include the provisions of the uniform assumptions. It is important to consider whether using the uniform assumptions for the measurement of your municipality's pension or OPEB liabilities are appropriate under GAAP, or whether the liabilities should be calculated using two sets of assumptions. If using two sets of assumptions is appropriate, both amounts will be reported to Treasury.

Treasury has issued the following as the uniform assumptions for 2020:

**Fiscal Year 2020 Assumptions**

<b>Assumption</b>	<b>Uniform assumption</b>	<b>Change from Fiscal Year 2019</b>
Investment Rate of Return	Maximum of 7.00%	None
Discount Rate	Blended Discount rate calculated using GASB Statements No. 68 and 75 Methodology  For periods in which projected plan assets are Sufficient to make Projected Benefit Payments: <u>Maximum of 7.00%</u>  For periods in which projected plan assets are Not Sufficient to make projected benefit payments: <u>3.50%</u>	Increased the blended rate from 3% to 3.50% for periods in which plan assets are <u>not</u> sufficient to make projected benefit payments
Salary Increase	A minimum of 3.5% or based on an actuarial experience study conducted within the last 5 years	None
Mortality Table	A version of the Pub-2010 mortality tables with future mortality improvement projected generationally using Scale MP-2018 or based on an actuarial experience study conducted within the last five years	Changed from RP-2014 to <b>Pub-2010</b> Tables; Generational mortality improvement using <b>Scale MP-2018</b>
Health care Inflation ( for Medical and Drug) <sup>1</sup>	<b>Non-Medicare:</b> Initial rate of 8.25% decreasing .25% per year to a 4.50% long-term rate  <b>Medicare:</b> Initial rate of 6.50% decreasing .25% a year to a 4.50% long-term rate	<b>Non-Medicare:</b> Initial rate reduced from 8.50% to 8.25%  <b>Medicare:</b> Initial rate reduced from 7.00% to 6.50%
Amortization of the Unfunded Actuarial Accrued liability	Local governments must amortize the unfunded actuarial accrued liability (UAAL) over a maximum closed periods of: <ul style="list-style-type: none"> <li>• Pension Systems: 19 Years</li> <li>• Retiree Health Care systems: 29 Years</li> </ul> Closed plans must use a level-dollar amortization method  Open plans may use a level-dollar or percent of pay amortization method	<b>Pension:</b> Closed period reduced from 20 years to 19 years  <b>Health Care:</b> Closed period reduced from 30 years to 29 years

<sup>1</sup> Separate trend scales used to value other ancillary benefits can continue to be used as is

**Difficulties Encountered in Performing the Audit**

We encountered no significant difficulties in dealing with management in performing and completing our audit.

**Corrected and Uncorrected Misstatements**

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

## **Disagreements with Management**

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

## **Management Representations**

We have requested certain representations from management that are included in the management representation letter dated as of the date of the audit report.

## **Management's Consultations with Other Accountants**

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the City's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

## **Other Audit Findings or Issues**

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the City's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

## **Report on Required Supplementary Information**

We applied certain limited procedures to the management's discussion and analysis, other postemployment benefit schedules, and budgetary comparison information, which are required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

## **Report on Other Supplementary Information**

We were engaged to report on other supplementary information as described in the table of contents of the financial statements, which accompany the financial statements but are not RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

## CAFR

The City's audited financial statements are included in their comprehensive annual financial report. Our responsibility for the other information contained in the comprehensive annual financial report does not extend beyond the financial information identified in our audit report. We do not have an obligation to perform any procedures to corroborate the other information contained in the introductory section and statistical section. However, we read the other information and considered whether such information, or the manner of its presentation, was materially inconsistent with information, or the manner of its presentation, appearing in the financial statements. Nothing came to our attention that caused us to believe that such information, or its manner of presentation, was materially inconsistent with the information, or manner of its presentation, appearing in the financial statements.

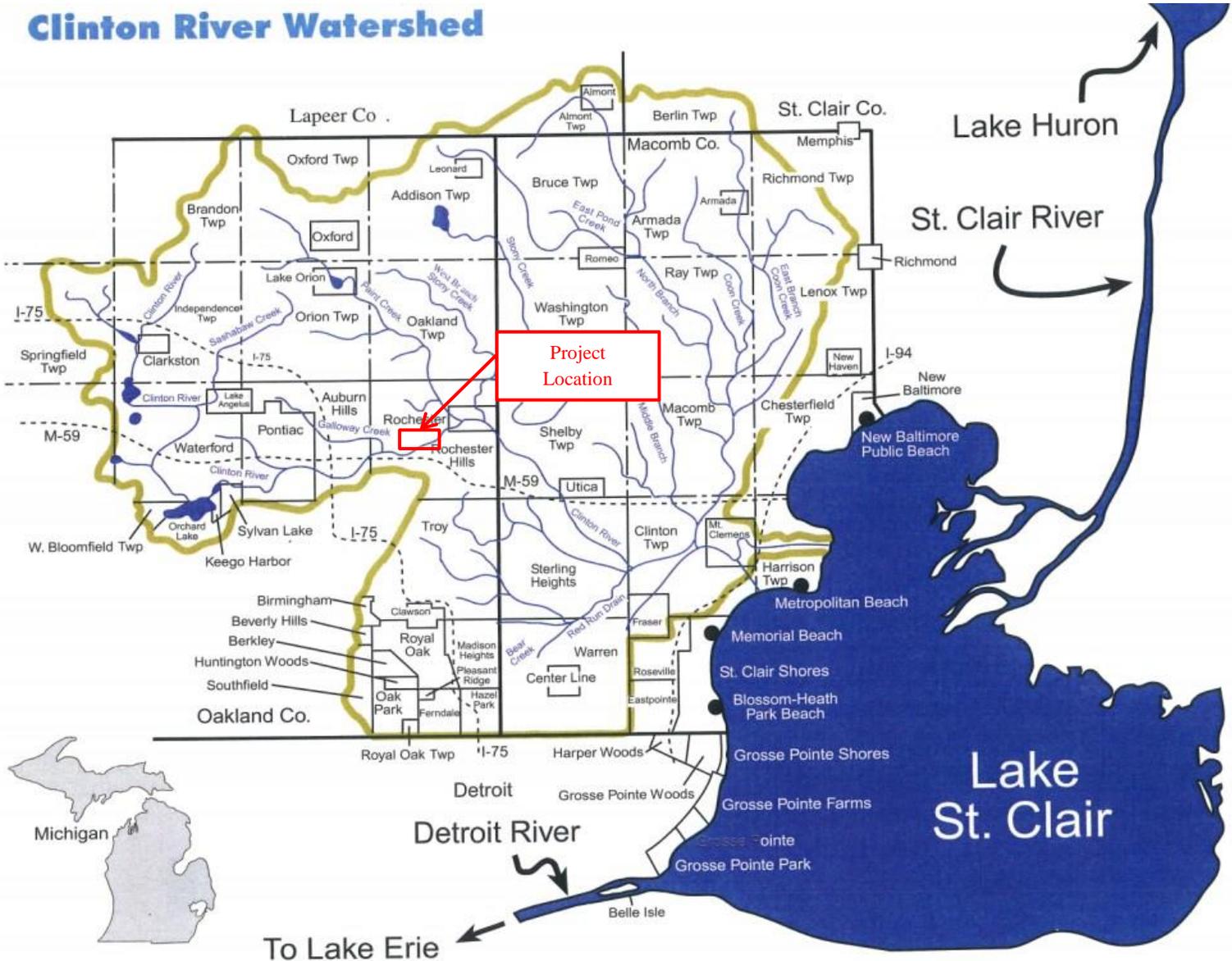
This information is intended solely for the information and use of the Honorable Mayor, City Council, and management of the City and is not intended to be, and should not be, used by anyone other than these specified parties.

*Yeo & Yeo, P.C.*

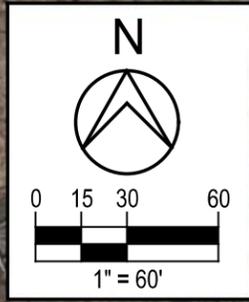
Auburn Hills, Michigan

Avon Nature Area Clinton River Bank Stabilization  
**Watershed Map**  
Rochester Hills, Michigan

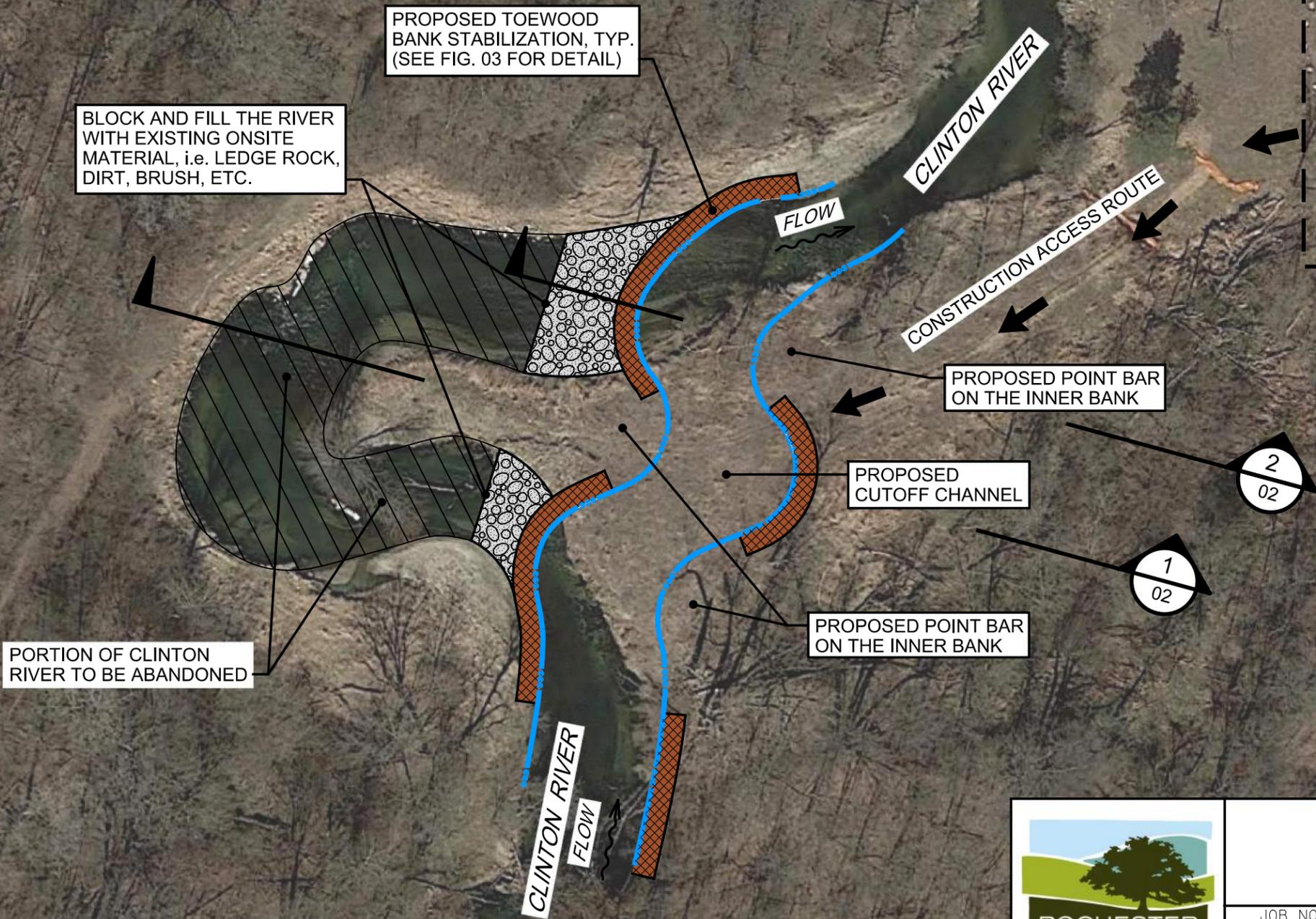
**Clinton River Watershed**



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**NOTE:**  
 CONSTRUCTION SITE IS LOCATED AT THE EAGLES' LANDING KAYAK AND CANOE LAUNCH SITE. APPROX. 750 FEET SOUTH OF THE AVON ROAD AND LIVERNOIS ROAD INTERSECTION IN ROCHESTER HILLS.



**LEGEND:**

NEW STREAMBANK	
PROPOSED FILL AREA	
PROPOSED TOEWOOD BANK STABILIZATION	
ABANDONED RIVER AREA	
CONSTRUCTION ACCESS ROUTE	
CONSTRUCTION STAGING AREA	
RIVER FLOW DIRECTION	



**CITY OF ROCHESTER HILLS  
 AVON NATURE BANK STABILIZATION  
 AND CUTOFF CHANNEL - SITE PLAN**

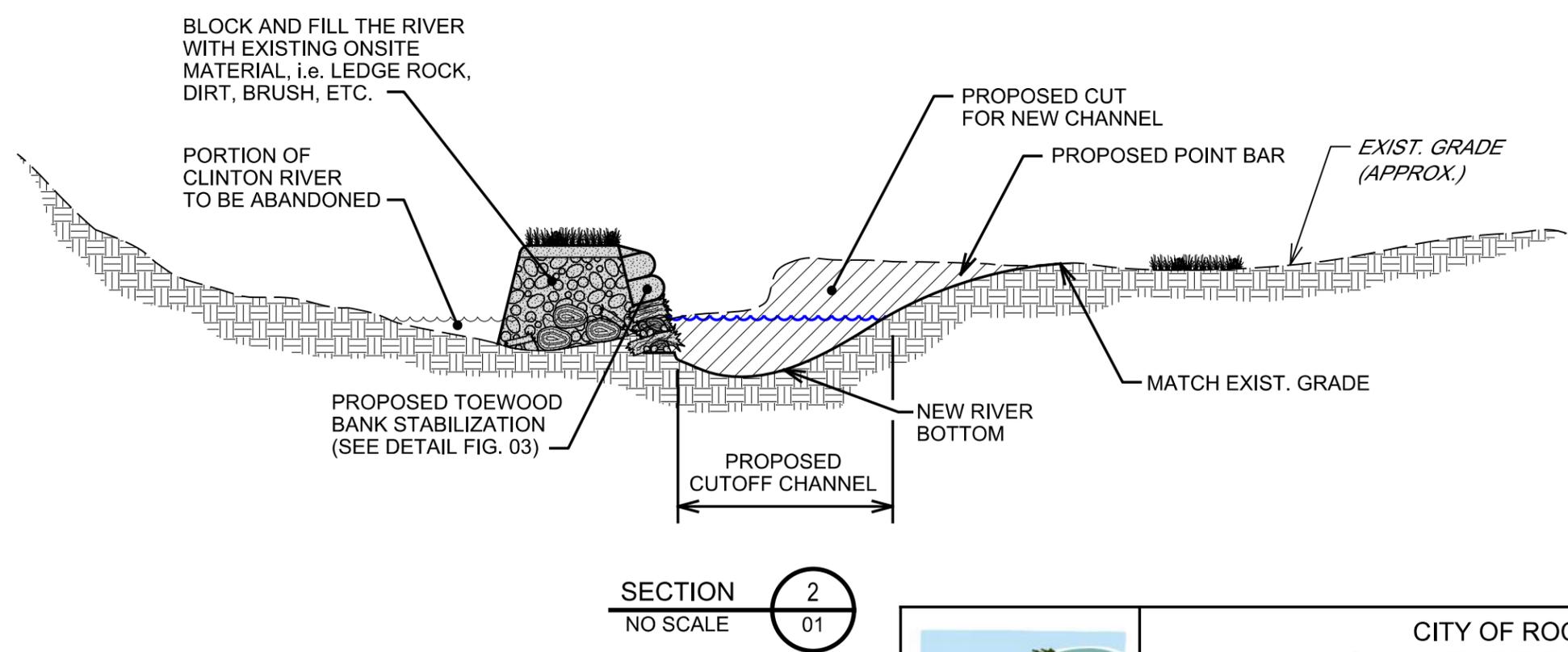
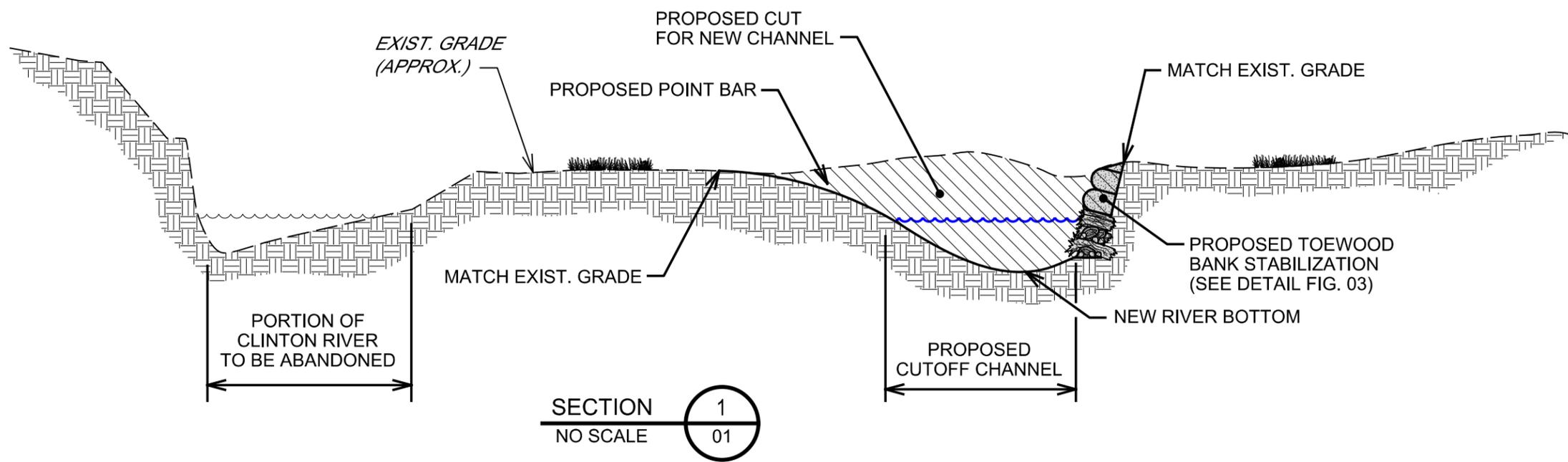
JOB NO. 20200721	 <b>HUBBELL, ROTH &amp; CLARK, INC</b> CONSULTING ENGINEERS SINCE 1915	555 HULET DRIVE BLOOMFIELD HILLS, MICH.	P.O. BOX 824 48303 - 0824	FIGURE
DATE NOV. 2020		PHONE: (248) 454-6300 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): WEB SITE: <a href="http://www.hrcengr.com">http:// www.hrcengr.com</a>		<b>01</b>

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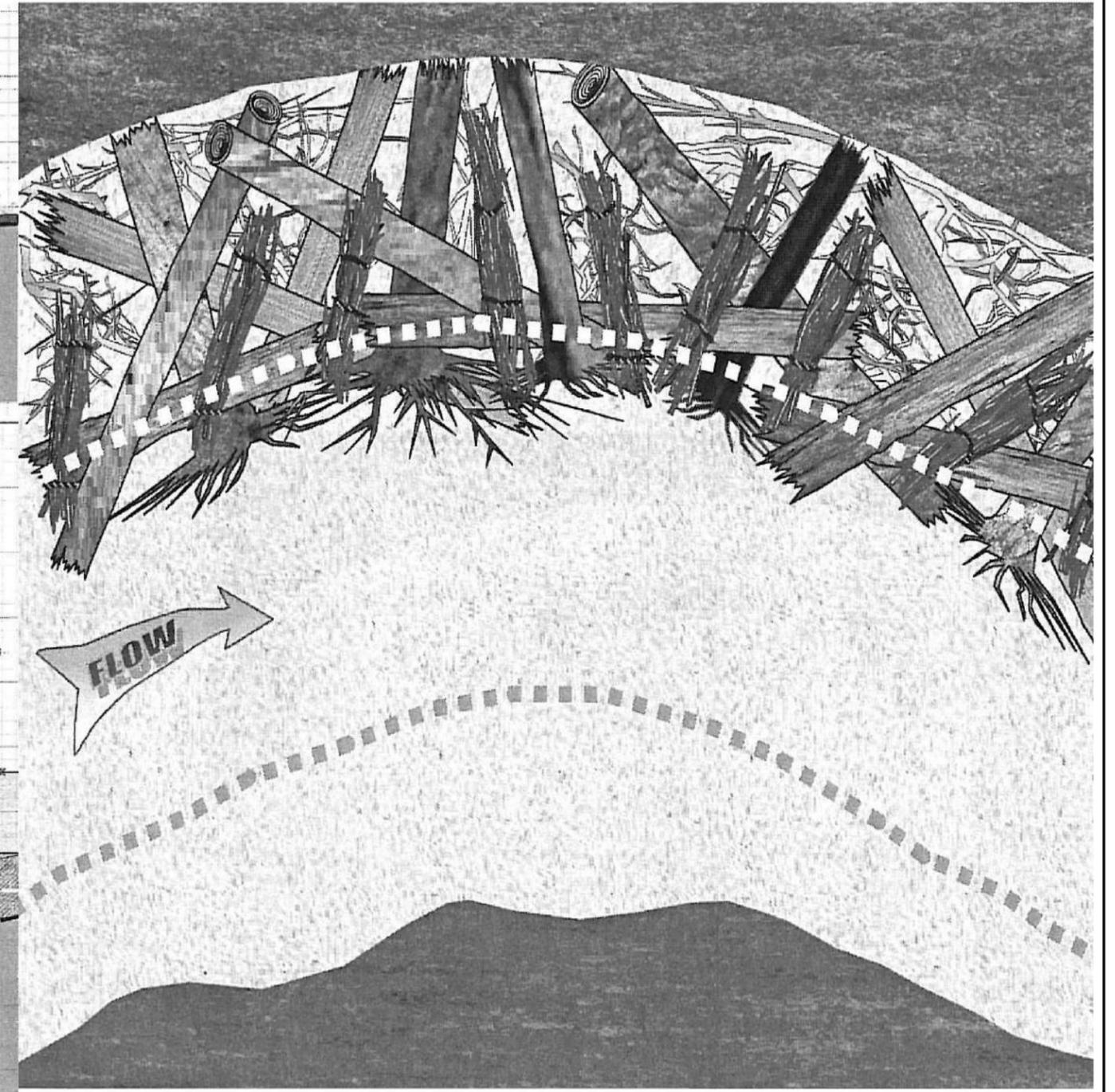
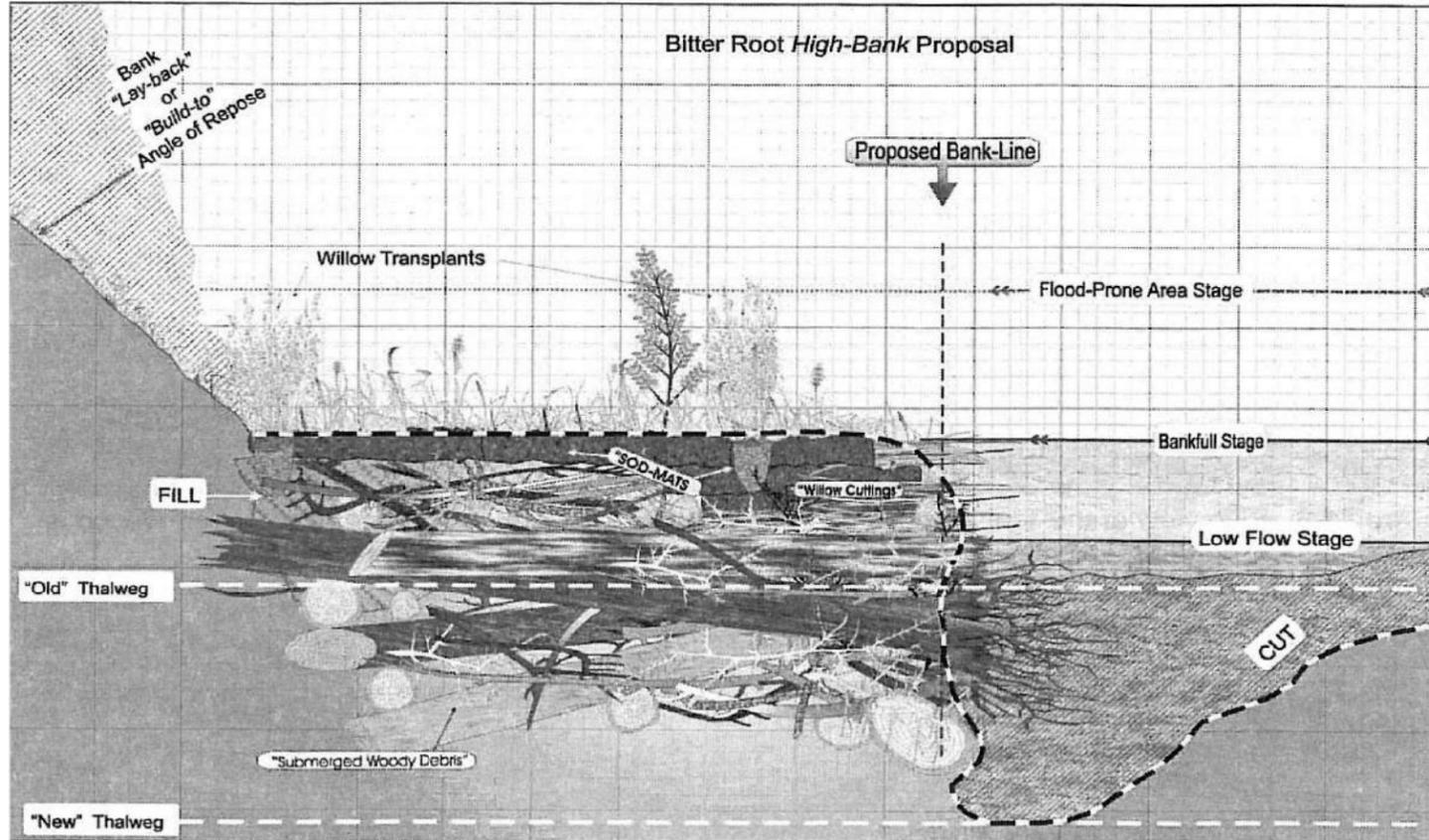
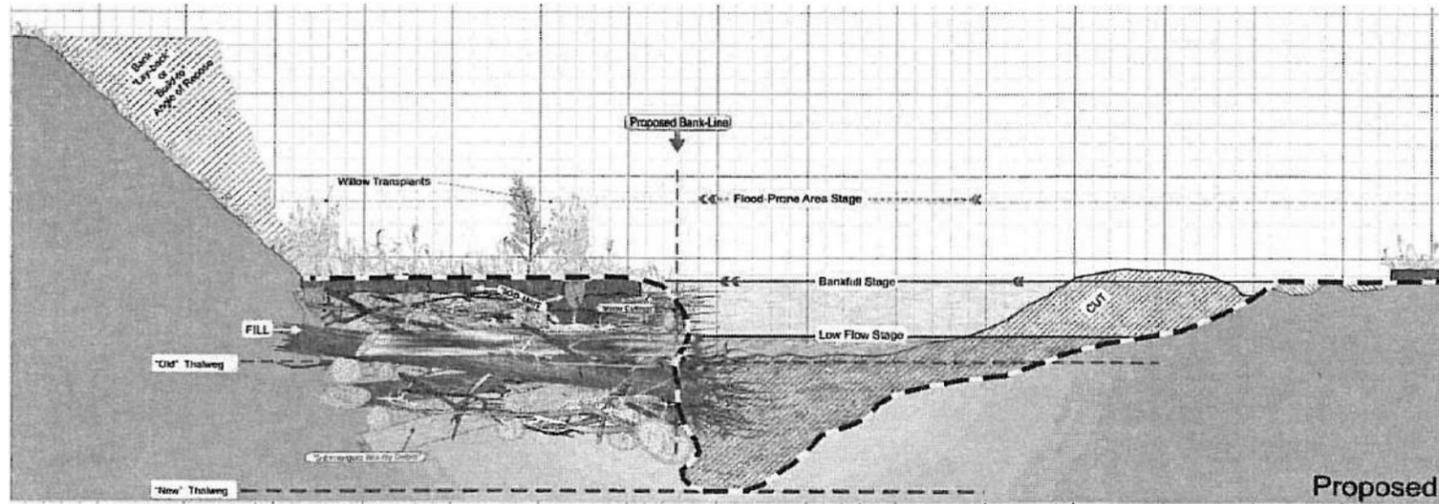
	<b>CITY OF ROCHESTER HILLS</b> <b>AVON NATURE BANK STABILIZATION</b> <b>AND CUTOFF CHANNEL - SECTIONS</b>			FIGURE <b>02</b>
	JOB NO. 20200721 DATE NOV. 2020	 <b>HUBBELL, ROTH &amp; CLARK, INC</b> CONSULTING ENGINEERS SINCE 1915	555 HULET DRIVE BLOOMFIELD HILLS, MICH. P.O. BOX 824 48303 - 0824 PHONE: (248) 454-6300 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): WEB SITE: <a href="http://www.hrcengr.com">http:// www.hrcengr.com</a>	

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jrec



TOEWOOD SECTION  
NO SCALE

TOEWOOD PLAN  
NO SCALE

	<b>CITY OF ROCHESTER HILLS AVON NATURE BANK STABILIZATION AND CUTOFF CHANNEL - DETAILS</b>		555 HULET DRIVE BLOOMFIELD HILLS, MICH. P.O. BOX 824 48303 - 0824 PHONE: (248) 454-6300 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): WEB SITE: <a href="http://www.hrcengr.com">http:// www.hrcengr.com</a>	FIGURE  <b>03</b>
	JOB NO. 20200721 DATE NOV. 2020			

**Clinton River Bank Stabilization At Avon Nature  
Engineer's Preliminary Estimate of Probable Costs**

**City of Rochester Hills, Oakland County**

Nov 05, 2020

HRC Job No. 20200721

The estimate anticipates the following:

Stream bank stabilization

No.	Bid Item	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Cost</u>
1.	Mobilization	1	LS	@ \$15,000	= \$15,000
2.	Temp access route and staging area	1	LS	@ \$5,000	= \$5,000
3.	Temp flow control	1	LS	@ \$3,000	= \$3,000
4.	Create point bar	1	LS	@ \$14,000	= \$14,000
5.	Toe-wood river restoration	420	LF	@ \$185	= \$77,500
6.	Seeding	1	AC	@ \$6,000	= \$6,000
7.	Block and fill the river	1	LS	@ \$20,000	= \$20,000
8.	Misc. erosion control temporary	1	LS	@ \$5,000	= \$5,000
9.	Site restoration	1	LS	@ \$5,000	= \$5,000

**Subtotal Construction Costs**

**\$150,500**

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**Total Costs**

**\$150,500**



HUBBELL, ROTH & CLARK, INC.  
*Consulting Engineers*



Photo 1 –Looking D/S- 2020



Photo 2 —Looking D/S- 2018



Photo 3 –Eroded Bend-2019



**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY**  
**WATER RESOURCES DIVISION**  
**PROPOSED BEST MANAGEMENT PRACTICES SHEET**

*Authorized by 1994 P.A. 451*

<b>Organization Name:</b> City of Rochester Hills <b>Project Name:</b> Avon Nature Area Clinton River Bank <b>Tracking Code:</b> 2021-0001						
SITE NAME/NUMBER LAT/LONG	POLLUTANT SOURCE	PROPOSED SYSTEM OF BMPS	ESTIMATED COST/SITE	GRANT FUNDS	LOCAL MATCH	OTHER FUNDS
CM02- Avon Nature 42.663403°, -83.155308°	Sediment	Streambank stabilization	\$114,000.00	\$143,875.00	\$ -	
	Sediment	Seeding	\$6,000.00	\$6,000.00	\$ -	
				<b>\$ 149,875.00</b>		
Sources of Other Funds: <input type="text"/>						

## **Appendix E: Hydrologic /Geomorphic Assessment**

### **Introduction**

The Clinton River is listed as a Great Lakes Area of Concern (AOC) due to Beneficial Use Impairments, including degradation of fish and wildlife populations and loss of fish and wildlife habitat. One of the specific criteria in the Clinton River AOC's fish/wildlife delisting goals is sedimentation and streambank stabilization. Avon Nature Bank stabilization project will address this criterion. This project objective is to improve water quality by reducing the sediment loading occurring from streambank erosion. Sediment is identified as one of the major pollutants of concern, as it appears to be impairing the macroinvertebrate community in several locations. Sediment enters the stream from the watershed and scouring the banks.

Clinton River at Avon Nature is in the phase of creating a cutoff channel and abandoning part of the stream to an oxbow lake. Generally, as water flows around the bends, the outer edge of the water is moving faster than the inner. This creates an erosional surface on the outer bank and a depositional surface on the inner bank (a point bar). Where the bends of two meanders meet, they bypass the curve of the river, creating an oxbow lake which may then be infilled with overwash sediment. This natural process can result in releasing excessive sediment load to the downstream reaches. Streambank erosion is a natural process that occurs in every watershed; however excessive erosion has serious consequences for the physical and biological functions of any river system. Eroding streambanks can be a major source of pollutant loading to streams.

Cutting of the Clinton River at Avon Nature can release about 300-ton sediment load to the downstream reach. The excess sediment load may deposit in the low gradient areas downstream, where the velocity drops.

This project proposes digging a new cutoff channel and abandoning a part of the stream where an oxbow lake will form over time. If the cutoff channel is constructed prior to it happening naturally, it can prevent the migration of excessive sediment loading to downstream reaches. The migration of excessive sediment load downstream can interfere with the previously constructed pools and other instream structures.

The toewood structure will be constructed in the newly constructed stream to prevent the bank from scouring. Phosphorus is a nutrient of concern in the Clinton River Subwatershed, which is normally a limiting factor in the growth of aquatic plants. When excessive amounts of phosphorus are present, aquatic plants can grow out of control, and algae blooms are common. The primary sources of phosphorus in this subwatershed appears to be eroding streambanks. The proposed native seeding along the river can reduce the sediment and nutrient delivery into the stream.

### **Population Growth and Land Use**

The Clinton Main Subwatershed is over 70 square miles in area and is located within the central portion of Oakland County. A total of 13 communities are located within the Subwatershed; one of these communities is the City of Rochester Hills. The city of Rochester Hills is comprised of 32.2 square miles and has a relatively large land area within the subwatershed (8,845 acres), representing 19% of the entire subwatershed. (The subwatershed covers 42% of the community). Rochester Hills is located in the east-central portion of Oakland County and is located within the downstream end of the Clinton Main subwatershed.

The primary land use is single-family residential, accounting for over 3,000 acres. The next largest land use is recreational land, which is approximately 2,146 acres, much of which contains the main branch of the Clinton River or its tributaries.

Clinton River watershed management plan prioritized items below

- high water during rain events at several locations within residential areas.

- sedimentation within sections of the Clinton Main River.
- steep slope bank erosion on the upstream end of the community.
- high number of large, dead ash trees within the subwatershed.
- encroachment into the 25' natural features setback.
- use of chemicals, including fertilizers and herbicides adjacent to the river.

Sedimentation is one of the priorities in the watershed management plan and will be addressed in this project.

### **Stream Flashiness**

Flashiness Index is one of the common metrics that can be used to evaluate changes in the watershed response. The Richards-Baker Flashiness Index (R-B Index) indicates how frequently and rapidly short-term changes in streamflow occur. Increased flashiness often reflects unstable watersheds and degraded habitat that adversely affects aquatic life. Flashy flows caused by increased peak flow rates and volume from urban runoff disrupt aquatic habitat and increase the delivery and transport of pollutant loads. The R-B index increases as the impervious cover become greater. The flashiness index was computed for all stream gage records in the Clinton River Watershed that had a minimum of 20 years of data as a part of the sediment transport study for this watershed by US Army Corps of Engineers 2005. Flashiness can quantify the stream response time to precipitation events. A high flashiness index indicates the quick response of the stream to the precipitation events. The results of the sediment transport modeling study performed by USACE-Detroit District in 2005 showed the flashiness at USGS Gage 0416154000 in the Clinton River in the City of Rochester has been increased. Increased flashiness can result in increased sheet flow, soil erosion rate, and sediment transport from overland to the stream channel.

### **Stream Stability**

As it was mentioned in the last section, the stream bank is severely eroding at the bend. From 2015 to 2020, about 35.5 ft of stream bank has been eroded, with an average of 7ft/yr. The left picture showed the eroded bank in 2019, and the right picture shows the bank in 2020.





## CLINTON RIVER WATERSHED COUNCIL

47 Years of Dedication

1115 W. Avon Road  
Rochester Hills, MI 48309  
248-601-0606  
[www.crwc.org](http://www.crwc.org)  
[contact@crwc.org](mailto:contact@crwc.org)

### **Board of Directors**

**Susan Kelsey**  
President  
**Stacey McFarlane**  
1st Vice President  
**Greg Kacvinsky**  
2<sup>nd</sup> Vice President  
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Secretary  
**Aaron Loiselle**  
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**John Kosnak**  
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Director  
**Diana Evannou**  
Director  
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**Jennifer Tegan**  
Director  
**Robert Zvonek**  
Director

### **COUNCIL STAFF**

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Executive Director  
**Chris Bobryk**  
Watershed Planner  
**Eric Diesing**  
Watershed Ecologist  
**Michael Eovaldi**  
Program Assistant  
**Melissa Golembieski**  
Development and  
Communications Specialist  
**Linda Schuler**  
Membership & Operations  
Coordinator  
**Kathleen Sexton**  
Director of Education and  
Stewardship  
**Janice Sugden**  
Accountant  
**Katie Yates**  
Program Coordinator

November 6, 2020

Mr. Robert Sweet  
Michigan Department of Environment, Great Lakes and Energy  
Nonpoint Source Program  
P.O. Box 30458  
Lansing, MI 48909

Re: Letter of Commitment-EGLE  
Avon Nature Area Clinton Riverbank Stabilization  
Nonpoint Source (NPS) Proposal

Dear Mr. Sweet,

Please accept this correspondence as a formal letter of commitment for the City of Rochester Hills' efforts in securing funding for the Avon Nature Area Clinton River Bank Stabilization project. The Clinton River Watershed Council (CRWC) believes this project will improve water quality and address long established goals of the Clinton Main Subwatershed for critical areas, improving overall site ranking based on Macro, BEHI, road crossing and NPS rank, addressing Peak Flow/Bankfull Flow Trends, and providing proper bankfull plan form and grade controls in stream corridors and floodplains.

We understand that the City is applying for funding through the Michigan Department of Environment, Great Lakes, and Energy's Nonpoint Source (NPS) Program with the goal of constructing a stable channel to eliminate the accelerated head cutting occurring in the Clinton River. By engineering the new channel with controlled grades, the project will eliminate substantial NPS erosion and sedimentation from occurring and impacting recently stabilized areas both nearby and downstream. Previous survey and design efforts will serve as a guide to ensure the engineering design will address the erosion source and provide long-term stability.

The CRWC is a partner in this effort and as noted in the proposal is committed to \$3,500 for in-kind staff and volunteering time to help with management of the project and public engagement. We appreciate the opportunity to be a partner of this important project and look forward to restoring waters impaired by NPS pollution.

Sincerely,

Anne Brasie  
Executive Director