City of Carroll

112 E. 5th Street Carroll, Iowa 51401-2799 (712) 792-1000 FAX: (712) 792-0139

MEMO TO: Mike Pogge-Weaver, City Manager

FROM: Jack Wardell, Director of Parks and Recreation JW

DATE: February 17, 2020

SUBJECT: Professional Services Agreement – Graham Park Creek Improvements - 2020

- Professional Services Agreement
- Resolution

This Professional Services Agreement is working to stabilize and improve the creek in Graham Park - Lateral #77 Drainage District #23. Shive-Hattery will assist with a site assessment and design improvements along the creek corridor.

Improvements to the creek include:

A. Improvements to the Wingwall
B. Protection of Existing Infrastructure
C. Outfall Protection
D. Creek Access/Experience

Attached is a map and more clarification of the project plans. With help from Shive-Hattery we have begun discussions with the Carroll County Engineer and have received favorable responses with the project but more work and discussions with the County Engineer and the County Board of Supervisors will need to happen since the County has jurisdiction of the creek area.

COMPENSATION:

Design	$16,600.00
Wetland Delineation/Permitting	$ 4,600.00
Drainage District Coordination	$ 2,300.00
Estimated Total	$23,500.00

CURRENT BUDGET

Revenue:

City of Carroll - Local Option Sales Tax (L.O.S.T.)	$ 75,000.00
REAP Grant	$125,000.00
Interest	$ 1,247.00
Total Revenue	$201,247.00

Expenses:	
Master Plan – Received the report - April 22, 2019	$ 27,000.00
Current Professional Services Agreement (Attached)	$ 23,500.00
Opinion of Probable Cost (2021 Construction - 6% increase)	$137,540.00
Total Expenses	$188,040.00
Excess Revenue	$ 13,207.00

RECOMMENDATION: For the Mayor and City Council consideration and approval of the Professional Services Agreement with Shive-Hattery for the Graham Park Creek Improvements for the Fee of $23,500.00.

RESOLUTION _____

RESOLUTION ACCEPTING AND APPROVING THE PROFESSIONAL SERVICES AGREEMENT WITH SHIVE-HATTERY FOR GRAHAM PARK CREEK IMPROVEMENTS PROJECT – 2020

WHEREAS, the Graham Park Creek Improvements Project - 2020 has been prepared with Shive-Hattery, and

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Carroll, Iowa, that the Professional Services Agreement with Shive-Hattery for the Graham Park Creek Improvements Project – 2020 is accepted.

BE IT RESOLVED that the Contract for Professional Services with Shive-Hattery for the Graham Park Creek Improvements Project – 2020 is approved upon review and acceptance by the City Attorney.

Passed and approved by the Carroll City Council this 24th day of February, 2020.

CITY COUNCIL OF THE
CITY OF CARROLL, IOWA

By: _____
Eric P. Jensen, Mayor

ATTEST:

By: _____
Laura A. Schaefer, City Clerk

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

PROFESSIONAL SERVICES AGREEMENT

ATTN: Jack Wardell
CLIENT: City of Carroll, IA
112 E 5th Street
Carroll, IA 51401

PROJECT: City of Carroll - Graham Park Creek Improvements

PROJECT LOCATION: Carroll, IA

DATE OF AGREEMENT: February 13, 2020

PROJECT DESCRIPTION

The City of Carroll is working to stabilize and improve the creek running through Graham Park. Shive-Hattery will assist with a site assessment and design of improvements along the creek corridor.

SCOPE OF SERVICES

We will provide the following services for the project:
Civil Engineering and Landscape Architecture

These services will consist of the following tasks:

1. Design
   A. Create a topographic base map utilizing LiDAR data. Showing contours, surface improvements, location of public utilities, and trees four inches and larger.
      1) Conduct limited topographic survey of stream alignment/profile in park area for project design. We anticipate using LiDAR for areas above the top of bank. Cross sections of the stream will be surveyed at structures and at critical locations to provide detail for the project design. The survey is intended for use in informing design and ultimately preparing construction documents. It will not include any boundary retracement or ALTA services.
   B. Stream Assessment.
      1) Assess current conditions of the stream from E11th Street south to Lincoln Highway.
         a) Provide 1 day recon survey of the stream corridor to collect and characterize: vegetation, bank composition, bed composition, baseline stability and geomorphic conditions, in-stream habitat conditions, and general ecological function of the site.
   C. Develop preliminary design of improvements along channel corridor to include:
      1) Stabilization/wingwall extension at upstream culvert under E 11th Street.
      2) Bank stabilization locations and details for protection of existing infrastructure.
      3) Outfall protection or reconstruction where pipe discharges into the creek are undermining or creating erosion.
      4) Creek access/experience.
         a) Prepare plan and construction details for improvements to encourage park users to interact with the creek through access, teaching, and respite.
         b) Design grading of a path and laying back grades to make access more inviting.
   D. Develop an opinion of probable project costs for budgeting purposes.
   E. Meeting with City to review preliminary design and discuss direction for refinements.

Shive-Hattery | 4125 Westown Parkway | Suite 100 | West Des Moines, IA 50266 | 515.223.8104 | fax 515.223.0622 | shive-hattery.com

F. Final Design/Construction Documents
   1) Incorporate client feedback and make refinements to the design.
   2) Prepare construction plans for the project. Anticipated plan sheets include:
      a) Cover sheet
      b) Project quantities and notes
      c) Existing conditions/removals
      d) Plan sheet
      e) Cross sections
      f) Construction details
   3) Prepare technical specifications for the project.
   4) Update the opinion of probable construction costs.
   5) Deliver plans and specifications to client.

2. Wetland Delineation/Permitting
   A. Wetland/Waters of the US Delineation
      1) Provide a wetland and Waters of the United States (WOTUS) delineation for the project area. The delineation will use mandatory technical criteria, field indicators, and other sources of information to evaluate whether the project area has jurisdictional wetlands or WOTUS. The delineation will be performed by an experienced environmental scientist or engineer. If wetlands or WOTUS are present, the upper boundaries within the project area will be identified and mapped.
   B. Facilitate permitting discussions with US Army Corps of Engineers (USACE) and the Iowa Department of Natural Resources (DNR), to review the proposed improvements.
      1) We anticipate the project will not require a 404 permit or will be covered under a nationwide permit.
      2) We anticipate the project will not require any floodplain modeling for the floodplain permit.
      3) Initiate additional environmental investigations, modeling, or reports if required. Additional Investigations, modeling, or reports beyond those listed above will be considered an Additional Service and will be handled by an amendment to this agreement.
   C. Drainage District and County Board of Supervisors Coordination.
      1) Coordinate proposed improvements with Carroll County Board of Supervisors who act as the Board of trustees for the drainage district.
      2) Attend a Board of Supervisors meeting to review project with Drainage District Trustees and answer questions.

CLIENT RESPONSIBILITIES

It will be your responsibility to provide the following:

1. Identify a Project Representative with full authority to act on behalf of the Client with respect to this project. The Client Project Representative shall render decisions in a timely manner in order to avoid delays of Shive-Hattery's services.
2. Legal, accounting, and insurance counseling services or other consultants, including geotechnical, or vendors that may be necessary. The Client shall coordinate these services with those services provided by Shive-Hattery.
3. Provide to Shive-Hattery any available drawings, survey plats, testing data and reports related to the project, either hard copy or electronic media. Electronic media is preferred.
4. Unless specifically included in the Scope of Services to be provided by Shive-Hattery, the Client shall furnish tests, inspections, permits and reports required by law, regulation or code including but not limited to hazardous materials, structural, mechanical, chemical, air pollution and water pollution tests.

SCHEDULE

We will begin our services upon receipt of this Agreement executed by you which will serve as a notice to proceed.

- We will meet with you to develop a mutually agreed-upon schedule for the Scope of Services.

COMPENSATION

Description	Fee Type	Fee	Estimated Expenses	Total
Design	Fixed Fee	$16,600	Included	$16,600
Wetland Delineation/Permitting	Fixed Fee	$4,600	Included	$4,600
Drainage District Coordination	Fixed Fee	$2,300	Included	$2,300
			ESTIMATED TOTAL	**$23,500**

Fee Types:

- Fixed Fee - We will provide the Scope of Services for the fee amounts listed above.

Expenses:

- Included – Expenses have been included in the Fee amount.

The terms of this proposal are valid for 30 days from the date of this proposal.

ADDITIONAL SERVICES

The following are additional services you may require for your project. We can provide these services but they are not part of this proposal at this time.

1. Additional Investigations, modeling, or reports required for permitting purposes or Drainage District approval.
2. Design of restoration or stabilization practices beyond those identified in the scope of services.

OTHER TERMS

STANDARD TERMS AND CONDITIONS

Copyright © Shive-Hattery April 2019

PARTIES

"S-H" shall mean Shive-Hattery, Inc. or Shive-Hattery A/E Services, P.C. and "CLIENT" shall mean the person or entity executing this Agreement with "S-H."

LIMITATION OF LIABILITY AND WAIVER OF CERTAIN DAMAGES

The CLIENT agrees, to the fullest extent of the law, to limit the liability of S-H, its officers, directors, shareholders, employees, agents, subconsultants, affiliated companies, and any of them, to the CLIENT and any person or entity claiming by or through the CLIENT, for any and all claims, damages, liabilities, losses, costs, and expenses including reasonable attorneys' fees, experts' fees, or any other legal costs , in any way related to the Project or Agreement from any cause(s) to an amount that shall not exceed the compensation received by S-H under the agreement or fifty thousand dollars ($50,000), whichever is greater. The parties intend that this limitation of liability apply to any and all liability or cause of action, claim, theory of recovery, or remedy however alleged or arising, including but not limited to negligence, errors or omissions, strict liability, breach of contract or warranty, express, implied or equitable indemnity and all other claims, which except for the limitation of liability above, the CLIENT waives.

CLIENT hereby releases S-H, its officers, directors, shareholders, employees, agents, subconsultants, affiliated companies, and any of them, and none shall be liable to the CLIENT for consequential, special, exemplary, punitive, indirect or incidental losses or damages, including but not limited to loss of use, loss of product, cost of capital, loss of goodwill, lost revenues or loss of profit, interruption of business, down time costs, loss of data, cost of cover, or governmental penalties or fines.

INDEMNIFICATION

Subject to the limitation of liability in this Agreement, S-H agrees to the fullest extent permitted by law, to indemnify and hold harmless the CLIENT, its officers, directors, shareholders, employees, contractors, subcontractors and consultants against all claims, damages, liabilities, losses or costs, including reasonable attorneys' fees, experts' fees, or other legal costs to the extent caused by S-H's negligent performance of service under this Agreement and that of its officers, directors, shareholders, and employees.

The CLIENT agrees to the fullest extent permitted by law, to indemnify and hold harmless S-H, its officers, directors, shareholders, employees, agents,, subconsultants, and affiliated companies against all damages, liabilities, losses, costs, and expenses including, reasonable attorneys' fees, expert's fees, and any other legal costs to the extent caused by the acts or omissions of the CLIENT, its employees, agents, contractors, subcontractors, consultants or anyone for whom the CLIENT is legally liable.

HAZARDOUS MATERIALS - INDEMNIFICATION

To the fullest extent permitted by law, CLIENT agrees to defend, indemnify, and hold S-H, its officers, directors, shareholders, employees, agents, consultants and affiliated companies, and any of them harmless from and against any and all claims, liabilities, losses, costs, or expenses including reasonable attorney's fees, experts' fees and any other legal costs (including without limitation damages to property, injuries or death to persons, fines, or penalties), arising out of, or resulting from the discharge, escape, release, or saturation of smoke, vapors, soot, fumes, acids, alkalies, toxic chemicals, liquids, gases, polychlorinated biphenyl, petroleum contaminants spores, biological toxins, or any other materials, irritants, contaminants, or pollutants in or into the atmosphere, or on, onto, upon, in, or into the surface or subsurface of soil, water, or watercourses, objects, or any tangible or intangible matter, whether sudden or not.

STANDARD OF CARE

Services provided by S-H under this Agreement will be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances on projects of similar size, complexity, and geographic location as that of the Project. Nothing in this Agreement is intended to create, nor shall it be construed to create, a fiduciary duty owed by either party to the other party.

BETTERMENT

The CLIENT recognizes and expects that certain change orders may be required to be issued as the result in whole or part of imprecision, incompleteness, omissions, ambiguities, or inconsistencies in S-H's drawings, specifications, and other design, bidding or construction documentation furnished by S-H or in other professional services performed or furnished by S-H under this Agreement (herein after in this Betterment section referred to as S-H Documentation). If a required item or component of the Project is omitted from S-H's Documentation, the CLIENT is responsible for paying all costs required to add such item or component to the extent that such item or component would have been required and included in the original S-H Documentation. In no event will S-H be responsible for costs or expense that provides betterment or upgrades or enhances the value of the Project.

RIGHT OF ENTRY

The CLIENT shall provide for entry for the employees, agents and subcontractors of S-H and for all necessary equipment. While S-H shall take reasonable precautions to minimize any damage to property, it is understood by the CLIENT that in the normal course of the project some damages may occur, the cost of correction of which is not a part of this Agreement.

PAYMENT

Unless otherwise provided herein, invoices will be prepared in accordance with S-H's standard invoicing practices then in effect and will be submitted to CLIENT each month and at the completion of the work on the project. Invoices are due and payable upon receipt by the CLIENT. If the CLIENT does not make payment within thirty (30) days after the date the invoice was mailed to the CLIENT, then the amount(s) due S-H shall bear interest due from the date of mailing at the lesser interest rate of 1.5% per month compounded or the maximum interest rate allowed by law. In the event that S-H files or takes any action, or incurs any costs, for the collection of amounts due it from the client, S-H shall be entitled to recover its entire cost for attorney fees and other collection expenses related to the collection of amounts due it under this Agreement. Any failure to comply with this term shall be grounds for a default termination.

TERMINATION

Either party may terminate this Agreement for convenience or for default by providing written notice to the other party. If the termination is for default, the non-terminating party may cure the default before the effective date of the termination and the termination for default will not be effective. The termination for convenience and for default, if the default is not cured, shall be effective seven (7) days after receipt of written notice by the non-terminating party. In the event that this Agreement is terminated for the convenience of either party or terminated by S-H for the default of the CLIENT, then S-H shall be paid for services performed to the termination effective date, including reimbursable expenses due, and termination expenses attributable to the termination. In the event the CLIENT terminates the Agreement for the default of S-H and S-H does not cure the default, then S-H shall be paid for services performed to the termination notice date, including reimbursable expenses due, but shall not be paid for services performed after the termination notice date and shall not be paid termination expenses. Termination expenses shall include expenses reasonably incurred by S-H in connection with the termination of the Agreement or services, including, but not limited to, closing out Project records, termination of subconsultants and other persons or entities whose services were retained for the Project, and all other expenses directly resulting from the termination.

INFORMATION PROVIDED BY OTHERS

S-H shall indicate to the CLIENT the information needed for rendering of services hereunder. The CLIENT shall provide to S-H such information, including electronic media, as is available to the CLIENT and the CLIENT's consultants and contractors, and S-H shall be entitled to rely upon the accuracy and completeness thereof. The CLIENT recognizes that it is difficult for S-H to assure the accuracy, completeness and sufficiency of such client-furnished information, either because it is provided by others or because of errors or omissions which may have occurred in assembling the information the CLIENT is providing. Accordingly, the CLIENT agrees, to the fullest extent permitted by law, to indemnify and hold harmless S-H, its officers, directors, shareholders, employees, agents, subconsultants and affiliated companies, and any of them, from and against any and all claims, liabilities, losses, costs , expenses (including reasonable attorneys' fees, experts' fees, and any other legal costs) for injury or loss arising or allegedly arising from errors, omissions or inaccuracies in documents or other information provided by the CLIENT.

UNDERGROUND UTILITIES

Information for location of underground utilities may come from the CLIENT, third parties, and/or research performed by S-H or its subcontractors. S-H will use the standard of care defined in this Agreement in providing this service. The information that S-H must rely on from various utilities and other records may be inaccurate or incomplete. Therefore, the CLIENT agrees, to the fullest extent permitted by law, to indemnify and hold harmless S-H, its officers, directors, shareholders, employees agents, subconsultants, affiliated companies, and any of them for all claims, losses, costs and damages arising out of the location of underground utilities provided or any information related to underground utilities by S-H under this Agreement.

CONTRACTOR MATTERS

CLIENT agrees that S-H shall not be responsible for the acts or omissions of the CLIENT's contractor, or subcontractors, their employees, agents, consultants, suppliers or arising from contractor's or subcontractors' work, their employees, agents, consultants, suppliers or other entities that are responsible for performing work that is not in conformance with the construction Contract Documents, if any, prepared by S-H under this Agreement. S-H shall not have responsibility for means, methods, techniques, sequences, and progress of construction of the contractor, subcontractors, agents, employees, agents, consultants, or others entities. In addition, CLIENT agrees that S-H is not responsible for safety at the project site and that safety during construction is for the CLIENT to address in the contract between the CLIENT and contractor.

SHOP DRAWING REVIEW

If, as part of this Agreement S-H reviews and approves Contractor submittals, such as shop drawings, product data, samples and other data, as required by S-H, these reviews and approvals shall be only for the limited purpose of checking for conformance with the design concept and the information expressed in the contract documents. This review shall not include review of the accuracy or completeness of details, such as quantities, dimensions, weights or gauges, fabrication processes, construction means or methods, coordination of the work with other trades or construction safety precautions, all of which are the sole responsibility of the Contractor. S-H's review shall be conducted with reasonable promptness while allowing sufficient time in S-H's judgment to permit adequate review. Review of a specific item shall not indicate that S-H has reviewed the entire assembly of which the item is a component. S-H shall not be responsible for any deviations from the contract documents not brought to the attention of S-H in writing by the Contractor. S-H shall not be required to review partial submissions or those for which submissions of correlated items have not been received.

OPINIONS OF PROBABLE COST

If, as part of this Agreement S-H is providing opinions of probable construction cost, the CLIENT understands that S-H has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that S-H's opinions of probable construction costs are to be made on the basis of S-H's qualifications and experience. S-H makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual costs.

CONSTRUCTION OBSERVATION

If, as part of this Agreement S-H is providing construction observation services, S-H shall visit the project at appropriate intervals during construction to become generally familiar with the progress and quality of the contractors' work and to determine if the work is proceeding in general accordance with the Contract Documents. Unless otherwise specified in the Agreement, the CLIENT has not retained S-H to make detailed inspections or to provide exhaustive or continuous project review and observation services. S-H does not guarantee the performance of, and shall have no responsibility for, the acts or omissions of any contractor, its subcontractors, employees, agents, consultants, suppliers or any other entities furnishing materials or performing any work on the project.

S-H shall advise the CLIENT if S-H observes that the contractor is not performing in general conformance of Contract Documents. CLIENT shall determine if work of contractor should be stopped to resolve any problems.

OTHER SERVICES

The CLIENT may direct S-H to provide other services including, but not limited to, any additional services identified in S-H's proposal. If S-H agrees to provide these services, then the schedule shall be reasonably adjusted to allow S-H to provide these services. Compensation for such services shall be at S-H's Standard Hourly Fee Schedule in effect at the time the work is performed unless there is a written Amendment to Agreement that contains an alternative compensation provision.

OWNERSHIP & REUSE OF INSTRUMENTS OF SERVICE

All reports, plans, specifications, field data and notes and other documents, including all documents on electronic media, prepared by S-H as instruments of service shall remain the property of S-H. The CLIENT shall not reuse or make any modifications to the plans and specifications without the prior written authorization of S-H. The CLIENT agrees, to the fullest extent permitted by law, to defend, indemnify and hold harmless S-H its officers, directors, shareholders, employees, agents, subconsultants and affiliated companies, and any of them from any and all claims, losses, costs or damages of any nature whatsoever arising out of, resulting from or in any way related to any unauthorized reuse or modifications of the construction documents by the CLIENT or any person or entity that acquires or obtains the plans and specifications from or through the CLIENT without the written authorization of S-H.

DISPUTE RESOLUTION

If a dispute arises between S-H and CLIENT, the executives of the parties having authority to resolve the dispute shall meet within thirty (30) days of the notification of the dispute to resolve the dispute. If the dispute is not resolved within such thirty (30) day time period, CLIENT and S-H agree to submit to non-binding mediation prior to commencement of any litigation and that non-binding mediation is a precondition to any litigation. Any costs incurred directly for a mediator, shall be shared equally between the parties involved in the mediation.

EXCUSABLE EVENTS

S-H shall not be responsible for any event or circumstance that is beyond the reasonable control of S-H that has a demonstrable and adverse effect on S-H's ability to perform its obligations under this Agreement or S-H's cost and expense of performing its obligations under this Agreement (an "Excusable Event"), including without limitation, a change in law or applicable standards, actions or inactions by a governmental authority, the presence or encounter of hazardous or toxic materials on the Project, war (declared or undeclared) or other armed conflict, terrorism, sabotage, vandalism, riot or other civil disturbance, blockade or embargos, explosion, epidemic, quarantine, strike, lockout, work slowdown or stoppage, accident, act of God, failure of any governmental or other regulatory authority to act in a timely manner, unexcused act or omission by CLIENT or contractors of any level (including, without limitation, failure of the CLIENT to furnish timely information or approve or disapprove of S-H's services or work product promptly, delays in the work caused by CLIENT, CLIENT's suspension, breach or default of this Agreement, or delays caused by faulty performance by the CLIENT or by contractors of any level). When an Excusable Event occurs, the CLIENT agrees S-H is not responsible for damages, nor shall S-H be deemed to be in default of this Agreement, and S-H shall be entitled to a change order to equitably adjust for S-H's increased time and/or cost to perform its services due to the Excusable Event.

ASSIGNMENT

Neither party to this Agreement shall transfer, sublet or assign any rights under or interest in this Agreement (including but not limited to monies that are due or monies that may be due) without the prior written consent of the other party.

SEVERABILITY, SURVIVAL AND WAIVER

Any provision of this Agreement later held to be unenforceable for any reason shall be deemed void, and all remaining provisions shall continue in full force and effect. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating responsibility or liability between the CLIENT and S-H shall survive the completion of the services hereunder and the termination of this Agreement. The failure of a party to insist upon strict compliance of any term hereof shall not constitute a waiver by that party of its rights to insist upon strict compliance at a subsequent date.

GOVERNING LAW

This Agreement shall be governed pursuant to the laws in the state of the locale of the S-H office address written in this Agreement.

EQUAL EMPLOYMENT OPPORTUNITY

It is the policy of S-H to provide equal employment opportunities for all. S-H enforces the following acts and amendments as presented by Federal government or State governments: Title VII of the Civil Rights Act of 1965, Age Discrimination in Employment ACT (ADEA), Americans With Disabilities Act (ADA), Iowa Civil Rights Act of 1965, and Illinois Human Rights Act [775ILCS 5]. S-H will not discriminate against any employee or applicant because of race, creed, color, religion, sex, national origin, gender identity, sexual orientation, marital status, ancestry, veteran status, or physical or mental handicap, unless related to performance of the job with or without accommodation.

COMPLETE AGREEMENT

This Agreement constitutes the entire and integrated agreement between the CLIENT and S-H and supersedes all prior negotiations, representations and agreements, whether oral or written. If the CLIENT issues a Purchase Order of which this Agreement becomes a part, the terms of this Agreement shall take precedence in the event of a conflict of terms.

AGREEMENT

This proposal shall become the Agreement for Services when accepted by both parties. Original, facsimile, electronic signatures or other electronic acceptance by the parties (and returned to Shive-Hattery) are deemed acceptable for binding the parties to the Agreement. The Client representative signing this Agreement warrants that he or she is authorized to enter into this Agreement on behalf of the Client.

Thank you for considering this proposal. We look forward to working with you. If you have any questions concerning this proposal, please contact us.

Sincerely,
SHIVE-HATTERY, INC.

Luke Monat

Luke Monat, PE
Project Manager
lmonat@shive-hattery.com

AGREEMENT ACCEPTED AND SERVICES AUTHORIZED TO PROCEED

CLIENT: City of Carroll, IA

BY:_____ **TITLE:**_____
(signature)

PRINTED NAME:_____**DATE ACCEPTED:**_____

CC: Craig Erickson

PROJECT 2
CREEK IMPROVEMENTS

IMPROVEMENTS INCLUDED:

WINGWALL

STABILIZATION IS NEEDED ALONG WEST WINGWALL OF CULVERT TO PROTECT NEARBY TENNIS COURTS. RECOMMENDED EXTENDING WINGWALL OR NEW RETAINING WALL OFFSET BACK FROM BANK.

PROTECTION OF EXISTING INFRASTRUCTURE

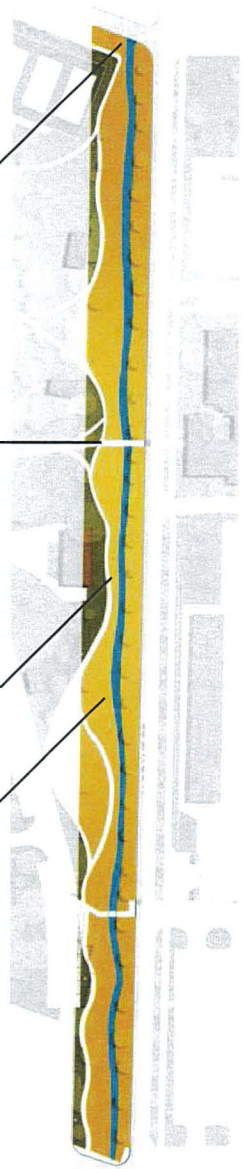
PROTECTION OF NORTH GRANT ROAD AND PEDESTRIAN BRIDGES FROM EROSION IS RECOMMENDED. ARMOR EXISTING PEDESTRIAN BRIDGE ABUTMENTS AND PROVIDE BED AND BANK STABILIZATION WHERE NEEDED TO ADDRES EROSION OR SLOPE STABILITY CONCERNS.

OUTFALL PROTECTION

MULTIPLE STREAM OUTFALLS HAVE COLLAPSED OR ARE ACTIVELY ARODING ADJACENT BANKS. RECOMMEND REBUILDING OUTFALLS AND ARMORING WITH RIPRAP OR FIELDSTONE.

CREEK ACCESS / EXPERIENCE

ACCESS TO THE STREAM CAN PROVIDE AN OPPORTUNITY FOR PARK USERS TO EXPERIENCE THIS NATURAL RESOURCE. EXISTING BANKS ARE VERY STEEP AND SHOULD BE LAID BACK. SPACE NEXT TO STREAM FOR RESTING, TEACHING, ACCESS IS RECOMMENDED.



PROJECT 2
CREEK IMPROVEMENTS

OPINION OF PROBABLE COSTS
(2019 DOLLARS)

#	CREEK IMPROVEMENTS - ITEM DESCRIPTION	QUANTITY	UNITS		UNIT COST		TOTAL COST
1	REINFORCED CONCRETE WALL	250	SF	*	$40	=	$10,000
2	RIPRAP ARMORING	350	TN	*	$55	=	$19,300
3	REBUILD OUTFALLS AND FOOTINGS	6	EA	*	$1,500	=	$9,000
4	EARTHWORK EXCAVATION - STREAM ACCESS	400	CY	*	$15	=	$6,000
5	UTILITY ADJUSTMENTS	1	LA	*	$2,000	=	$2,000
6	SURFACING - PATH AND GATHERING AREA	1,000	SF	*	$7	=	$7,000
7	BOULDER OR OUTCROPPING STONE TERRACING	50	EA	*	$400	=	$20,000
8	SEEDING AND RESTORATION	1	LS	*	$8,000	=	$8,000
					SUBTOTAL	=	$81,300
					DESIGN CONTINGENCY (20%)	=	$16,300
					SUBTOTAL	**=**	**$97,600**
					PROFESSIONAL ENGINEERING FEE (15%)	=	$14,600
					MATERIALS TESTING / PERMITS (3%)	=	$2,900
					CONSTRUCTION CONTINGENCY (15%)	=	$14,600
					TOTAL PROJECT COSTS	**=**	**$129,700**