THIS IS A LEGAL INSTRUMENT. IF NOT UNDERSTOOD, LEGAL, TAX OR OTHER COUNSEL SHOULD BE CONSULTED BEFORE SIGNING.

DEED OF TRUST

THIS DEED OF TRUST is made this 9th day of February, 2017, between Lake Fork Valley Conservancy, a Colorado non-profit corporation (Borrower), whose address is PO Box 123 Lake City, CO 81235; and the Public Trustee of the County in which the Property (see § 1) is situated (Trustee); for the benefit of Peter M. Main Trust (Lender), whose address is 8832 NE 148th Pl. Kenmore, WA. 98208.

Borrower and Lender covenant and agree as follows:

1. **Property in Trust.** Borrower, in consideration of the indebtedness herein recited and the trust herein created, hereby grants and conveys to Trustee in trust, with power of sale, the following legally described property:

Property Legal Description: LOTS 2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17- 18-19-20-21-22-23-24-25-26-27-28-29-30-31, BLOCK 4 SUBJECT TO HIGHWAY RIGHT OF WAY, TOWN OF LAKE CITY; LOTS 31-32 BLOCK 13 TOWN OF LAKE CITY.

County of Hinsdale, State of Colorado.
together with all its appurtenances (Property).

2. **Note; Other Obligations Secured.** This Deed of Trust is given to secure to Lender:

2.1. the repayment of the indebtedness evidenced by Borrower's note (Note) of even date herewith, in the principal sum of one hundred thousand dollars ($100,000.00). The entire balance shall be due and payable in one lump payment, free of interest, on the day that is three years from the Date of the Note;

2.2. the payment of all other sums, with interest thereon at 8% per annum, disbursed by Lender in accordance with this Deed of Trust to protect the security of this Deed of Trust; and

2.3. the performance of the covenants and agreements of Borrower herein contained.

3. **Title.** Borrower covenants that Borrower owns and has the right to grant and convey the Property, and warrants title to the same, subject to general real estate taxes for the current year, easements of record or in existence, and recorded declarations, restrictions, reservations and covenants, if any, as of this date.

4. **Payment of Principal and Interest.** Borrower shall promptly pay when due the principal of and interest, if any, on the indebtedness evidenced by the Note, and late charges as provided in the Note, if any, and shall perform all of Borrower's other covenants contained in the Note.

5. **Application of Payments.** All payments received by Lender under the terms hereof shall be applied by Lender first in payment of amounts due pursuant to § 23 (Escrow Funds for Taxes and Insurance), if any, then to amounts disbursed by Lender pursuant to § 9 (Protection of Lender's Security), and the balance in accordance with the terms and conditions of the Note.

6. **Prior Mortgages and Deeds of Trust; Charges; Liens.** Borrower shall perform all of Borrower's obligations under any prior deed of trust and any other prior liens. Borrower shall pay all taxes, assessments and other charges, fines and impositions attributable to the Property which may have or attain a priority over this Deed of Trust, and leasehold payments or ground rents, if any, in the manner set out in § 23 (Escrow Funds for Taxes and Insurance) or, if not required to be paid in such manner, by Borrower making payment when due, directly to the payee thereof. Despite the foregoing, Borrower shall

not be required to make payments otherwise required by this section if Borrower, after notice to Lender, shall in good faith contest such obligation by, or defend enforcement of such obligation in, legal proceedings which operate to prevent the enforcement of the obligation or forfeiture of the Property or any part thereof, only upon Borrower making all such contested payments and other payments as ordered by the court to the registry of the court in which such proceedings are filed.

7. **Property Insurance.** N/A.

8. **Preservation and Maintenance of Property.** Borrower shall keep the Property in good repair and shall not commit waste or permit impairment or deterioration of the Property. Borrower shall perform all of Borrower's obligations under any declarations, covenants, by-laws, rules, or other documents governing the use, ownership or occupancy of the Property.

9. **Protection of Lender's Security.** Except when Borrower has exercised Borrower's rights under § 6 above, if Borrower fails to perform the covenants and agreements contained in this Deed of Trust, or if a default occurs in a prior lien, or if any action or proceeding is commenced which materially affects Lender's interest in the Property, then Lender, at Lender's option, with notice to Borrower if required by law, may make such appearances, disburse such sums and take such action as is necessary to protect Lender's interest, including, but not limited to:

9.1. any general or special taxes or ditch or water assessments levied or accruing against the Property;

9.2. the premiums on any insurance necessary to protect any improvements comprising a part of the Property;

9.3. sums due on any prior lien or encumbrance on the Property;

9.4. if the Property is a leasehold or is subject to a lease, all sums due under such lease;

9.5. the reasonable costs and expenses of defending, protecting, and maintaining the Property and Lender's interest in the Property, including repair and maintenance costs and expenses, costs and expenses of protecting and securing the Property, receiver's fees and expenses, inspection fees, appraisal fees, court costs, attorney fees and costs, and fees and costs of an attorney in the employment of Lender or holder of the certificate of purchase;

9.6. all other costs and expenses allowable by the evidence of debt or this Deed of Trust; and

9.7. such other costs and expenses which may be authorized by a court of competent jurisdiction.

Borrower hereby assigns to Lender any right Borrower may have by reason of any prior encumbrance on the Property or by law or otherwise to cure any default under said prior encumbrance.

Any amounts disbursed by Lender pursuant to this § 9, with interest thereon, shall become additional indebtedness of Borrower secured by this Deed of Trust. Such amounts shall be payable upon notice from Lender to Borrower requesting payment thereof, and Lender may bring suit to collect any amounts so disbursed plus interest specified in § 2.2 (Note: Other Obligations Secured). Nothing contained in this § 9 shall require Lender to incur any expense or take any action hereunder.

10. **Inspection.** Lender may make or cause to be made reasonable entries upon and inspection of the Property, provided that Lender shall give Borrower notice prior to any such inspection specifying reasonable cause therefore related to Lender's interest in the Property.

11. **Condemnation.** The proceeds of any award or claim for damages, direct or consequential, in connection with any condemnation or other taking of the Property, or part thereof, or for conveyance in lieu of condemnation, are hereby assigned and shall be paid to Lender as herein provided. However, all of

the rights of Borrower and Lender hereunder with respect to such proceeds are subject to the rights of any holder of a prior deed of trust.

11.1. In the event of a total taking of the Property, the proceeds shall be applied to the sums secured by this Deed of Trust, with the excess, if any, paid to Borrower. In the event of a partial taking of the Property, the proceeds remaining after taking out any part of the award due any prior lien holder (net award) shall be divided between Lender and Borrower, in the same ratio as the amount of the sums secured by this Deed of Trust immediately prior to the date of taking bears to Borrower's equity in the Property immediately prior to the date of taking. Borrower's equity in the Property means the fair market value of the Property less the amount of sums secured by both this Deed of Trust and all prior liens (except taxes) that are to receive any of the award, all at the value immediately prior to the date of taking.

11.2. If the Property is abandoned by Borrower or if, after notice by Lender to Borrower that the condemnor offers to make an award or settle a claim for damages, Borrower fails to respond to Lender within 30 days after the date such notice is given, Lender is authorized to collect and apply the proceeds, at Lender's option, either to restoration or repair of the Property or to the sums secured by this Deed of Trust.

11.3. Any such application of proceeds to principal shall not extend or postpone the due date of the installments referred to in §§ 4 (Payment of Principal and Interest) and 23 (Escrow Funds for Taxes and Insurance) nor change the amount of such installments.

12. **Borrower not Released.** Extension of the time for payment or modification of amortization of the sums secured by this Deed of Trust granted by Lender to any successor in interest of Borrower shall not operate to release, in any manner, the liability of the original Borrower, nor Borrower's successors in interest, from the original terms of this Deed of Trust. Lender shall not be required to commence proceedings against such successor or refuse to extend time for payment or otherwise modify amortization of the sums secured by this Deed of Trust by reason of any demand made by the original Borrower nor Borrower's successors in interest.

13. **Forbearance by Lender Not a Waiver.** Any forbearance by Lender in exercising any right or remedy hereunder, or otherwise afforded by law, shall not be a waiver or preclude the exercise of any such right or remedy.

14. **Remedies Cumulative.** Each remedy provided in the Note and this Deed of Trust is distinct from and cumulative to all other rights or remedies under the Note and this Deed of Trust or afforded by law or equity, and may be exercised concurrently, independently or successively.

15. **Successors and Assigns Bound; Joint and Several Liability; Captions.** The covenants and agreements herein contained shall bind, and the rights hereunder shall inure to, the respective successors and assigns of Lender and Borrower. All covenants and agreements of Borrower shall be joint and several. The captions and headings of the sections in this Deed of Trust are for convenience only and are not to be used to interpret or define the provisions hereof.

16. **Notice.** Except for any notice required by law to be given in another manner, (a) any notice to Borrower provided for in this Deed of Trust shall be in writing and shall be given and be effective upon (1) delivery to Borrower or (2) mailing such notice by first class U.S. mail, addressed to Borrower at Borrower's address stated herein or at such other address as Borrower may designate by notice to Lender as provided herein, and (b) any notice to Lender shall be in writing and shall be given and be effective upon (1) delivery to Lender or (2) mailing such notice by first class U.S. mail, to Lender's address stated herein or to such other address as Lender may designate by notice to Borrower as provided herein. Any notice provided for in this Deed of Trust shall be deemed to have been given to Borrower or Lender when given in any manner designated herein.

17. **Governing Law; Severability**. The Note and this Deed of Trust shall be governed by the law of Colorado. In the event that any provision or clause of this Deed of Trust or the Note conflicts with the law, such conflict shall not affect other provisions of this Deed of Trust or the Note which can be given effect without the conflicting provision, and to this end the provisions of the Deed of Trust and Note are declared to be severable.

18. **Acceleration; Foreclosure; Other Remedies**. Upon Borrower's breach of any covenant or agreement of Borrower in this Deed of Trust, or upon any default in a prior lien upon the Property, (unless Borrower has exercised Borrower's rights under § 6 above), at Lender's option, all of the sums secured by this Deed of Trust shall be immediately due and payable (Acceleration). To exercise this option, Lender may invoke the power of sale and any other remedies permitted by law. Lender shall be entitled to collect all reasonable costs and expenses incurred in pursuing the remedies provided in this Deed of Trust, including, but not limited to, reasonable attorney's fees.

18.1. If Lender invokes the power of sale, Lender shall give written notice to Trustee of such election. Trustee shall give such notice to Borrower of Borrower's rights as is provided by law. Trustee shall record a copy of such notice and shall cause publication of the legal notice as required by law in a legal newspaper of general circulation in each county in which the Property is situated, and shall mail copies of such notice of sale to Borrower and other persons as prescribed by law. After the lapse of such time as may be required by law, Trustee, without demand on Borrower, shall sell the Property at public auction to the highest bidder for cash at the time and place (which may be on the Property or any part thereof as permitted by law) in one or more parcels as Trustee may think best and in such order as Trustee may determine. Lender or Lender's designee may purchase the Property at any sale. It shall not be obligatory upon the purchaser at any such sale to see to the application of the purchase money.

18.2. Trustee shall apply the proceeds of the sale in the following order: (a) to all reasonable costs and expenses of the sale, including, but not limited to, reasonable Trustee's and attorney's fees and costs of title evidence; (b) to all sums secured by this Deed of Trust; and (c) the excess, if any, to the person or persons legally entitled thereto.

19. **Borrower's Right to Cure Default**. Whenever foreclosure is commenced for nonpayment of any sums due hereunder, the owners of the Property or parties liable hereon shall be entitled to cure said defaults by paying all delinquent principal and interest payments due as of the date of cure, costs, expenses, late charges, attorney's fees and other fees all in the manner provided by law. Upon such payment, this Deed of Trust and the obligations secured hereby shall remain in full force and effect as though no Acceleration had occurred, and the foreclosure proceedings shall be discontinued.

20. **Assignment of Rents; Appointment of Receiver; Lender in Possession**. N/A.

21. **Release**. Upon payment of all sums secured by this Deed of Trust, Lender shall cause Trustee to release this Deed of Trust and shall produce for Trustee the Note. Borrower shall pay all costs of recordation and shall pay the statutory Trustee's fees. If Lender shall not produce the Note as aforesaid, then Lender, upon notice in accordance with § 16 (Notice) from Borrower to Lender, shall obtain, at Lender's expense, and file any lost instrument bond required by Trustee or pay the cost thereof to effect the release of this Deed of Trust.

22. **Waiver of Exemptions**. Borrower hereby waives all right of homestead and any other exemption in the Property under state or federal law presently existing or hereafter enacted.

23. **Escrow Funds for Taxes and Insurance**. There is no escrow fund for taxes and insurance. Borrower shall pay taxes and insurance directly, and shall provide to Lender proof of payment of the same on an annual basis.

24. **Transfer of the Property; Assumption**. Borrower shall have the right to transfer the Property or any part thereof or interest therein. Upon any such transfer, the transferee shall be deemed to have

assumed the obligations of Borrower under this Deed of Trust including payment of all sums secured hereby whether or not the instrument evidencing such transfer expressly so provides. This covenant shall run with the Property and remain in full force and effect until said sums are paid in full. Any such transfer shall not alter or discharge Borrower's liability hereunder for the obligations hereby secured. unless Lender expressly agrees to release Borrower from such liability.

25. **Borrower's Copy.** Borrower acknowledges receipt of a copy of the Note and this Deed of Trust.

EXECUTED BY BORROWER.

STATE OF Colorado)
)ss.
COUNTY OF Hinsdale)

The foregoing letter was acknowledged before me this 9th day of February 2017, by Lyndon Lampert. Witness my hand and official seal. My commission expires: 8-14-2017.

Notary Public

Alena D. Haskell
Notary Public
State of Colorado
Notary ID 20074014782
My Commission Expires August 14, 2017

THIS IS A LEGAL INSTRUMENT. IF NOT UNDERSTOOD, LEGAL, TAX OR OTHER COUNSEL SHOULD BE CONSULTED BEFORE SIGNING.

PROMISSORY NOTE

U.S.$100,000 Hinsdale County, Colorado

Date: 2/9/2017

1. FOR VALUE RECEIVED, the undersigned Lake Fork Valley Conservancy, a Colorado based 501(c)(3) non-profit corporation, for itself and its successors and assigns (Borrower), promises to pay Peter M. Main Trust (Note Holder) or order, the principal sum of one hundred thousand dollars ($100,000.00). The entire balance shall be due and payable in one lump sum payment on the day that is three years from the Date of this Note. Payments made under this Note shall be paid at 8832 NE 148th Pl, Kenmore, WA 98028 , or such other place as Note Holder may designate.

2. Payments received for application to this Note shall, after application in accordance with paragraph 5 of the Deed of Trust (described below), be applied first to the payment of late charges, if any, second to the payment of accrued interest, if any, and the balance applied in reduction of the principal amount hereof.

3. Because the Lake Fork Valley Conservancy is a 501(c)(3) non-profit corporation, this loan is interest free and does not require the minimum IRS imputed interest. However, if any payment required by this Note is not paid when due, or if any default under any Deed of Trust securing this Note occurs, the entire principal amount outstanding and accrued interest thereon shall, at the option of Note Holder, at once become due and payable (Acceleration); and the indebtedness shall bear interest at the rate of 8 percent per annum from the date of this promissory note. Note Holder shall be entitled to collect all reasonable costs and expense of collection and/or suit, including, but not limited to reasonable attorneys' fees.

4. Borrower may prepay the principal amount outstanding under this Note, in whole or in part, at any time without penalty. Borrower will make payments as funding is procured, which includes the following secured and unsecured sources:

   a. Colorado Parks and Wildlife Fishing is Fun grant of $30,000 (secured).

   b. Upper Gunnison River Water Conservancy District grant of $41,250 (secured).

   c. Unsecured funding of $28,750 (to be raised through donations and small grants).

5. Borrower and all other makers, sureties, guarantors, and endorsers hereby waive presentment, notice of dishonor and protest, and they hereby agree to any extensions of time of payment and partial payments before, at, or after maturity. This Note shall be the joint and several obligation of Borrower and all other makers, sureties, guarantors and endorsers, and their successors and assigns.

6. Any notice to Borrower provided for in this Note shall be in writing and shall be given and be effective upon (a) delivery to Borrower or (b) by mailing such notice by first class U. S. mail, addressed to Borrower at Borrower's address stated below, or to such other address as Borrower may designate by notice to Note Holder. Any notice to Note Holder shall be in writing and shall be given and be effective upon (a) delivery to Note Holder or (b) by mailing such notice by first class U.S. mail, to Note Holder at the address stated in the first paragraph of this Note, or to such other address as Note Holder may designate by notice to Borrower.

7. The indebtedness evidenced by this Note is secured by a Deed of Trust of even date herewith, and until released said Deed of Trust contains additional rights of Note Holder. Such rights may cause Acceleration of the indebtedness evidenced by this Note. Reference is made to said Deed of Trust for such additional terms. Said Deed of Trust grants rights in the following legally described property:

Property Legal Description: LOTS 2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17- 18-19-20-21-22-23-24-25-26-27-28-29-30-31, BLOCK 4 SUBJECT TO HIGHWAY RIGHT OF WAY, TOWN OF LAKE CITY; LOTS 31-32 BLOCK 13 TOWN OF LAKE CITY.

County of Hinsdale, State of Colorado.

BORROWER: Lake Fork Valley Conservancy, a Colorado non-profit corporation

By: _____

Name: Lynden Lampert

Title: Vice President, LFVC

Borrower's address:
Lake Fork Valley Conservancy
PO Box 123
Lake City, CO 81235

NOTE HOLDER: KEEP THIS NOTE IN A SAFE PLACE. THE ORIGINAL OF THIS NOTE MUST BE EXHIBITED TO THE PUBLIC TRUSTEE IN ORDER TO RELEASE A DEED OF TRUST SECURING THIS NOTE.

CAUTION TO BORROWER: SIGN ORIGINAL NOTE ONLY/RETAIN COPY

BOARD RESOLUTION

At a special meeting of the Lake Fork Valley Conservancy (LFVC) Board of Directors on February 8, 2017, the following resolution was proposed and approved by the board, based on 2017 annual work plan and budget approval on January 12, 2017:

Resolved:

WHEREAS the mission of the LFVC is to facilitate long term environmental and economic sustainability in the headwaters of the Colorado River Basin, focusing on the Lake Fork of the Gunnison and Cebolla Creek valleys;

WHEREAS the Lake Fork River Enhancement Project is an integral part of the LFVC's Mission:

That the LFVC Board is in full support of the purchase of the Peter M. Main Estate parcels, for purposes of flood plain restoration, conservation, and education, legally described as follows:

Property Legal Description: LOTS 2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17- 18-19-20-21-22-23-24-25-26-27-28-29-30-31, BLOCK 4 SUBJECT TO HIGHWAY RIGHT OF WAY, TOWN OF LAKE CITY; LOTS 31-32 BLOCK 13 TOWN OF LAKE CITY.

County of Hinsdale, State of Colorado,
together with all its appurtenances (Property).

Signed:

Lyndon Lampert
Vice President, Board of Directors

GENERAL WARRANTY DEED

Main Family Trust ("Grantor"), for good and valuable consideration of $165,000.00, in hand paid, hereby sells and conveys to **Lake Fork Valley Conservancy, a Colorado 501c3 Non-profit Corporation**, ("Grantee"), whose address is PO Box 123, Lake City, CO 81235, the following real property:

Parcel 1: Lots 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Block 4, TOWN OF LAKE CITY, according to the official plat thereof on file and of record in the office of the Hinsdale County Clerk and Recorder,

Parcel 2: Lots 31 and 32, Block 13, TOWN OF LAKE CITY, according to the official plat thereof on file and of record in the office of the Hinsdale County Clerk and Recorder,

All in the County of Hinsdale, State of Colorado,

with all appurtenances, and warrants the title to the same, subject to:

1. Reservation and exception as contained in the United States Patent recorded in Book 14 at page 21.
2. Availability of Service Variance Agreement for Lots 13, 14, 15, and 16, Block 4, recorded July 2, 1984 in Book 128 at page 532.
3. Requirement for water meter as set forth in Ordinance No. 2, Series 2000 filed for record in the office of the Hinsdale County Clerk and Recorder on February 4, 2000 under Reception No. 90489.
4. General taxes for the year 2017.
5. Distribution utility easements (including cable TV).
6. Those specifically described rights of third parties not shown by the public records of which Grantee has actual knowledge and which were accepted by Grantee in accordance with Off-Record Title and New ILC or New Survey provisions of the Contract to Buy and Sell Real Estate between the Grantor and Grantee pertaining to the property that is the subject of this deed (Contract).
7. Inclusion of the Property within any special taxing district.
8. Any special assessment if the improvements were not installed as of the date of the Grantee's signature on the Contract, whether assessed prior to or after Closing.

Signed this 7th day of February, 2017.

GRANTOR: Main Family Trust

By: Cindy Bauer
Cindy M. Bauer, Trustee

STATE OF Washington)
) ss.
COUNTY OF King)

The foregoing instrument was acknowledged before me this 7th day of February, 2017, by Cindy M. Bauer, Trustee of the Main Family Trust. Witness my

HINSDALE TITLE COMPANY, LLC

STATEMENT OF SETTLEMENT FOR PURCHASERS

PROPERTY ADDRESS: TBD, Lake City, CO 81235

PURCHASER/BORROWER(S): Lake Fork Valley Conservancy, a Colorado 501c3 Non-profit Corporation

SELLER(S): Main Family Trust

SETTLEMENT DATE:February 9, 2017 DISBURSED: February 9, 2017 PRORATION DATE: February 9, 2017

LEGAL DESCRIPTION:

Parcel 1
Lots 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, Block 4, TOWN OF LAKE CITY,according to the official plat thereof on file and of record in the office of the Hinsdale County Clerk and Recorder,

County of Hinsdale,
State of Colorado.

Parcel 2
Lots 31 and 32, Block 13, TOWN OF LAKE CITY,according to the official plat thereof on file and of record in the office of the Hinsdale County Clerk and Recorder,

County of Hinsdale,
State of Colorado.

		DEBIT	CREDIT
Contract Sales Price		165,000.00	
Deposit or earnest money			1,000.00
Purchase Money Note			100,000.00
Hinsdale Cty Taxes 01/01/17 to 02/09/17 (1,262.16 / 365 x 39 days)			134.86
Settlement or Closing Fee	Hinsdale Title Company, LLC	150.00	
Tax Certificate(s)	Hinsdale Title Company, LLC	30.00	
Wire Fee	Hinsdale Title Company, LLC	10.00	
Recording Fees	Hinsdale County Clerk & Recorder	56.00	
State tax/stamps	Hinsdale County Clerk & Recorder	16.50	
Statement of Authority	Hinsdale County Clerk & Recorder	13.00	
Subtotals		165,275.50	101,134.86
Balance Due FROM Purchaser/Borrower			64,140.64
TOTALS		165,275.50	165,275.50

The above figures do not include sales or use taxes on personal property

APPROVED and ACCEPTED

PURCHASER(S) / BORROWER(S):

Lake Fork Valley Conservancy, a Colorado 501c3 Non-profit Corporation

BY: _____
Lyndon Lampert, Vice- President

ESCROW AGENT:

Hinsdale Title Company, LLC

_____
Team Murphy Realty, LLC

Lake Fork of the Gunnison River and Henson Creek Monitoring Data In-Stream Structures and Comparative Cross Sections

Prepared for:

Camille Richard
Lake Fork Valley Conservancy (LFVC)

Prepared by:

Brett Jordan PhD, PE, CPESC
HydroGeo Designs LLC. (HGD)
P.O. Box 775
Buena Vista, CO 81211

1.0 INTRODUCTION

HydroGeo Designs LLC. (HGD) has prepared this monitoring summary of completed restoration projects on the Lake Fork of the Gunnison (LFG) and Henson Creek (HC) near Lake City, CO. This work was performed for the Lake Fork Valley Conservancy (LVFC) as a part of the Lake Fork of the Gunnison River Enhancement Project (LFGREP). The Henson Creek and Lake Fork of the Gunnison Confluence Project was constructed in several phases.

1. Henson Creek from the Lake City Headgate downstream to Highway 149 (Oct-Nov 2013)
2. Henson Creek from Highway 149 downstream to LFG confluence and LFG channel areas near confluence (Aug 2014-Oct 2015).
3. LFG downstream of the 8 ½ Street Bridge, Oct-Nov 2017.

The purpose of this report is to provide a baseline monitoring data on the success of the project with regard to:

1. In-stream structure evaluations and;
2. Channel cross section survey data.

The data was collected using the protocol provided by the state of Colorado Measurable Results Program (CMRP). Stream design plans for HC and LFG are provided in **Appendix A**.

The main objectives of the project are:

1. Increase fisheries habitat quality;
2. Improve the hydraulics of the river to maintain existing or reduce base flood elevation and facilitate effective bed load movement;
3. Improve bank stability to protect public and private assets along the river, and,
4. Provide quality recreational experiences along the river via improved fishing and boating opportunities, safer access to the stream banks and educational opportunities.

2.0 In-stream Structure Evaluations

In-stream structures utilized for this project included:

1. Boulder cross vanes,
2. Boulder J-hook vanes,
3. Boulder vanes and;
4. In-stream boulder clusters.

The cross vanes and j-hook vanes were the primary components of the project design and were the most critical for the over-arching success of the project. Boulder cross vanes and j hook vanes representative of overall project conditions were evaluated post project in the October 2017. In all six (6) structures were sampled for the Lake Fork of the Gunnison reach downstream of the 8 ½ Street bridge and nine (9) structure were sampled for the Henson Creek/Lake Fork of the Gunnison Confluence reach.

The field surveys indicate that the structures are performing as designed and are meeting the project objectives and the success criteria set forth in the CMRP (Table 1). The reach average score for the Lake Fork of the Gunnison reach downstream of the 8 ½ Street bridge is 14.7 and the average score for the Henson Creek/ LFG confluence reach was 14.6. A minimum score for stability is 12. The HC/LFG confluence reach have been in place since 2013-2014, three to four runoff seasons. During this time the reach has met or exceeded the bankfull discharge each year with one runoff season with an approximately 10 year return interval runoff that was estimated to be almost twice the bankfull discharge. The LFG downstream of the 8 ½ Street bridge project has been in place for one runoff season and the bankfull discharge in the reach was exceeded.

Summary data for the in-stream stream surveys is provided in **Appendix B**.

Table 1 Structure Survey Results

REACH	Structure ID	Structure Type	Stream	MRP Score
LFG Downstream of 8.5 ST	CV1	CV	LFG	15
	JH1	JH	LFG	15
	JH2	JH	LFG	14
	CV2	CV	LFG	14
	CV3	CV	LFG	15
	JH3	JH	LFG	15
Reach average score				14.7
Henson Creek-LFG Confluence	LFG-CV PIER	CV	LFG	14
	HC-CV1	CV	HC	15
	HC-JH1	JH	HC	15
	HC-JH2	JH	HC	15
	HC-CV2	CV	HC	14
	HC-CV3	CV	HC	15
	HC-CV4	CV	HC	15
	HC-CV4	CV	HC	14
	HC-CV5	CV	HC	14
Reach average score				14.6

CV= Cross Vane
JH= J hook Vane
HC=Henson Creek
LFG= Lake Fork of the Gunnison

3.0 Channel Cross Section Survey Data

Reach average representative channel cross sections were surveyed for pre-project and post-project conditions. The locations of these sections are shown in **Appendix C**. Four HC/LFG confluence reach sections were surveyed in 2012 and then again in 2017. These are shown in **Figures 1-4**. Results demonstrate that the channel as designed and built has maintained an average bankfull depth of 4 feet and a bankfull width ranging from 50-65 feet with some natural variability. The project has successfully transport the high upstream bedload sediment loads through the reach and maintained excellent depth for fisheries habitat.

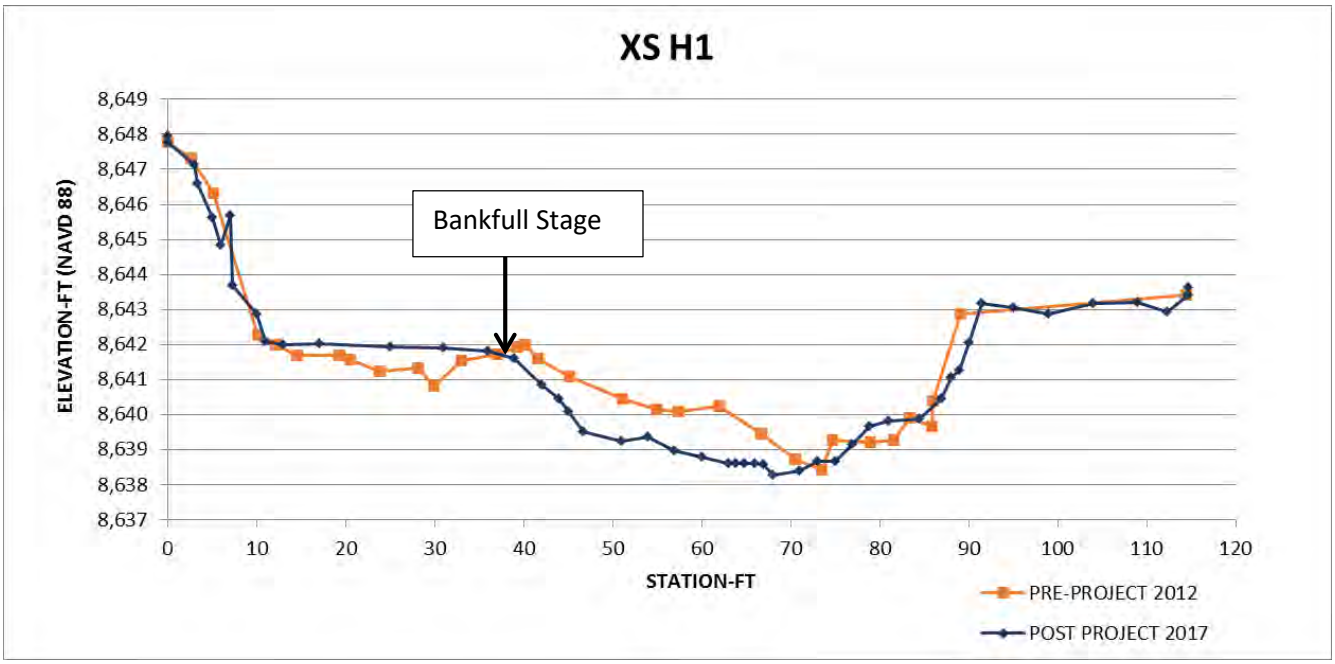


Figure 1 **Henson Creek Section H1**

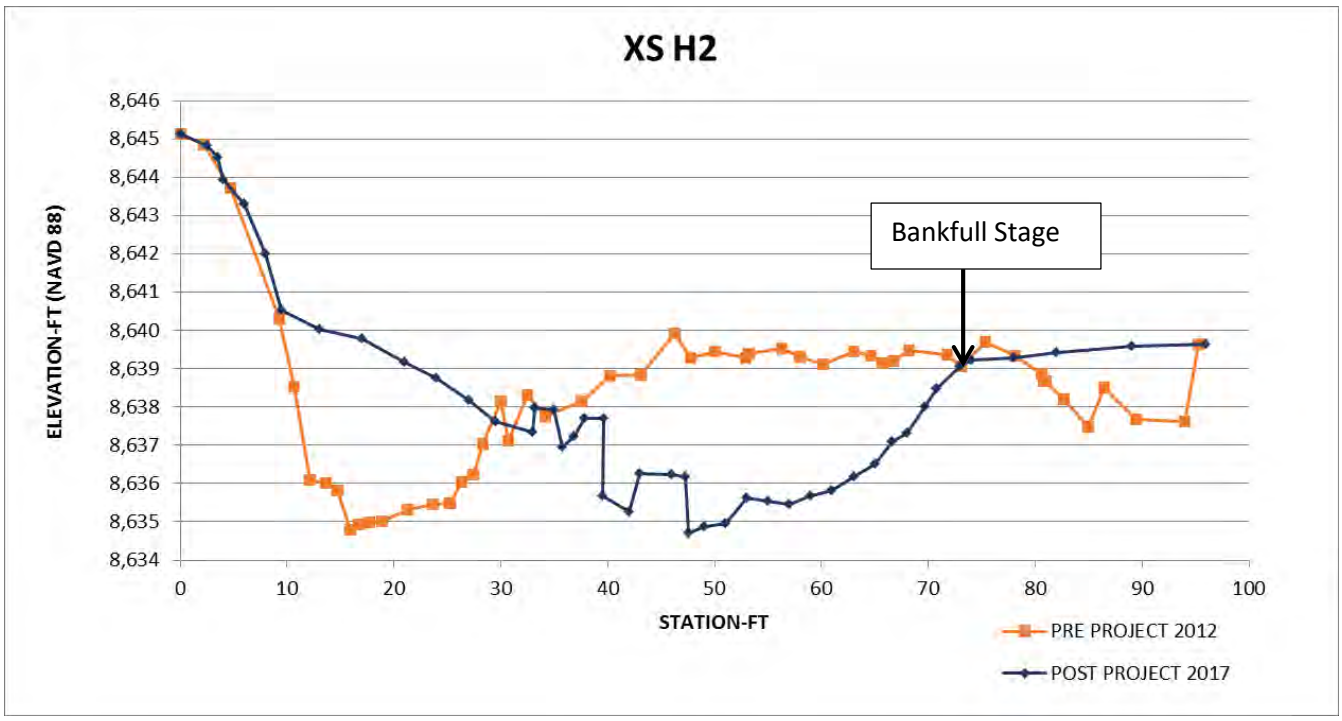


Figure 2 **Henson Creek Section H2**

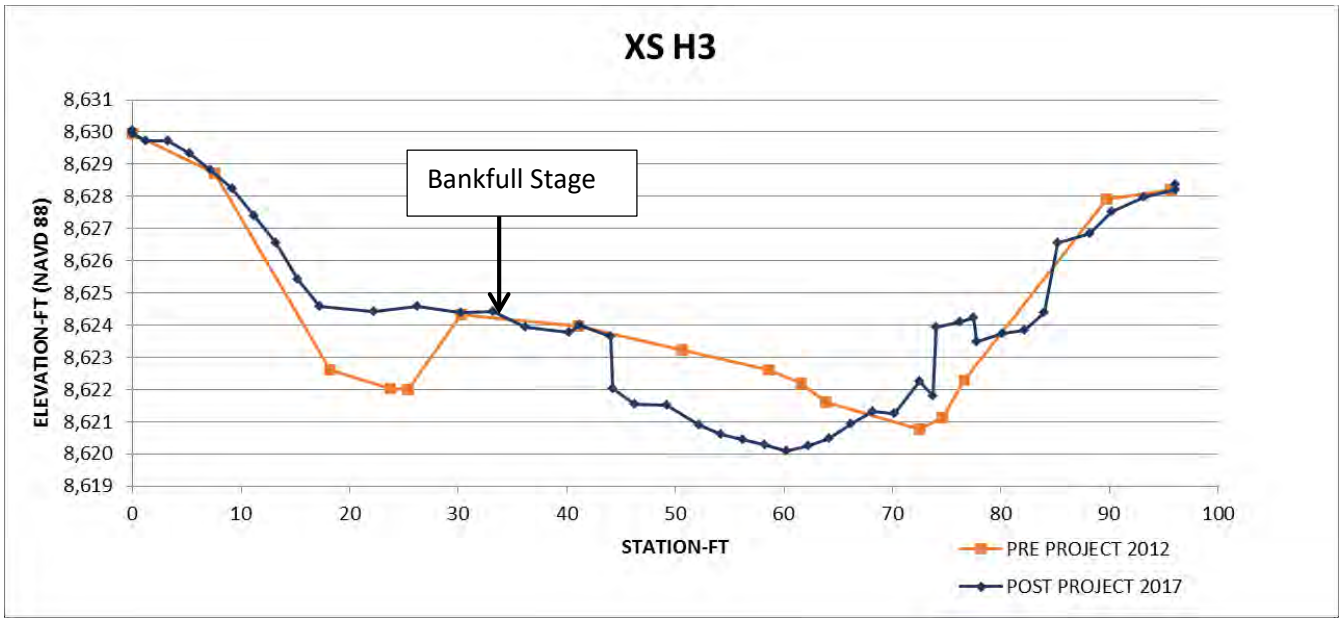


Figure 3 **Henson Creek Section H3**

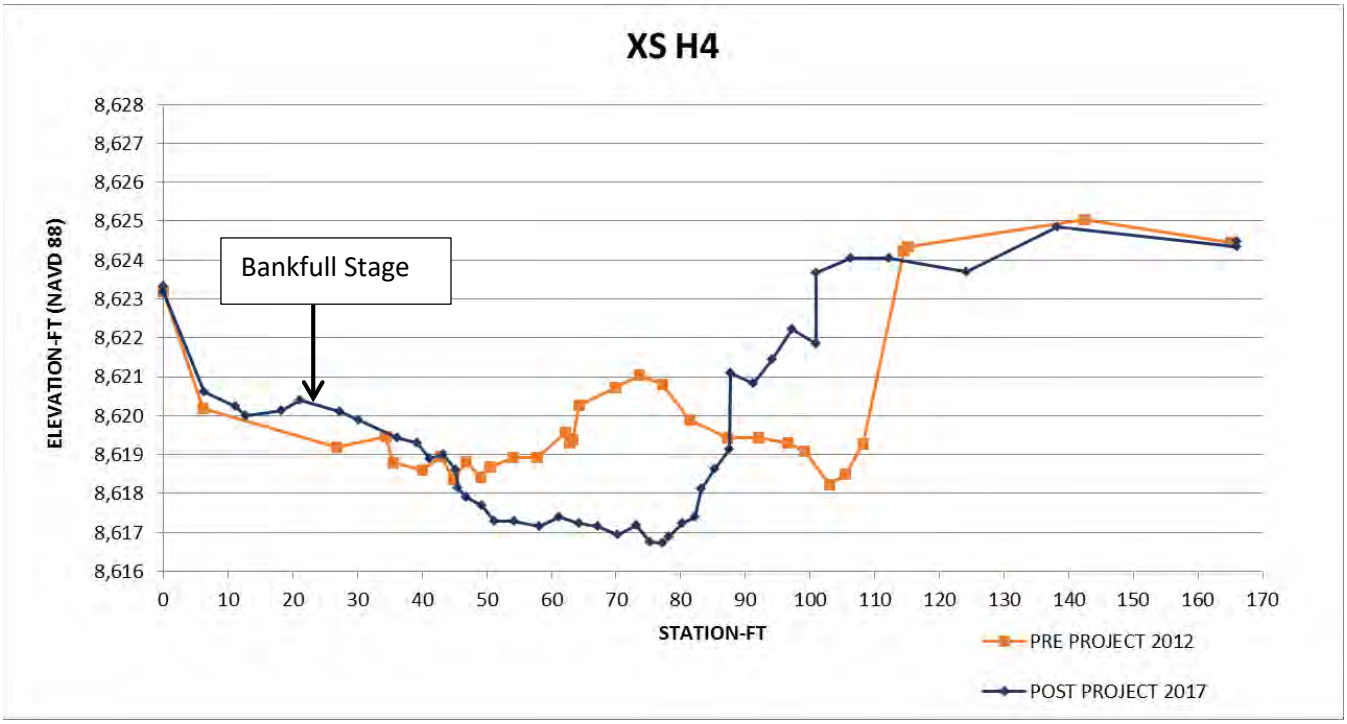


Figure 4 **Henson Creek Section H4**

Three representative channel sections for the project reach on the LFG downstream of the 8 ½ bridge were surveyed pre-project in the fall of 2016 and post-project in the fall of 2017. These sections are very wide and spanned the entire valley bottom up to the adjacent hillslopes they are shown in **Figures 5-7**. Through the high water runoff season the section surveys have demonstrated that the project reach has maintained it's project designed single thread meandering planform and maintained sediment transport and stability in a reach previously subject to channel braiding aggradation and channel instability. The average bankfull width post runoff ranged from 80-100 feet and the bankfull depth post runoff ranged from 4-5.5 feet.

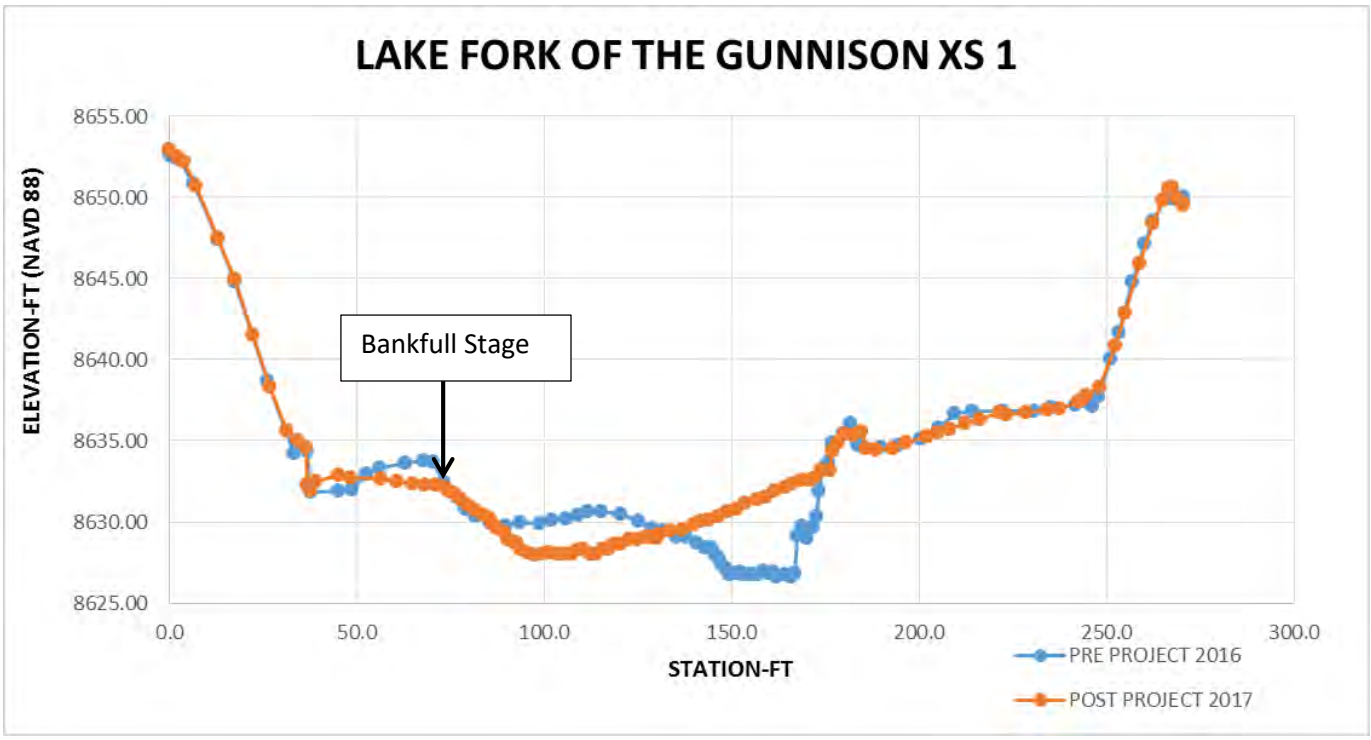


Figure 5 **LFG Section 1**

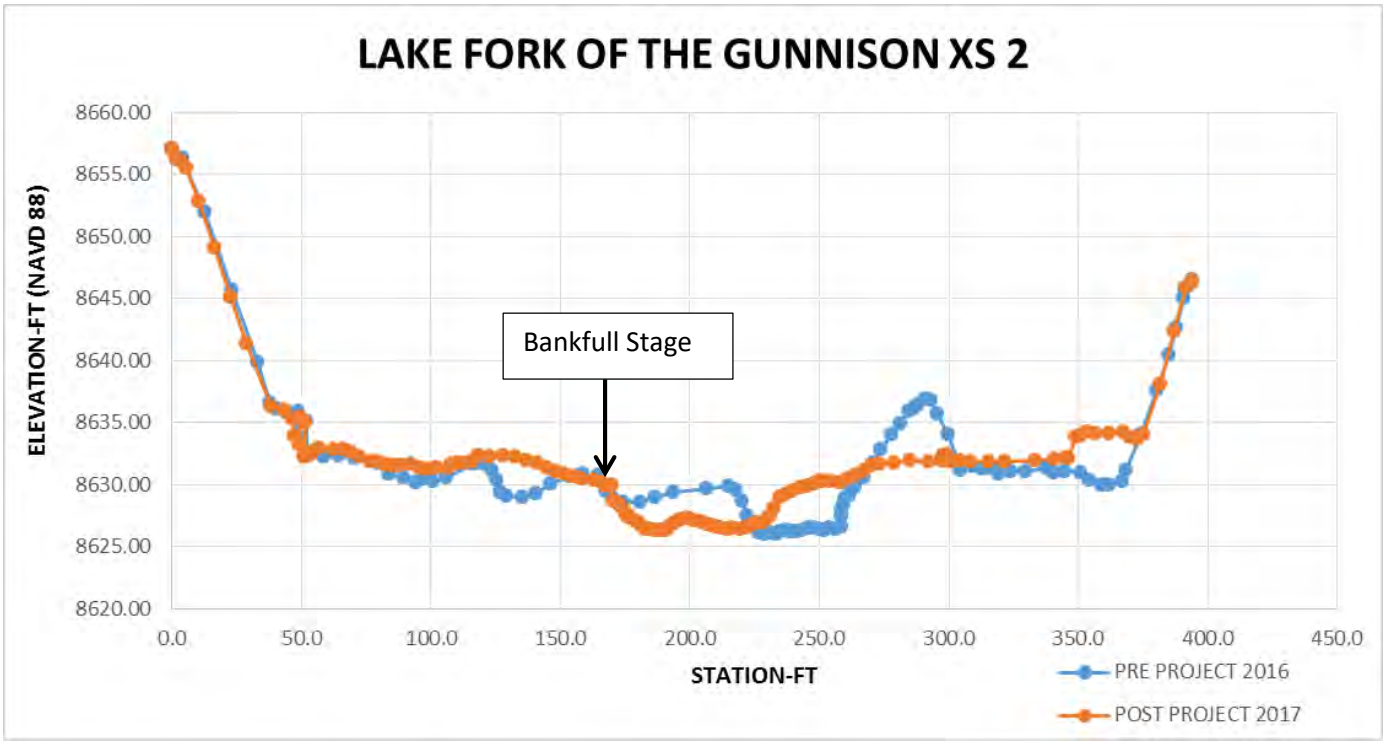


Figure 6 **LFG Section 2**

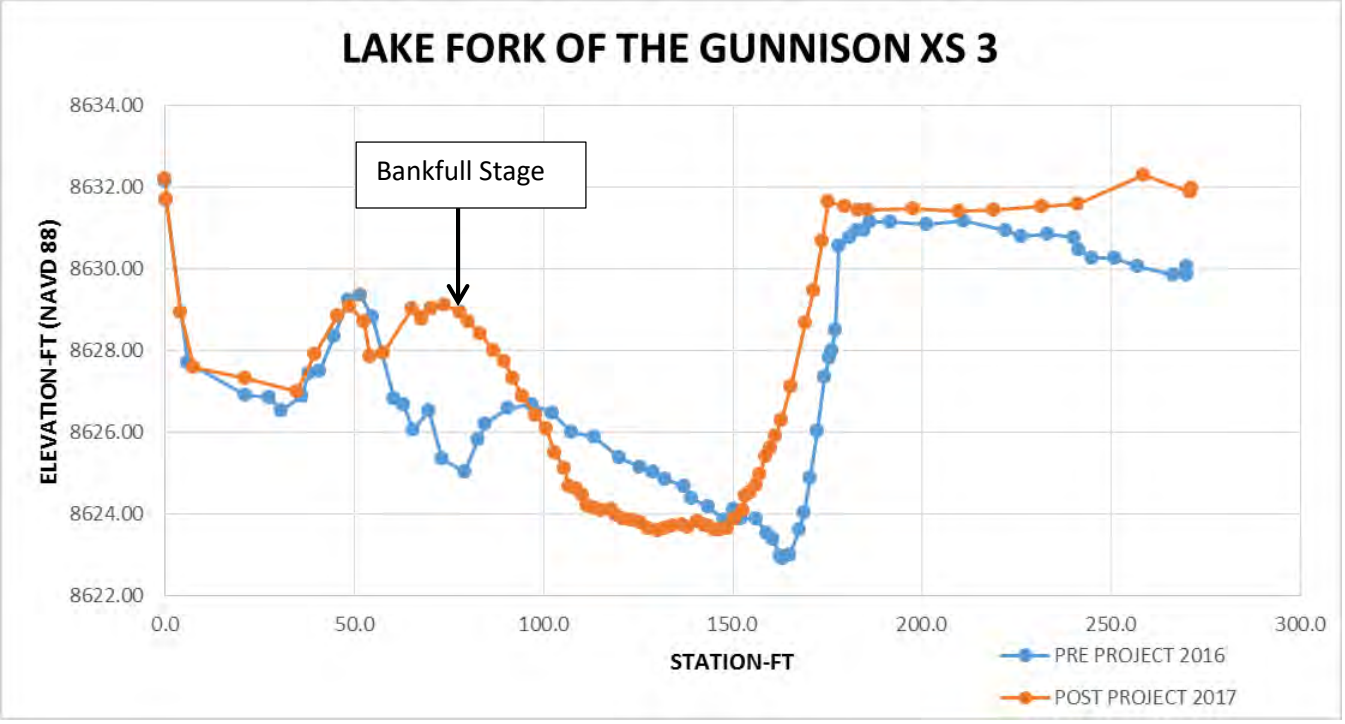


Figure 6 **LFG Section 3**

Appendix A Project Plans – see above

Appendix B In-stream Structure Data

Appendix C Cross Section Survey Maps

Measurable Results Program: In-Channel Structure Assessment

Stream: LAKE FORK GUNNISON Date: 10/17/17
Site ID: CB #1 DS 8½ ST. BRIDGE
Assessed by: JORDAN / BRUNJAK
Location Coordinates: WPT #001 38.035182° N
-107.309689° W

Structure Type: (Circle): Vane (Cross-Vane) J-Hook Other_____
Structure Material (Circle): (Rock) Root Wad Timber pole
Intent of structure (Circle): (Streambank stabilization) (Thalweg Direction) (Grade Adjustment) (Aquatic habitat) Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4X Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4X Stable (Well vegetated, gently sloping or low banks)

Structure Stability
1__ Severe (Numerous failure points along structure)
2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
3__ Minor (Minor movement of stones, structure appears to be stable and functional, sediment may not be in ideal location in relation to structure)
4X Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3X Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) (Stable (12-15))

Cause of Impairment: (Circle all that apply): N/A

Drag and lift or tipping Undercutting Side-cutting

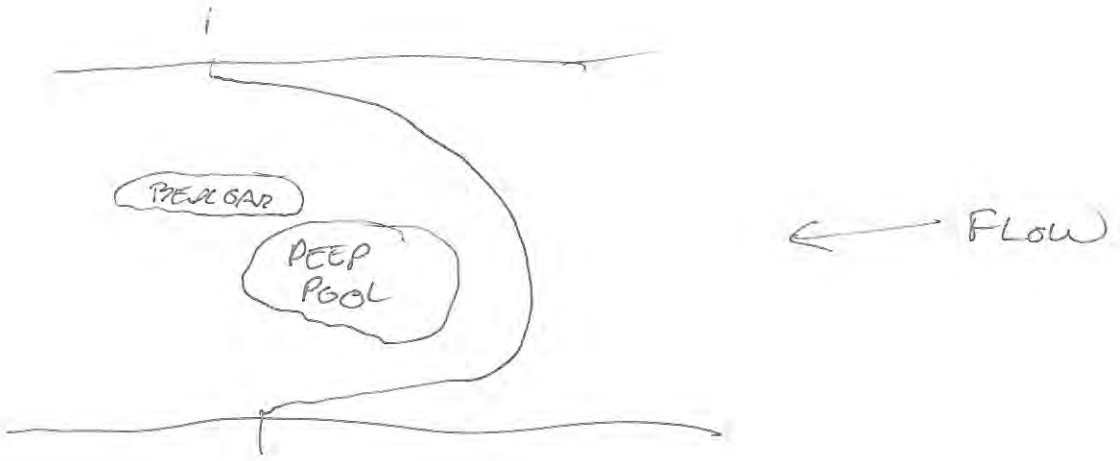
Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

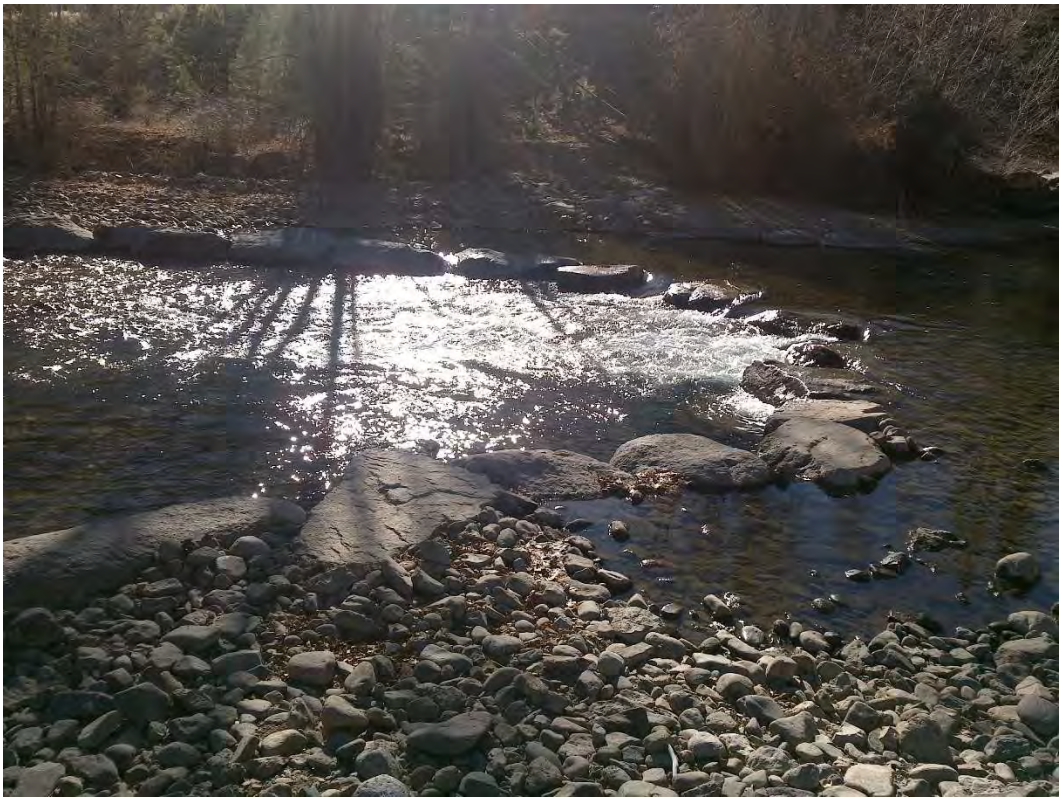
SEE PLAN SET



COMMENTS GOOD POOL DEPTH

PHOTOS GPS 1 – 8

Lake Fork Gunnison – Cross Vane #1 DS/ 8 ½ St. Bridge.



Measurable Results Program: In-Channel Structure Assessment

Stream: LAKE FORK GUNNISON Date: 10/17/17
Site ID: SH#1 DS 8½ ST. BRIDGE
Assessed by: JORDAN / BRUNJAK
Location Coordinates: WPT #002 38.035507°N
-107.309278°W

Structure Type: (Circle): Vane Cross-Vane J-Hook Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment
Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4X Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4X Stable (Well vegetated, gently sloping or low banks)

Structure Stability
1__ Severe (Numerous failure points along structure)
2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
3X Minor (Minor movement of stones, structure appears to be stable and functional, sediment may not be in ideal location in relation to structure)
4X Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3X Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply): N/A

Drag and lift or tipping Undercutting Side-cutting

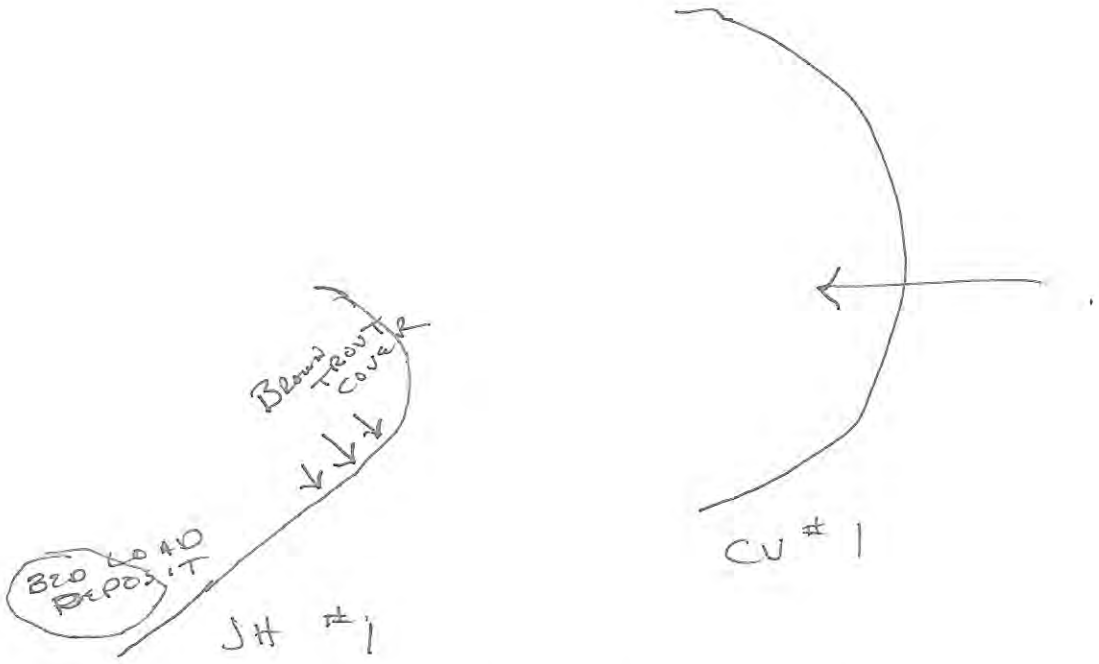
Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

SEE PLAN SET



COMMENTS EXCELLENT POOL DEPTH, BN TROUT COVER

PHOTOS BPS 9-12

Lake Fork Gunnison – J-Hook #1 DS 8 ½ St. Bridge

Measurable Results Program: In-Channel Structure Assessment

Stream: LAKE FORK GUNNISON Date: 10/17/17
Site ID: JH #2 DS 8 1/2 ST. BRIDGE
Assessed by: JORDAN / BRUNSTAK
Location Coordinates: WPT # 003 38.035656°N
-107.308919°W

Structure Type: (Circle): Vane Cross-Vane J-Hook Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4X Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4X Stable (Well vegetated, gently sloping or low banks)

Structure Stability
1__ Severe (Numerous failure points along structure)
2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
3__ Minor (Minor movement of stones, structure appears to be stable and functional, sediment may not be in ideal location in relation to structure)
4X Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2X Defined thalweg, but not in the location designed or desired
3__ Defined thalweg in the location designed or desired

Total Score: 14

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply): N/A

Drag and lift or tipping Undercutting Side-cutting

Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

SEE PLAN SET

COMMENTS - NO POOL, POOR HABITAT
- PHOTOS GPS 113-116
- NOTE DOWNSTREAM MID CHANNEL BAR

Lake Fork Gunnison – J-Hook #2 DS 8 ½ St. Bridge.

Measurable Results Program: In-Channel Structure Assessment

Stream: LAKE FORK GUNNISON Date: 10/17/17
Site ID: CV #2 DS 8½ ST. BRIDGE
Assessed by: JORDAN / BRUNJAK
Location Coordinates: WPT 004 38.035819° N
-107.308358° W

Structure Type: (Circle): ~~Vane~~ Cross-Vane J-Hook Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4_X_ Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
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4_X_ Stable (Well vegetated, gently sloping or low banks)

Structure Stability
1__ Severe (Numerous failure points along structure)
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Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3_X_ Defined thalweg in the location designed or desired

Total Score: 14

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply):

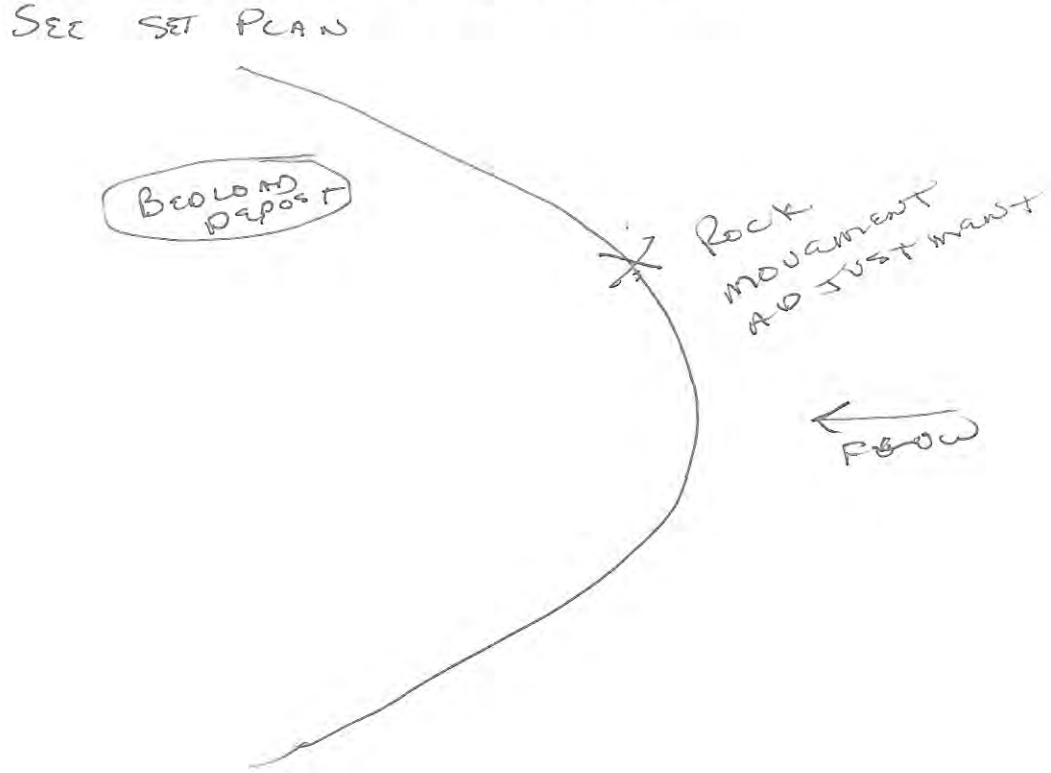
Drag and lift or tipping Undercutting Side-cutting

Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures



COMMENTS Photos GPS 17-23
Good Pool Depth

Lake Fork Gunnison – Cross Vane #2 DS 8 ½ St. Bridge.

Measurable Results Program: In-Channel Structure Assessment

Stream: LAKE FORK GUNNISON Date: 10/17/17
Site ID: CV #3 DS 8 1/2 ST BRIDGE
Assessed by: JORDAN | BRUNTAE
Location Coordinates: WPT 005 38.036238° N
-107.307015° W

Structure Type: (Circle): Vane Cross-Vane J-Hook Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
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4_X_ Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3_X_ Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply): N/A

Drag and lift or tipping Undercutting Side-cutting

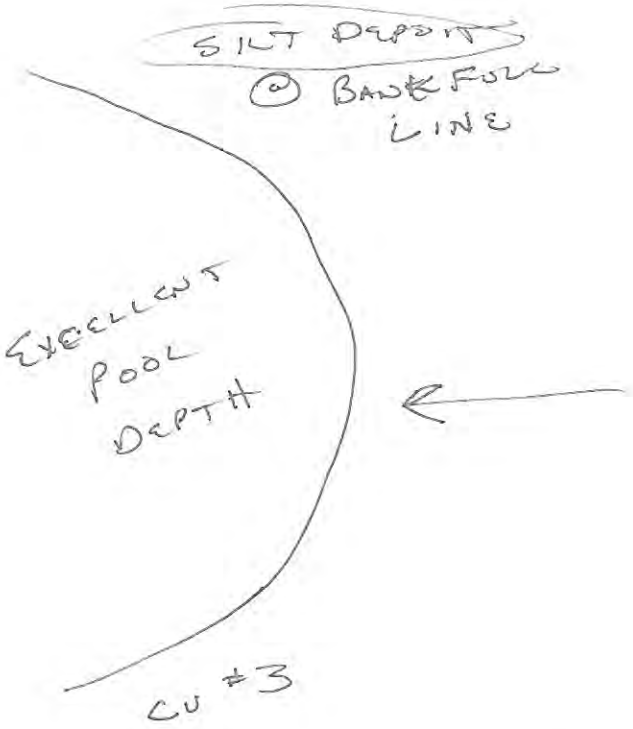
Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

SEE SEET PLAN



COMMENTS PHOTOS GPS 22-25

Lake Fork Gunnison – Cross Vane #3 DS 8 ½ St. Bridge.

Measurable Results Program: In-Channel Structure Assessment

Stream: LAKE FORK GUNNISON Date: 10/17/17
Site ID: SH 92 DS S/L ST. BRIDGE
Assessed by: JORDAN/BRUNTAK
Location Coordinates: WPT 006 38.035975°N
-107.307491°W

Structure Type: (Circle): Vane Cross-Vane J-Hook Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment
Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
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Bank Stability (downstream)
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4_X_ Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3_X_ Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply):

N/A

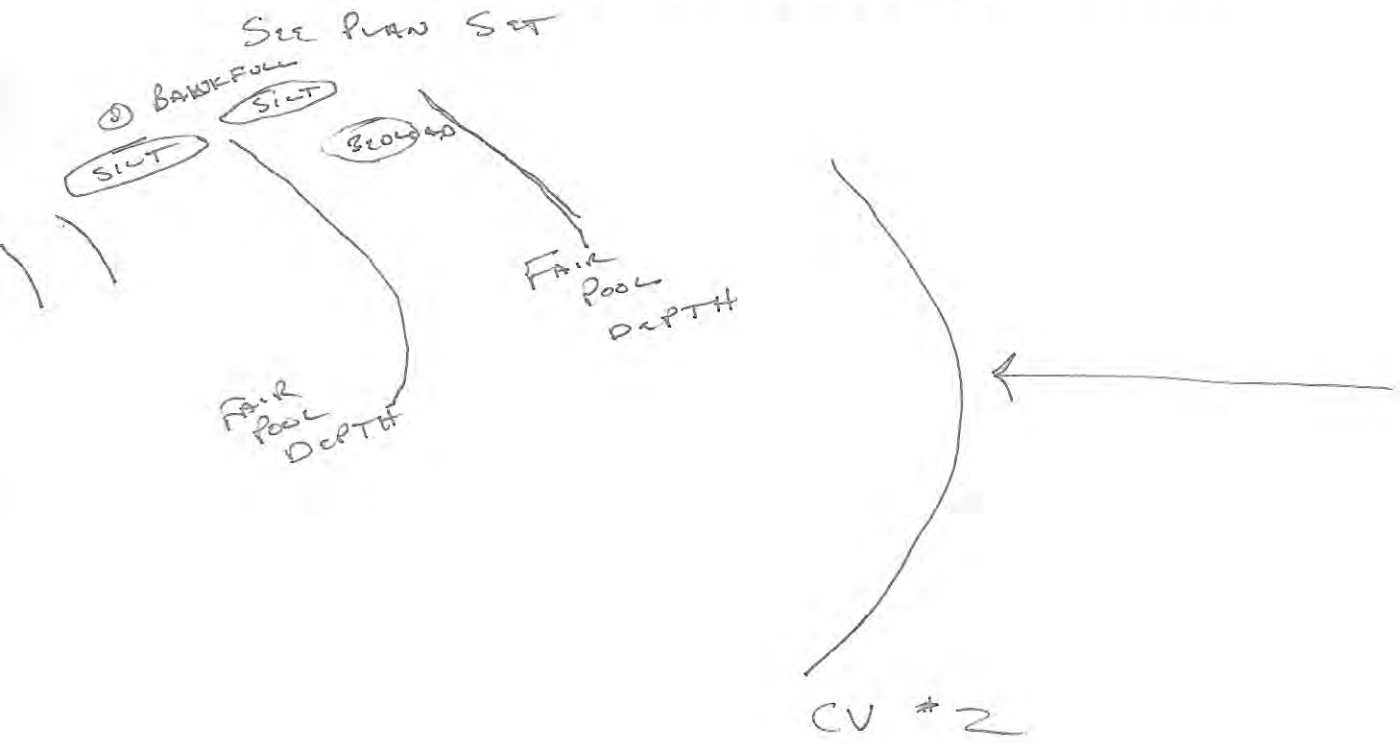
Drag and lift or tipping Undercutting Side-cutting

Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures



COMMENTS PHOTOS GPS 26-29

5

Lake Fork Gunnison – J-Hook #3 DS 8 ½ St. Bridge.

Measurable Results Program: In-Channel Structure Assessment

Stream: LAKE FORK GUNNISON Date: 10/17/17
Site ID: CU ⑥ FISHING PIER A/B CONFLUENCE
Assessed by: JORDAN / BRUNJAK
Location Coordinates: WPT 017 38.024705°N
-107.31956°W

Structure Type: (Circle): Vane (Cross-Vane) J-Hook Other_____
Structure Material (Circle): (Rock) Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization (Thalweg Direction) (Grade Adjustment) (Aquatic habitat) Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4_X_ Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
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2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
3_X_ Minor (Minor movement of stones, structure appears to be stable and functional, sediment may not be in ideal location in relation to structure)
4__ Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3_X_ Defined thalweg in the location designed or desired

Total Score: 14

Stability Ranking (circle): Failing (4-7) Unstable (8-11) (Stable (12-15))

Cause of Impairment: (Circle all that apply): FOOTER SETTLING

Drag and lift or tipping | Undercutting | Side-cutting

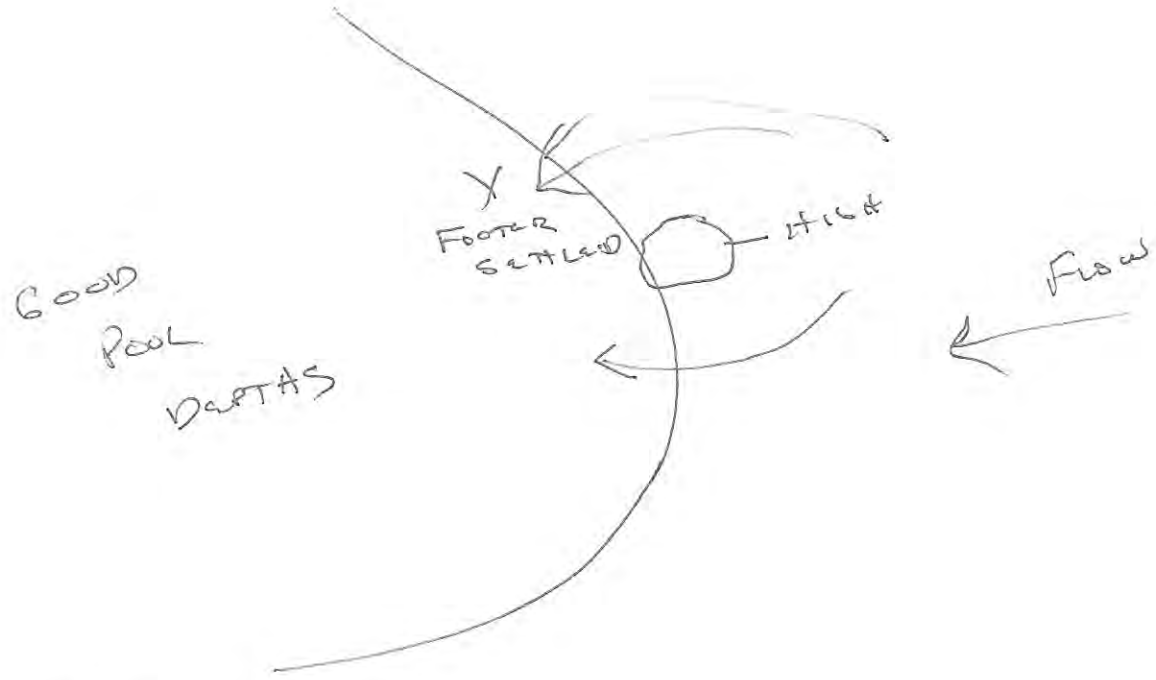
Improper alignment | Piping | Flow directed at bank | Arms not tied in

Footers failing | Poor spacing of boulders | Insufficient backfill/fabric

Flow area constriction | Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

SAT PLAN SAT



PHOTOS GPS 60-64

COMMENTS

Lake Fork Gunnison – Cross Vane @ Fishing Pier LFG CV-PIER A/B Confluence.

Measurable Results Program: In-Channel Structure Assessment

Stream: HENSON CREEK DIVERSION Date: 10/17/17
Site ID: CU 1 DIVERSION
Assessed by: JORDAN / BENJAK
Location Coordinates: WPT 007 38.025526° N
-107.321166° W

Structure Type: (Circle): Vane (Cross-Vane) J-Hook Other_____
Structure Material (Circle): (Rock) Root Wad Timber pole
Intent of structure (Circle): (Streambank stabilization) (Thalweg Direction) (Grade Adjustment) ~~Aquatic habitat~~ Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
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4_X_ Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3_X_ Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) (Stable (12-15))

Cause of Impairment: (Circle all that apply): N/A

Drag and lift or tipping Undercutting Side-cutting

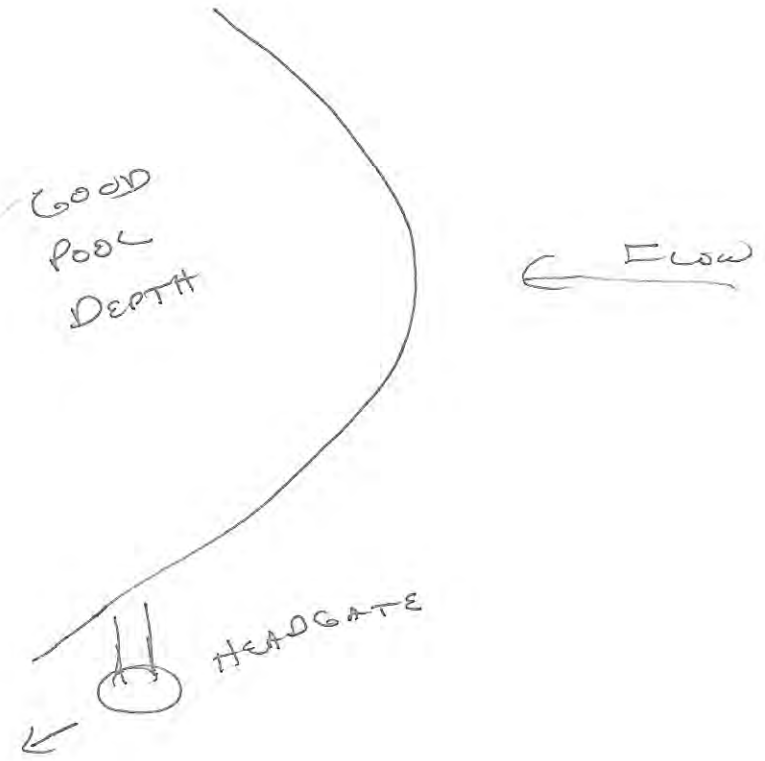
Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

SEE PLAN SET



COMMENTS PHOTOS GPS 34-37 — GOOD POOL DEPTH

Henson Creek – Cross Vane HC-CV1 Diversion

Measurable Results Program: In-Channel Structure Assessment

Stream: HANSON CREEK Date: 10/17/17
Site ID: JH #1 DS DIVERSION W/CUTOFF SILL
Assessed by: TORDAN / BRUNJAK
Location Coordinates: WPT 008 38.025988° N
-107.320436° W

Structure Type: (Circle): Vane Cross-Vane J-Hook W/ CUTOFF SILL Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
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Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
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4X Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3X Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply): N/A

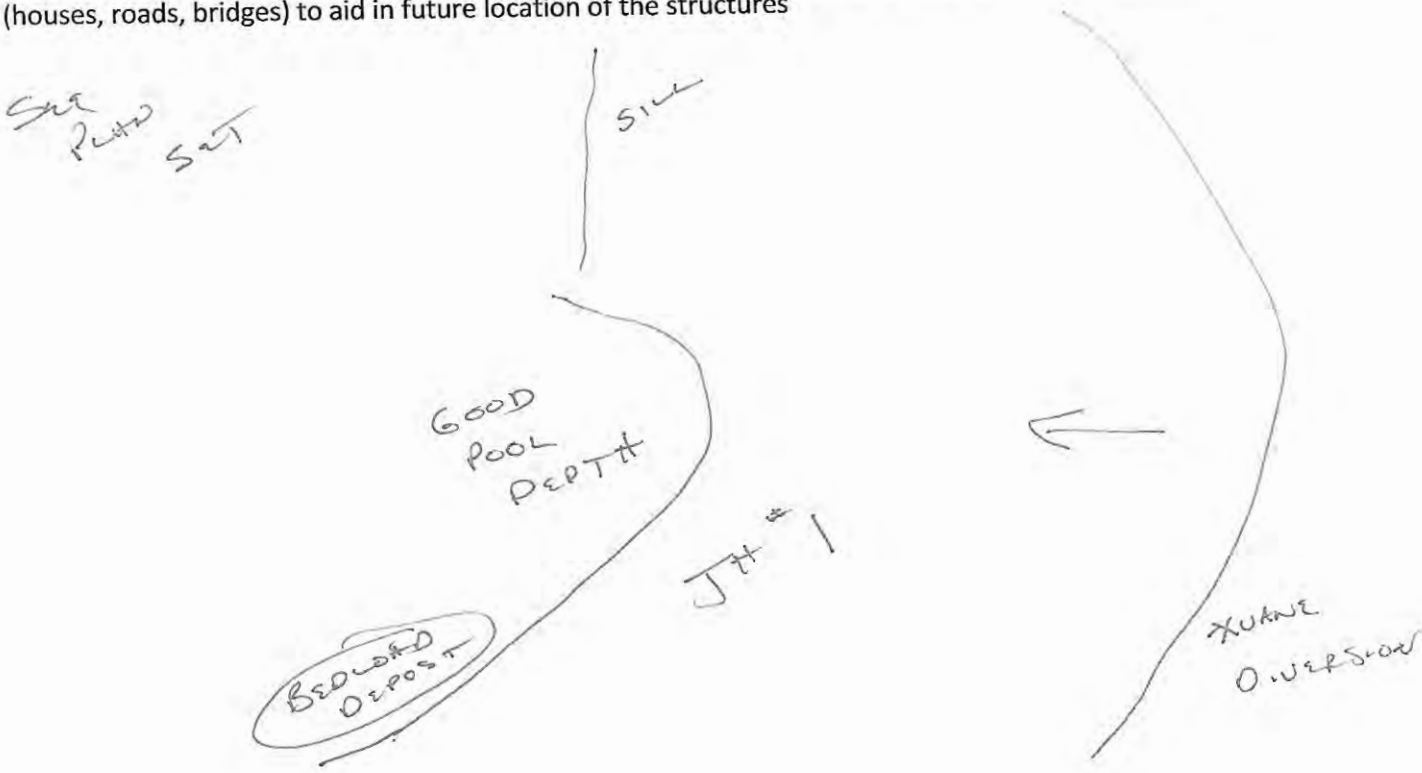
Drag and lift or tipping Undercutting Side-cutting

Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures



COMMENTS PHOTOS GPS 43-46

Henson Creek – J-Hook CH-JH-1 W/ Cutoff Sill

Measurable Results Program: In-Channel Structure Assessment

Stream: HAWSON CREEK Date: 10/17/17
Site ID: CV #2 DS DIVERSION
Assessed by: JORDAN / BRUNJAK
Location Coordinates: WPT 014 38.026323°N
-107.319563°W

Structure Type: (Circle): Vane (Cross-Vane) J-Hook Other_____
Structure Material (Circle): (Rock) (Root Wad) Timber pole
Intent of structure (Circle): (Streambank stabilization) (Thalweg Direction) (Grade Adjustment) (Aquatic habitat) Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4X Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4X Stable (Well vegetated, gently sloping or low banks)

Structure Stability
1__ Severe (Numerous failure points along structure)
2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
3X Minor (Minor movement of stones, structure appears to be stable and functional, sediment may not be in ideal location in relation to structure)
4__ Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3X Defined thalweg in the location designed or desired

Total Score: 14

Stability Ranking (circle): Failing (4-7) Unstable (8-11) (Stable (12-15))

Cause of Impairment: (Circle all that apply): N/A

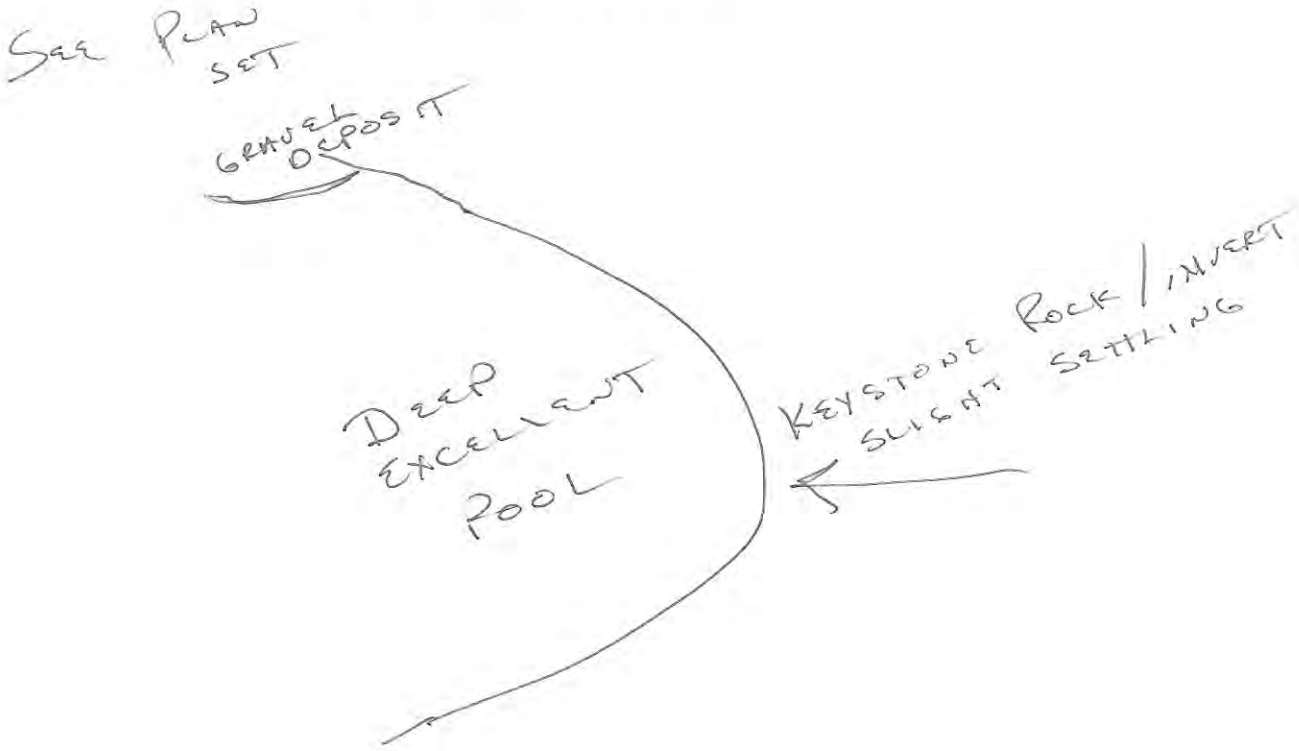
Drag and lift or tipping Undercutting Side-cutting

Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures



COMMENTS PHOTOS GPS 49-52

Henson Creek – Cross Vane #2 DS Diversion

Measurable Results Program: In-Channel Structure Assessment

Stream: HENSON CREEK Date: 10/17/17
Site ID: CR #3, DS DIVERSION
Assessed by: JORDAN / BRUNJAK
Location Coordinates: WPT 015 38.026392° N
-107.318909° W

Structure Type: (Circle): Vane Cross-Vane J-Hook Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4_✓_ Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4_✓_ Stable (Well vegetated, gently sloping or low banks)

Structure Stability
1__ Severe (Numerous failure points along structure)
2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
3__ Minor (Minor movement of stones, structure appears to be stable and functional, sediment may not be in ideal location in relation to structure)
4_✓_ Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3_✓_ Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply):

Drag and lift or tipping Undercutting Side-cutting

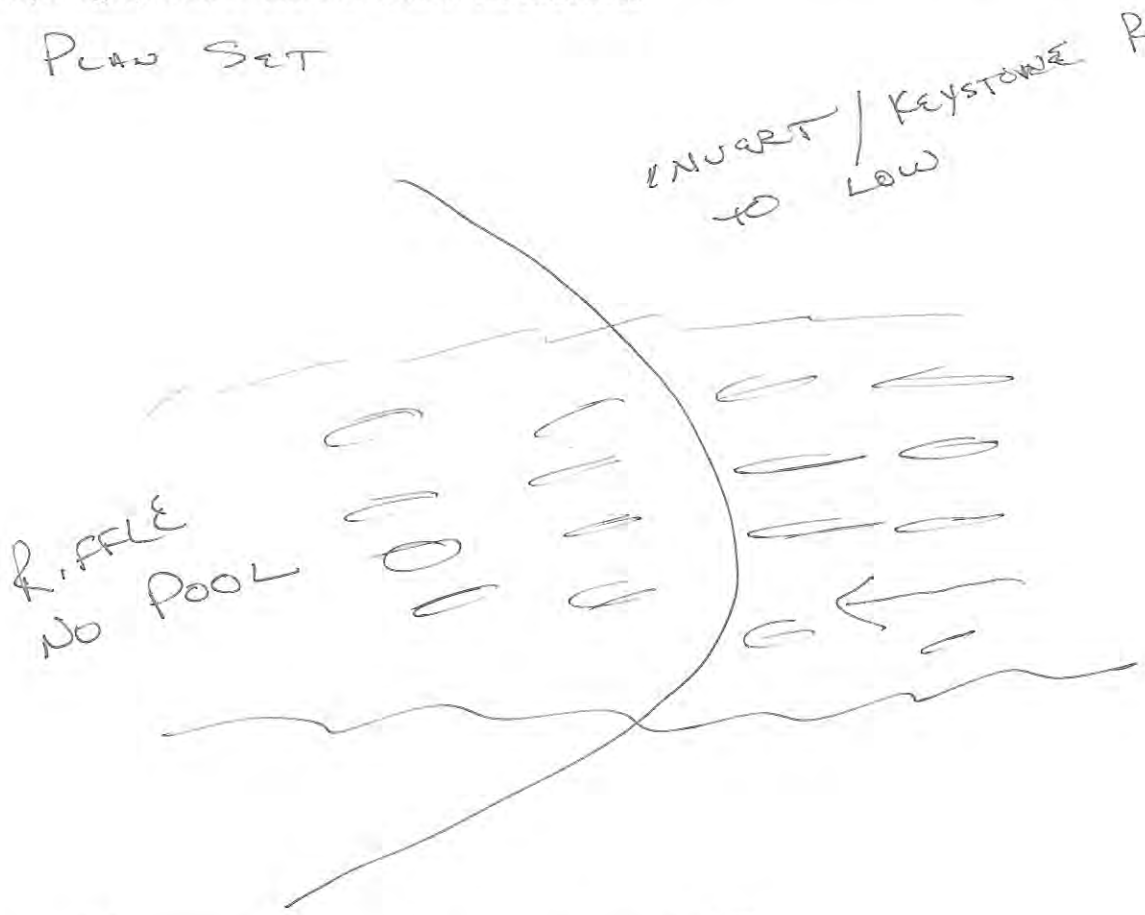
Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction MODERATE Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

SEE PLAN SET



COMMENTS PHOTOS GPS 53-55

Hensen Creek – Cross-Vane HC-CV3 DS Diversion

Measurable Results Program: In-Channel Structure Assessment

Stream: HANSON CREEK Date: 10/17/17
Site ID: SH #2 W/ SILL DS DIVERSION
Assessed by: JORDAN / BRUNJAK
Location Coordinates: WPT 016 38.086371°N
-107.317991°W

Structure Type: (Circle): Vane Cross-Vane J-Hook w/ sill Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
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Bank Stability (downstream)
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2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
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Structure Stability
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2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
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4X Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3X Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply): N/A

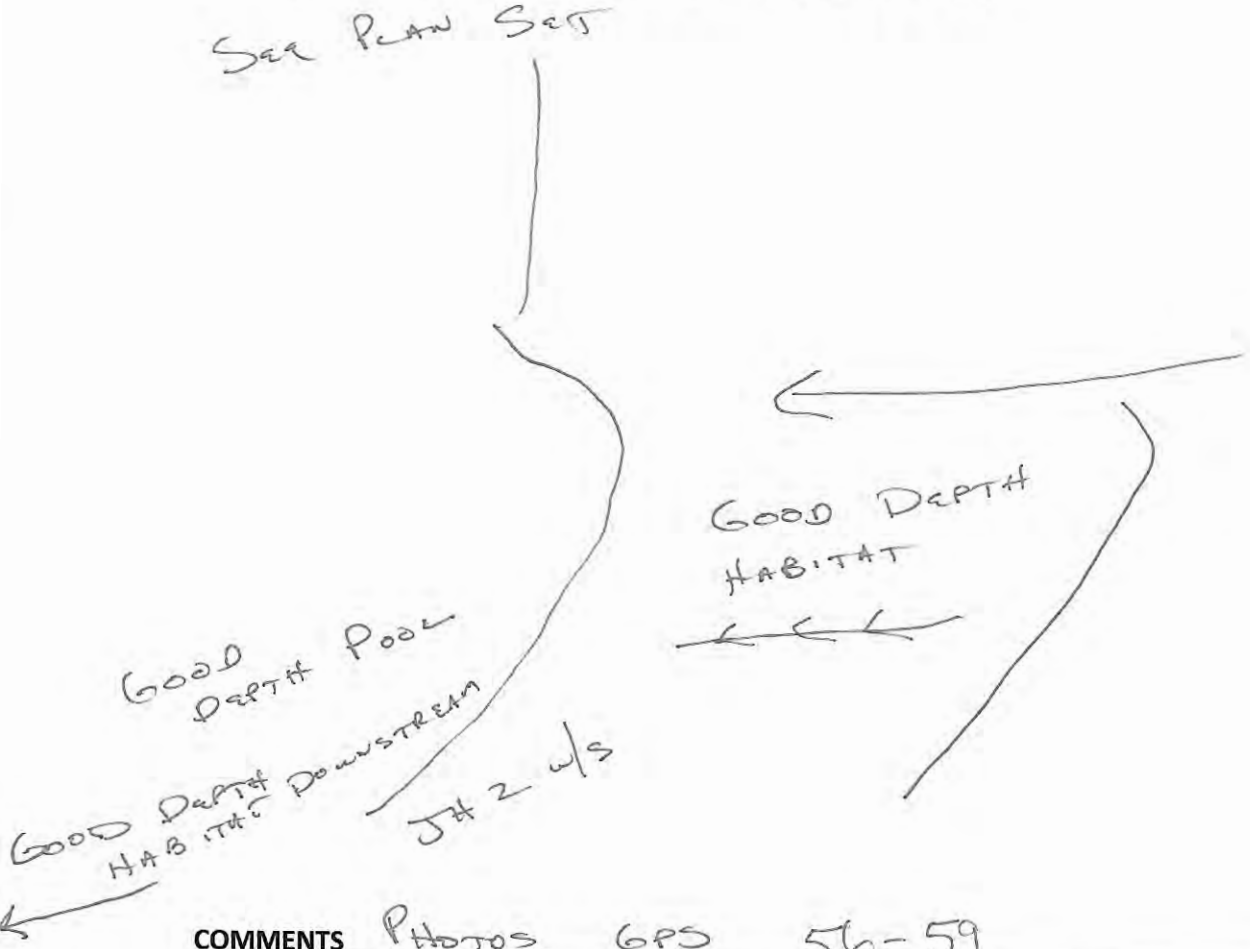
Drag and lift or tipping Undercutting Side-cutting

Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures



COMMENTS PHOTOS GPS 56-59

Henson Creek – J-Hook JH-2 W/ Sill Ds Diversion

Measurable Results Program: In-Channel Structure Assessment

Stream: Hanson Creek Date: 10/12/17
Site ID: GV #4 A/B Pre Bridge
Assessed by: Jordan | Brunjak
Location Coordinates: WPT 020 38.025775°N
-107.316463°W

Structure Type: (Circle): Vane Cross-Vane J-Hook Other_____
Structure Material (Circle): Rock Root Wad Timber pole
Intent of structure (Circle): Streambank stabilization Thalweg Direction Grade Adjustment Aquatic habitat Other_____

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4_X_ Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
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3__ Minor (Some bank erosion, slopes < 60 degrees)
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Structure Stability
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2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
3__ Minor (Minor movement of stones, structure appears to be stable and functional, sediment may not be in ideal location in relation to structure)
4_X_ Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3_X_ Defined thalweg in the location designed or desired

Total Score: 15

Stability Ranking (circle): Failing (4-7) Unstable (8-11) Stable (12-15)

Cause of Impairment: (Circle all that apply):

Drag and lift or tipping Undercutting N/A Side-cutting

Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

See Plan Set

COMMENTS Photos GPS 72-76

Henson Creek – Cross Vane HC CV-4 Above Ped Bridge.

Measurable Results Program: In-Channel Structure Assessment

Stream: HENSON CREEK Date: 10/17/17
Site ID: CV #5 B/L PAD BRIDGE
Assessed by: JORDAN / BRUNJAK
Location Coordinates: WPT 019 38.025512° N
-107.315476° W

Structure Type: (Circle): Vane **Cross-Vane** (circled) J-Hook Other________
Structure Material (Circle): **Rock** (circled) Root Wad Timber pole
Intent of structure (Circle): **Streambank stabilization** (circled) **Thalweg Direction** (circled) Grade Adjustment
Aquatic habitat (circled) Other________

Assessment: (Circle descriptive elements that apply to structure)

Bank Stability (upstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4 X Stable (Well vegetated, gently sloping or low banks)

Bank Stability (downstream)
1__ Severe (Banks sloughing, undercut or vertical, exposed soils, evidence of property damage)
2__ Moderate (Banks unstable, some bank sloughing, bank slopes 60 to 80 degrees)
3__ Minor (Some bank erosion, slopes < 60 degrees)
4 X Stable (Well vegetated, gently sloping or low banks)

Structure Stability
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2__ Moderate (Some movement of rocks noticeable, some evidence of undermining or out-flanking)
3 X Minor (Minor movement of stones, structure appears to be stable and functional, sediment may not be in ideal location in relation to structure)
4__ Stable (Structure appears with no evident migration, looks to be trapping and/or moving sediment as intended)

Channel Stability
1___ No defined thalweg
2___ Defined thalweg, but not in the location designed or desired
3 X Defined thalweg in the location designed or desired

Total Score: 14

Stability Ranking (circle): Failing (4-7) Unstable (8-11) **Stable (12-15)** (circled)

Cause of Impairment: (Circle all that apply):

Drag and lift or tipping Undercutting Side-cutting

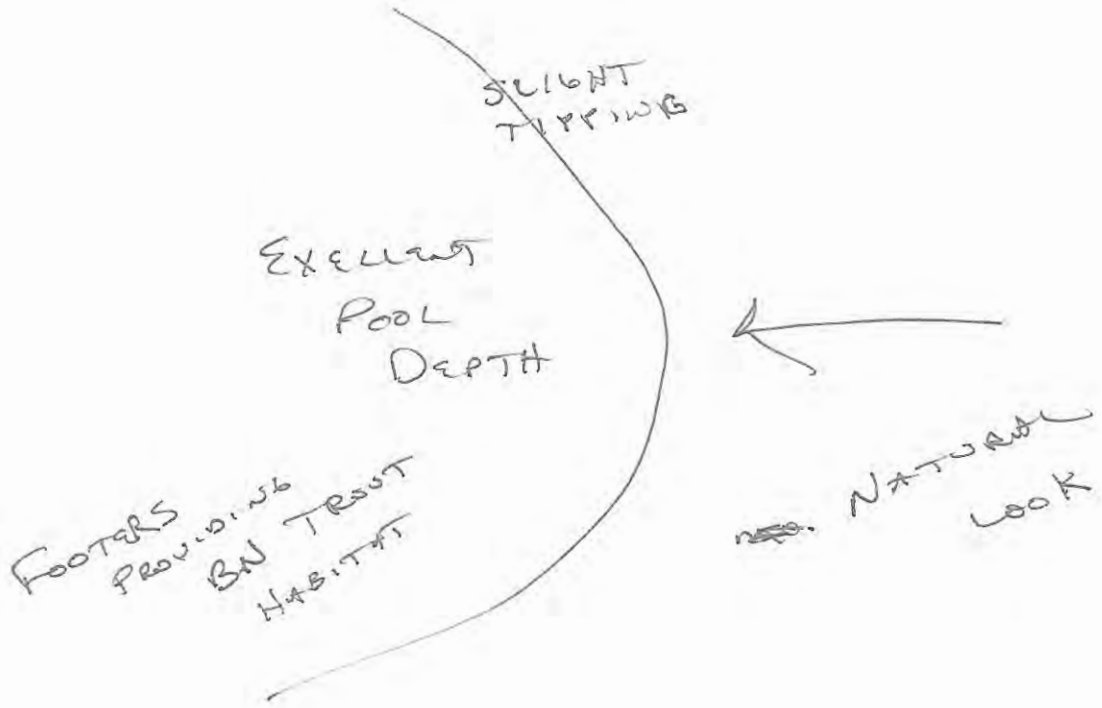
Improper alignment Piping Flow directed at bank Arms not tied in

Footers failing Poor spacing of boulders Insufficient backfill/fabric

Flow area constriction Excessive aggradation

Map- Hand drawn figure of the structures assessed in relation to permanent features in the landscape (houses, roads, bridges) to aid in future location of the structures

SEE PLAN SHT



COMMENTS PHOTOS GPS 65-67

Henson Creek – Cross Vane HC CV-5 – Downstream of Ped Bridge.

HENSON CREEK/LAKE FORK CONFLUENCE

CHANNEL IMPROVEMENT PROJECT

LAKE FORK VALLEY CONSERVANCY

OVERVIEW HENSON CREEK MONITORING LOCATIONS

PREPARED BY:

COLORADO LICENSED
BRENT A. JORDAN
45190
PROFESSIONAL ENGINEER

75 0' 75 150
SCALE IN FEET

HydroGeo Designs LLC.

Lake Fork Valley Conservancy

HydroGeo Designs LLC.

Lake Fork Valley Conservancy

60 30 0' 30 IN FEET
SCALE

PREPARED BY:

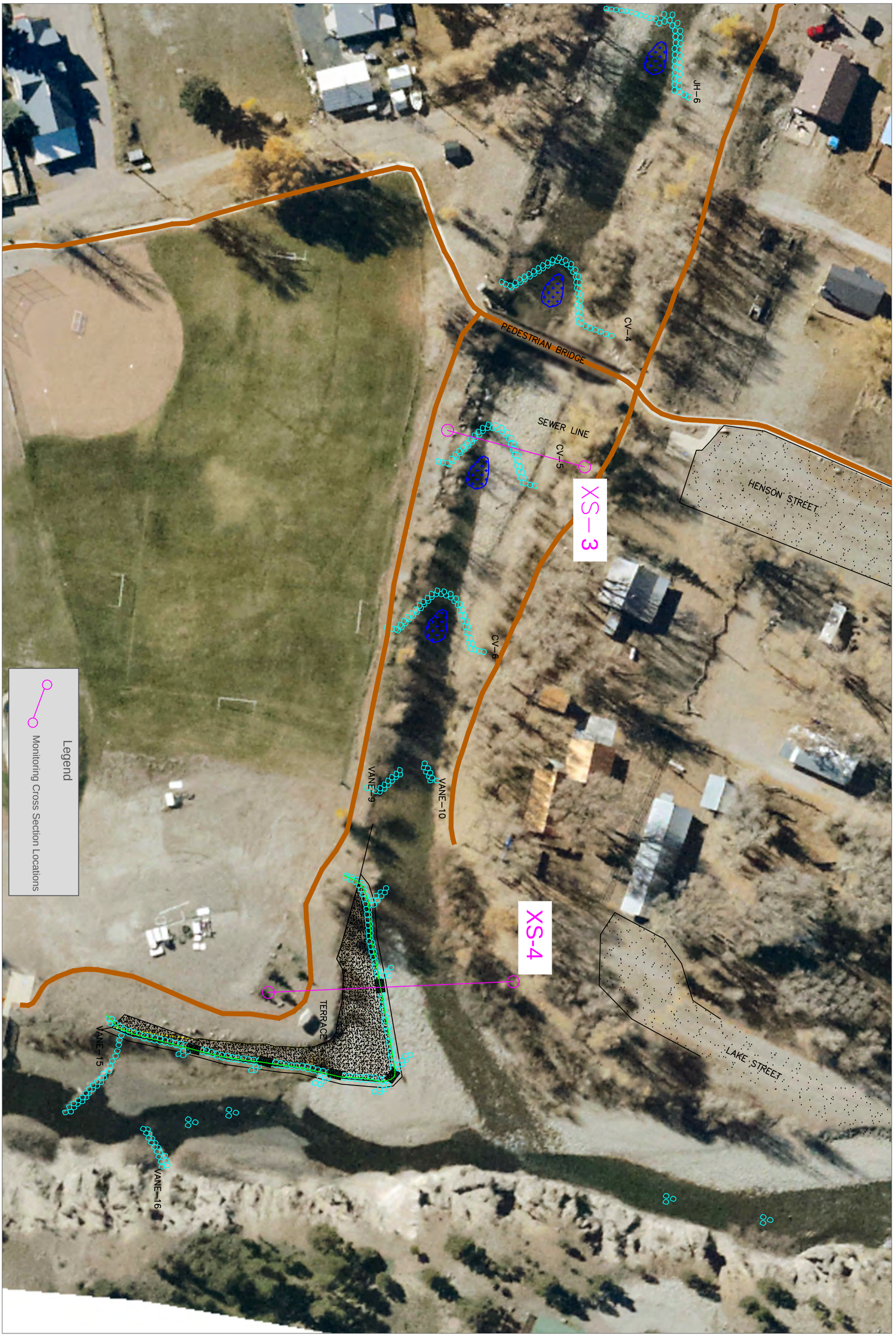
COLORADO LICENSED BRETT A. JORDAN 45190 PROFESSIONAL ENGINEER

HENSON CREEK/LAKE FORK CONFLUENCE

CHANNEL IMPROVEMENT PROJECT

LAKE FORK VALLEY CONSERVANCY

HENSON CREEK MONITORING SECTIONS 1&2



HENSON CREEK/LAKE FORK CONFLUENCE

CHANNEL IMPROVEMENT PROJECT

LAKE FORK VALLEY CONSERVANCY

HENSON CREEK MONITORING SECTIONS 3&4

PREPARED BY:

COLORADO LICENSED
BRETT A. JORDAN
45190
PROFESSIONAL ENGINEER

30 0' 30 60
SCALE IN FEET

HydroGeo Designs LLC.

Lake Fork Valley Conservancy

HENSON CREEK/LAKE FORK CONFLUENCE

CHANNEL IMPROVEMENT PROJECT

LAKE FORK VALLEY CONSERVANCY

LAKE FORK OF THE GUNNISON MONITORING SECTIONS 1,2 & 3

PREPARED BY:

COLORADO LICENSED
BRETT A. JORDAN
45190
PROFESSIONAL ENGINEER

75 0' 75 150
SCALE IN FEET

HydroGeo Designs LLC.

Lake Fork Valley Conservancy

HENSON CREEK/LAKE FORK CONFLUENCE

CHANNEL IMPROVEMENT PROJECT 60% DESIGN

LAKE FORK VALLEY CONSERVANCY

SHEET 2 AIR PHOTO (STN. 23+00-14+00) (1"=60')

PREPARED BY:

COLORADO LICENSED
BRETT A. JORDAN
45190
PROFESSIONAL ENGINEER

30 0' 30 60
SCALE IN FEET

HydroGeo Designs LLC.

Lake Fork Valley Conservancy

Exhibit to CWCB WSRA Contract: Pre and Post Construction Monitoring

Description of Task

Prior to construction, under low flow conditions in late August/early September, LFVC will select at least three cross-section locations in the project reach. At each cross section we will: 1) identify and monument cross section end points; 2) perform detailed survey of each cross section; 3) perform a pebble count at each cross section; 4) establish photo points at each cross section (upstream, downstream and left and right bank directions); and 5) conduct a riparian survey of pre-existing vegetation. Standard Operating Procedures used for items 1-4 are from CDPHE's Measurable Results Project, also used by CWCB. Measurable Results SOP's are contained in Appendix A.

Riparian survey will utilize a modification of the Greenline Riparian/Wetland Monitoring Protocol (BLM Technical Reference 1737-8, 1993), as described here. Both Henson Creek and the Lake Fork flood plains are comprised primarily of cobble and are well drained. Consequently, native vegetation along these reaches are dominated by shrubs with little herbaceous understory. A 100 m belt transect will be used to determine shrub count using edge of bank full channel (used here to represent the greenline because of sparse vegetation along cobbly banks). The belt will be 6 meters wide by 100 m long with one edge along the channel edge. A paired transect will also be run on the opposite bank. Shrubs will be counted within the 6 x 100 m area, recorded by species and size class. Herbaceous vegetation, when present, will be documented using one square meter quadrats placed every 20 m along the 100 m transect and 3 meters from bank full). Percent cover will be estimated per species. Transects will be randomly placed along the river edge for an average of 2 pairs of transects per thousand feet of river. Location of these transects will be documented via GPS so that we can return to the same location for post construction monitoring. These methods will allow us to show increasing density of vegetation and growth stages of shrubs. Any presence of weeds will be noted, even if they show up outside of the quadrats.

After completion of channel construction and revegetation activities, the project area will be monitored in late summer and fall the following year after all project activities are completed (2019). The above methods will be repeated at the same locations.

An assessment of structures will be conducted using CDPHE's Structural Assessment SOP (Appendix A). In addition, macro-invertebrate sampling will be conducted using BLM's Utah BugLab protocols (so we can compare to data collected in 2009-2010). These sampling protocols are compatible with Colorado Water Quality Control Division protocols. Macro sampling protocols can be found at http://www.usu.edu/buglab/MonitoringResources/MonitoringProtocols/#item=26

LFVC will continue to monitor structures annually for three years following completion of the project. This will include annual documentation of condition of treatments and identify any problems that may develop.

Monitoring Schedule

Time	**Task**
Summer/early fall of 2016	Post-construction monitoring along Phase I on Henson and at confluence of the Lake Fork
Late Summer/early fall of 2016	Pre-construction monitoring along Phase II reach from 8½ Street Bridge to north end of project area
Late Summer/early fall of 2019	Post-construction monitoring along Phase II of project

HENSON CREEK

Dan Brauch
Aquatic Biologist
Southwest Region

Water: Henson Creek
Location: GU0639, GU1856
Sampling Date: September 21st 2015
Gear: Truck mounted bank electrofisher with 5 electrodes
Drainage: Gunnison
Water Code: 40612

GU0639	**UTM**	**Zone:** 13S **Easting:** 296812 **Northing:** 4211174	**GU**1856	**UTM**	**Zone** 13S **Easting:** 294800 **Northing:** 4210539

OBJECTIVE

Henson Creek was sampled using a two pass removal effort to monitor the status of stream fish populations after a habitat improvement project was completed on lower Henson Creek near the confluence with the Lake Fork of the Gunnison River and within the town of Lake City (GU0639). An upstream site was sampled to assess population changes at a historic fish sampling site (GU1856).

HISTORY

Henson Creek was stocked with primarily catchable rainbow trout until 1995, when state fish production was drastically reduced after several state fish hatcheries adjusted water sources from river sources to primarily spring and well sources to reduce disease contamination of fish production units. Due to reductions in numbers of fish available for stocking, many streams were removed from annual stocking schedules, including Henson Creek. Colorado River cutthroat trout fry were stocked in 2013 to restore cutthroat trout to lower Henson Creek after a 2011 avalanche impacted this reach.

A historic electrofishing site was sampled in 2005 just below T Gulch and the Ute-Ulay mine (Table 1 and Fig. 1).

Habitat improvement work was completed on portions of Henson Creek within the town of Lake City in 2014 to provide additional habitat for overwintering of trout and for larger trout (sampling site GU0639)

Table 1. Summary of fish sampled in Henson Creek (GU1856) in 2005.

Station Number	Species	Number Caught	Number Per Mile ≥ 1 yr old	Mean Length (in.) ≥ 1 yr old	Length Range (in.)
GU1856	Brook trout	8	76.1	6.9	5.2—9.3
GU1856	Brown Trout	16	153.8	10.7	5.4—14.1
GU1856	Rainbow trout	3	28.5	11.6	10.7—13.9

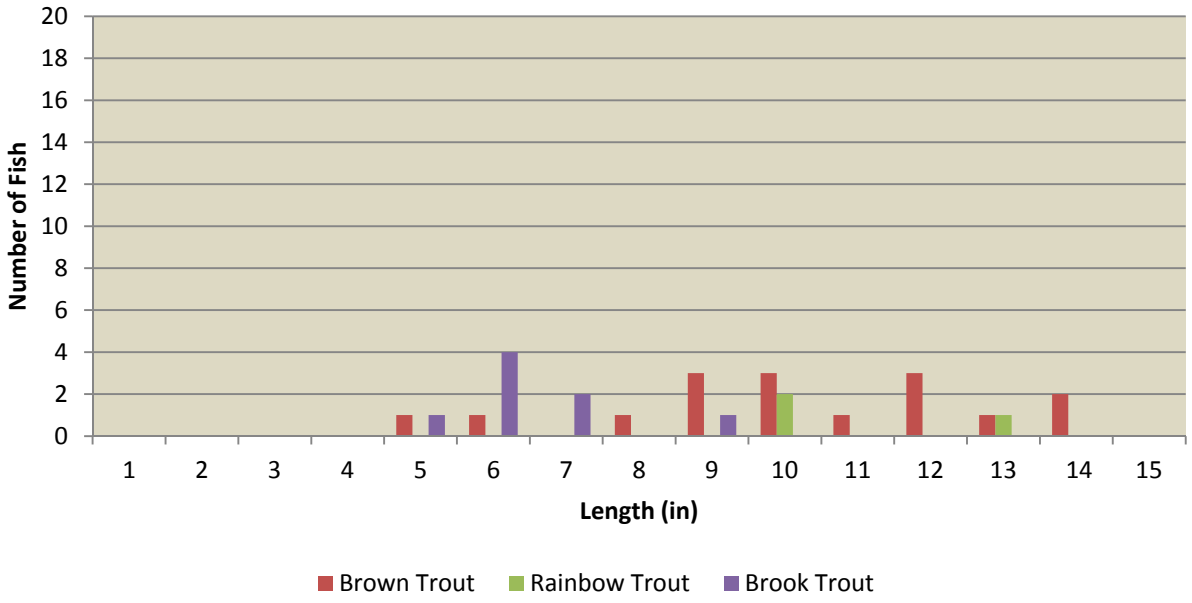


Figure 1. Length Frequency of fish sampled in 2005 (GU1856).

RESULTS

Fish survey collection data and population estimates are summarized in table 2 and figures 2 and 3 below for the two sites sampled in lower Henson Creek in 2015. At the lower site within the town of Lake City (GU0639) fish sampling documented good brown trout population density and biomass with an estimated 788 fish present per mile of stream and a biomass of 76 pounds per acre (excluding fry, Table 2). Quality sized trout were sampled at this site, with an estimated 5 trout present per acre over 14 inches in length. This site also contained significant numbers of wild brown trout fry, with an estimated 2045 brown trout fry present per mile.

At the upper sampling site (GU1856), located about 1.3 miles above Lake City, fish densities and biomass were much lower with 390 fish and 27 pounds of trout per acre (excluding fry). An estimated two browns per acre were present over 14 inches in length at this site. Few fry were sampled at this site.

Table 2. Summary of fish sampled 2015.

Station Number	Species	Number Caught	Number Per Mile ≥ 1 Yr old	Mean Length (in.)	Length Range (in.)
GU0639	Brown Trout	250	730.2	4.9	2.2 — 14.6
GU0639	Rainbow Trout	16	58.7	6.3	2.1 — 15.1
GU1856	Brook Trout	6	28.5	4.6	2.6 — 7.7
GU1856	Brown Trout	31	304.0	8.9	4.3 — 14.6
GU1856	Rainbow Trout	6	57 (netted)	10.0	5.9 — 13.9

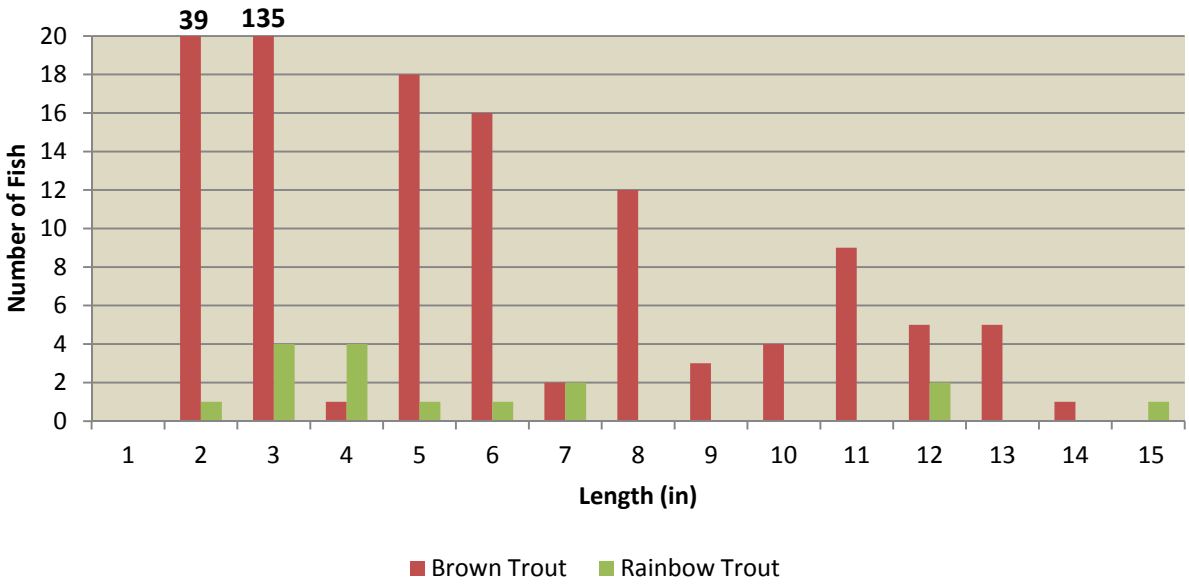


Figure 2. Length frequency of fish sampled in lower Henson Creek (GU0639).

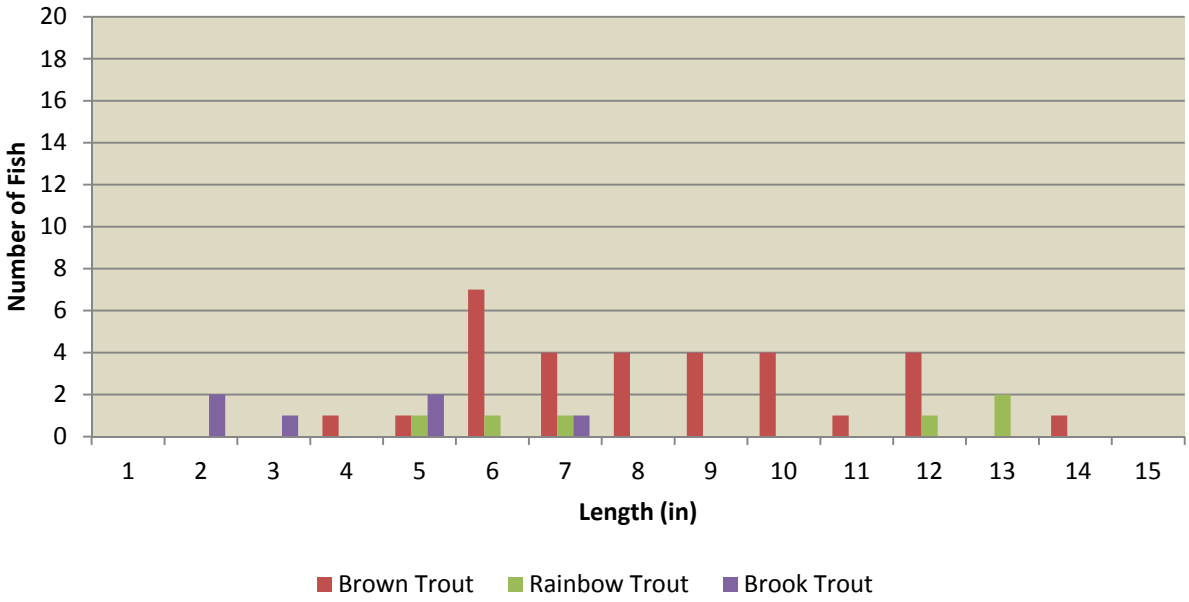


Figure 3. Length frequency of fish sampled in Upper Henson Creek (GU1856).

CONCLUSIONS

Habitat improvement work was completed on lower Henson Creek in 2014. Fish sampling station GU0639 was established within the habitat improvement area. This site was not sampled prior to completion of habitat improvement structures, so it is not known to what extent fish populations have improved since completion of the project. If the upstream site is a reasonable comparison with pre-project conditions, it appears that the habitat improvement project may have doubled fish densities and biomass (downstream pre and post habitat improvement fisheries assessments documented similar improvements in fish densities, biomass, and numbers of quality sized fish downstream on the Lake Fork of the Gunnison River).

An avalanche occurred just upstream of station GU1856 in T Gulch on April 27, 2011 which dammed up Henson Creek for several days. This avalanche appeared to significantly dewater the sampling reach including station GU1856 for a period of time as flows built above the avalanche area. When the dam began to melt out, it is believed that ice and debris flows likely occurred as well. Fisheries data from the year or two after the avalanche are not available to assess the level of impact. 2015 sampling was completed to assess recovery of fish populations in lower Henson Creek. Sampling results indicate that the fishery has likely recovered from this event if populations were impacted, with population densities exceeding estimates from previous sampling in 2005 (Table 1 and 2). Connection and proximity to the Lake Fork of the Gunnison River may have helped to facilitate a quick recovery of fish populations if impacts did occur from the 2011 avalanche.

Although Colorado River cutthroat trout were stocked in 2013 to try to improve numbers of cutthroat trout within lower Henson Creek, none were sampled from Henson Creek within either sampling station in 2015. Cutthroat trout were stocked at a size of 1.5 inches, so it is possible that survival of stocked trout was low from this fall plant. Rainbow trout are stocked in nearby Lake Fork of the Gunnison River, so it is not known whether rainbow trout fry sampled in lower Henson Creek are from that stocking event or whether they are the result of rainbow trout natural reproduction. Brown trout reproduction appears to be strong in lower Henson Creek with significant numbers of fry sampled during the 2015 sampling. It is possible that this area of Henson Creek is utilized for spawning by browns that reside in nearby reaches of the Lake Fork of the Gunnison River.

MANAGEMENT RECCOMENDATION SUMMARY

1. Management: Continue to manage as category 302, wild sportfish management, salmonid recreation stream. Although Henson Creek and its tributaries are listed on the 303d list due to exceedances of zinc and cadmium, Henson Creek does support a robust enough fishery to support a fishing opportunities for trout.
2. Stocking: Stocking was completed to help to recover this stream segment from potential impact from avalanche dam blowout or dewatering after avalanche within impacted area, but additional stocking is not planned.
3. Regulations: Continue standard bag and possession limits
4. Habitat Improvement: Additional habitat improvement work on lower Henson Creek could improve overwintering and adult trout habitat and provide trout refuge from higher flow events for brown, brook, and rainbow trout.
5. Access/ Facilities: Lower Henson Creek is very accessible for anglers with suitable pullouts for angler parking.
6. Information and Education: Reducing abandoned mine impacts to water quality may result in improved habitat for aquatic life but may be limited by natural heavy metals loading due to local geology. Recently completed habitat improvement work will likely increase angling use on lower Henson Creek, but the relatively small size of this stream segment would suggest that publicizing this new angling opportunity is not necessary.

Figure 6. Aerial view of Henson Creek survey sites, Lake City occupies top right corner.

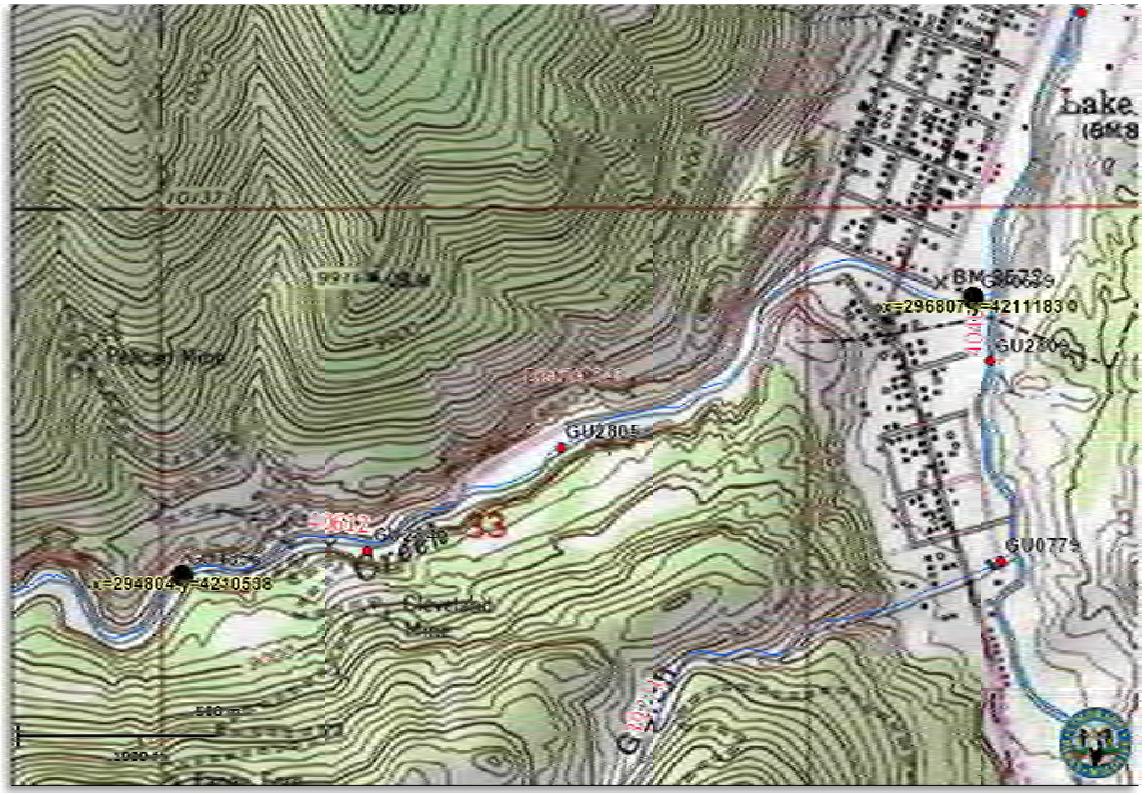


Figure 7. Sampling sites in relation to Lake City.

Combined Summaries

Water **40612** **HENSON CREEK** Date **9/21/2015**

Station **GU0639** **50 M ABV Lk Fk Gunnison River**

Drainage **Gunnison River** UtmX **296812** UtmY **4211174** Elevation **8663 ft**

Length **630 ft** Width **26.90 ft** Area **0.39 acre**

Surveyors **Brauch, Felt, Brittain, Stevens, Sandersen, Rzyska**

Gear **BKEF** Effort Metric **PASS** Protocol **TWO-PASS REMOVAL**

Proportional Stocking Density and Catch/Unit Effort

Species	Total Catch	Min Cut inch	Max Cut inch	Total used	Proportional Stock Density (%)	Percent Stock Size	Percent Quality Size	Percent Preferred Size	Percent Memorable Size	Percent Trophy Size	Max Length inches
BROWN TROUT	250	4.72		75	36.00	44.00	18.67	17.33			14.57
RAINBOW TROUT	16	4.72		7	0.00	42.86					15.12

Mean, Minimum and Maximum Length and Weight

Species	Total Catch	Min cut inch	Max cut inch	Total Used	Length (inches) Mean	Minimum	Maximum	Weight (lb) Mean	Minimum	Maximum
BROWN TROUT	250	4.72		75	8.51	5.35	14.57	0.31	0.06	1.15
RAINBOW TROUT	16	4.72		7	9.64	5.98	15.12	0.38	0.07	0.86

Relative Abundance and Catch/Unit Effort

Species	Total Catch	Min.Cut inch	Max.Cut inch	Total used	Weight Lbs	Percent Number	Percent Weight	Catch per Unit Effort Number/Effort	Catch per Unit Effort Lbs/Effort
BROWN TROUT	250	4.72		75	27.06	91.46	91.15		
RAINBOW TROUT	16	4.72		7	2.63	8.54	8.85		

Combined Summaries

Water **40612** **HENSON CREEK** Date **9/21/2015**

Station **GU0639** **50 M ABV Lk Fk Gunnison River**

Abundance and Biomass

Species	Total Catch	Min.Cut inch	Max.Cut inch	Total Used	Population estimate	Biomass Lbs	Percent Number	Percent Weight	Density estimates Lb/Acre	Density estimates Fish/Acre	Density estimates Fish/Mile
BROWN TROUT	250	4.72		75	88	27.06	91.46	91.15	69.56	225.49	735.24
RAINBOW TROUT	16	4.72		7	7	2.63	8.54	8.85	6.75	17.99	58.67

Notes:

Combined Summaries

Water **40612** **HENSON CREEK** Date **9/21/2015**

Station **GU1856** **ABV Jeep Trail S Off CO RD 20 (station 1)**

Drainage **Gunnison River** UtmX **294848** UtmY **4210337** Elevation **8773 ft**

Length **555 ft** Width **34.00 ft** Area **0.43 acre**

Surveyors **Brauch, Felt, Sandersen, Stevens**

Gear **BKEF** Effort Metric **PASS** Protocol **TWO-PASS REMOVAL**

Proportional Stocking Density and Catch/Unit Effort

Species	Total Catch	Min Cut inch	Max Cut inch	Total used	Proportional Stock Density (%)	Percent Stock Size	Percent Quality Size	Percent Preferred Size	Percent Memorable Size	Percent Trophy Size	Max Length inches
BROOK TROUT	6	4.09		3	0.00						7.64
BROWN TROUT	31			31	45.16	48.39	25.81	19.35			14.57
RAINBOW TROUT	6			6	0.00	50.00					13.94

Mean, Minimum and Maximum Length and Weight

Species	Total Catch	Min cut inch	Max cut inch	Total Used	Length (inches) Mean	Length (inches) Minimum	Length (inches) Maximum	Weight (lb) Mean	Weight (lb) Minimum	Weight (lb) Maximum
BROOK TROUT	6	4.09		3	6.21	5.24	7.64	0.12	0.06	0.21
BROWN TROUT	31			31	8.90	4.33	14.57	0.35	0.03	1.33
RAINBOW TROUT	6			6	9.96	5.91	13.94	0.56	0.09	1.20

Relative Abundance and Catch/Unit Effort

Species	Total Catch	Min.Cut inch	Max.Cut inch	Total used	Weight Lbs	Percent Number	Percent Weight	Catch per Unit Effort Number/Effort	Catch per Unit Effort Lbs/Effort
BROOK TROUT	6	4.09		3	0.35	7.50	3.02		
BROWN TROUT	31			31	11.13	77.50	96.98		
RAINBOW TROUT	6			6	0.00	15.00	0.00		

Combined Summaries

Water **40612** **HENSON CREEK** Date **9/21/2015**

Station **GU1856** **ABV Jeep Trail S Off CO RD 20 (station 1)**

Abundance and Biomass

Species	Total Catch	Min.Cut inch	Max.Cut inch	Total Used	Population estimate	Biomass Lbs	Percent Number	Percent Weight	Density estimates Lb/Acre	Density estimates Fish/Acre	Density estimates Fish/Mile
BROOK TROUT	6	4.09		3	3	0.35	7.50	3.02	0.80	6.93	28.54
BROWN TROUT	31			31	32	11.13	77.50	96.98	25.68	73.76	303.98
RAINBOW TROUT	6			6		0.00	15.00	0.00	0.00		

Notes:

Phase I Photo Monitoring Sites

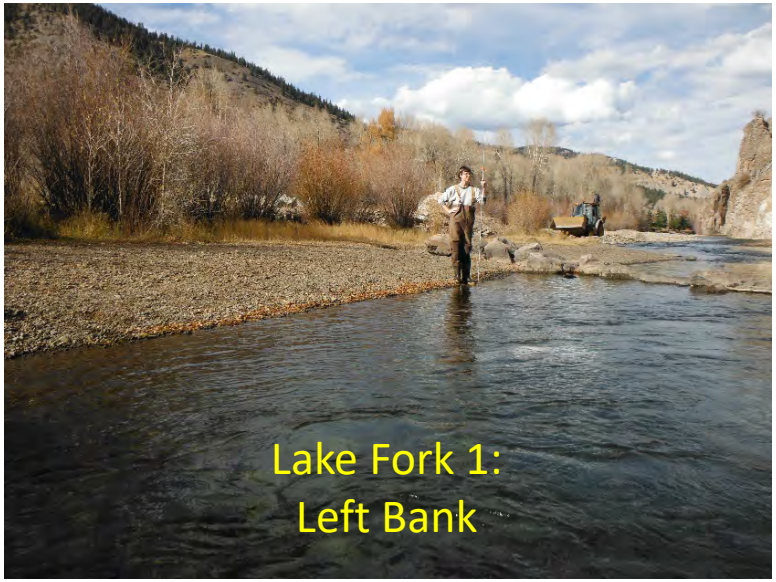
HENSON CREEK AND LAKE FORK MONITORING SECTIONS

HydroGeo Designs LLC.

N

0 50 100 200 300 400 500 Feet

Pre Construction Photos



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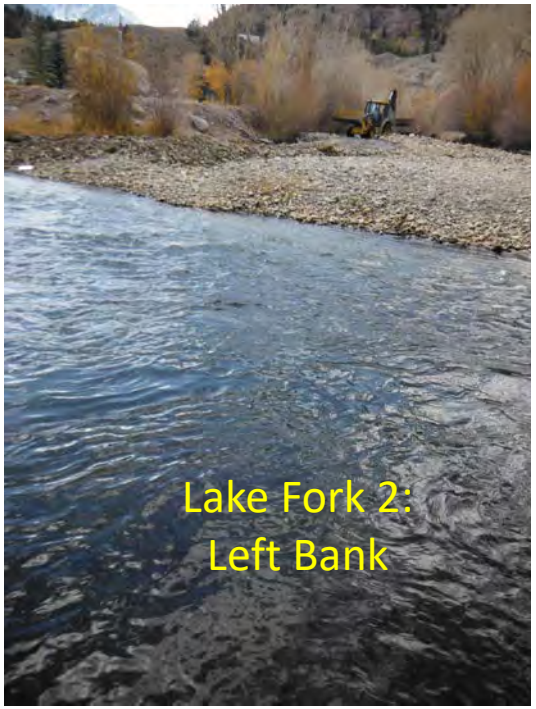

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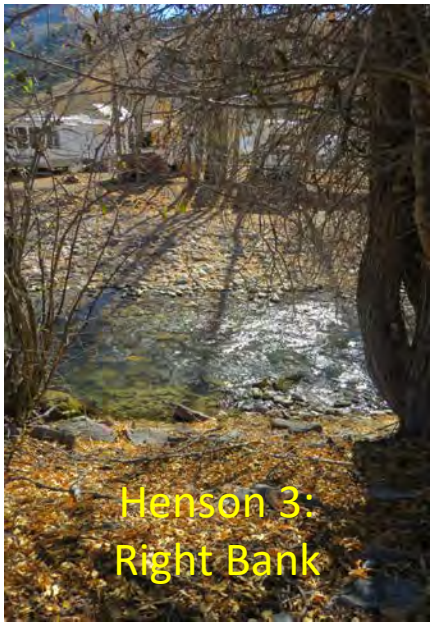

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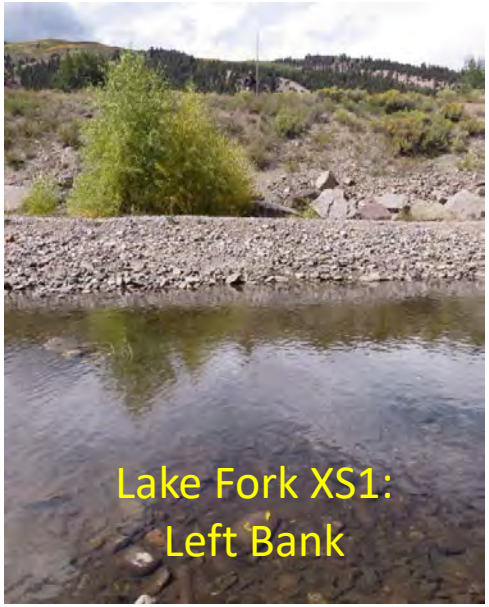
Phase II Photo Monitoring Sites

Pre Construction Photos



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