MONITORING YEAR 7 ANNUAL/CLOSEOUT REPORT

FINAL

CANDY CREEK MITIGATION SITE

Guilford County, NC
NCDEQ Contract 5794
NCDMS Project Number 96315
USACE Action ID Number 2015-01209
DWR Project Number 14-0334
RFP Number 16-005568

Cape Fear River Basin HUC 03030002

Data Collection Period: February - October 2023
Draft Submission Date: November 2023
Final Submission Date: January 2024

PREPARED FOR:

Environmental Quality

NC Department of Environmental Quality
Division of Mitigation Services
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PREPARED BY:

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January 12, 2024

Emily Dunnigan
Project Manager
NCDEQ – Division of Mitigation Services
217 West Jones Street
Raleigh, NC 27603

RE: Draft Monitoring Year 7 Report Comments
Candy Creek Mitigation Site (DMS #96315)
Cape Fear River Basin – CU# 03030002 - Guilford County
Contract # 005794

Dear Ms. Dunnigan:

Wildlands Engineering, Inc. (Wildlands) has reviewed the Division of Mitigation Services' (DMS) comments for the Candy Creek Mitigation Project's Draft Monitoring Year 7 Report received on December 22, 2023. The draft report has been updated to reflect those comments. DMS' comments are listed below and noted in **bold**. Wildlands' response to those comments are noted in *Italics*.

DMS comment: Table 9g: Please ensure undesirable species (red maple, sweet gum, etc.) or species not included in the approved mitigation plan were not included in success criteria calculations.

Wildlands' response: Tables 9a through 9e were modified so that the PnoLS criteria column excludes sweet gum or red maple. Tables 9f through 9h were renamed the "Vegetation Summary Table"; these tables were modified to show planted stems, total stems, planted stems per acre, and planted stem average height. Section 1.2.3 was updated to explain that "planted" refers to either stems from the original and/or supplemental plantings or volunteers that had been incorporated in previous monitoring years, because they are in the target vegetation community and had been present for several monitoring years. "Total stems" are presented only to give a picture of how vegetation as a whole is doing across the Site; "total stems" is not a category used for the final success criteria.

DMS comment: Appendix 5: Please include monthly rainfall data (compared to 30th and 70th percentiles – site data sources for percentiles) for the region/county for the entire calendar year.

Wildlands' response: The rainfall data from 2023 is summarized in Table 15 and is shown in the Monthly Rainfall Data plot. Both were added to Appendix 5.

As requested, Wildlands has included one (1) pdf copy of the final report and a full electronic submittal of the support files. A copy of our responses to the DMS's comment letter has been included after the cover pages of the report, as well. Please feel free to contact me via email at ksuggs@wildlandseng.com or by phone at (704) 332-7754 Ext. 110 with any questions.

Sincerely,

Kristi Suggs
Senior Environmental Scientist

EXECUTIVE SUMMARY

Wildlands Engineering Inc. (Wildlands) implemented a full delivery project at the Candy Creek Mitigation Site (Site) for the North Carolina Division of Mitigation Services (NCDMS) to restore, enhance, and preserve a total of 19,583 linear feet (LF) of perennial and intermittent streams in Guilford County, NC. The Site is expected to generate 15,506.467 (warm) stream credits through the restoration, enhancement, and preservation of Candy Creek and nine unnamed tributaries (Table 1).

The Site is located northeast of the Town of Brown Summit within the NCDMS Targeted Local Watershed for the Cape Fear River Basin Hydrologic Unit Code (HUC) 03030002010020 and NC Division of Water Resources (DWR) Subbasin 03-06-01 (Figure 1) and is being submitted for mitigation credit in the Cape Fear River Basin HUC 03030002. The Site is located within the Haw River Headwaters Watershed, which is part of NCDMS' Cape Fear River Basin Restoration Priorities (RBRP). While Candy Creek is not mentioned specifically, this document identifies restoration goals for all streams within HUC 03030002; reducing sediment and nutrient pollution to downstream Jordan Lake is a primary goal of the RBRP as stated in the Jordan Lake Nutrient Management Strategy (NCDENR, 2005). The Haw River Watershed was also identified in the 2005 NC Wildlife Resources Commission's Wildlife Action Plan as a priority area for freshwater habitat conservation and restoration to protect rare and endemic aquatic fauna and enhance species diversity. No rare and endemic aquatic species have been documented onsite or are proposed for re-establishment onsite as part of the project. The Wildlife Action Plan calls for "support of conservation and restoration of streams and riparian zones in priority areas (acquisition, easements, and buffer)." Restoration at the Site directly and indirectly addressed these goals by excluding cattle from the stream, creating stable stream banks, restoring a riparian corridor, and placing land historically used for agriculture under permanent conservation easement.

The project goals established in the Mitigation Plan (Wildlands, 2016) were to provide ecological enhancement and mitigate site water quality stressors that will benefit the receiving waters in the Cape Fear River Basin. This will primarily be achieved by creating functional and stable stream channels, increasing and improving the interaction of stream hydrology within the riparian zone, and improving floodplain habitat and ecological function. This will also be achieved by restoring a Piedmont Bottomland Forest community as described by Schafale and Weakley (1990) along the stream reaches within open pastures. With careful consideration of goals and objectives that were described in the RBRP, the following project goals were established:

- Reduce in-stream water quality stressors resulting in enhanced habitat and water quality in riffles and pools.
- Construct stream channels that are laterally and vertically stable resulting in a network of streams capable of supporting hydrologic, biologic, and water quality functions.
- Improve on-site habitat by diversifying and stabilizing the stream channel form; installing habitat features such as undercut logs, brush toe, wood and stone-based riffles; and by establishing native stream bank vegetation and shading where none exists.
- Exclude cattle from project streams resulting in greater treatment and reduction of overland flow and landscape derived pollutants including fecal coliform, nitrogen, and phosphorus.
- Increase and improve hydrologic connectivity between streams and their riparian floodplains; promote temporary water storage and wetland and floodplain recharge during high flows; increase groundwater connectivity within floodplains and wetlands; promote nutrient and carbon exchange between streams and floodplains and reduce shear stress forces on channels during larger flow events.

The Site construction and as-built surveys were completed between July 2016 and March 2017, respectively. A conservation easement was recorded on 61.74 acres to protect the restored riparian corridor in perpetuity. Maintenance measures were implemented between 2017 and 2023. Monitoring Year (MY) 7 assessments and site visits were completed between March and October 2023 to assess the conditions of the project.

This is the seventh and final monitoring year as established in the Mitigation Plan (Wildlands, 2016). The Site will be presented to the NC IRT for regulatory closeout. Overall, the Site has met the required stream, hydrology, and vegetation success criteria for MY7 or the life of the project. All restored and enhanced streams are stable and functioning as designed with cross-section dimensions exhibiting minimal adjustments compared to as-built. The Site met the required bankfull and stream flow criteria earlier in the life of the project, having recorded at least two bankfull events on each restored reach. The stream flow gage established on the upstream, intermittent section of UT1D exceeded the minimum 30 consecutive day hydrologic baseflow criteria. The average planted stem density for the Site is 405 stems per acre, with a total stem density of 849 stems per acre. All 40 vegetation plots met the final density criteria. The planted stem height is now 14.0 feet.

Stream repairs were completed on the main stem and several side tributaries between March and October 2023. This includes rebuilding the left bank on Candy Creek Reach 3 and fixing numerous piping structures along UT1C, UT1D, and UT2. The sediment influx first reported during MY4 has moved through the system so that all streams have visible sediment sorting.

Areas of invasive species were treated between 2017 and 2023 and currently make up approximately 0.3% of the total easement area. No kudzu was located this year, having been repeatedly treated for the last several years. Two areas of prior mowing encroachments were supplementally planted with herbaceous plugs, and no additional mowing has been observed this year. Several beavers were trapped, and their dams were removed. Visual assessment surveys indicate that the majority of the Site is stable and functioning as intended and the riparian buffer is well vegetated and intact. The Site will continue to be monitored through closeout.

CANDY CREEK MITIGATION SITE
Monitoring Year 7 Annual/Closeout Report

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APPENDICES

APPENDICES (cont.)

Section 1: PROJECT OVERVIEW

The Site is located in Guilford County, northeast of the Town of Brown Summit, off of Old Reidsville Road and Hopkins Road (Figure 1). The project watershed is primarily comprised of agricultural and forested land. The drainage area for the Site is 937 acres.

The project streams consist of Candy Creek and its unnamed tributaries (UT1, UT2, UT2A, UT2B, UT3, UT4, UT5, and UT5A). Stream restoration reaches included Candy Creek (Reach 1, 2, and 4), upper UT1C, UT1D, UT2 (lower Reach 1), lower UT3, UT4, and lower UT5. Stream enhancement (Level I and II) activities were utilized for Candy Creek Reach 3, UT2 (upper Reach 1 and Reach 2), UT2A, and UT2B. The intact and functional reaches associated with lower UT1C, upper UT3, and UT5A were preserved with the implementation of the conservation easement. The riparian areas along the restoration and enhancement reaches were planted with native vegetation to improve habitat and protect water quality.

Construction activities were completed by Land Mechanic Designs, Inc. in March 2017. Planting and seeding activities were completed by Bruton Natural Systems, Inc. in March 2017. A conservation easement has been recorded and is in place on 61.74 acres. The project is expected to generate 15,506.467 (warm) stream credits. Annual monitoring has been conducted for seven years with the close-out anticipated to commence in 2023/2024 given that the success criteria are met. Appendix 1 provides more detailed project activity, history, contact information, and watershed/site background information for this project.

Directions and a map of the Site are provided in Figure 1 and project components are illustrated for the Site in Figure 2.

1.1 Project Goals and Objectives

Prior to construction activities, stream impairments included incised and over-widened channels, bank erosion with areas of mass wasting, historic channelization, floodplain alteration, degraded in-stream habitat, and impoundments. Riparian impairments included clearing and livestock grazing.

The overarching goals of the stream mitigation project are to provide ecological enhancement and mitigate site water quality stressors that will benefit the receiving waters in the Cape Fear River Basin. The Site will treat almost all the headwaters of Candy Creek and 47% of the entire 3.1-square mile Candy Creek watershed before flowing to the Haw River. A primary goal of the NCDMS' Cape Fear River Basin Restoration Priorities (RBRP) is to restore and maintain water quality as stated in the Jordan Lake Nutrient Management Strategy (NCDENR, 2005). The project goals established for the Site were completed with careful consideration of goals and objectives that were described in the RBRP and include the following:

- *Reduce in-stream water quality stressors.* Reconstruct stream channels with stable dimensions. Stabilize eroding stream banks. Add bank protection and in-stream structures to protect restored/enhanced streams.
- *Construct stream channels that are laterally and vertically stable.* Construct stream channels that will maintain a stable pattern and profile considering the hydrologic and sediment inputs to the system, the landscape setting, and the watershed conditions.
- *Improve on-site habitat.* Construct diverse and stable channel form with varied and self-sustainable stream bedform. Install habitat features such as undercut logs, brush toe, wood and stone-based riffles. Establish native stream bank vegetation and shading where none exists.

- *Exclude cattle from project streams.* Install fencing around the conservation easement adjacent to cattle pastures.
- *Increase and improve the interaction of stream hydrology within the riparian zone to in turn improve floodplain habitat and ecological function.* Reconstruct stream channels with appropriate bankfull dimensions and raise them to the proper depths relative to a functioning floodplain.
- *Restore and enhance native floodplain forest.* Plant native trees and understory species and treat invasive species in the riparian zone.
- *Permanently protect the project Site from harmful uses.* Establish a conservation easement on the Site.

1.2 Monitoring Year 7 Data Assessment

Annual monitoring and quarterly site visits were conducted during MY7 to assess the condition of the project. The stream, vegetation, and hydrologic success criteria for the Site follow the approved success criteria presented in the Candy Creek Mitigation Plan (Wildlands, 2016). The stream reaches were assigned specific performance criteria components for stream morphology, hydrology, and vegetation. Performance criteria will be evaluated throughout the seven-year post-construction monitoring period.

See Appendix 2 for the visual stability assessment tables, Integrated Current Condition Plan View (CCPV) maps, and reference photographs.

1.2.1 Stream Assessment

Riffle cross sections on the restoration and enhancement (EI) reaches should be stable and should show little change in bankfull area, maximum depth ratio, and width-to-depth ratio. Per DMS guidance, bank height ratios shall not exceed 1.2 and entrenchment ratios shall be at least 2.2 for restored channels to be considered stable. All riffle cross sections should fall within the parameters defined for channels of the appropriate stream type. If any changes do occur, these changes will be evaluated to assess whether the stream channel is showing signs of instability. Indicators of instability include trends in vertical incision or bank erosion. Changes in the channel that indicate a movement toward stability or enhanced habitat include a decrease in the width-to-depth ratio in meandering channels or an increase in pool depth. Remedial action would not be taken if channel changes indicate a movement toward stability.

Morphological surveys for MY7 were conducted between April and May 2023. Throughout the Site, the cross-section (XS) survey results indicate that channel dimensions are stable and continuing to perform with minimal adjustments compared to as-built. Some erosion is present along the left bank of pool XS6 on Candy Creek Reach 1 but native stabilizing vegetation is still present. UT2, UT2A, UT4 and UT5 all experienced an influx of sediment during MY4. Sediment has continued to flush through the system. The tributaries appear to be effectively transporting the material. Cross-section dimensions show some reduction in area and depth compared to as-built but most riffles and pools are maintaining dimensions within or close to design parameters. All reaches are still functioning as single thread channels as shown in the Improved Areas of Concern Photographs in Appendix 2. Sediment aggradation across the project is minimal and not considered an area of concern. Refer to Appendix 4 for the cross-section plots and morphology tables.

As discussed in the MY5 report (Wildlands, 2022), based on a DMS Technical Workgroup memo from 10/19/2021 and concurrence by the DMS project manager received on 11/18/2021 (Phillips), pebble count collection is no longer required unless requested by the IRT. Therefore, pebble counts were not conducted during MY7.

1.2.2 Stream Areas of Concern and Adaptive Management Activities

The Stream Photographs and Areas of Concern Photographs (AOC) are shown in Appendix 2. As discussed in section 1.2.1, the aggradation throughout the Site has continued to improve since the storms in MY4 deposited off-site sediment into the system and is no longer considered an area of concern.

Bank repairs along Candy Creek Reach 3 were completed in September 2022 and discussed in the MY6 monitoring report. MY7 visual assessments revealed that the bank is stable and is revegetating as documented in the Improved AOC Photographs, and in the XS16 plot. The temporary construction path was planted with live stakes, which have resprouted and are doing well, as shown in the Improved AOC Photographs. The step-pool structures along UT1C, UT1D, and several log and rock sills along UT2 were repaired by hand between March and October 2023. Water is no longer piping under or around these structures which are shown in before and after photos in the Improved AOC Photographs.

Across the site, much of the erosion previously documented is stabilizing as the woody vegetation matures along the stream banks; more than 99% of the banks are stable with only 35 feet of bank erosion documented this year along Candy Creek Reaches 1 and 2. Minor bank erosion was observed only in isolated pockets along outer meander bends and behind lunker logs. The structural issues that remain are typically lunker logs that have either eroded or dislodged from the bank. There are very few areas that indicate instability for the streams throughout the project in MY7.

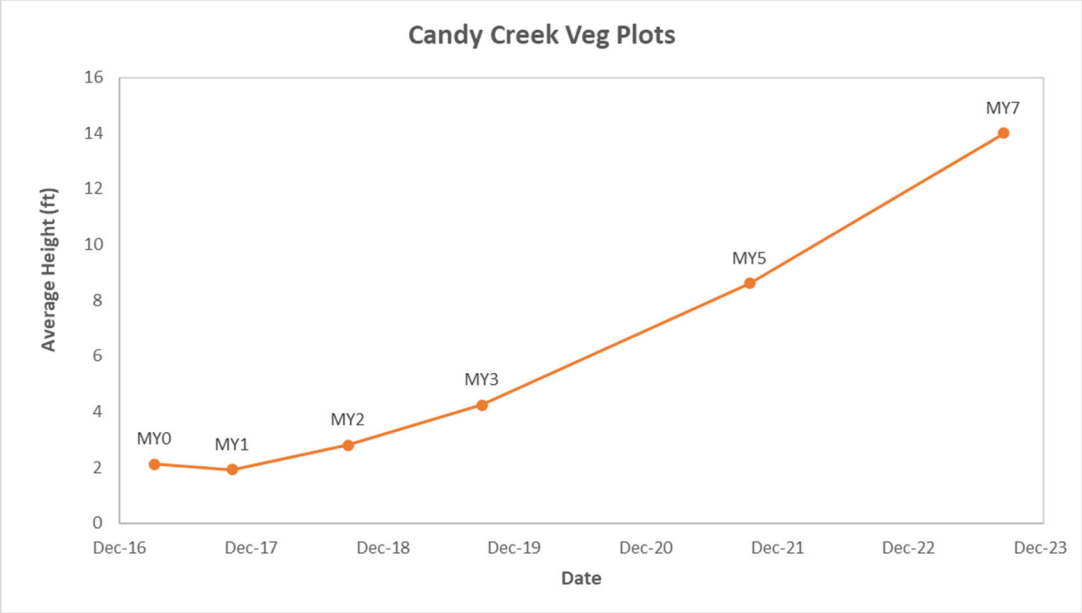
During MY7, several beavers colonized the upstream portion of Candy Creek Reach 1 and 2 and built several dams. A contractor trapped the beaver and removed the dam in August and October of 2023. Vegetation damage around the dams was minimal. Beaver activity will continue to be monitored until closeout.

Refer to the Appendix 2 for the Visual Stream Morphology Stability Assessment Table and the CCPV Figures for the AOC locations.

1.2.3 Vegetative Assessment

A total of 40 permanent vegetation plots (VPs) were established during baseline monitoring within the project easement area using standard 10 by 10-meter plots. Vegetation plots are monitored in accordance with the guidelines and procedures developed by the Carolina Vegetation Survey-EEP Level 2 Protocol (Lee et al., 2008). The final vegetative performance standard is the survival of 210 planted stems per acre in the planted riparian and wetland corridor at the end of the required seven-year monitoring period.

The MY7 vegetation survey was completed in August 2023 and resulted in an average stem density of 405 stems per acre, with a total stem density of 849 stems per acre. All permanent vegetation plots (100%) exceed the final density standard of 210 stems per acre. Individual plot densities ranged from 243 – 526 planted stems per acre. The MY7 average stem height for all VPs is approximately 14.0 feet. As shown in the plot below, the average tree height across the Site continues to improve.



Please refer to Appendix 2 for vegetation plot photographs, CCPV Figures 3.0-3.7 for vegetation plot locations, and Appendix 3 for vegetation data tables.

A summary of the vegetation on the Site over the life of the project is summarized in Tables 9f – 9h in Appendix 3. The number of planted stems, total stems, planted stem density, and the height of the planted stems is shown per plot. Note that "planted" refers to either stems from the original planting and/or supplemental plantings or volunteers that had been incorporated in previous monitoring years, because they are in the target vegetation community and had been present for several monitoring years. "Total stems" are presented only to give a picture of how vegetation as a whole is doing across the Site; "total stems" is not a category used for the final success criteria.

1.2.4 Vegetative Areas of Concern and Adaptive Management Activities

The Site consists of 61.74 acres within the conservation easement, including 32 acres of planted trees. The Site is performing well. The low stem density previously observed around vegetation plot 35 continued to improve and has been removed as an area of concern. Invasive plant populations were treated across the site this year. Along Candy Creek Reach 4, the kudzu (*Pueraria montana*) did not return and primrose (*Ludwigia peploides*) was treated in the pools along Candy Creek Reach 4, as shown in the Improved Areas of Concern Photographs; blackberry (*Rubus argutus*), multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), and tree of heaven (*Ailanthus altissima*) have all been reduced to a small population size which does not threaten the performance of the project. The invasive species now cover less than 1% of the project area.

The entire easement boundary was inspected for encroachment and boundary marking issues in MY7. Several additional signs were added at the request of DMS. One piece of old fencing and wire was removed from Candy Creek Reach 2. All of the easement corners were located and replaced with stamped aluminum caps in November 2023. Several areas where a tree or limb had fallen on the fence were cleared and repaired as needed. During a site walk by the DMS project manager in January 2023, three potential areas of mowing encroachment were observed. Two of these areas, totaling 0.002 acres, were located along Candy Creek Reach 1 and Reach 3. A third area, along UT3, was observed to be close to, but outside of the easement boundary. The boundaries were marked off with horse tape and some were planted with additional herbaceous plugs. The encroachment mowing has stopped in all locations.

These areas are considered resolved and are shown on the CCPV figures and in the Improved Areas of Concern Photographs. A deer stand was also located along Candy Creek Reach 1 and it was removed by the landowner in November 2023.

Refer to Appendix 6 for the IRT site walk minutes and the Conservation Easement Inspection Report comments.

1.2.5 Hydrology Assessment

At the end of the seven-year monitoring period, two or more bankfull events must have occurred in separate years within the restoration reaches. The bankfull performance standard was met for the project by the end of MY3. During MY7, UT5 recorded additional bankfull events.

In addition to monitoring bankfull events, intermittent streams (UT1D) must demonstrate a minimum of 30 consecutive days of flow during periods of normal rainfall. The normal rainfall is determined from the Greensboro/Piedmont Triad International Airport precipitation gage, which is approximately 18 miles from the Site. (Annual rainfall totals were retrieved from the NCAT - NC A&T SU Research Farm precipitation gage, which is slightly closer to the Site at only 11.5 miles.) The streamflow criterion was exceeded every year of the project. The presence of baseflow was also observed on these reaches during site visits; thereby, confirming the recorded stream gage data. Please refer to CCPV Figures 3.0-3.7 in Appendix 2 for stream gage locations and Appendix 5 for hydrology summary data and plots.

1.3 Monitoring Year 7 Summary

This is the seventh and final monitoring year as established in the Mitigation Plan (Wildlands, 2016). The Site will be presented to the NC IRT for regulatory closeout. Overall, the Site has met the required stream, hydrology, and vegetation success criteria for MY7 or the life of the project. All restored and enhanced streams are stable and functioning as designed with cross-section dimensions exhibiting minimal adjustments compared to as-built. The Site met the required bankfull and stream flow criteria earlier in the life of the project, having recorded at least two bankfull events on each restored reach. The stream flow gage established on the upstream, intermittent section of UT1D exceeded the minimum 30 consecutive day hydrologic baseflow criteria. The average planted stem density for the Site is 405 stems per acre, with a total stem density of 849 stems per acre. All 40 vegetation plots met the final density criteria. The planted stem height is now 14.0 feet.

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Summary information and data related to the performance of various project and monitoring elements can be found in the tables and figures in the report appendices. All raw data supporting the tables and figures in the appendices are available from DMS upon request.

Section 2: METHODOLOGY

Geomorphic data collection follows the standards outlined in *Stream Channel Reference Site: An Illustrated Guide to Field Techniques* (Harrelson et al., 1994) and in *Stream Restoration: A Natural Channel Design Handbook* (Doll et al., 2003). All Integrated Current Condition Mapping was recorded using a Trimble handheld GPS with sub-meter accuracy and processed using Pathfinder and ArcGIS. Planted woody vegetation is being monitored in accordance with the guidelines and procedures developed by the Carolina Vegetation Survey-EEP Level 2 Protocol (Lee et al., 2008). Crest gages were installed in surveyed riffle cross-sections. Hydrologic monitoring instrument installation and monitoring methods are in accordance with the United States Army Corps of Engineers (USACE, 2003) standards.

Section 3: REFERENCES

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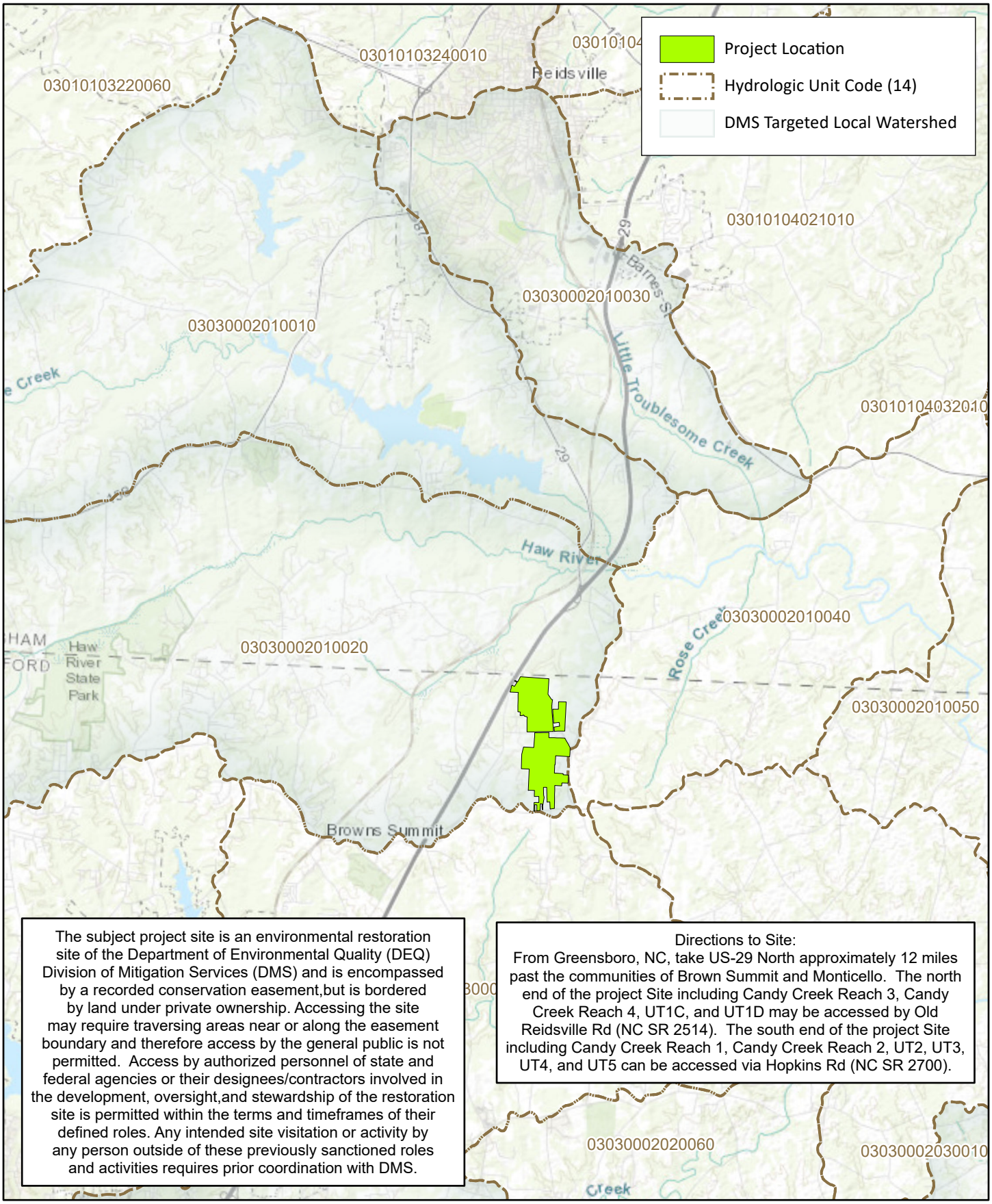
APPENDIX 1. General Figures and Tables



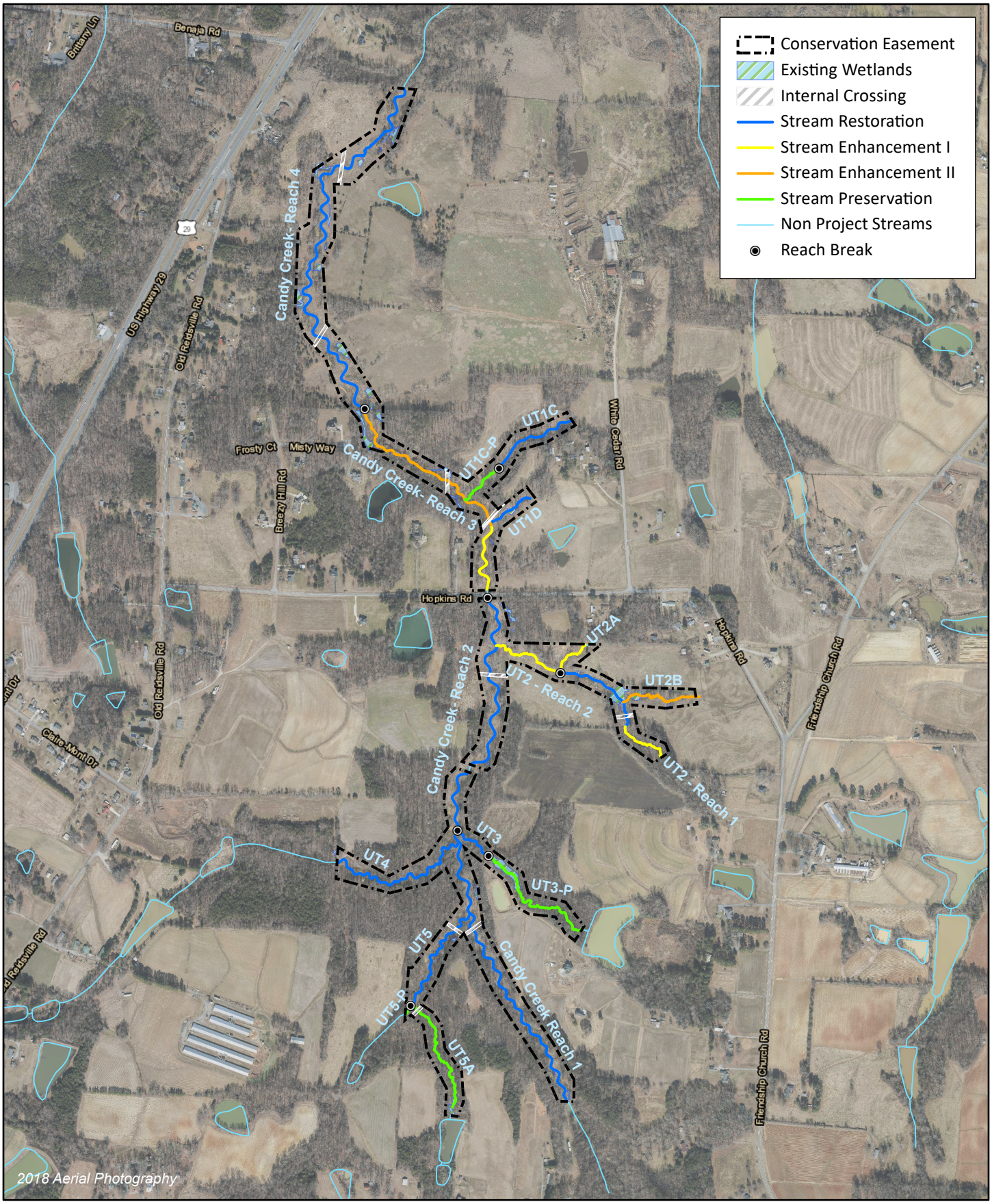
The subject project site is an environmental restoration site of the Department of Environmental Quality (DEQ) Division of Mitigation Services (DMS) and is encompassed by a recorded conservation easement,but is bordered by land under private ownership. Accessing the site may require traversing areas near or along the easement boundary and therefore access by the general public is not permitted. Access by authorized personnel of state and federal agencies or their designees/contractors involved in the development, oversight,and stewardship of the restoration site is permitted within the terms and timeframes of their defined roles. Any intended site visitation or activity by any person outside of these previously sanctioned roles and activities requires prior coordination with DMS.

Directions to Site:
From Greensboro, NC, take US-29 North approximately 12 miles past the communities of Brown Summit and Monticello. The north end of the project Site including Candy Creek Reach 3, Candy Creek Reach 4, UT1C, and UT1D may be accessed by Old Reidsville Rd (NC SR 2514). The south end of the project Site including Candy Creek Reach 1, Candy Creek Reach 2, UT2, UT3, UT4, and UT5 can be accessed via Hopkins Rd (NC SR 2700).

WILDLANDS ENGINEERING

Environmental Quality

Figure 1 Project Vicinity Map
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023
Guilford County, NC



WILDLANDS ENGINEERING

Environmental Quality

0 1,000 2,000 Feet

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Figure 2 Project Components/Assets Map
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023
Guilford County, NC

Table 1. Project Components and Mitigation Credits

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Mitigation Credits									
	Stream		Riparian Wetland		Non-Riparian Wetland		Buffer	Nitrogen Nutrient Offset	Phosphorous Nutrient Offset
Type	R	RE	R	RE	R	RE			
Totals	14,975.867	530.600	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Project Components							
Reach ID	As-Built Stationing/ Location	Existing Footage/ Acreage	Approach	Restoration or Restoration Equivalent	Restoration Footage/ Acreage	Mitigation Ratio	Credits (SMU/WMU)
STREAMS							
Candy Creek Reach 1	100+08 - 117+19	2,885	P1	Restoration	1,711	1:1	1,711.000
	117+45 - 126+27		P1	Restoration	882	1:1	882.000
Candy Creek Reach 2	126+27 - 131+80	2,398	P1	Restoration	553	1:1	553.000
	132+40 - 141+17		P1	Restoration	877	1:1	877.000
	141+43 - 148+42		P1	Restoration	699	1:1	699.000
Candy Creek Reach 3	149+02 - 155+05	2,333	EI	Enhancement	603	1.5:1	402.000
	155+05 - 155+33		EII	Enhancement	28	2.5:1	11.200
	155+62 -160+35		EII	Enhancement	473	2.5:1	189.200
	160+62 - 170+37		EII	Enhancement	975	2.5:1	390.000
Candy Creek Reach 4	170+71 - 178+74	3,386	P1	Restoration	803	1:1	803.000
	179+00 - 196+47		P1	Restoration	1,747	1:1	1,747.000
	196+68 - 206+35		P1	Restoration	967	1:1	967.000
UT1C	200+12 - 207+40	551	P1	Restoration	728	1:1	728.000
UT1C - P	207+40 - 211+38	398	-	Preservation	398	5:1	79.600
UT1D	250+00 - 253+79	437	P1	Restoration	379	1:1	379.000
UT2 Reach 1	300+00 - 304+24	940	EI	Enhancement	424	1.5:1	282.667
	304+24 - 305+01		P1	Restoration	77	1:1	77.000
	305+26 - 311+88		P1	Restoration	662	1:1	662.000
UT2 Reach 2	311+88 - 318+31	746	EI	Enhancement	643	1.5:1	428.667
UT2A	350+84 - 354+37	376	EI	Enhancement	353	1.5:1	235.333
UT2B	270+28 - 276+85	702	EII	Enhancement	657	2.5:1	262.800
UT3 - P	400+00 - 411+50	1,150	-	Preservation	1,150	5:1	230.000
UT3	411+50 - 414+96	729	P1	Restoration	346	1:1	346.000
UT4	500+49 - 514+05	1,270	P1	Restoration	1,356	1:1	1,356.000
UT5 - P	599+19 - 600+00	81	-	Preservation	81	5:1	16.200
UT5	600+00 - 607+91	1,297	P1	Restoration	791	1:1	791.000
	608+16 - 610+12			Restoration	196	1:1	196.000
UT5A	650+00 - 659+70	1,056	-	Preservation	970	5:1	194.000
	659+99 - 660+56		-	Preservation	54	5:1	10.800

Component Summation						
Restoration Level	Stream (LF)	Riparian Wetland (ac)		Non-Riparian Wetland (ac)	Buffer (sqft)	Upland (ac)
		Riverine	Non-Riverine			
Restoration	12,774	-	-	-	-	-
Enhancement		-	-	-	-	-
Enhancement I	2,023					
Enhancement II	2,133					
Preservation	2,653	-	-	-		

The linear feet associated with the stream crossings were excluded from the computations.

Table 2. Project Activity and Reporting History

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Activity or Report		Data Collection Complete	Completion or Scheduled Delivery
Mitigation Plan		November 2014	March 2016
Final Design - Construction Plans		July 2016	July 2016
Construction		July 2016 - March 2017	March 2017
Temporary S&E mix applied to entire project area[1]		July 2016 - March 2017	March 2017
Permanent seed mix applied to reach/segments		March 2017	March 2017
Bare root and live stake plantings for reach/segments		March 2017	March 2017
Baseline Monitoring Document (Year 0)	Stream Survey	October 2016 - March 2017	May 2017
	Vegetation Survey	March 2017	
Invasive Species Treatment		September / October 2017	
Year 1 Monitoring	Stream Survey	October 2017	December 2017
	Vegetation Survey	October 2017	
Year 2 Monitoring	Stream Survey	June 2018	November 2018
	Vegetation Survey	August 2018	
Live Staking and Live Facines		March 2019	
Riparian Seeding			
Stream Maintenance		August 2019	
Invasive Species Treatment		September 2019	
Additional easement marker installed		September 2019	
Year 3 Monitoring	Vegetation Survey	September 2019	December 2019
	Stream Survey	October 2019	December 2019
Stream Maintenance		Jan - May 2020	
Invasive Species Treatment		April - October 2020	
Year 4 Monitoring		October 2020	December 2020
Additional easement markings installed (horse tape)		August 2021	
Year 5 Monitoring	Stream Survey	May 2021	December 2021
	Vegetation Survey	September 2021	
Beaver trapped, dam removed		November 2021	
Year 6 Monitoring		February - October 2022	
Encroachment Supplemental Planting		March 2022	
Invasive Species Treatment		March - October 2022	
Beaver trapped, dam removed		April 2022	
Stream Repairs		September 2022	
Year 7 Monitoring	Stream Survey	April - May 2023	November 2023
	Vegetation Survey	August 2023	
Invasive Species Treatment		March - October 2023	
Manual Stream Repairs		March - October 2023	
Beaver trapped, dam removed		August, October 2023	
Monuments located and stamped		November 2023	

[1]Seed and mulch is added as each section of construction is completed.

Table 3. Project Contact Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Designer Aaron Earley, PE	**Wildlands Engineering, Inc.** 1430 South Mint Street, Suite 104 Charlotte, NC 28203 704.332.7754
Construction Contractor	**Land Mechanic Designs, Inc.** 126 Circle G Lane Willow Spring, NC 27592
Planting Contractor	**Bruton Natural Systems, Inc** P.O. Box 1197 Fremont, NC 27830
Seeding Contractor	**Land Mechanic Designs, Inc.** 126 Circle G Lane Willow Spring, NC 27592
Seed Mix Sources	**Green Resource, LLC**
Nursery Stock Suppliers	**Dykes and Son Nursery** 825 Maude Etter Rd. McMinnville, TN 37110
Bare Roots **Live Stakes**	**Foggy Mountain Nursery** 797 Helton Creek Rd. Lansing, NC 28643
	Bruton Natural Systems, Inc.
Monitoring Performers Monitoring, POC	**Wildlands Engineering, Inc.** Kristi Suggs 704.332.7754 ext. 110

Table 4. Project Information and Attributes

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

Project Information	
Project Name	Candy Creek Mitigation Site
County	Guilford County
Project Area (acres)	61.74
Project Coordinates (latitude and longitude)	Upstream Project Limits – 36°13'27.27"N, 79°39'37.79"W
	Downstream Project Limits – 36°14'39.74"N, 79°39'50.46"W

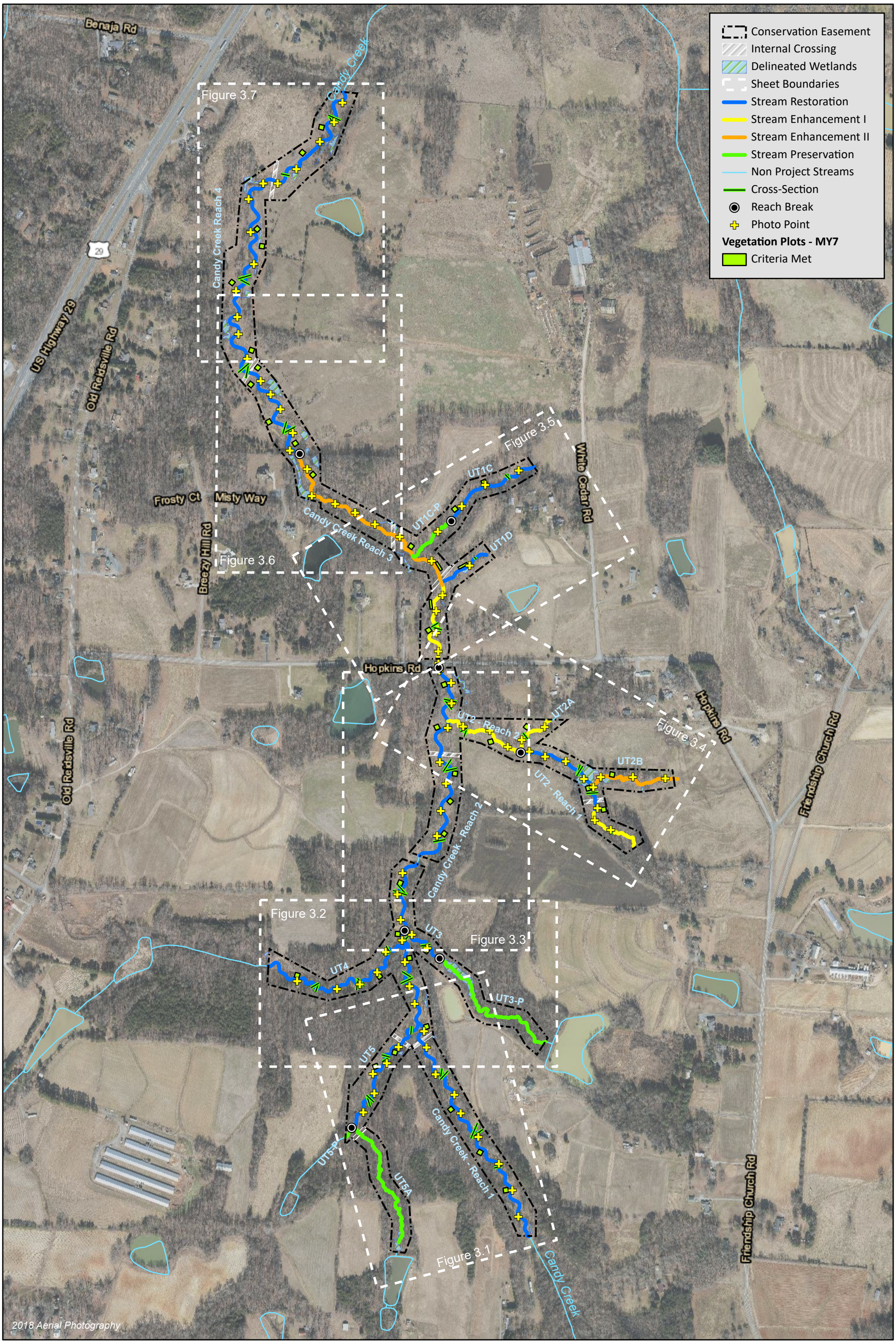
Project Watershed Summary Information	
Physiographic Province	Inner Piedmont Belt of the Piedmont Physiographic Province
River Basin	Cape Fear
USGS Hydrologic Unit 8-digit	03030002
USGS Hydrologic Unit 14-digit	03030002010020
DWR Sub-basin	03-06-01
Project Drainiage Area (acres)	937
Project Drainage Area Percentage of Impervious Area	1%
CGIA Land Use Classification	66% – Agriculture/Managed Herbaceous; 29% – Forested/Scrubland, 5% - Developed

Reach Summary Information				
Parameters	**Candy Creek Reach 1**	**Candy Creek Reach 2**	**Candy Creek Reach 3**	**Candy Creek Reach 4**
Length of Reach (linear feet) - Post-Restoration	2,593	2,129	2,079	3,517
Drainage Area (acres)	560	694	809	937
NCDWR Stream Identification Score	40.5	40.5	45.0	45.0
NCDWR Water Quality Classification	WS-V (NSW)			
Morphological Desription (stream type)	G4c	F5	G4c	G4c
Evolutionary trend (Simon's Model) - Pre- Restoration	IV	IV	IV	III/IV
Underlying mapped soils	Clifford Sandy Clay Loam, Codorus Loam, Nathalie Sandy Loam, Poplar Forest Gravelly Sandy Loam			
Drainage class	Well Drained to Somewhat Poorly Drained			
Soil hydric status	Codorus Loam - Hydric			
Slope	---			
FEMA classification	N/A			
Native vegetation community	Piedmont Bottomland Forest			
Percent composition exotic invasive vegetation -Post-Restoration	1%			

Parameters	**UT1C**	**UT1D**	**UT2**	**UT2A**	**UT2B**	**UT3**	**UT4**	**UT5**	**UT5A**
Length of Reach (linear feet) - Post-Restoration	1,126	379	1,806	353	657	1,496	1,356	1,068	1,024
Drainage Area (acres)	28	6	63	15	24	79	190	137	45
NCDWR Stream Identification Score	35.0	27.5	34.5	31.5	31.5	36.5	37.5	31.5	33.5
NCDWR Water Quality Classification	C								
Morphological Desription (stream type)	E5b	C5	F5	G5	B5c	G4	G4	F4	N/A
Evolutionary trend (Simon's Model) - Pre- Restoration	III	II/III	III/V	III	III	IV	IV	IV	N/A
Underlying mapped soils	Casville Sandy Loam, Codorus Loam, Nathalie Sandy Loam								
Drainage class	Well Drained to Somewhat Poorly Drained								
Soil hydric status	Codorus Loam - Hydric								
Slope	---								
FEMA classification	N/A								
Native vegetation community	Piedmont Bottomland Forest								
Percent composition exotic invasive vegetation -Post-Restoration	0%								

Regulatory Considerations			
Regulation	**Applicable?**	**Resolved?**	**Supporting Documentation**
Waters of the United States - Section 404	Yes	Yes	USACE Nationwide Permit No.27 (Action ID# SAW-2015-01209) and DWR 401 Water Quality Certification (letter from DWR dated 5/13/2015).
Waters of the United States - Section 401	Yes	Yes	
Division of Land Quality (Dam Safety)	No	N/A	N/A
Endangered Species Act	Yes	Yes	Candy Creek Mitigation Plan; Wildlands determined "no effect" on Guilford County listed endangered species. USFWS responded on April 4, 2014 and stated the "proposed action is not likely to adversely affect any federally listed endangered or threatened species, their formally designated critical habitat or species currently proposed for listing under the Act".
Historic Preservation Act	Yes	Yes	No historic resources were found to be impacted (letter from SHPO dated 3/24/2014).
Coastal Zone Management Act (CZMA)/Coastal Area	No	N/A	N/A
FEMA Floodplain Compliance	No	N/A	N/A
Essential Fisheries Habitat	No	N/A	N/A

APPENDIX 2. Visual Assessment Data



WILDLANDS ENGINEERING

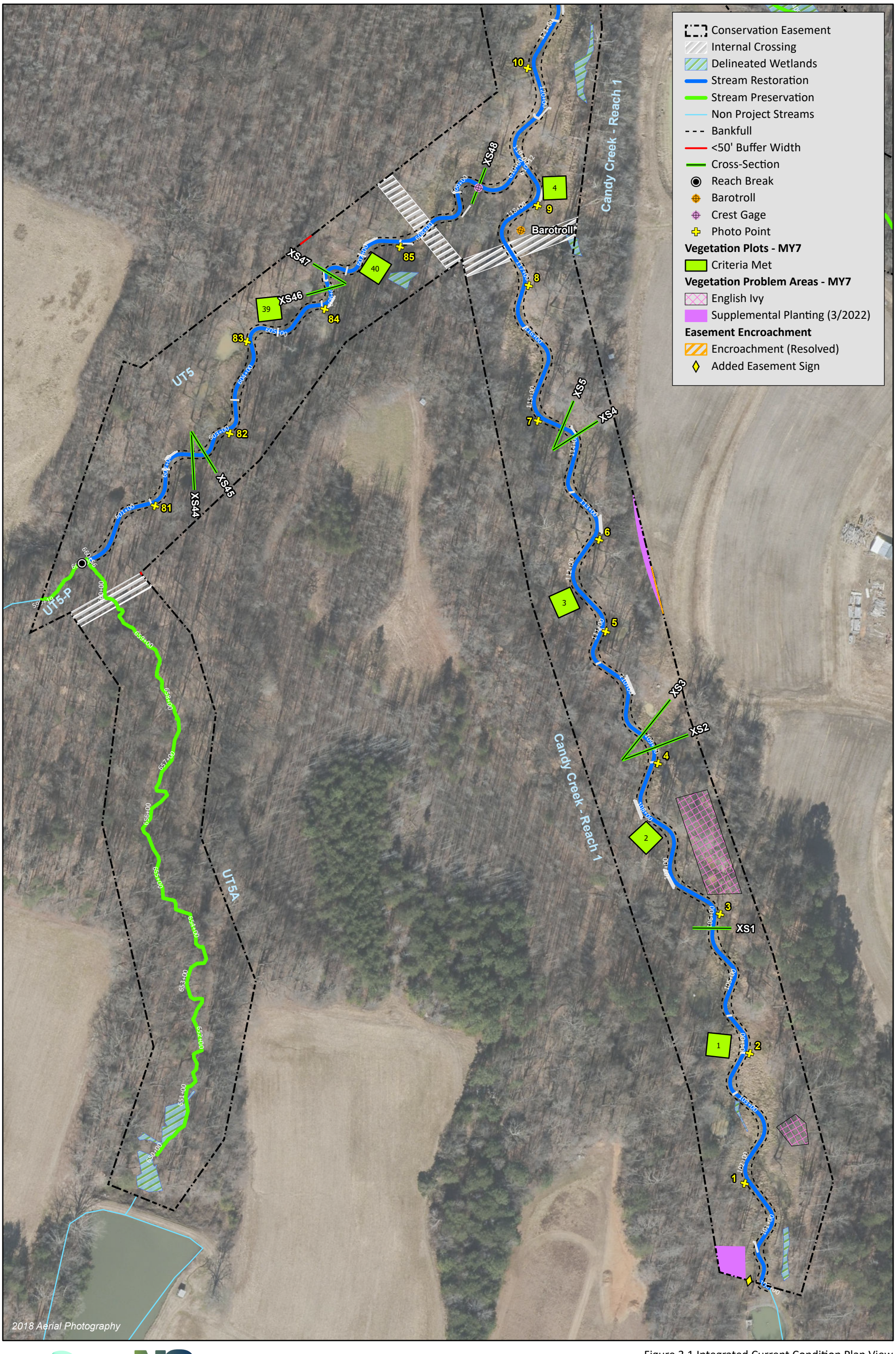
Environmental Quality

0 600 1,200 Feet

N

Figure 3.0 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Guilford County, NC



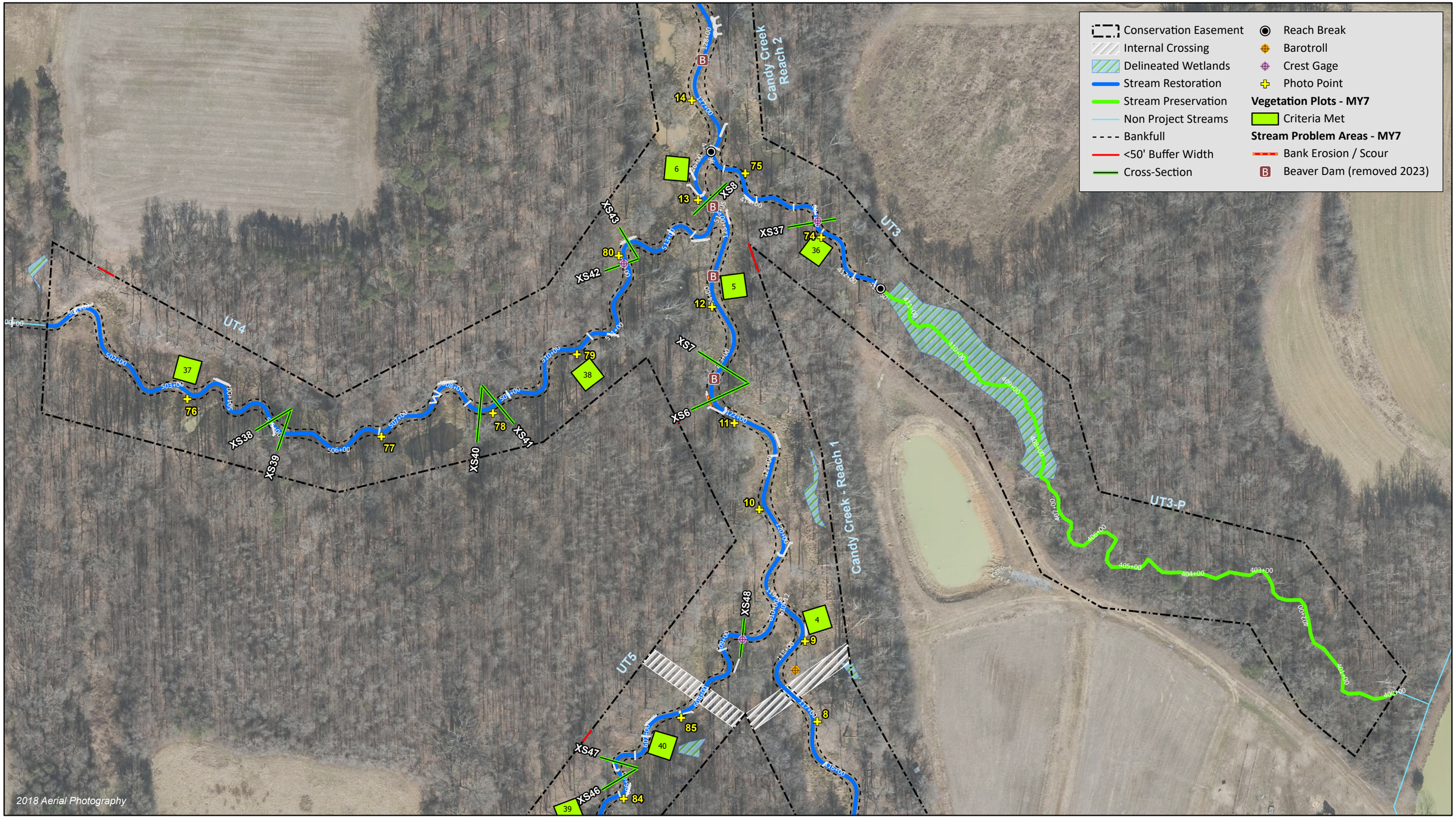
WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.1 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Guilford County, NC

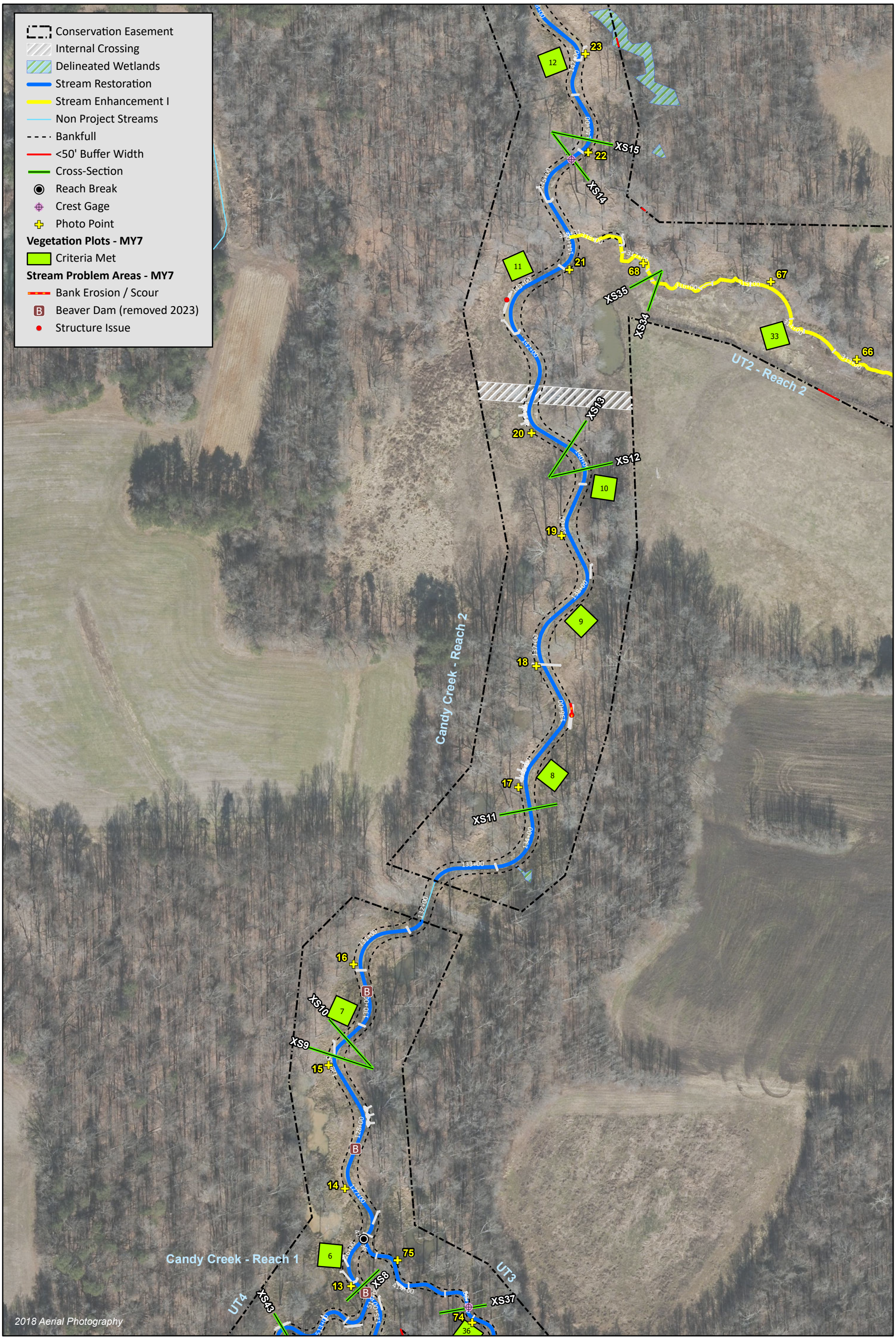


WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.2 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023
Guilford County, NC



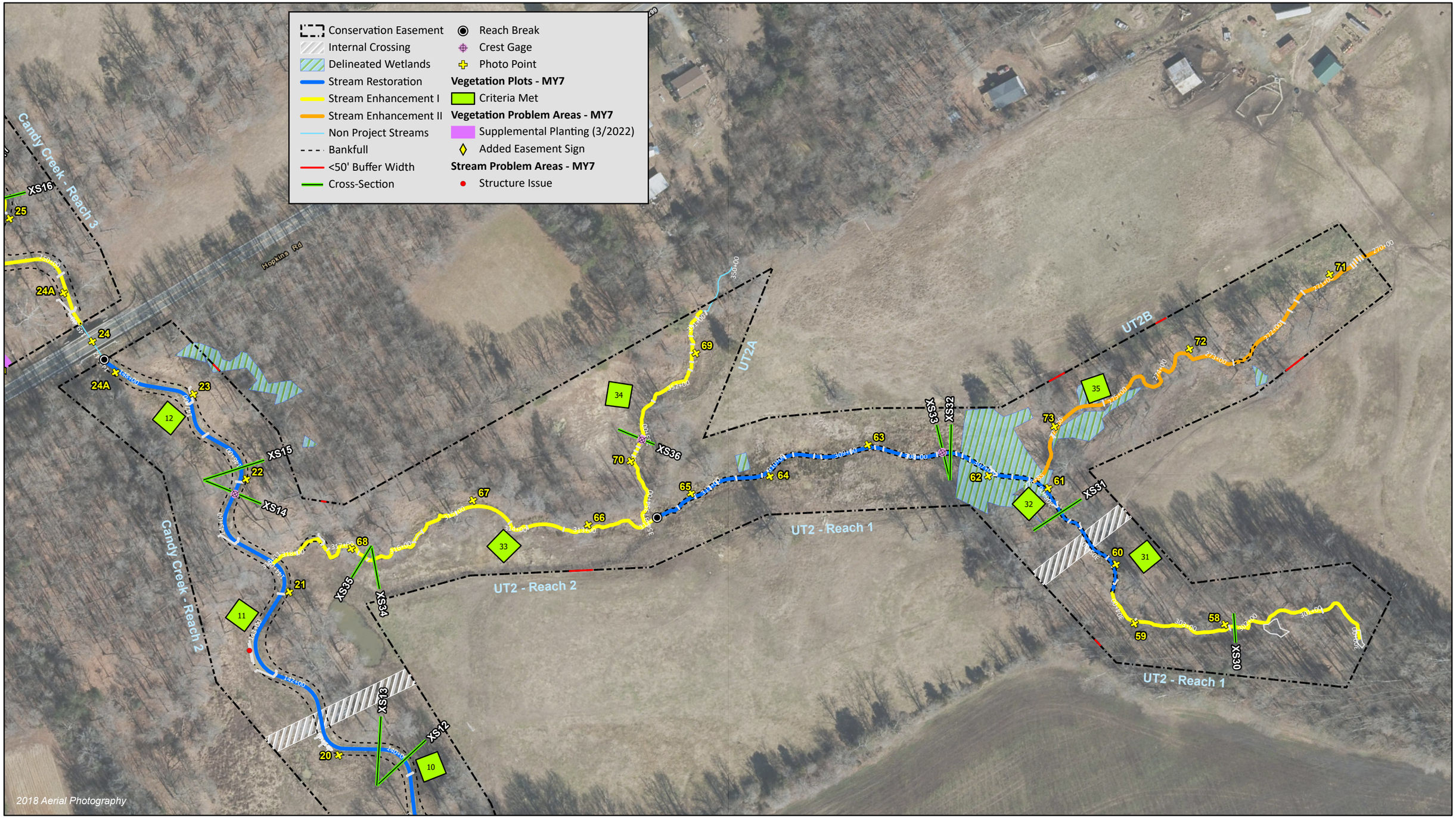
WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

N

Figure 3.3 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023
Guilford County, NC



WILDLANDS ENGINEERING

NC Environmental Quality

Figure 3.4 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023
Guilford County, NC

Conservation Easement
Internal Crossing
Delineated Wetlands
Stream Restoration
Stream Enhancement I
Stream Enhancement II
Stream Preservation
Non Project Streams
Bankfull
<50' Buffer Width
Cross-Section
Reach Break
Crest Gage
Stream Gage
Photo Point

Vegetation Plots - MY7

Criteria Met

Vegetation Problem Areas - MY7

Supplemental Planting (3/2022)

Easement Encroachment

Encroachment (Resolved)
Added Easement Sign

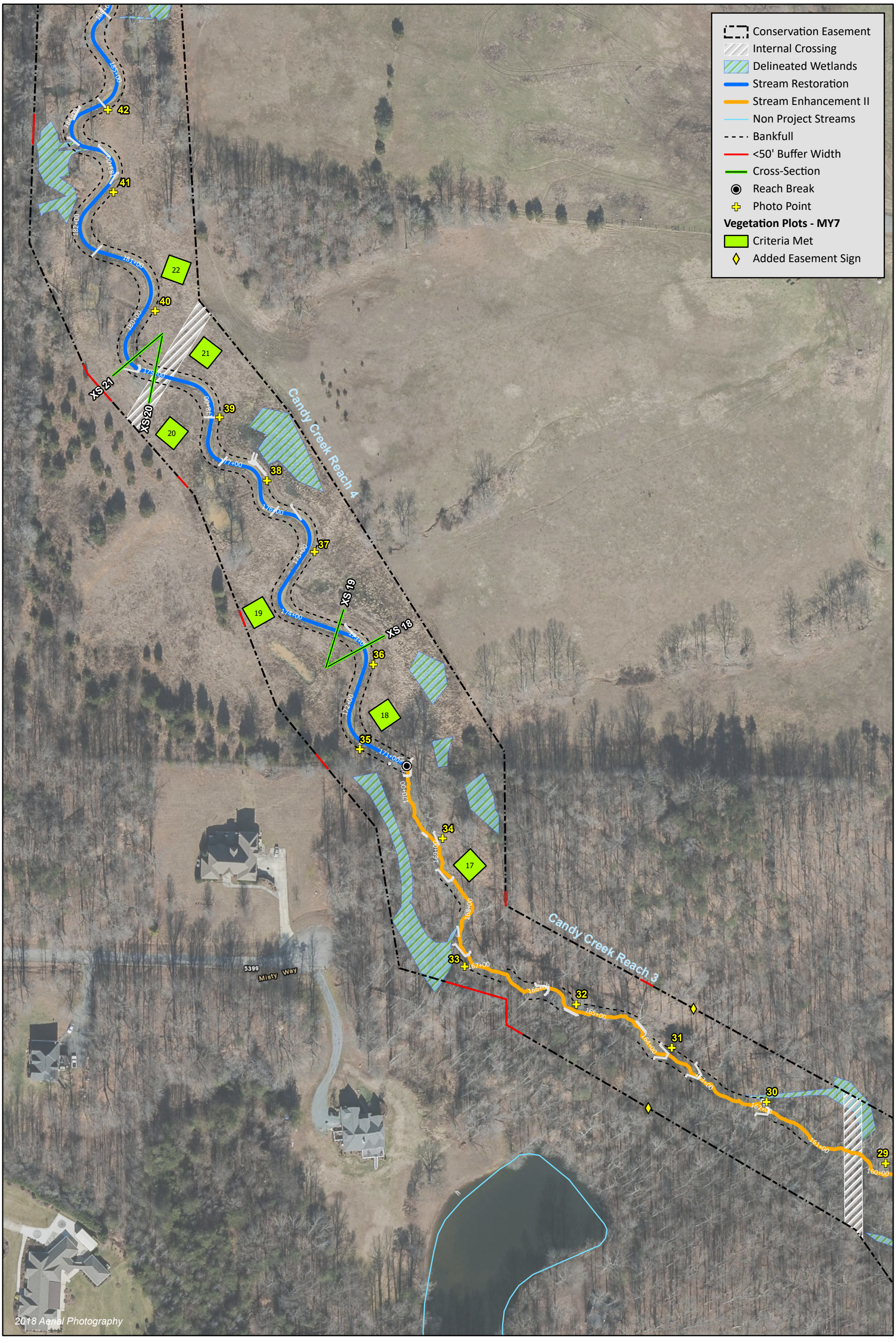
Candy Creek - Reach 3
UT1C
UT1C-P
UT1D
Hopkins Rd
9299
XS 17
XS 16
XS 29
XS 28
XS 27
2018 Aerial Photography

WILDLANDS ENGINEERING

NC Environmental Quality

0 125 250 Feet

Figure 3.5 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023
Guilford County, NC

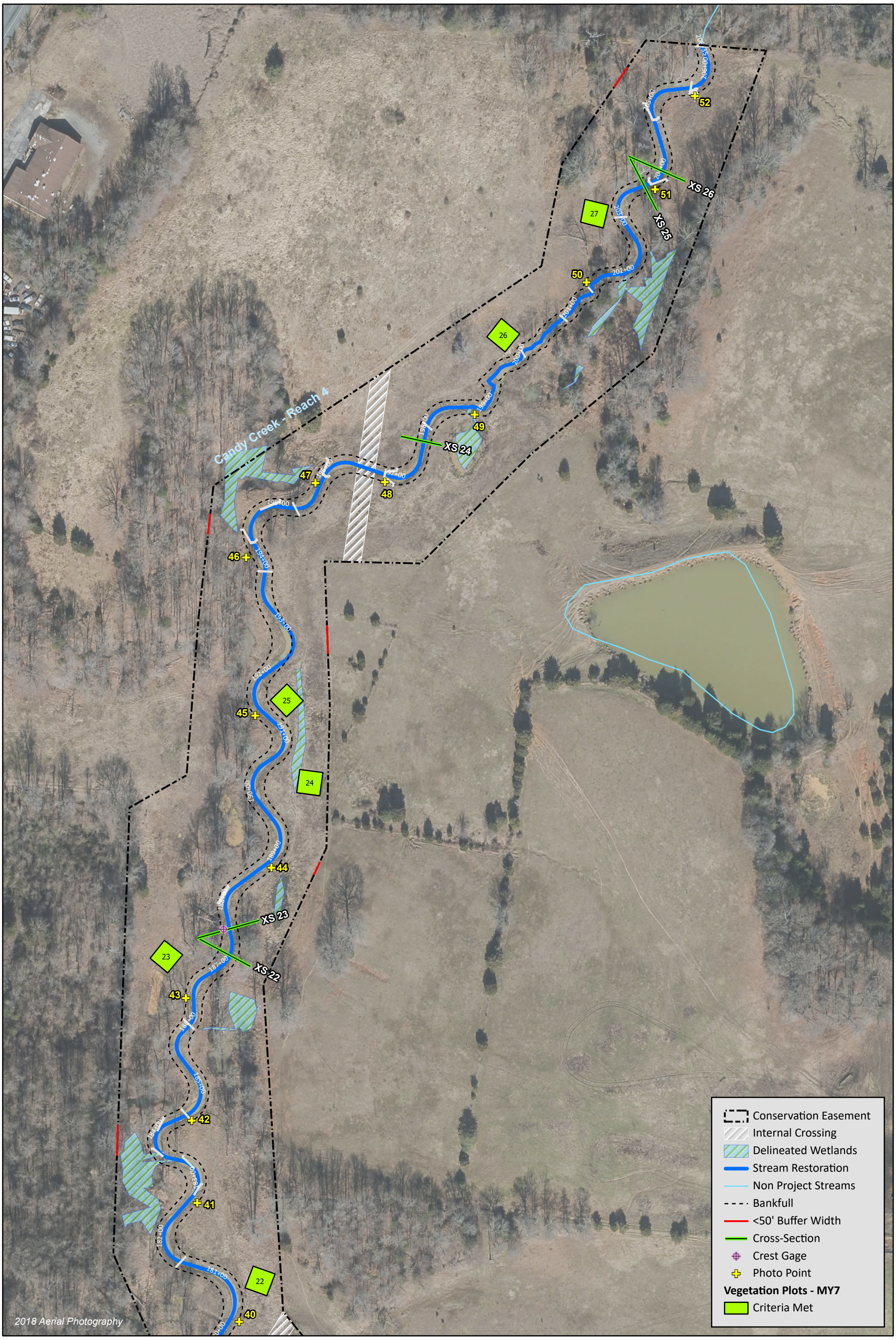


WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.6 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023
Guilford County, NC



WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.7 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023
Guilford County, NC

Table 5a. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

Candy Creek Reach 1 (2,619 LF)

Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	39	39			100%			
	3. Meander Pool Condition	Depth Sufficient	38	38			100%			
		Length Appropriate	38	38			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	38	38			100%			
		Thalweg centering at downstream of meander bend (Glide)	38	38			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			1	15	>99%	0	0	>99%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	1	15	>99%	0	0	>99%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	32	32			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	8	8			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	8	8			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	27	27			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	27	27			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5b. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 2 (2,215 LF)
Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	24	24			100%			
	3. Meander Pool Condition	Depth Sufficient	24	24			100%			
		Length Appropriate	24	24			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	24	24			100%			
		Thalweg centering at downstream of meander bend (Glide)	24	24			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			1	20	>99%	0	0	>99%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	1	20	>99%	0	0	>99%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	27	29			93%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	12	12			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	12	12			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	17	17			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	17	17			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5c. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

Candy Creek Reach 3 (2,135 LF)

Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	23	23			100%			
	3. Meander Pool Condition	Depth Sufficient	17	17			100%			
		Length Appropriate	17	17			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	17	17			100%			
		Thalweg centering at downstream of meander bend (Glide)	16	16			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	>99%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	35	35			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	12	12			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	12	12			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	23	23			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	23	23			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5d. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

Candy Creek Reach 4 (3,564 LF)

Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	42	42			100%			
	3. Meander Pool Condition	Depth Sufficient	39	39			100%			
		Length Appropriate	39	39			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	38	38			100%			
		Thalweg centering at downstream of meander bend (Glide)	39	39			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	56	56			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	22	22			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	22	22			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	38	38			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	38	38			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5e. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT1C (728 LF)
Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	32	32			100%			
	3. Meander Pool Condition	Depth Sufficient	7	7			100%			
		Length Appropriate	7	7			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	7	7			100%			
		Thalweg centering at downstream of meander bend (Glide)	7	7			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	29	29			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	22	22			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	22	22			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	7	7			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	7	7			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5f. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT1D (379 LF)
Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	24	24			100%			
	3. Meander Pool Condition	Depth Sufficient	2	2			100%			
		Length Appropriate	2	2			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	2	2			100%			
		Thalweg centering at downstream of meander bend (Glide)	2	2			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	30	30			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	29	29			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	29	29			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	1	1			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	20	20			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5g. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

UT2 Reach 1 (1,188 LF)

Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	32	32			100%			
	3. Meander Pool Condition	Depth Sufficient	8	8			100%			
		Length Appropriate	8	8			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	8	8			100%			
		Thalweg centering at downstream of meander bend (Glide)	8	8			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	32	32			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	31	31			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	31	31			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	1	1			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	22	22			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5h. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

UT2 Reach 2 (643 LF)

Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	6	6			100%			
	3. Meander Pool Condition	Depth Sufficient	7	7			100%			
		Length Appropriate	7	7			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	7	7			100%			
		Thalweg centering at downstream of meander bend (Glide)	7	7			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	9	9			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	8	8			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	8	8			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	2	2			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	4	4			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5i. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

UT2A (353 LF)

Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	11	11			100%			
	3. Meander Pool Condition	Depth Sufficient	4	4			100%			
		Length Appropriate	4	4			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	4	4			100%			
		Thalweg centering at downstream of meander bend (Glide)	4	4			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	12	12			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	12	12			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	12	12			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	n/a	n/a			n/a			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	12	12			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5j. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT2B (657 LF)
Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	5	5			100%			
	3. Meander Pool Condition	Depth Sufficient	6	6			100%			
		Length Appropriate	6	6			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	6	6			100%			
		Thalweg centering at downstream of meander bend (Glide)	6	6			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	16	16			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	16	16			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	16	16			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	n/a	n/a			n/a			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	4	4			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5k. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT3 (346 LF)
Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	11	11			100%			
	3. Meander Pool Condition	Depth Sufficient	10	10			100%			
		Length Appropriate	10	10			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	10	10			100%			
		Thalweg centering at downstream of meander bend (Glide)	10	10			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	15	15			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	9	9			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	9	9			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	6	6			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	5	5			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5l. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT4 (1,356 LF)
Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	32	32			100%			
	3. Meander Pool Condition	Depth Sufficient	30	30			100%			
		Length Appropriate	30	30			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	30	30			100%			
		Thalweg centering at downstream of meander bend (Glide)	30	30			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	22	22			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	7	7			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	7	7			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	15	15			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	16	16			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 5m. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT5 (1,012 LF)
Last assessed on 10/13/2023

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-Built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjust % for Stabilizing Woody Vegetation
1. Bed	1. Vertical Stability (Riffle and Run Units)	Aggradation			0	0	100%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	21	21			100%			
	3. Meander Pool Condition	Depth Sufficient	21	21			100%			
		Length Appropriate	21	21			100%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	21	21			100%			
		Thalweg centering at downstream of meander bend (Glide)	21	21			100%			
2. Bank	1. Scoured/Eroded	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			0	0	100%	0	0	100%
	2. Undercut	Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat.			0	0	100%	0	0	100%
	3. Mass Wasting	Bank slumping, calving, or collapse			0	0	100%	0	0	100%
				Totals	0	0	100%	0	0	100%
3. Engineered Structures[1]	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	22	22			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	12	12			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	12	12			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does not exceed 15%.	12	12			100%			
	4. Habitat	Pool forming structures maintaining ~Max Pool Depth : Bankfull Depth ≥ 1.6 Rootwads/logs providing some cover at baseflow.	12	12			100%			

[1]Excludes constructed riffles since they are evaluated in channel category.

Table 6. Vegetation Condition Assessment Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

Last assessed on 10/13/2023

Planted Acreage **32**

Vegetation Category	Definitions	Mapping Threshold (Ac)	Number of Polygons	Combined Acreage	% of Planted Acreage
Bare Areas	Very limited cover of both woody and herbaceous material.	0.1	0	0.00	0.0%
Low Stem Density Areas	Woody stem densities clearly below target levels based on MY3, 5, or 7 stem count criteria.	0.1	0	0.00	0.0%
		Total	**0**	**0.00**	**0.0%**
Areas of Poor Growth Rates or Vigor	Areas with woody stems of a size class that are obviously small given the monitoring year.	0.25	0	0.00	0%
		Cumulative Total	**0**	**0.00**	**0.0%**

Easement Acreage **62**

Vegetation Category	Definitions	Mapping Threshold (SF)	Number of Polygons	Combined Acreage	% of Easement Acreage
Invasive Areas of Concern	Areas of points (if too small to render as polygons at map scale).	1,000	2	0.19	0.3%
Easement Encroachment Areas	Areas of points (if too small to render as polygons at map scale).	none	0	0.00	0.0%

STREAM PHOTOGRAPHS

Candy Creek
MY0 - MY7

	
PHOTO POINT 1 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 1** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 1 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 1** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 2 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 2** Candy Creek R1 – upstream *(4/13/2023)*

	
PHOTO POINT 2 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 2** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 3 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 3** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 3 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 3** Candy Creek R1 – downstream *(4/13/2023)*

	
PHOTO POINT 4 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 4** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 4 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 4** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 5 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 5** Candy Creek R1 – upstream *(4/13/2023)*

	
PHOTO POINT 5 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 5** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 6 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 6** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 6 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 6** Candy Creek R1 – downstream *(4/13/2023)*

	
PHOTO POINT 7 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 7** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 7 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 7** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 8 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 8** Candy Creek R1 – upstream *(4/13/2023)*

	
PHOTO POINT 8 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 8** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 9 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 9** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 9 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 9** Candy Creek R1 – downstream *(4/13/2023)*

	
PHOTO POINT 10 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 10** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 10 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 10** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 11 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 11** Candy Creek R1 – upstream *(4/13/2023)*

	
PHOTO POINT 11 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 11** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 12 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 12** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 12 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 12** Candy Creek R1 – downstream *(4/13/2023)*

	
PHOTO POINT 13 Candy Creek R1 – upstream *(03/06/2017)*	**PHOTO POINT 13** Candy Creek R1 – upstream *(4/13/2023)*
	
PHOTO POINT 13 Candy Creek R1 – downstream *(03/06/2017)*	**PHOTO POINT 13** Candy Creek R1 – downstream *(4/13/2023)*
	
PHOTO POINT 14 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 14** Candy Creek R2 – upstream *(4/13/2023)*

	
PHOTO POINT 14 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 14** Candy Creek R2 – downstream *(4/13/2023)*
	
PHOTO POINT 15 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 15** Candy Creek R2 – upstream *(4/13/2023)*
	
PHOTO POINT 15 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 15** Candy Creek R2 – downstream *(4/13/2023)*

	
PHOTO POINT 16 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 16** Candy Creek R2 – upstream *(4/13/2023)*
	
PHOTO POINT 16 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 16** Candy Creek R2 – downstream *(4/13/2023)*
	
PHOTO POINT 17 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 17** Candy Creek R2 – upstream *(3/30/2023)*

	
PHOTO POINT 17 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 17** Candy Creek R2 – downstream *(3/30/2023)*
	
PHOTO POINT 18 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 18** Candy Creek R2 – upstream *(3/30/2023)*
	
PHOTO POINT 18 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 18** Candy Creek R2 – downstream *(3/30/2023)*

	
PHOTO POINT 19 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 19** Candy Creek R2 – upstream *(3/30/2023)*
	
PHOTO POINT 19 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 19** Candy Creek R2 – downstream *(3/30/2023)*
	
PHOTO POINT 20 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 20** Candy Creek R2 – upstream *(3/30/2023)*

	
PHOTO POINT 20 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 20** Candy Creek R2 – downstream *(3/30/2023)*
	
PHOTO POINT 21 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 21** Candy Creek R2 – upstream *(3/30/2023)*
	
PHOTO POINT 21 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 21** Candy Creek R2 – downstream *(3/30/2023)*

	
PHOTO POINT 22 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 22** Candy Creek R2 – upstream *(3/30/2023)*
	
PHOTO POINT 22 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 22** Candy Creek R2 – downstream *(3/30/2023)*
	
PHOTO POINT 23 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 23** Candy Creek R2 – upstream *(3/30/2023)*

	
PHOTO POINT 23 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 23** Candy Creek R2 – downstream *(3/30/2023)*
	
PHOTO POINT 24A[1] Candy Creek R2 – upstream *(10/19/2021)*	**PHOTO POINT 24A** Candy Creek R2 – upstream *(3/30/2023)*
	
PHOTO POINT 24A[1] Candy Creek R2 – downstream *(10/19/2021)*	**PHOTO POINT 24A** Candy Creek R2 – downstream *(3/30/2023)*

[1] Photo point added in 2021 (MY5)

	
PHOTO POINT 24 Candy Creek R2 – upstream *(03/06/2017)*	**PHOTO POINT 24** Candy Creek R3 – upstream *(3/30/2023)*
	
PHOTO POINT 24 Candy Creek R2 – downstream *(03/06/2017)*	**PHOTO POINT 24** Candy Creek R3 – downstream *(3/30/2023)*
	
PHOTO POINT 24B[1] Candy Creek R3 – upstream *(10/19/2021)*	**PHOTO POINT 24B** Candy Creek R3 – upstream (*3/30/2023)*

[1] Photo point added in 2021 (MY5)

	
PHOTO POINT 24B[1] Candy Creek R3 – downstream *(10/16/2021)*	**PHOTO POINT 24B** Candy Creek R3 – downstream (*3/30/2023)*
	
PHOTO POINT 25 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 25** Candy Creek R3 – upstream *(3/30/2023)*
	
PHOTO POINT 25 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 25** Candy Creek R3 – downstream *(3/30/2023)*

[1] Photo point added in 2021 (MY5)

	
PHOTO POINT 26 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 26** Candy Creek R3 – upstream *(3/30/2023)*
	
PHOTO POINT 26 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 26** Candy Creek R3 – downstream *(3/30/2023)*
	
PHOTO POINT 27 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 27** Candy Creek R3 – upstream *(3/30/2023)*

	
PHOTO POINT 27 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 27** Candy Creek R3 – downstream *(3/30/2023)*
	
PHOTO POINT 28 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 28** Candy Creek R3 – upstream *(3/30/2023)*
	
PHOTO POINT 28 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 28** Candy Creek R3 – downstream *(3/30/2023)*

	
PHOTO POINT 29 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 29** Candy Creek R3 – upstream *(3/30/2023)*
	
PHOTO POINT 29 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 29** Candy Creek R3 – downstream *(3/30/2023)*
	
PHOTO POINT 30 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 30** Candy Creek R3 – upstream *(3/30/2023)*

	
PHOTO POINT 30 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 30** Candy Creek R3 – downstream *(3/30/2023)*
	
PHOTO POINT 31 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 31** Candy Creek R3 – upstream *(3/30/2023)*
	
PHOTO POINT 31 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 31** Candy Creek R3 – downstream *(3/30/2023)*

	
PHOTO POINT 32 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 32** Candy Creek R3 – upstream *(3/30/2023)*
	
PHOTO POINT 32 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 32** Candy Creek R3 – downstream *(3/30/2023)*
	
PHOTO POINT 33 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 33** Candy Creek R3 – upstream *(3/30/2023)*

	
PHOTO POINT 33 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 33** Candy Creek R3 – downstream *(3/30/2023)*
	
PHOTO POINT 34 Candy Creek R3 – upstream *(03/06/2017)*	**PHOTO POINT 34** Candy Creek R3 – upstream *(3/30/2023)*
	
PHOTO POINT 34 Candy Creek R3 – downstream *(03/06/2017)*	**PHOTO POINT 34** Candy Creek R3 – downstream *(3/30/2023)*

	
PHOTO POINT 35 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 35** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 35 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 35** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 36 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 36** Candy Creek R4 – upstream *(3/30/2023)*

	
PHOTO POINT 36 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 36** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 37 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 37** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 37 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 37** Candy Creek R4 – downstream *(3/30/2023)*

	
PHOTO POINT 38 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 38** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 38 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 38** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 39 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 39** Candy Creek R4 – upstream *(3/30/2023)*

	
PHOTO POINT 39 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 39** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 40 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 40** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 40 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 40** Candy Creek R4 – downstream *(3/30/2023)*

	
PHOTO POINT 41 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 41** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 41 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 41** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 42 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 42** Candy Creek R4 – upstream *(3/30/2023)*

	
PHOTO POINT 42 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 42** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 43 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 43** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 43 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 43** Candy Creek R4 – downstream *(3/30/2023)*

	
PHOTO POINT 44 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 44** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 44 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 44** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 45 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 45** Candy Creek R4 – upstream *(3/30/2023)*

	
PHOTO POINT 45 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 45** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 46 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 46** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 46 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 46** Candy Creek R4 – downstream *(3/30/2023)*

	
PHOTO POINT 47 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 47** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 47 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 47** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 48 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 48** Candy Creek R4 – upstream *(3/30/2023)*

	
PHOTO POINT 48 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 48** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 49 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 49** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 49 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 49** Candy Creek R4 – downstream *(3/30/2023)*

	
PHOTO POINT 50 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 50** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 50 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 50** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 51 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 51** Candy Creek R4 – upstream *(3/30/2023)*

	
PHOTO POINT 51 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 51** Candy Creek R4 – downstream *(3/30/2023)*
	
PHOTO POINT 52 Candy Creek R4 – upstream *(03/06/2017)*	**PHOTO POINT 52** Candy Creek R4 – upstream *(3/30/2023)*
	
PHOTO POINT 52 Candy Creek R4 – downstream *(03/06/2017)*	**PHOTO POINT 52** Candy Creek R4 – downstream *(3/30/2023)*

	
PHOTO POINT 53 UT1C – upstream *(03/06/2017)*	**PHOTO POINT 53** UT1C – upstream *(3/30/2023)*
	
PHOTO POINT 53 UT1C – downstream *(03/06/2017)*	**PHOTO POINT 53** UT1C – downstream *(3/30/2023)*
	
PHOTO POINT 54 UT1C – upstream *(03/06/2017)*	**PHOTO POINT 54** UT1C – upstream *(3/30/2023)*

	
PHOTO POINT 54 UT1C – downstream *(03/06/2017)*	**PHOTO POINT 54** UT1C – downstream *(3/30/2023)*
	
PHOTO POINT 55 UT1C – upstream *(03/06/2017)*	**PHOTO POINT 55** UT1C – upstream *(3/30/2023)*
	
PHOTO POINT 55 UT1C – downstream *(03/06/2017)*	**PHOTO POINT 55** UT1C – downstream *(3/30/2023)*

	
PHOTO POINT 56 UT1C – upstream *(03/06/2017)*	**PHOTO POINT 56** UT1C – upstream *(3/30/2023)*
	
PHOTO POINT 56 UT1C – downstream *(03/06/2017)*	**PHOTO POINT 56** UT1C – downstream *(3/30/2023)*
	
PHOTO POINT 57 UT1D – upstream *(03/06/2017)*	**PHOTO POINT 57** UT1D – upstream *(3/30/2023)*

	
PHOTO POINT 57 UT1D – downstream *(03/06/2017)*	**PHOTO POINT 57** UT1D – downstream *(3/30/2023)*
	
PHOTO POINT 58 UT2 R1 – upstream *(03/06/2017)*	**PHOTO POINT 58** UT2 R1 – upstream *(3/30/2023)*
	
PHOTO POINT 58 UT2 R1 – downstream *(03/06/2017)*	**PHOTO POINT 58** UT2 R1 – downstream *(3/30/2023)*

	
PHOTO POINT 59 UT2 R1 – upstream *(03/06/2017)*	**PHOTO POINT 59** UT2 R1 – upstream *(3/30/2023)*
	
PHOTO POINT 59 UT2 R1 – downstream *(03/06/2017)*	**PHOTO POINT 59** UT2 R1 – downstream *(3/30/2023)*
	
PHOTO POINT 60 UT2 R1 – upstream *(03/06/2017)*	**PHOTO POINT 60** UT2 R1 – upstream *(3/30/2023)*

	
PHOTO POINT 60 UT2 R1 – downstream *(03/06/2017)*	**PHOTO POINT 60** UT2 R1 – downstream *(3/30/2023)*
	
PHOTO POINT 61 UT2 R1 – upstream *(03/06/2017)*	**PHOTO POINT 61** UT2 R1 – upstream *(3/30/2023)*
	
PHOTO POINT 61 UT2 R1 – downstream *(03/06/2017)*	**PHOTO POINT 61** UT2 R1 – downstream *(3/30/2023)*

	
PHOTO POINT 62 UT2 R1 – upstream *(03/06/2017)*	**PHOTO POINT 62** UT2 R1 – upstream *(3/30/2023)*
	
PHOTO POINT 62 UT2 R1 – downstream *(03/06/2017)*	**PHOTO POINT 62** UT2 R1 – downstream *(3/30/2023)*
	
PHOTO POINT 63 UT2 R1 – upstream *(03/06/2017)*	**PHOTO POINT 63** UT2 R1 – upstream *(3/30/2023)*

	
PHOTO POINT 63 UT2 R1 – downstream *(03/06/2017)*	**PHOTO POINT 63** UT2 R1 – downstream *(3/30/2023)*
	
PHOTO POINT 64 UT2 R1 – upstream *(03/06/2017)*	**PHOTO POINT 64** UT2 R1 – upstream *(3/30/2023)*
	
PHOTO POINT 64 UT2 R1 – downstream *(03/06/2017)*	**PHOTO POINT 64** UT2 R1 – downstream *(3/30/2023)*

	
PHOTO POINT 65 UT2 R1 – upstream *(03/06/2017)*	**PHOTO POINT 65** UT2 R1 – upstream *(3/30/2023)*
	
PHOTO POINT 65 UT2 R1 – downstream *(03/06/2017)*	**PHOTO POINT 65** UT2 R1 – downstream *(3/30/2023)*
	
PHOTO POINT 66 UT2 R2 – upstream *(03/06/2017)*	**PHOTO POINT 66** UT2 R2 – upstream *(3/30/2023)*

	
PHOTO POINT 66 UT2 R2 – downstream *(03/06/2017)*	**PHOTO POINT 66** UT2 R2 – downstream *(3/30/2023)*
	
PHOTO POINT 67 UT2 R2 – upstream *(03/06/2017)*	**PHOTO POINT 67** UT2 R2 – upstream *(3/30/2023)*
	
PHOTO POINT 67 UT2 R2 – downstream *(03/06/2017)*	**PHOTO POINT 67** UT2 R2 – downstream *(3/30/2023)*

	
PHOTO POINT 68 UT2 R2 – upstream *(03/06/2017)*	**PHOTO POINT 68** UT2 R2 – upstream (*3/30/2023)*
	
PHOTO POINT 68 UT2 R2 – downstream *(03/06/2017)*	**PHOTO POINT 68** UT2 R2 – downstream (*3/30/2023)*
	
PHOTO POINT 69 UT2A – upstream *(03/06/2017)*	**PHOTO POINT 69** UT2A – upstream *(3/30/2023)*

	
PHOTO POINT 69 UT2A – downstream *(03/06/2017)*	**PHOTO POINT 69** UT2A – downstream *(3/30/2023)*
	
PHOTO POINT 70 UT2A – upstream *(03/06/2017)*	**PHOTO POINT 70** UT2A – upstream *(3/30/2023)*
	
PHOTO POINT 70 UT2A – downstream *(03/06/2017)*	**PHOTO POINT 70** UT2A – downstream *(3/30/2023)*

	
PHOTO POINT 71 UT2B – upstream *(03/06/2017)*	**PHOTO POINT 71** UT2B – upstream *(3/30/2023)*
	
PHOTO POINT 71 UT2B – downstream *(03/06/2017)*	**PHOTO POINT 71** UT2B – downstream *(3/30/2023)*
	
PHOTO POINT 72 UT2B – upstream *(03/06/2017)*	**PHOTO POINT 72** UT2B – upstream *(3/30/2023)*

	
PHOTO POINT 72 UT2B – downstream *(03/06/2017)*	**PHOTO POINT 72** UT2B – downstream *(3/30/2023)*
	
PHOTO POINT 73 UT2B – upstream *(03/06/2017)*	**PHOTO POINT 73** UT2B – upstream *(3/30/2023)*
	
PHOTO POINT 73 UT2B – downstream *(03/06/2017)*	**PHOTO POINT 73** UT2B – downstream *(3/30/2023)*

	
PHOTO POINT 74 UT3 – upstream *(03/06/2017)*	**PHOTO POINT 74** UT3 – upstream *(4/13/2023)*
	
PHOTO POINT 74 UT3 – downstream *(03/06/2017)*	**PHOTO POINT 74** UT3 – downstream *(4/13/2023)*
	
PHOTO POINT 75 UT3 – upstream *(03/06/2017)*	**PHOTO POINT 75** UT3 – upstream *(4/13/2023)*

	
PHOTO POINT 75 UT3 – downstream *(03/06/2017)*	**PHOTO POINT 75** UT3 – downstream *(4/13/2023)*
	
PHOTO POINT 76 UT4 – upstream *(03/06/2017)*	**PHOTO POINT 76** UT4 – upstream *(4/13/2023)*
	
PHOTO POINT 76 UT4 – downstream *(03/06/2017)*	**PHOTO POINT 76** UT4 – downstream *(4/13/2023)*

	
PHOTO POINT 77 UT4 – upstream *(03/06/2017)*	**PHOTO POINT 77** UT4 – upstream *(4/13/2023)*
	
PHOTO POINT 77 UT4 – downstream *(03/06/2017)*	**PHOTO POINT 77** UT4 – downstream *(4/13/2023)*
	
PHOTO POINT 78 UT4 – upstream *(03/06/2017)*	**PHOTO POINT 78** UT4 – upstream *(4/13/2023)*

	
PHOTO POINT 78 UT4 – downstream *(03/06/2017)*	**PHOTO POINT 78** UT4 – downstream *(4/13/2023)*
	
PHOTO POINT 79 UT4 – upstream *(03/06/2017)*	**PHOTO POINT 79** UT4 – upstream *(4/13/2023)*
	
PHOTO POINT 79 UT4 – downstream *(03/06/2017)*	**PHOTO POINT 79** UT4 – downstream *(4/13/2023)*

	
PHOTO POINT 80 UT4 – upstream *(03/06/2017)*	**PHOTO POINT 80** UT4 – upstream *(4/13/2023)*
	
PHOTO POINT 80 UT4 – downstream *(03/06/2017)*	**PHOTO POINT 80** UT4 – downstream *(4/13/2023)*
	
PHOTO POINT 81 UT5 – upstream *(03/06/2017)*	**PHOTO POINT 81** UT5 – upstream *(4/13/2023)*

	
PHOTO POINT 81 UT5 – downstream *(03/06/2017)*	**PHOTO POINT 81** UT5 – downstream *(4/13/2023)*
	
PHOTO POINT 82 UT5 – upstream *(03/06/2017)*	**PHOTO POINT 82** UT5 – upstream *(4/13/2023)*
	
PHOTO POINT 82 UT5 – downstream *(03/06/2017)*	**PHOTO POINT 82** UT5 – downstream *(4/13/2023)*

	
PHOTO POINT 83 UT5 – upstream *(03/06/2017)*	**PHOTO POINT 83** UT5 – upstream *(4/13/2023)*
	
PHOTO POINT 83 UT5 – downstream *(03/06/2017)*	**PHOTO POINT 83** UT5 – downstream *(4/13/2023)*
	
PHOTO POINT 84 UT5 – upstream *(03/06/2017)*	**PHOTO POINT 84** UT5 – upstream *(4/13/2023)*

	
PHOTO POINT 84 UT5 – downstream *(03/06/2017)*	**PHOTO POINT 84** UT5 – downstream *(4/13/2023)*
	
PHOTO POINT 85 UT5 **–** upstream *(03/06/2017)*	**PHOTO POINT 85** UT5 **–** upstream *(4/13/2023)*
	
PHOTO POINT 85 UT5 **–** downstream *(03/06/2017)*	**PHOTO POINT 85** UT5 **–** downstream *(4/13/2023)*

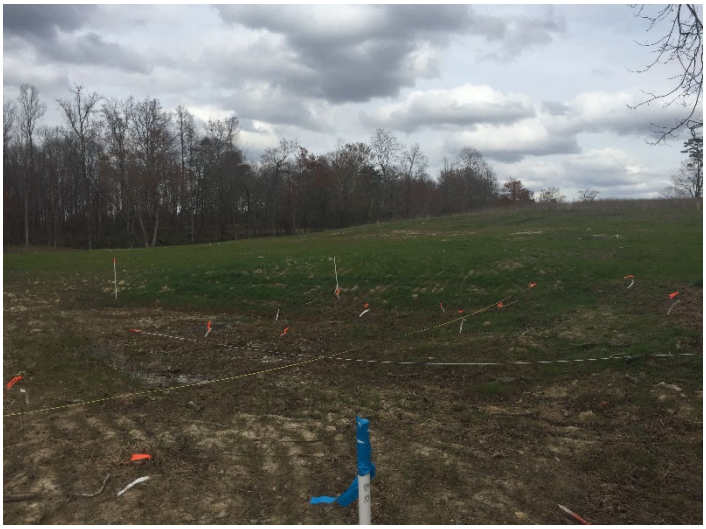
VEGETATION PHOTOGRAPHS

Candy Creek
MY0 - MY7

	
Vegetation Plot 1 - MY0 *(03/07/2017)*	**Vegetation Plot 1** - MY7 *(8/3/2023)*
	
Vegetation Plot 2 - MY0 *(03/07/2017)*	**Vegetation Plot 2** - MY7 *(8/3/2023)*
	
Vegetation Plot 3 - MY0 *(03/07/2017)*	**Vegetation Plot 3** - MY7 *(8/3/2023)*

	
Vegetation Plot 4 - MY0 *(03/07/2017)*	**Vegetation Plot 4** - MY7 *(8/3/2023)*
	
Vegetation Plot 5 - MY0 *(03/07/2017)*	**Vegetation Plot 5** - MY7 *(8/3/2023)*
	
Vegetation Plot 6 - MY0 *(03/07/2017)*	**Vegetation Plot 6** - MY7 *(8/3/2023)*

	
Vegetation Plot 7 - MY0 *(03/07/2017)*	**Vegetation Plot 7** - MY7 *(8/3/2023)*
	
Vegetation Plot 8 - MY0 *(03/07/2017)*	**Vegetation Plot 8** - MY7 *(8/3/2023)*
	
Vegetation Plot 9 - MY0 *(03/07/2017)*	**Vegetation Plot 9** - MY7 *(8/3/2023)*

	
Vegetation Plot 10 - MY0 *(03/07/2017)*	**Vegetation Plot 10** - MY7 *(8/3/2023)*
	
Vegetation Plot 11 - MY0 *(03/07/2017)*	**Vegetation Plot 11** - MY7 *(8/7/2023)*
	
Vegetation Plot 12 - MY0 *(03/07/2017)*	**Vegetation Plot 12** - MY7 *(8/7/2023)*

	
Vegetation Plot 13 - MY0 *(03/07/2017)*	**Vegetation Plot 13** - MY7 *(08/07/2023)*
	
Vegetation Plot 14 - MY0 *(03/07/2017)*	**Vegetation Plot 14** - MY7 *(08/07/2023)*
	
Vegetation Plot 15 - MY0 *(03/07/2017)*	**Vegetation Plot 15** - MY7 *(8/8/2023)*

	
Vegetation Plot 16 - MY0 *(03/07/2017)*	**Vegetation Plot 16** - MY7 *(8/8/2023)*
	
Vegetation Plot 17 - MY0 *(03/07/2017)*	**Vegetation Plot 17** - MY7 *(8/8/2023)*
	
Vegetation Plot 18 - MY0 *(03/07/2017)*	**Vegetation Plot 18** - MY7 *(8/8/2023)*

	
Vegetation Plot 19 - MY0 *(03/07/2017)*	**Vegetation Plot 19** - MY7 *(8/8/2023)*
	
Vegetation Plot 20 - MY0 *(03/07/2017)*	**Vegetation Plot 20** - MY7 *(8/8/2023)*
	
Vegetation Plot 21 - MY0 *(03/07/2017)*	**Vegetation Plot 21** - MY7 *(8/8/2023)*

	
Vegetation Plot 22 - MY0 *(03/07/2017)*	**Vegetation Plot 22** - MY7 *(8/8/2023)*
	
Vegetation Plot 23 - MY0 *(03/07/2017)*	**Vegetation Plot 23** - MY7 *(8/8/2023)*
	
Vegetation Plot 24 - MY0 *(03/07/2017)*	**Vegetation Plot 24** - MY7 *(8/8/2023)*

	
Vegetation Plot 25 - MY0 *(03/07/2017)*	**Vegetation Plot 25** - MY7 *(8/8/2023)*
	
Vegetation Plot 26 - MY0 *(03/07/2017)*	**Vegetation Plot 26** - MY7 *(8/8/2023)*
	
Vegetation Plot 27 - MY0 *(03/07/2017)*	**Vegetation Plot 27** - MY7 *(8/8/2023)*

	
Vegetation Plot 28 - MY0 *(03/07/2017)*	**Vegetation Plot 28** - MY7 *(8/8/2023)*
	
Vegetation Plot 29 - MY0 *(03/07/2017)*	**Vegetation Plot 29** - MY7 *(8/8/2023)*
	
Vegetation Plot 30 - MY0 *(03/07/2017)*	**Vegetation Plot 30** - MY7 *(8/8/2023)*

Vegetation Plot 31 - MY0 *(03/07/2017)*

Vegetation Plot 31 - MY7 *(8/7/2023)*

Vegetation Plot 32 - MY0 *(03/07/2017)*

Vegetation Plot 32 - MY7 *(8/7/2023)*

Vegetation Plot 33 - MY0 *(03/07/2017)*

Vegetation Plot 33 - MY7 *(8/7/2023)*

	
Vegetation Plot 34 - MY0 *(03/07/2017)*	**Vegetation Plot 34** - MY7 (*10/31/2023)*
	
Vegetation Plot 35 - MY0 *(03/07/2017)*	**Vegetation Plot 35** - MY7 *(8/3/2023)*
	
Vegetation Plot 36 - MY0 *(03/07/2017)*	**Vegetation Plot 36** - MY7 *(8/3/2023)*

	
Vegetation Plot 37 - MY0 *(03/07/2017)*	**Vegetation Plot 37** - MY7 *(8/3/2023)*
	
Vegetation Plot 38 - MY0 *(03/07/2017)*	**Vegetation Plot 38** - MY7 *(8/3/2023)*
	
Vegetation Plot 39 - MY0 *(03/07/2017)*	**Vegetation Plot 39** - MY7 *(8/3/2023)*

	
Vegetation Plot 40 - MY0 *(03/07/2017)*	**Vegetation Plot 40** - MY7 *(8/3/2023)*

Stream Repair Status

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Reach	Station	Length (LF)	Year Reported - Issue	Description	Year - Management Action	Year - Status
Candy Creek Reach 1	100+00	130	MY4 - Aggradation	Minor sedimentation	MY4 - Monitor	MY5 - No longer an issue; channel mobilized sediment.
	100+00	N/A	MY3 - Encroachment	Mowing encroachment	MY4 - Added easement sign and horse tape. MY6 - Replanted	MY7 - No longer an issue.
	110+00	14	MY1 - Bank erosion	Minor bank erosion	MY1 - Monitor	MY3 - Bank is stable.
	111+00	10	MY1 - Bank erosion	Minor bank erosion	MY1 - Monitor	MY3 - Bank is stable.
	112+00	N/A	MY4 - Encroachment	Mowing encroachment	MY4 - Added horse tape. MY6 - Replanted MY7 - Replaced horse tape.	MY7 - Minor mowing early in MY7; No longer an issue.
	117+50	N/A	MY6 - Bridge issue	Bridge rotting	MY6 - Bridge replaced	MY6 - No issues with the bridge.
	122+50	20	MY3 - Bank erosion	Bank erosion behind structure	MY3 - Monitor	MY7 - Bank is revegetating, some erosion present.
	122+50	N/A	MY7 - Beaver dam	Beaver dam	MY7 - Beaver dam removed; beavers trapped	MY7 - No longer an issue.
	124+25	N/A	MY7 - Beaver dam	Beaver dam	MY7 - Beaver dam removed; beavers trapped	MY7 - No longer an issue.
	125+25	N/A	MY7 - Beaver dam	Beaver dam	MY7 - Beaver dam removed; beavers trapped	MY7 - No longer an issue.
Candy Creek Reach 2	127+50	N/A	MY7 - Beaver dam	Beaver dam	MY7 - Beaver dam removed; beavers trapped	MY7 - No longer an issue.
	128+25	N/A	MY6 - Beaver dam	Beaver dam	MY6 - Beaver dam removed; beavers trapped	MY6 - No longer an issue.
	129+25	N/A	MY5 - Beaver dam	Beaver dam	MY5 - Beaver dam removed; beavers trapped	MY5 - No longer an issue.
	130+10	N/A	MY7 - Beaver dam	Beaver dam	MY7 - Beaver dam removed; beavers trapped	MY7 - No longer an issue.
	136+00	20	MY3 - Bank erosion MY4 - Structure issue	Minor bank erosion behind structure	MY3 & MY4 - Monitor	MY7 - Bank is revegetating, some erosion present; structure is disconnected from bank.
	140+50	55	MY4 - Aggradation	Minor sedimentation in riffle	MY4 - Monitor	MY5 - No longer an issue; channel mobilized sediment.

Stream Repair Status

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Reach	Station	Length (LF)	Year Reported - Issue	Description	Year - Management Action	Year - Status
Candy Creek Reach 2 (cont.)	142+75	25	MY1 - Bank erosion, structure issue	Bank erosion behind structure	MY1 - Monitor	MY4 - Bank is revegetating and stable. MY7 - Structure is disconnected from bank. Bank still stable.
	145+00	5	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY4 - Bank is revegetating and stable.
	147+25	20	MY1 - Bank erosion	Bank erosion	MY4 - Repaired right bank.	MY4 - Bank is stable.
Candy Creek Reach 3	149+00	N/A	MY4 - Encroachment	Mowing encroachment	MY4 - Added easement sign and horse tape. MY6 - Replanted	MY7 - No longer an issue.
	150+00	20	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY5 - Bank is stable.
	151+00	45	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY4 - Bank is stable.
	151+75	35	MY3 - Bank erosion	Bank erosion	MY6 - Repaired right bank	MY7 - Bank is stable.
	156+50	5	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY6 - Bank is stable
	156+50	30	MY4 - Aggradation	Minor sedimentation in riffle	MY4 - Monitor	MY5 - No longer an issue; channel mobilized sediment.
	159+50	15	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY4 - Bank is stable.
	165+50	10	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY7 - Bank is stable.
Candy Creek Reach 4	173+00	N/A	MY3 - Beaver dam	Beaver dam	MY4 - Beaver dam removed; beavers trapped	MY4 - No longer an issue.
	175+50	N/A	MY3 - Beaver dam	Beaver dam	MY4 - Beaver dam removed; beavers trapped	MY4 - No longer an issue.
	180+50	15	MY1 - Bank erosion	Minor bank erosion	MY1 - Monitor	MY3 - Bank is stable.
	188+00	N/A	MY4 - Structure issue	Strutural integrity	MY4 - Monitor	MY6 - Structure is stable.
	191+00	15	MY1 - Bank erosion	Minor bank erosion	MY1 - Monitor	MY3 - Bank is stable.
	194+25	4	MY3 - Bank erosion; structure issue	Minor bank erosion around structure tie-in	MY3 - Monitor	MY4 - Bank is revegetating and structure is stable.
	196+00	4	MY3 - Bank erosion; structure issue	Minor bank erosion around structure tie-in	MY3 - Monitor	MY4 - Bank is revegetating and structure is stable.
	200+50	22	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY6 - Bank is stable.
	205+00	4	MY3 - Bank erosion; structure issue	Minor bank erosion around structure tie-in	MY3 - Monitor	MY4 - Bank is revegetating and structure is stable.
	205+50	40	MY3 - Bank erosion; structure issue	Minor bank erosion; bank protection.	MY3 - Monitor	MY4 - Bank is revegetating and structure is stable.

Stream Repair Status

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Reach	Station	Length (LF)	Year Reported - Issue	Description	Year - Management Action	Year - Status
UT1C	205+75	13	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY4 - Bank is revegetating and stable.
	205+75	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
	206+00	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
	207+25	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
	208+00	N/A	MY6 - Encroachment	Mowing encroachment	MY6 - Added horse tape. MY7 - Replaced horse tape.	MY7 - No longer an issue.
UT1D	250+25	19	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY4 - Bank is revegetating and stable.
	253+00	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
	253+10	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
	253+20	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
	253+30	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
	253+40	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
UT2B	270+50	N/A	MY4 - Structure issue	Piping	MY4 - Monitor	MY5 - Structure is stable.
UT2 Reach 1	302+00	15	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY4 - Bank is revegetating and stable.
	305+75	15	MY3 - Aggradation	Minor sedimentation	MY3 - Monitor	MY5 - No longer an issue; channel mobilized sediment.
	307+40	N/A	MY4 - Structure issue	Piping	MY4 - Monitor	MY5 - Water is flowign over structure.
	307+50	10	MY3 - Bank erosion	Minor bank erosion	MY3 - Monitor	MY4 - Bank is revegetating and stable.
UT2 Reach 2	311+90	N/A	MY4 - Structure issue	Piping	MY7 - Plugged piping structure	MY7 - Water is flowing over structure.
	313+00	30	MY4 - Aggradation	Minor sedimentation	MY4 - Monitor	MY7 - No longer an issue; channel mobilized sediment.
	316+50	50	MY3 - Aggradation	Minor sedimentation	MY3 - Monitor	MY6 - No longer an issue; channel mobilized sediment.

Stream Repair Status

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Reach	Station	Length (LF)	Year Reported - Issue	Description	Year - Management Action	Year - Status
UT2A	N/A	N/A	No issues	N/A	N/A	N/A
UT3	407+00	N/A	MY1 - Encroachment	Mowing encroachment	MY2 - Replaced signs	MY2 - No longer an issue.
UT4	502+00	20	MY4 - Aggradation	Sedimentation	MY4 - Monitor	MY6 - No longer an issue; channel mobilized sediment.
	504+00	50	MY4 - Aggradation	Sedimentation	MY4 - Monitor	MY6 - No longer an issue; channel mobilized sediment.
	510+50	40	MY4 - Aggradation	Sedimentation	MY4 - Monitor	MY6 - No longer an issue; channel mobilized sediment.
UT5	600+00	100	MY3 - Aggradation	Sedimentation	MY3 - Monitor	MY7 - No longer an issue; channel mobilized sediment.
	604+00	100	MY4 - Aggradation	Sedimentation	MY4 - Monitor	MY5 - No longer an issue; channel mobilized sediment.
	607+50	30	MY4 - Aggradation	Sedimentation	MY4 - Monitor	MY7 - No longer an issue; channel mobilized sediment.
	608+75	30	MY4 - Aggradation	Sedimentation	MY4 - Monitor	MY6 - No longer an issue; channel mobilized sediment.

AREAS OF CONCERN PHOTOGRAPHS

Monitoring Year 7

	
Candy Creek Reach 1 – Erosion, LB (Sta. 122+50) (10/17/2023)	Candy Creek Reach 1 – Breached beaver dam (Sta. 122+50) (10/17/2023)
	
Candy Creek Reach 2 – Beaver dam; breached in late October (Sta. 128+00) (10/17/2023)	Candy Creek Reach 2 – Beaver dam; breached in late October (Sta. 130+00) (10/17/2023)

IMPROVED AREAS OF CONCERN PHOTOGRAPHS

Monitoring Year 7

	
Candy Creek Reach 3 – Bank repair, RB (Sta. 151+75) (03/31/2023)	Candy Creek Reach 3 – Repair area replanting (Sta. 152+75) (03/31/2023)
	
UT1C – Structural issues, prior to repair (Sta. 206+00) (03/31/2023)	UT1C – Repaired structure (Sta. 206+00) (10/31/2023)
	
UT1C – Structural issues, prior to repair (Sta. 207+05) (03/31/2023)	UT1C – Repaired structure (Sta. 207+05) (10/17/2023)

	
UT1D – Structural issues, prior to repair (Sta. 253+25) (10/21/2022)	UT1D – Repaired structure (Sta. 253+25) (10/17/2023)
	
UT2 Reach 2 – Improved deposition (Sta. 316+50) (03/31/2023)	UT2 Reach 2 – Repaired structure (Sta. 311+88) (10/17/2023)
	
UT2 Reach 2 – Structural issues, prior to repair (Sta. 312+50) (03/31/2023)	UT2 Reach 2 – Repaired structure (Sta. 312+50) (10/17/2023)

	
Candy Creek Reach 1 – Resolved mowing encroachment (Sta. 112+00) (10/17/2023)	Candy Creek Reach 3 – Resolved mowing encroachment and a new signpost (Sta. 149+02) (10/17/2023)
	
UT1C – Horse tape repaired on encroachment (Sta. 208+50) (10/17/2023)	UT3 – Resolved mowing encroachment. The mowing was observed just outside of the boundary, as indicated by the string and flags (Sta. 408+00) (10/17/2023)
	
Candy Creek Reach 3 – New sign installed (Sta. 164+00) (10/17/2023)	Candy Creek Reach 4 – Treated primrose (*Ludwigia peploides*) (Sta. 188+00) (10/17/2023)

APPENDIX 3. Vegetation Plot Data

Table 7. Vegetation Plot Criteria Attainment Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Plot	Success Criteria Met (Y/N)	Tract Mean
1	Y	100%
2	Y	
3	Y	
4	Y	
5	Y	
6	Y	
7	Y	
8	Y	
9	Y	
10	Y	
11	Y	
12	Y	
13	Y	
14	Y	
15	Y	
16	Y	
17	Y	
18	Y	
19	Y	
20	Y	
21	Y	
22	Y	
23	Y	
24	Y	
25	Y	
26	Y	
27	Y	
28	Y	
29	Y	
30	Y	
31	Y	
32	Y	
33	Y	
34	Y	
35	Y	
36	Y	
37	Y	
38	Y	
39	Y	
40	Y	

Table 8. CVS Vegetation Plot Metadata

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Report Prepared By	Jeffrey Turner
Date Prepared	11/1/2023
Database Name	Candy Creek MY7 CVS-v2.5.0_8.8.23.mdb
Database Location	C:\Users\jturner\Desktop
Computer Name	JEFF-PC
File Size	87818240
DESCRIPTION OF WORKSHEETS IN THIS DOCUMENT----------	
Metadata	Description of database file, the report worksheets, and a summary of project(s) and project data.
Project Planted	Each project is listed with its PLANTED stems per acre, for each year. This excludes live stakes.
Project Total Stems	Each project is listed with its TOTAL stems per acre, for each year. This includes live stakes, all planted stems, and all natural/volunteer stems.
Plots	List of plots surveyed with location and summary data (live stems, dead stems, missing, etc.).
Vigor	Frequency distribution of vigor classes for stems for all plots.
Vigor by Spp	Frequency distribution of vigor classes listed by species.
Damage	List of most frequent damage classes with number of occurrences and percent of total stems impacted by each.
Damage by Spp	Damage values tallied by type for each species.
Damage by Plot	Damage values tallied by type for each plot.
Planted Stems by Plot and Spp	A matrix of the count of PLANTED living stems of each species for each plot; dead and missing stems are excluded.
ALL Stems by Plot and Spp	A matrix of the count of total living stems of each species (planted and natural volunteers combined) for each plot; dead and missing stems are excluded.
PROJECT SUMMARY----------	
Project Code	96315
Project Name	Candy Creek Mitigation Site
Sampled Plots	40

Table 9a. Planted and Total Stems
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

			Current Plot Data (MY7 2023)																									
Scientific Name	**Common Name**	**Species Type**	**Vegetation Plot 1**			**Vegetation Plot 2**			**Vegetation Plot 3**			**Vegetation Plot 4**			**Vegetation Plot 5**			**Vegetation Plot 6**			**Vegetation Plot 7**			**Vegetation Plot 8**			**Vegetation Plot 9**		
			PnoLS	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**
Acer negundo	Boxelder	Tree																										
Acer rubrum	Red Maple	Tree																										
Ailanthus altissima	Tree-of-Heaven	Tree																										
Alnus serrulata	Tag Alder, Smooth Alder	Shrub Tree																										
Betula nigra	River Birch, Red Birch	Tree	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2			11	1	1	1	1	1	1	2	2	2
Carya	Hickory	Tree																										
Carya ovata	Common Shagbark Hickory	Tree																										
Castanea dentata	American Chestnut	Tree																										
Cercis canadensis	Redbud	Shrub Tree																										
Diospyros virginiana	American Persimmon	Tree																										
Fagus grandifolia	American Beech	Tree																										
Fraxinus pennsylvanica	Green Ash, Red Ash	Tree	1	1	1	2	2	2	3	3	3	2	2	2	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3
Hamamelis virginiana	Witch-hazel	Shrub Tree																										
Juniperus virginiana	Eastern Red Cedar	Tree																										
Lindera benzoin	Northern Spicebush	Shrub Tree																										
Liquidambar styraciflua	Sweet Gum, Red Gum	Tree																		2						2		
Liriodendron tulipifera	Tulip Poplar	Tree													1	1	1			4			5			5		
Morus rubra	Red Mulberry	Tree																										
Nyssa sylvatica	Sour Gum, Black Gum	Tree																										
Pinus strobus	Eastern White Pine	Tree																										
Pinus taeda	Loblolly Pine	Tree																										
Platanus occidentalis	Sycamore, Plane-tree	Tree	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	3	3	6	1	1	1	3	3	3	1	1	1
Prunus caroliniana	Carolina Laurel Cherry	Shrub Tree																										
Prunus serotina	Black Cherry	Shrub Tree																										
Quercus alba	White Oak	Tree																										
Quercus falcata	Southern Red Oak	Tree																										
Quercus lyrata	Overcup Oak	Tree																										
Quercus michauxii	Swamp Chestnut Oak	Tree	1	1	1	1	1	1				2	2	2	1	1	1	1	1	1	2	2	2	1	1	1	2	2	2
Quercus pagoda	Cherrybark Oak	Tree													1	1	1										1	1	1
Quercus phellos	Willow Oak	Tree	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2	1	1	1	3	3	3	2	2	2	2	2	2
Quercus rubra	Northern Red Oak	Tree																										
Rhus copallinum	Winged Sumac	Shrub Tree																										
Rhus typhina	Staghorn Sumac	Shrub																										
Salix nigra	Black Willow	Tree																								4		
Salix sericea	Silky Willow	Shrub Tree																										
Sambucus canadensis	Common Elderberry	Shrub Tree																										
Sambucus nigra	European Elder	Shrub Tree																										
Ulmus alata	Winged Elm	Tree																								4		
Ulmus americana	American Elm	Tree																					10					
Ulmus rubra	Slippery Elm, Red Elm	Tree																										
	Stem count		9	9	9	9	9	9	8	8	8	8	8	8	11	11	11	8	8	27	10	10	25	10	10	25	11	11	11
	Size (ares)		1			1			1			1			1			1			1			1			1		
	Size (acres)		0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247		
	Species count		5	5	5	5	5	5	4	4	4	5	5	5	7	7	7	4	4	6	5	5	7	5	5	9	6	6	6
	Stems per acre		364	364	364	364	364	364	324	324	324	324	324	324	445	445	445	324	324	1,093	405	405	1,012	405	405	1,012	445	445	445

Final success criteria is 210 stems per acre

Exceeds requirements by 10%	PnoLS: Number of planted stems excluding live stakes
Exceeds requirements, but by less than 10%	P-All: Number of planted stems including live stakes
Fails to meet requirements, by less than 10%	T: Total stems
Fails to meet requirements by more than 10%	
Volunteers included	

Table 9b. Planted and Total Stems
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

			Current Plot Data (MY7 2023)																									
Scientific Name	**Common Name**	**Species Type**	**Vegetation Plot 10**			**Vegetation Plot 11**			**Vegetation Plot 12**			**Vegetation Plot 13**			**Vegetation Plot 14**			**Vegetation Plot 15**			**Vegetation Plot 16**			**Vegetation Plot 17**			**Vegetation Plot 18**		
			PnoLS	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**
Acer negundo	Boxelder	Tree																										
Acer rubrum	Red Maple	Tree																										
Ailanthus altissima	Tree-of-Heaven	Tree																										
Alnus serrulata	Tag Alder, Smooth Alder	Shrub Tree																										
Betula nigra	River Birch, Red Birch	Tree				1	1	1				3	3	4	2	2	2	3	3	3	1	1	1				2	2	2
Carya	Hickory	Tree																										
Carya ovata	Common Shagbark Hickory	Tree																										
Castanea dentata	American Chestnut	Tree																										
Cercis canadensis	Redbud	Shrub Tree																										
Diospyros virginiana	American Persimmon	Tree							2	2	2																	
Fagus grandifolia	American Beech	Tree																										
Fraxinus pennsylvanica	Green Ash, Red Ash	Tree	3	3	3	2	2	2	2	2	2	3	3	3	2	2	2	2	2	2	3	3	3	3	3	3	2	2	2
Hamamelis virginiana	Witch-hazel	Shrub Tree																										
Juniperus virginiana	Eastern Red Cedar	Tree																										
Lindera benzoin	Northern Spicebush	Shrub Tree																						1	1	1		
Liquidambar styraciflua	Sweet Gum, Red Gum	Tree												2														
Liriodendron tulipifera	Tulip Poplar	Tree							1	1	15			5			20	1	1	1								
Morus rubra	Red Mulberry	Tree																										
Nyssa sylvatica	Sour Gum, Black Gum	Tree																										
Pinus strobus	Eastern White Pine	Tree																										
Pinus taeda	Loblolly Pine	Tree																										
Platanus occidentalis	Sycamore, Plane-tree	Tree	3	3	3	1	1	1	1	1	1	2	2	2	3	3	3				2	2	2	2	2	2	2	2	2
Prunus caroliniana	Carolina Laurel Cherry	Shrub Tree																										
Prunus serotina	Black Cherry	Shrub Tree																										
Quercus alba	White Oak	Tree																										
Quercus falcata	Southern Red Oak	Tree																										
Quercus lyrata	Overcup Oak	Tree																										
Quercus michauxii	Swamp Chestnut Oak	Tree				2	2	2	2	2	3	2	2	2	2	2	2	1	1	1	2	2	2	1	1	1	3	3	3
Quercus pagoda	Cherrybark Oak	Tree				2	2	2	1	1	1	1	1	1	1	1	1				1	1	1	1	1	1			
Quercus phellos	Willow Oak	Tree	3	3	3	3	3	3	1	1	1	1	1	2				1	1	1	2	2	2						
Quercus rubra	Northern Red Oak	Tree																										
Rhus copallinum	Winged Sumac	Shrub Tree																										
Rhus typhina	Staghorn Sumac	Shrub																										
Salix nigra	Black Willow	Tree							1	1	1																2	2	2
Salix sericea	Silky Willow	Shrub Tree																										
Sambucus canadensis	Common Elderberry	Shrub Tree																1	1	1				1	1	1		
Sambucus nigra	European Elder	Shrub Tree																										
Ulmus alata	Winged Elm	Tree									11																	
Ulmus americana	American Elm	Tree																										
Ulmus rubra	Slippery Elm, Red Elm	Tree																										
	Stem count		9	9	9	11	11	11	11	11	37	12	12	21	10	10	30	9	9	9	11	11	11	9	9	9	11	11	11
	Size (ares)		1			1			1			1			1			1			1			1			1		
	Size (acres)		0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247		
	Species count		3	3	3	6	6	6	8	8	9	6	6	8	5	5	6	6	6	6	6	6	6	6	6	6	5	5	5
	Stems per acre		364	364	364	445	445	445	445	445	1,497	486	486	850	405	405	1,214	364	364	364	445	445	445	364	364	364	445	445	445

Final success criteria is 210 stems per acre

Exceeds requirements by 10%	PnoLS: Number of planted stems excluding live stakes
Exceeds requirements, but by less than 10%	P-All: Number of planted stems including live stakes
Fails to meet requirements, by less than 10%	T: Total stems
Fails to meet requirements by more than 10%	
Volunteers included	

Table 9c. Planted and Total Stems
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

			Current Plot Data (MY7 2023)																									
Scientific Name	**Common Name**	**Species Type**	**Vegetation Plot 19**			**Vegetation Plot 20**			**Vegetation Plot 21**			**Vegetation Plot 22**			**Vegetation Plot 23**			**Vegetation Plot 24**			**Vegetation Plot 25**			**Vegetation Plot 26**			**Vegetation Plot 27**		
			PnoLS	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**
Acer negundo	Boxelder	Tree																										
Acer rubrum	Red Maple	Tree						1																				
Ailanthus altissima	Tree-of-Heaven	Tree																										
Alnus serrulata	Tag Alder, Smooth Alder	Shrub Tree																										
Betula nigra	River Birch, Red Birch	Tree	2	2	2				1	1	1	2	2	2	2	2	2	2	2	2				1	1	1	2	2	2
Carya	Hickory	Tree																										
Carya ovata	Common Shagbark Hickory	Tree																										
Castanea dentata	American Chestnut	Tree																										
Cercis canadensis	Redbud	Shrub Tree																										
Diospyros virginiana	American Persimmon	Tree																										
Fagus grandifolia	American Beech	Tree																										
Fraxinus pennsylvanica	Green Ash, Red Ash	Tree	2	2	2	3	3	3	2	2	2	3	3	3	3	3	3	2	2	2	3	3	3	3	3	3	2	2	2
Hamamelis virginiana	Witch-hazel	Shrub Tree																										
Juniperus virginiana	Eastern Red Cedar	Tree																										
Lindera benzoin	Northern Spicebush	Shrub Tree																										
Liquidambar styraciflua	Sweet Gum, Red Gum	Tree																										
Liriodendron tulipifera	Tulip Poplar	Tree																										
Morus rubra	Red Mulberry	Tree																										
Nyssa sylvatica	Sour Gum, Black Gum	Tree																										
Pinus strobus	Eastern White Pine	Tree																										
Pinus taeda	Loblolly Pine	Tree																										
Platanus occidentalis	Sycamore, Plane-tree	Tree	3	3	3	3	3	3	3	3	3	1	1	1	3	3	3				3	3	3	3	3	3	3	3	3
Prunus caroliniana	Carolina Laurel Cherry	Shrub Tree																										
Prunus serotina	Black Cherry	Shrub Tree																										
Quercus alba	White Oak	Tree																										
Quercus falcata	Southern Red Oak	Tree				1	1	1																				
Quercus lyrata	Overcup Oak	Tree																										
Quercus michauxii	Swamp Chestnut Oak	Tree	2	2	2	1	1	1	1	1	1				2	2	2	2	2	2	1	1	1	3	3	3	2	2	2
Quercus pagoda	Cherrybark Oak	Tree							2	2	2	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1
Quercus phellos	Willow Oak	Tree	2	2	2	1	1	1	1	1	1	3	3	3	2	2	2	3	3	3	2	2	2	2	2	2	1	1	1
Quercus rubra	Northern Red Oak	Tree																										
Rhus copallinum	Winged Sumac	Shrub Tree																										
Rhus typhina	Staghorn Sumac	Shrub																										
Salix nigra	Black Willow	Tree																										
Salix sericea	Silky Willow	Shrub Tree																										
Sambucus canadensis	Common Elderberry	Shrub Tree																										
Sambucus nigra	European Elder	Shrub Tree																										
Ulmus alata	Winged Elm	Tree																										
Ulmus americana	American Elm	Tree																										
Ulmus rubra	Slippery Elm, Red Elm	Tree																										
	Stem count		11	11	11	9	9	10	10	10	10	10	10	10	13	13	13	10	10	10	10	10	10	12	12	12	11	11	11
	Size (ares)		1			1			1			1			1			1			1			1			1		
	Size (acres)		0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247		
	Species count		5	5	5	5	5	6	6	6	6	5	5	5	6	6	6	5	5	5	5	5	5	5	5	5	6	6	6
	Stems per acre		445	445	445	364	364	405	405	405	405	405	405	405	526	526	526	405	405	405	405	405	405	486	486	486	445	445	445

Final success criteria is 210 stems per acre

Exceeds requirements by 10%	PnoLS: Number of planted stems excluding live stakes
Exceeds requirements, but by less than 10%	P-All: Number of planted stems including live stakes
Fails to meet requirements, by less than 10%	T: Total stems
Fails to meet requirements by more than 10%	
Volunteers included	

Table 9d. Planted and Total Stems
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

			Current Plot Data (MY7 2023)																									
Scientific Name	**Common Name**	**Species Type**	**Vegetation Plot 28**			**Vegetation Plot 29**			**Vegetation Plot 30**			**Vegetation Plot 31**			**Vegetation Plot 32**			**Vegetation Plot 33**			**Vegetation Plot 34**			**Vegetation Plot 35**			**Vegetation Plot 36**		
			PnoLS	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**	**PnoLS**	**P-all**	**T**
Acer negundo	Boxelder	Tree																										
Acer rubrum	Red Maple	Tree																										30
Ailanthus altissima	Tree-of-Heaven	Tree																										
Alnus serrulata	Tag Alder, Smooth Alder	Shrub Tree																										
Betula nigra	River Birch, Red Birch	Tree	3	3	3				3	3	3							2	2	2	1	1	1				3	3	30
Carya	Hickory	Tree																										
Carya ovata	Common Shagbark Hickory	Tree																										
Castanea dentata	American Chestnut	Tree																										
Cercis canadensis	Redbud	Shrub Tree																										
Diospyros virginiana	American Persimmon	Tree																										
Fagus grandifolia	American Beech	Tree																										
Fraxinus pennsylvanica	Green Ash, Red Ash	Tree	4	4	4	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	1	1	2	2	2	2
Hamamelis virginiana	Witch-hazel	Shrub Tree																										
Juniperus virginiana	Eastern Red Cedar	Tree																										
Lindera benzoin	Northern Spicebush	Shrub Tree																										
Liquidambar styraciflua	Sweet Gum, Red Gum	Tree												10			6			18			50						17
Liriodendron tulipifera	Tulip Poplar	Tree												5			1			12			50						17
Morus rubra	Red Mulberry	Tree																										
Nyssa sylvatica	Sour Gum, Black Gum	Tree																										
Pinus strobus	Eastern White Pine	Tree																										
Pinus taeda	Loblolly Pine	Tree																										
Platanus occidentalis	Sycamore, Plane-tree	Tree	3	3	3	1	1	1	2	2	2	3	3	8	3	3	5	2	2	2	1	1	2	3	3	3	2	2	15
Prunus caroliniana	Carolina Laurel Cherry	Shrub Tree																										
Prunus serotina	Black Cherry	Shrub Tree																										
Quercus alba	White Oak	Tree												5														
Quercus falcata	Southern Red Oak	Tree																										
Quercus lyrata	Overcup Oak	Tree																										
Quercus michauxii	Swamp Chestnut Oak	Tree				6	6	6	1	1	1	3	3	3	1	1	1	1	1	1	2	2	3	2	2	2			
Quercus pagoda	Cherrybark Oak	Tree							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1
Quercus phellos	Willow Oak	Tree	1	1	1				1	1	1				2	2	2	2	2	2	3	3	3						
Quercus rubra	Northern Red Oak	Tree																										
Rhus copallinum	Winged Sumac	Shrub Tree																										
Rhus typhina	Staghorn Sumac	Shrub																										
Salix nigra	Black Willow	Tree																										
Salix sericea	Silky Willow	Shrub Tree																										
Sambucus canadensis	Common Elderberry	Shrub Tree																										
Sambucus nigra	European Elder	Shrub Tree																										
Ulmus alata	Winged Elm	Tree																		1			15					
Ulmus americana	American Elm	Tree																										
Ulmus rubra	Slippery Elm, Red Elm	Tree																		1								
	Stem count		11	11	11	8	8	8	11	11	11	10	10	35	10	10	19	11	11	43	10	10	127	6	6	7	8	8	112
	Size (ares)		1			1			1			1			1			1			1			1			1		
	Size (acres)		0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247			0.0247		
	Species count		4	4	4	3	3	3	6	6	6	4	4	7	5	5	7	6	6	10	6	6	9	3	3	3	4	4	7
	Stems per acre		445	445	445	324	324	324	445	445	445	405	405	1,416	405	405	769	445	445	1,740	405	405	5,140	243	243	283	324	324	4,532

Final success criteria is 210 stems per acre

Exceeds requirements by 10%	PnoLS: Number of planted stems excluding live stakes
Exceeds requirements, but by less than 10%	P-All: Number of planted stems including live stakes
Fails to meet requirements, by less than 10%	T: Total stems
Fails to meet requirements by more than 10%	
Volunteers included	

Table 9e. Planted and Total Stems
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

			Current Plot Data (MY7 2023)											
Scientific Name	Common Name	Species Type	Vegetation Plot 37			Vegetation Plot 38			Vegetation Plot 39			Vegetation Plot 40		
			PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T
Acer negundo	Boxelder	Tree												
Acer rubrum	Red Maple	Tree												
Ailanthus altissima	Tree-of-Heaven	Tree												
Alnus serrulata	Tag Alder, Smooth Alder	Shrub Tree												
Betula nigra	River Birch, Red Birch	Tree	1	1	1	1	1	1	2	2	2			
Carya	Hickory	Tree												
Carya ovata	Common Shagbark Hickory	Tree												
Castanea dentata	American Chestnut	Tree						1						
Cercis canadensis	Redbud	Shrub Tree												
Diospyros virginiana	American Persimmon	Tree												
Fagus grandifolia	American Beech	Tree												
Fraxinus pennsylvanica	Green Ash, Red Ash	Tree	2	2	2	4	4	4	3	3	3	1	1	1
Hamamelis virginiana	Witch-hazel	Shrub Tree												
Juniperus virginiana	Eastern Red Cedar	Tree												
Lindera benzoin	Northern Spicebush	Shrub Tree												
Liquidambar styraciflua	Sweet Gum, Red Gum	Tree			22									
Liriodendron tulipifera	Tulip Poplar	Tree			8				2	2	2	2	2	2
Morus rubra	Red Mulberry	Tree												
Nyssa sylvatica	Sour Gum, Black Gum	Tree												
Pinus strobus	Eastern White Pine	Tree												
Pinus taeda	Loblolly Pine	Tree												
Platanus occidentalis	Sycamore, Plane-tree	Tree	4	4	4	2	2	2	1	1	1	4	4	4
Prunus caroliniana	Carolina Laurel Cherry	Shrub Tree												
Prunus serotina	Black Cherry	Shrub Tree												
Quercus alba	White Oak	Tree												
Quercus falcata	Southern Red Oak	Tree												
Quercus lyrata	Overcup Oak	Tree												
Quercus michauxii	Swamp Chestnut Oak	Tree	1	1	1	1	1	1				1	1	1
Quercus pagoda	Cherrybark Oak	Tree	1	1	1	1	1	1				1	1	1
Quercus phellos	Willow Oak	Tree	1	1	1				2	2	2	1	1	1
Quercus rubra	Northern Red Oak	Tree												
Rhus copallinum	Winged Sumac	Shrub Tree												
Rhus typhina	Staghorn Sumac	Shrub												
Salix nigra	Black Willow	Tree										1	1	1
Salix sericea	Silky Willow	Shrub Tree												
Sambucus canadensis	Common Elderberry	Shrub Tree				1	1	1	1	1	1			
Sambucus nigra	European Elder	Shrub Tree												
Ulmus alata	Winged Elm	Tree			15									
Ulmus americana	American Elm	Tree												
Ulmus rubra	Slippery Elm, Red Elm	Tree												
		Stem count	10	10	55	10	10	11	11	11	11	11	11	11
		Size (ares)	1			1			1			1		
		Size (acres)	0.0247			0.0247			0.0247			0.0247		
		Species count	6	6	9	6	6	7	6	6	6	7	7	7
		Stems per acre	405	405	2,226	405	405	445	445	445	445	445	445	445

			Annual Means																		
Scientific Name	Common Name	Species Type	MY7 (2023)			MY5 (2021)			MY3 (2019)			MY2 (2018)			MY1 (2017)			MY0 (2017)		
			PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T
Acer negundo	Boxelder	Tree						33												
Acer rubrum	Red Maple	Tree			31	1	1	23			134			188			215			
Ailanthus altissima	Tree-of-Heaven	Tree									5									
Alnus serrulata	Tag Alder, Smooth Alder	Shrub Tree						12						1						
Betula nigra	River Birch, Red Birch	Tree	55	55	94	55	55	78	44	44	75	47	47	70	67	67	92	98	98	98
Carya	Hickory	Tree									7									
Carya ovata	Common Shagbark Hickory	Tree												3						
Castanea dentata	American Chestnut	Tree			1	1	1	1	1	1	1									
Cercis canadensis	Redbud	Shrub Tree									2			2						
Diospyros virginiana	American Persimmon	Tree	2	2	2	2	2	3			1			1						
Fagus grandifolia	American Beech	Tree															199			
Fraxinus pennsylvanica	Green Ash, Red Ash	Tree	100	100	102	103	103	107	101	101	102	103	103	104	105	105	105	107	107	107
Hamamelis virginiana	Witch-hazel	Shrub Tree									2									
Juniperus virginiana	Eastern Red Cedar	Tree						1			1									
Lindera benzoin	Northern Spicebush	Shrub Tree	1	1	1	1	1	1						1						
Liquidambar styraciflua	Sweet Gum, Red Gum	Tree			127			598			1321			188			100			
Liriodendron tulipifera	Tulip Poplar	Tree	7	7	153	7	7	380			518			444			319			
Morus rubra	Red Mulberry	Tree									2									
Nyssa sylvatica	Sour Gum, Black Gum	Tree									7			1			11			
Pinus strobus	Eastern White Pine	Tree						2												
Pinus taeda	Loblolly Pine	Tree						22												
Platanus occidentalis	Sycamore, Plane-tree	Tree	85	85	109	84	84	165	82	82	216	83	83	224	97	97	202	107	107	107
Prunus caroliniana	Carolina Laurel Cherry	Shrub Tree												1						
Prunus serotina	Black Cherry	Shrub Tree									5									
Quercus alba	White Oak	Tree			5						2									
Quercus falcata	Southern Red Oak	Tree	1	1	1	1	1	1	1	1	2									
Quercus lyrata	Overcup Oak	Tree												2						
Quercus michauxii	Swamp Chestnut Oak	Tree	59	59	61	59	59	60	62	62	62	68	68	68	97	97	97	109	109	109
Quercus pagoda	Cherrybark Oak	Tree	25	25	25	25	25	27	29	29	29	36	36	37	63	63	63	75	75	75
Quercus phellos	Willow Oak	Tree	57	57	58	62	62	63	61	61	63	70	70	70	93	93	93	107	107	107
Quercus rubra	Northern Red Oak	Tree						8												
Rhus copallinum	Winged Sumac	Shrub Tree						4			9			1			2			
Rhus typhina	Staghorn Sumac	Shrub									1									
Salix nigra	Black Willow	Tree	4	4	8	4	4	135			96			8			31			
Salix sericea	Silky Willow	Shrub Tree						7			31			35			1			
Sambucus canadensis	Common Elderberry	Shrub Tree	4	4	4	4	4	16			6			8						
Sambucus nigra	European Elder	Shrub Tree									19									
Ulmus alata	Winged Elm	Tree			46			215			126			238						
Ulmus americana	American Elm	Tree			10			35			139			31						
Ulmus rubra	Slippery Elm, Red Elm	Tree			1						40									
		Stem count	400	400	839	409	409	1,997	381	381	3,024	407	407	1,726	522	522	1,530	603	603	603
		Size (ares)	40			40			40			40			40			40		
		Size (acres)	0.9884			0.9884			0.9884			0.9884			0.9884			0.9884		
		Species count	12	12	19	14	14	25	8	8	30	6	6	23	6	6	14	6	6	6
		Stems per acre	405	405	849	414	414	2,020	385	385	3,059	412	412	1,746	528	528	1,548	610	610	610

Final success criteria is 210 stems per acre

Exceeds requirements by 10%
Exceeds requirements, but by less than 10%
Fails to meet requirements, by less than 10%
Fails to meet requirements by more than 10%
Volunteers included

PnoLS: Number of planted stems excluding live stakes
P-All: Number of planted stems including live stakes
T: Total stems

Table 9f. Vegetation Summary Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

	Vegetation Plot 1					Vegetation Plot 2					Vegetation Plot 3					Vegetation Plot 4			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	9	9	364	18.8	Monitoring Year 7	9	9	364	11.6	Monitoring Year 7	8	8	324	13.7	Monitoring Year 7	8	8	324	12.0
Monitoring Year 5	10	17	405	12.4	Monitoring Year 5	9	30	364	7.6	Monitoring Year 5	8	49	324	8.0	Monitoring Year 5	9	23	364	7.4
Monitoring Year 3	10	24	405	6.3	Monitoring Year 3	9	53	364	3.3	Monitoring Year 3	9	75	364	3.3	Monitoring Year 3	9	26	364	4.0
Monitoring Year 2	10	43	405	4.4	Monitoring Year 2	10	46	405	3.3	Monitoring Year 2	10	43	405	2.4	Monitoring Year 2	9	26	364	2.8
Monitoring Year 1	15	21	607	2.1	Monitoring Year 1	15	65	607	1.9	Monitoring Year 1	15	56	607	1.4	Monitoring Year 1	15	55	607	2.1
Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.0	Monitoring Year 0	15	15	607	2.1	Monitoring Year 0	15	15	607	2.0
	Vegetation Plot 5					**Vegetation Plot 6**					**Vegetation Plot 7**					**Vegetation Plot 8**			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	11	11	445	12.8	Monitoring Year 7	8	27	324	16.8	Monitoring Year 7	10	25	405	11.8	Monitoring Year 7	10	25	405	11.7
Monitoring Year 5	10	28	405	7.8	Monitoring Year 5	8	14	324	11.5	Monitoring Year 5	10	38	405	8.7	Monitoring Year 5	10	25	405	7.5
Monitoring Year 3	8	50	324	4.4	Monitoring Year 3	6	26	243	5.4	Monitoring Year 3	10	74	405	4.7	Monitoring Year 3	9	38	364	39.0
Monitoring Year 2	10	48	405	3.1	Monitoring Year 2	7	112	283	3.8	Monitoring Year 2	10	45	405	2.9	Monitoring Year 2	12	37	486	2.3
Monitoring Year 1	12	57	486	2.0	Monitoring Year 1	8	55	324	2.2	Monitoring Year 1	12	62	486	1.6	Monitoring Year 1	13	48	526	1.7
Monitoring Year 0	15	15	607	2.1	Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.3
	Vegetation Plot 9					**Vegetation Plot 10**					**Vegetation Plot 11**					**Vegetation Plot 12**			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	11	11	445	12.3	Monitoring Year 7	9	9	364	12.3	Monitoring Year 7	11	11	445	13.7	Monitoring Year 7	11	37	445	17.2
Monitoring Year 5	11	37	445	6.9	Monitoring Year 5	9	38	364	8.4	Monitoring Year 5	12	45	486	7.7	Monitoring Year 5	11	45	445	8.4
Monitoring Year 3	11	77	445	34.0	Monitoring Year 3	9	47	364	4.6	Monitoring Year 3	12	42	486	3.8	Monitoring Year 3	7	52	283	4.2
Monitoring Year 2	11	26	445	2.4	Monitoring Year 2	9	30	364	3.3	Monitoring Year 2	12	23	486	2.9	Monitoring Year 2	7	19	283	2.2
Monitoring Year 1	12	32	486	2.0	Monitoring Year 1	11	38	445	2.0	Monitoring Year 1	14	24	567	1.8	Monitoring Year 1	14	17	567	2.3
Monitoring Year 0	15	15	607	2.3	Monitoring Year 0	15	15	607	2.1	Monitoring Year 0	15	15	607	2.1	Monitoring Year 0	15	15	607	2.4
	Vegetation Plot 13					**Vegetation Plot 14**					**Vegetation Plot 15**					**Vegetation Plot 16**			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	12	21	486	12.1	Monitoring Year 7	10	30	405	17.2	Monitoring Year 7	9	9	364	10.0	Monitoring Year 7	11	11	445	16.8
Monitoring Year 5	12	58	486	7.5	Monitoring Year 5	10	21	405	12.0	Monitoring Year 5	10	11	405	6.5	Monitoring Year 5	11	41	445	10.9
Monitoring Year 3	10	56	405	3.8	Monitoring Year 3	11	39	445	6.3	Monitoring Year 3	5	11	202	3.9	Monitoring Year 3	11	74	445	5.4
Monitoring Year 2	12	38	486	2.5	Monitoring Year 2	11	53	445	4.3	Monitoring Year 2	7	13	283	2.4	Monitoring Year 2	11	58	445	3.4
Monitoring Year 1	13	73	526	1.8	Monitoring Year 1	12	47	486	2.3	Monitoring Year 1	9	14	364	1.4	Monitoring Year 1	12	37	486	2.1
Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.5	Monitoring Year 0	18	18	728	2.2	Monitoring Year 0	15	15	607	2.1

Final success criteria is 210 stems per acre (MY7); 320 stems/acre (MY3); 260 stems/acre (MY5)

"Planted" includeds only stems that count towards the final success criteria. "Total Stems" includes volunteers and species that don't count towards the final success criteria

Table 9g. Vegetation Performance Standard Summary Table

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

	Vegetation Plot 17					Vegetation Plot 18					Vegetation Plot 19					Vegetation Plot 20			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	9	9	364	13.5	Monitoring Year 7	11	11	445	13.2	Monitoring Year 7	11	11	445	15.5	Monitoring Year 7	9	10	364	12.8
Monitoring Year 5	9	9	364	8.7	Monitoring Year 5	11	32	445	7.0	Monitoring Year 5	12	27	486	7.6	Monitoring Year 5	10	81	405	8.1
Monitoring Year 3	7	9	283	4.6	Monitoring Year 3	6	24	243	4.0	Monitoring Year 3	13	21	526	3.9	Monitoring Year 3	6	63	243	4.1
Monitoring Year 2	7	8	283	2.9	Monitoring Year 2	7	11	283	2.7	Monitoring Year 2	15	13	607	2.6	Monitoring Year 2	8	23	324	2.3
Monitoring Year 1	11	12	445	2.1	Monitoring Year 1	13	13	526	1.8	Monitoring Year 1	15	15	607	1.7	Monitoring Year 1	14	44	567	1.9
Monitoring Year 0	15	15	607	1.9	Monitoring Year 0	15	15	607	2.1	Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.0
	Vegetation Plot 21					**Vegetation Plot 22**					**Vegetation Plot 23**					**Vegetation Plot 24**			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	10	10	405	14.2	Monitoring Year 7	10	10	405	12.8	Monitoring Year 7	13	13	526	8.2	Monitoring Year 7	10	10	405	12.4
Monitoring Year 5	10	44	405	7.8	Monitoring Year 5	10	79	405	5.8	Monitoring Year 5	13	57	526	5.8	Monitoring Year 5	10	77	405	6.5
Monitoring Year 3	10	26	405	3.8	Monitoring Year 3	8	64	324	3.3	Monitoring Year 3	13	88	526	3.6	Monitoring Year 3	10	28	405	3.0
Monitoring Year 2	11	17	445	2.3	Monitoring Year 2	10	20	405	2.0	Monitoring Year 2	13	16	526	2.9	Monitoring Year 2	10	15	405	2.0
Monitoring Year 1	15	15	607	1.6	Monitoring Year 1	14	14	567	1.7	Monitoring Year 1	15	15	607	2.0	Monitoring Year 1	15	15	607	1.8
Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.0	Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.1
	Vegetation Plot 25					**Vegetation Plot 26**					**Vegetation Plot 27**					**Vegetation Plot 28**			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	10	10	405	13.8	Monitoring Year 7	12	12	486	11.7	Monitoring Year 7	11	11	445	10.7	Monitoring Year 7	11	11	445	14.7
Monitoring Year 5	10	59	405	7.8	Monitoring Year 5	12	38	486	7.6	Monitoring Year 5	11	35	445	6.7	Monitoring Year 5	12	64	486	8.1
Monitoring Year 3	10	64	405	4.2	Monitoring Year 3	12	14	486	4.0	Monitoring Year 3	11	33	445	3.6	Monitoring Year 3	13	112	526	4.9
Monitoring Year 2	11	22	445	2.8	Monitoring Year 2	13	13	526	2.5	Monitoring Year 2	11	14	445	2.2	Monitoring Year 2	13	91	526	3.5
Monitoring Year 1	14	14	567	2.0	Monitoring Year 1	13	13	526	2.2	Monitoring Year 1	15	15	607	1.7	Monitoring Year 1	15	57	607	2.5
Monitoring Year 0	15	15	607	2.0	Monitoring Year 0	15	15	607	2.1	Monitoring Year 0	15	15	607	2.0	Monitoring Year 0	15	15	607	2.1
	Vegetation Plot 29					**Vegetation Plot 30**					**Vegetation Plot 31**					**Vegetation Plot 32**			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	8	8	324	9.7	Monitoring Year 7	11	11	445	19.9	Monitoring Year 7	10	35	405	21.3	Monitoring Year 7	10	19	405	11.8
Monitoring Year 5	10	51	405	7.1	Monitoring Year 5	11	18	445	13.8	Monitoring Year 5	10	112	405	14.6	Monitoring Year 5	10	16	405	8.8
Monitoring Year 3	10	69	405	4.0	Monitoring Year 3	8	21	324	6.5	Monitoring Year 3	11	106	445	6.6	Monitoring Year 3	10	26	405	4.7
Monitoring Year 2	11	71	445	2.7	Monitoring Year 2	7	21	283	4.3	Monitoring Year 2	11	86	445	3.7	Monitoring Year 2	10	15	405	3.1
Monitoring Year 1	12	49	486	1.9	Monitoring Year 1	9	12	364	2.5	Monitoring Year 1	15	45	607	2.1	Monitoring Year 1	12	18	486	1.9
Monitoring Year 0	15	15	607	1.8	Monitoring Year 0	15	15	607	2.3	Monitoring Year 0	15	15	607	1.9	Monitoring Year 0	15	15	607	2.0

Final success criteria is 210 stems per acre (MY7); 320 stems/acre (MY3); 260 stems/acre (MY5)
"Planted" includeds only stems that count towards the final success criteria. "Total Stems" includes volunteers and species that don't count towards the final success criteria

Table 9h. Vegetation Performance Standard Summary Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

	Vegetation Plot 33					Vegetation Plot 34					Vegetation Plot 35					Vegetation Plot 36			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	11	43	445	6.0	Monitoring Year 7	10	127	405	6.7	Monitoring Year 7	6	7	243	21.4	Monitoring Year 7	8	112	324	19.9
Monitoring Year 5	11	54	445	3.0	Monitoring Year 5	11	136	445	5.0	Monitoring Year 5	5	5	202	12.6	Monitoring Year 5	8	8	324	13.8
Monitoring Year 3	11	27	445	2.2	Monitoring Year 3	12	117	486	3.0	Monitoring Year 3	7	7	283	4.3	Monitoring Year 3	10	154	405	4.6
Monitoring Year 2	11	36	445	1.8	Monitoring Year 2	12	77	486	2.1	Monitoring Year 2	7	9	283	2.6	Monitoring Year 2	10	142	405	2.9
Monitoring Year 1	14	29	567	1.8	Monitoring Year 1	15	75	607	2.0	Monitoring Year 1	11	11	445	2.1	Monitoring Year 1	11	67	445	1.8
Monitoring Year 0	15	15	607	2.3	Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.0
	Vegetation Plot 37					**Vegetation Plot 38**					**Vegetation Plot 39**					**Vegetation Plot 40**			
	Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)		Planted Stems	Total Stems	Planted Stems/Ac.	Planted Av. Ht. (ft)
Monitoring Year 7	10	55	405	12.2	Monitoring Year 7	11	11	445	12.4	Monitoring Year 7	11	11	445	20.2	Monitoring Year 7	11	11	445	24.0
Monitoring Year 5	10	229	405	7.4	Monitoring Year 5	11	32	445	6.9	Monitoring Year 5	11	140	445	12.6	Monitoring Year 5	11	74	445	11.3
Monitoring Year 3	11	981	445	3.2	Monitoring Year 3	9	51	364	3.4	Monitoring Year 3	9	64	364	5.5	Monitoring Year 3	7	90	283	4.0
Monitoring Year 2	11	76	445	2.3	Monitoring Year 2	12	60	486	2.4	Monitoring Year 2	9	110	364	3.4	Monitoring Year 2	11	98	445	2.2
Monitoring Year 1	12	72	486	1.8	Monitoring Year 1	12	49	486	1.7	Monitoring Year 1	14	54	567	1.9	Monitoring Year 1	14	106	567	1.9
Monitoring Year 0	15	15	607	1.9	Monitoring Year 0	15	15	607	1.9	Monitoring Year 0	15	15	607	2.2	Monitoring Year 0	15	15	607	2.0

Final success criteria is 210 stems per acre (MY7); 320 stems/acre (MY3); 260 stems/acre (MY5)

"Planted" includeds only stems that count towards the final success criteria. "Total Stems" includes volunteers and species that don't count towards the final success criteria.

APPENDIX 4. Morphological Summary Data and Plots

Table 10a. Baseline Stream Data Summary
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 1

		Pre-Restoration Condition		Reference Reach Data								Design						As-Built/Baseline					
Parameter	**Gage**	**Candy Creek Reach 1**		**Collins Creek**		**Long Branch**		**UT to Rocky Creek**		**Spencer Creek Reach 2**		**Candy Creek Reach 1 (100+08 - 118+91)**		**Candy Creek Reach 1 (118+91 - 125+27)**		**Candy Creek Reach 1 (125+27 - 126+27)**		**Candy Creek Reach 1 (100+08 - 118+91)**		**Candy Creek Reach 1 (118+91 - 125+27)**		**Candy Creek Reach 1 (125+27 - 126+27)**	
		Min	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**
Dimension and Substrate - Shallow																							
Bankfull Width (ft)		8.7	9.4	11.9	20.1	14.8	18.6	12.2		10.7	11.2	10.6		13.6		16.8		11.9	12.8	16.1		17.0	
Floodprone Width (ft)		11	16	60		>50		72		60	>114	23	53	30	68	37	84	53	97	164		292	
Bankfull Mean Depth		1.3	1.4	1.6	2.7	1.3	2.1	1.3		1.6	1.8	0.8		1.0		1.2		0.5	0.7	0.9		1.2	
Bankfull Max Depth		1.7	1.8	3.3	4.2	1.9	2.9	1.8		2.1	2.6	1.2		1.5		1.8		1.0	1.2	1.8		2.3	
Bankfull Cross-sectional Area (ft^2)	N/A	12.1	12.3	32.9		25.0	34.6	16.3		17.8	19.7	8.2		13.2		19.9		5.7	8.9	13.9		20.3	
Width/Depth Ratio		6.2	7.2	4.4	12.1	7.9	13.8	9.1		5.8	7.1	13.7		14.0		14.2		18.4	25.3	18.6		14.3	
Entrenchment Ratio[1]		1.2	1.7	2.0	3.0	>3.4		6.0		5.5	>10.2	2.2	5.0	2.2	5.0	2.2	5.0	4.4	8.1	10.2		17.1	
Bank Height Ratio[2]		3.8	3.9	1.0	1.1	1.2	1.5	1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0	
D50 (mm)		2.4																0.9		2.8		14.6	
Riffle Length (ft)				---		---		---		---		---		---		---		11	55	7	59	17	29
Riffle Slope (ft/ft)		0.007	0.031	0.003	0.008	0.012	0.013	0.061	0.089	0.013		0.005	0.078	0.007	0.047	0.007	0.023	0.002	0.055	0.006	0.017	0.007	0.017
Pool Length (ft)	N/A			---		---		---		---		---		---		---		18	70	19	57	52	
Pool Max Depth (ft)		2.1		2.4		2.2		2.2		3.3		0.9	2.4	1.2	3.0	1.4	3.7	2.1	3.0	3.3		3.2	
Pool Spacing (ft)		20	57	32	80	50	105	26	81	71		23	85	30	106	37	118	23	102	53	110	N/A	
Pool Volume (ft^3)																							
Pattern																							
Channel Beltwidth (ft)		N/A		---		60		---		38	41	28	94	39	121	50	150	19	47	25	58	54	
Radius of Curvature (ft)		N/A		---		16	87	---		11	15	16	34	20	44	25	54	17	38	22	44	40	
Rc:Bankfull Width (ft/ft)	N/A	N/A		---		1.1	4.7	---		1.3	1.4	1.5	3.2	1.5	3.2	1.5	3.2	1.6	3.0	1.4	2.6	2.4	
Meander Length (ft)		N/A		---		---		---		---		53	148	68	190	84	235	32	92	65	110	160	
Meander Width Ratio		N/A		---		---		---		---		5.0	14.0	5	14.0	5.0	14.0	3.1	6.4	3.6	6.2	3.2	
Substrate, Bed and Transport Parameters																							
Ri%/Ru%/P%/G%/S%																							
SC%/Sa%/G%/C%/B%/Be%																							
d16/d35/d50/d84/d95/d100	N/A	0.57/1.4/2.4/15.3/26/45		---		---		---		0.6/3.0/8.8/42.0/90/---								SC/0.35/0.9/62/114/512		SC/0.34/2.8/72/168/256		0.15/0.9/15/83/129/256	
Reach Shear Stress (Competency) lb/ft^2		0.73										0.45		0.45		0.45		0.28	0.41	0.40		0.63	
Max part size (mm) mobilized at bankfull																							
Stream Power (Capacity) W/m^2												---		---		---		---		---		---	
Additional Reach Parameters																							
Drainage Area (SM)		0.88		1.68		1.49		1.10		0.96		0.22		0.24		0.88		0.22		0.24		0.88	
Watershed Impervious Cover Estimate (%)		1%		---		---		---		---		1%		1%		1%		1%		1%		1%	
Rosgen Classification		G4c		E4		C/E4		E4b		E4		C/E		C/E		C/E		C4					
Bankfull Velocity (fps)		5.3	5.4	3.9		3.6	4.0	5.5		4.9	5.4	3.0		3.3		3.2		2.7	4.2	3.0		3.2	
Bankfull Discharge (cfs)		65		115	150	101	124	85		97		24		42		65		24		42		65	
Q-NFF regression (2-yr)		---																					
Q-USGS extrapolation (1.2-yr)	N/A	---																					
Q-Mannings		---																					
Valley Length (ft)		2,268		---		---		---		---		1,615		550		88		1,615		550		88	
Channel Thalweg Length (ft)		2,887		---		---		---		---		1,894		636		100		1,883		636		100	
Sinuosity		1.27		---		1.30		1.10		2.30		1.17		1.16		1.14		1.17		1.16		1.14	
Water Surface Slope $(ft/ft)^2$		---		---		---		---		---		0.004	0.021	0.006	0.012	0.006		0.010		0.008		0.009	
Bankfull Slope (ft/ft)		---		---		---		---		---		0.012		0.009		0.005		0.010		0.009		0.008	

SC: Silt/Clay <0.062 mm diameter particles
(---): Data was not provided
N/A: Not Applicable
[1]Entrenchment Ratio is the flood prone width divided by the bankfull width
[2]Bank Height Ratio is the bank height divided by the max depth of the bankfull channel

Table 10b. Baseline Stream Data Summary
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reaches 2 and 3

		Pre-Restoration Condition				Reference Reach Data		Design						As-Built/Baseline					
Parameter	**Gage**	**Candy Creek Reach 2**		**Candy Creek Reach 3**		**See Table 7a**		**Candy Creek Reach 2 (126+27 - 143+06)**		**Candy Creek Reach 2 (143+06 - 148+02)**		**Candy Creek Reach 3 (149+02 - 155+05)**		**Candy Creek Reach 2 (126+27 - 143+06)**		**Candy Creek Reach 2 (143+06 - 148+02)**		**Candy Creek Reach 3 (149+02 - 155+05)**	
		Min	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**
Dimension and Substrate - Riffle																			
Bankfull Width (ft)		18.2	19.4	15.3	17.6			17.5		17.0		20.0		16.1	19.5	16.7		19.2	
Floodprone Width (ft)		27	99+	24	60			39	88	37	85	44	100	154	254	164		57	
Bankfull Mean Depth		1.2	1.5	1.6	1.7			1.2		1.2		1.4		1.0	1.2	1.2		1.5	
Bankfull Max Depth		1.8	2.4	2.2	2.4			1.9		1.9		2.1		1.9	2.1	1.8		2.3	
Bankfull Cross-sectional Area (ft^2)	N/A	23.4	27.9	25.8	27.6	See Table 10a		21.8		20.9		28.0		16.2	23.3	20.8		28.2	
Width/Depth Ratio		11.9	16.2	9.1	11.2			14.0		13.8		14.3		13.3	16.3	13.5		13.1	
Entrenchment Ratio[1]		1.4	3.2+	1.4	3.9			2.2	5.0	2.2	5.0	2.2	5.0	9.5	15.8	9.8		3.0	
Bank Height Ratio[2]		1.3	2.4	1.8	2.3			1.0		1.0		1.0		1.0		1.0		1.0	
D50 (mm)		0.8		N/A										0.4		0.5		1.0	
Riffle Length (ft)								---		---		---		24	63	14	60	10	61
Riffle Slope (ft/ft)		0.005	0.010	N/A				0.004	0.035	0.011	0.035	0.006	0.013	0.001	0.019	0.001	0.019	0.001	0.035
Pool Length (ft)	N/A					See Table 10a		---		---		---		23	101	23	58	22	53
Pool Max Depth (ft)		2.7		N/A				1.5	3.9	1.5	3.8	2.1	4.2	3.3	3.5	3.9		3.5	
Pool Spacing (ft)		16	68	N/A				39	124	37	119	40	130	59	146	55	136	49	97
Pool Volume (ft^3)																			
Pattern																			
Channel Beltwidth (ft)		N/A		N/A				48	156	38	151	N/A		31	72	23	68	N/A	
Radius of Curvature (ft)		N/A		N/A				26	56	26	54	N/A		20	107	27	42	N/A	
Rc:Bankfull Width (ft/ft)	N/A	N/A		N/A		See Table 10a		1.5	3.2	1.5	3.2	N/A		1.1	4.5	1.3	1.9	N/A	
Meander Length (ft)		N/A		N/A				88	245	85	238	N/A		81	171	54	121	N/A	
Meander Width Ratio		N/A		N/A				2.2	8.9	2.2	8.9	N/A		1.4	3.0	1.1	3.0	N/A	
Substrate, Bed and Transport Parameters																			
Ri%/Ru%/P%/G%/S%																			
SC%/Sa%/G%/C%/B%/Be%																			
d16/d35/d50/d84/d95/d100	N/A	SC/0.3/0.8/9.1/13.9/23		N/A		See Table 10a								SC/0.17/0.4/93/146/256		SC/0.21/0.5/72/117/362		SC/0.27/1.0/113/148/256	
Reach Shear Stress (Competency) lb/ft^2		0.42		N/A				0.50		0.50		N/A		0.40	0.48	0.58		N/A	
Max part size (mm) mobilized at bankfull																			
Stream Power (Capacity) W/m^2								---		---		---		---		---		---	
Additional Reach Parameters																			
Drainage Area (SM)		1.08		1.26				0.93		1.08		1.26		0.93		1.08		1.26	
Watershed Impervious Cover Estimate (%)		1%		1%				1%		1%		1%		1%		1%		1%	
Rosgen Classification		F5		G4c				C/E		C/E		C/E		C5		C5		C5	
Bankfull Velocity (fps)		3.6	4.3	3.4	3.6			3.5		4.0		3.2		3.2	4.6	4.1		3.3	
Bankfull Discharge (cfs)		85		93				75		85		93		75		85		93	
Q-NFF regression (2-yr)		---		---															
Q-USGS extrapolation (1.2-yr)	N/A	---		---		See Table 10a													
Q-Mannings		---		---															
Valley Length (ft)		1,387		551				1,363		426		511		1,363		426		490	
Channel Thalweg Length (ft)		1,780		671				1,679		536		628		1,679		536		603	
Sinuosity		1.28		1.22				1.23		1.26		1.23		1.23		1.26		1.23	
Water Surface Slope ($ft/ft)^2$		---		---				0.004	0.009	0.009		0.004	0.005	0.007		0.008		0.004	
Bankfull Slope (ft/ft)		---		---				0.006		0.018		0.007		0.007		0.009		0.005	

SC: Silt/Clay <0.062 mm diameter particles
(---): Data was not provided
N/A: Not Applicable
[1]Entrenchment Ratio is the flood prone width divided by the bankfull width
[2]Bank Height Ratio is the bank height divided by the max depth of the bankfull channel

Table 10c. Baseline Stream Data Summary
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 4

		Pre-Restoration Condition		Reference Reach Data		Design				As-Built/Baseline			
Parameter	**Gage**	**Candy Creek Reach 4**		**See Table 7a**		**Candy Creek Reach 4 (170+71 - 196+50)**		**Candy Creek Reach 4 (196+50 - 206+35)**		**Candy Creek Reach 4 (170+71 - 196+50)**		**Candy Creek Reach 4 (196+50 - 206+35)**	
		Min	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**
Dimension and Substrate - Riffle													
Bankfull Width (ft)		11.4	14.1			22.0		20.0		19.1	24.9	21.7	23.2
Floodprone Width (ft)		17	21			77	176	70	120	158	222	132	155
Bankfull Mean Depth		1.5	1.8			1.5		1.4		1.4	1.5	1.4	1.5
Bankfull Max Depth		1.8	2.1			2.2		2.0		2.1	2.9	2.5	2.9
Bankfull Cross-sectional Area (ft^2)	N/A	20.4	21.5	See Table 10a		32.1		27.2		26.9	38.1	31.6	32.8
Width/Depth Ratio		6.4	9.2			15.1		14.7		13.6	16.3	14.4	17.1
Entrenchment Ratio[1]		1.5	1.5			3.5	8.0	3.5	6.0	7.1	11.6	6.1	6.7
Bank Height Ratio[2]		1.9	2.3			1.0		1.0		1.0		1.0	
D50 (mm)		2.2								0.4		0.6	
Riffle Length (ft)						---		---		14	74	15	53
Riffle Slope (ft/ft)		N/A				0.006	0.020	0.011	0.039	0.003	0.022	0.004	0.025
Pool Length (ft)	N/A			See Table 10a		---		---		20	125	22	71
Pool Max Depth (ft)		2.8				2.9	4.4	2.7	4.1	4.5	4.6	4.1	
Pool Spacing (ft)		N/A				88	154	26	132	40	145	52	111
Pool Volume (ft^3)													
Pattern													
Channel Beltwidth (ft)		N/A				66	154	30	100	66	154	30	100
Radius of Curvature (ft)		N/A				25	55	25	50	25	55	25	50
Rc:Bankfull Width (ft/ft)	N/A	N/A		See Table 10a		1.2	2.5	1.3	2.5	1.2	2.5	1.3	2.5
Meander Length (ft)		N/A				84	220	80	220	84	220	80	220
Meander Width Ratio		N/A				3.0	7.0	1.5	5.0	3.0	7.0	1.5	5.0
Substrate, Bed and Transport Parameters													
Ri%/Ru%/P%/G%/S%													
SC%/Sa%/G%/C%/B%/Be%													
d16/d35/d50/d84/d95/d100	N/A	0.3/0.7/2.2/14/28/256		See Table 10a						SC/0.15/0.4/64/180/256		0.09/0.26/0.6/49/111/180	
Reach Shear Stress (Competency) lb/ft^2		0.69				0.46		0.46		0.40	0.44	0.85	0.83
Max part size (mm) mobilized at bankfull													
Stream Power (Capacity) W/m^2						---		---		---		---	
Additional Reach Parameters													
Drainage Area (SM)		1.46				1.40		1.46		1.40		1.46	
Watershed Impervious Cover Estimate (%)		1%				1%		1%		1%		1%	
Rosgen Classification		G4c				C/E		C/E		C5		C5	
Bankfull Velocity (fps)		4.9	5.2			3.3		4.0		3.3		3.2	3.3
Bankfull Discharge (cfs)		105				---		105		---		105	
Q-NFF regression (2-yr)		---											
Q-USGS extrapolation (1.2-yr)	N/A	---		See Table 10a									
Q-Mannings		---											
Valley Length (ft)		2,847				1,976		744		1,981		745	
Channel Thalweg Length (ft)		3,359				2,575		983		2,579		985	
Sinuosity		1.18				1.30		1.32		1.30		1.32	
Water Surface Slope (ft/ft^2)		---				0.004	0.008	0.009	0.013	0.005		0.010	
Bankfull Slope (ft/ft)		---				0.005		0.012		0.005		0.008	

SC: Silt/Clay <0.062 mm diameter particles
(---): Data was not provided
N/A: Not Applicable
[1]Entrenchment Ratio is the flood prone width divided by the bankfull width
[2]Bank Height Ratio is the bank height divided by the max depth of the bankfull channel

Table 10d. Baseline Stream Data Summary
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT1C and UT1D

		Pre-Restoration Condition				Reference Reach Data								Design				As-Built/Baseline			
Parameter	Gage	UT1C		UT1D		UT to Varnals Creek		Spencer Creek Reach 3		Agony Acres UT1-Reach 3		UT to Richland Creek		UT1C		UT1D		UT1C		UT1D	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate - Shallow																					
Bankfull Width (ft)	N/A	8.7		6.4		9.3	10.5	6.3	9.3	9.1	10.4	8.8	10.4	5.8		3.7		7.8		7.6	
Floodprone Width (ft)		12		34		20	64	14	125	36+		28	31	13	29	8	18	28		15	
Bankfull Mean Depth		1.3		0.6		1.1	1.2	0.8	1.0	1.0	1.2	0.8	0.9	0.4		0.2		0.5		0.5	
Bankfull Max Depth		1.7		1.0		1.5	1.7	1.0	1.2	1.8		1.1	1.3	0.5		0.3		0.9		0.8	
Bankfull Cross-sectional Area (ft^2)		7.2		3.7		10.3	12.3	6.6	8.7	10.7	11.3	7.8	8.5	2.1		0.8		4.0		3.8	
Width/Depth Ratio		4.5		11.2		8.1	9.3	7.9	9.3	7.3	10.1	10.0	12.8	16.0		16.1		15.0		15.4	
Entrenchment Ratio[1]		2.1		5.3		1.9	6.1	1.7	4.3	>3.9		2.5	4.0	2.2	5.0	2.2	5.0	3.6		2.0	
Bank Height Ratio[2]		3.8		1.2		0.9	1.0	1.0		1.0		1.4	2.1	1.0		1.0		1.0		1.0	
D50 (mm)		0.3		0.3														12.8		31.2	
Riffle Length (ft)	N/A					---		---		---		---		---		---		3	43	4	62
Riffle Slope (ft/ft)		N/A		N/A		0.024	0.057	0.018	0.034	N/A		0.021	0.045	0.030	0.050	0.006	0.112	0.003	0.082	0.002	0.085
Pool Length (ft)						---		---		---		---		---		---		5.0	20.0	4.0	15.0
Pool Max Depth (ft)		N/A		N/A		2.5	2.6	1.2	1.8	2.5		N/A		0.7	1.3	0.5	0.8	1.7		1.1	
Pool Spacing (ft)		N/A		N/A		8	82	9	46	N/A		N/A		8	29	5	26	6	51	6	33
Pool Volume (ft^3)																					
Pattern																					
Channel Beltwidth (ft)	N/A	N/A		N/A		15	45	10	50	21	93	N/A		N/A		N/A		N/A		N/A	
Radius of Curvature (ft)		N/A		N/A		8	47	12	85	14	60	N/A		N/A		N/A		N/A		N/A	
Rc:Bankfull Width (ft/ft)		N/A		N/A		0.6	3.2	1.9	9.1	1.5	5.8	N/A		N/A		N/A		N/A		N/A	
Meander Length (ft)		N/A		N/A		---		53	178	---		N/A		N/A		N/A		N/A		N/A	
Meander Width Ratio		N/A		N/A		1.0	3.0	1.6	5.4	2.3	8.9	N/A		N/A		N/A		N/A		N/A	
Substrate, Bed and Transport Parameters																					
Ri%/Ru%/P%/G%/S%	N/A																				
SC%/Sa%/G%/C%/B%/Be%																					
d16/d35/d50/d84/d95/d100		SC/SC/0.3/9.4/30/90		SC/0.1/0.3/2.9/5.2/16		---		1.9/8.9/11/64/128/---		---		---						SC/0.39/12.8/82/117/180		0.3/6.1/31/57/78/128	
Reach Shear Stress (Competency) lb/ft^2		2.70		0.39										0.31		0.50		0.84		1.48	
Max part size (mm) mobilized at bankfull																					
Stream Power (Capacity) W/m^2														---		---		---		---	
Additional Reach Parameters																					
Drainage Area (SM)	N/A	0.04		0.01		0.41		0.37		0.30		0.28		0.04		0.01		0.04		0.01	
Watershed Impervious Cover Estimate (%)		1%		<1%		---		---		---		---		1%		<1%		1%		<1%	
Rosgen Classification		E5b		C5		B		E4		E4		C4/E4		B/C		B/C		B/C		B/C	
Bankfull Velocity (fps)		0.8		0.5		4.4	5.2	5	5.6	2.2	2.4	3.5	4.1	2.5		3.0		1.5		0.5	
Bankfull Discharge (cfs)		6		2		54		35		25		29	32	6		2		6		2	
Q-NFF regression (2-yr)		---		---																	
Q-USGS extrapolation (1.2-yr)		---		---																	
Q-Mannings		---		---																	
Valley Length (ft)		688		378		---		---		---		---		684		370		672		363	
Channel Thalweg Length (ft)		728		436		---		---		---		---		740		385		728		379	
Sinuosity		1.06		1.15		1.20		1.00	1.30	1.35		1.00		1.08		1.04		1.08		1.04	
Water Surface Slope ($ft/ft)^2$		---		---		---		---		---		---		0.028		0.006	0.075	0.028		0.051	
Bankfull Slope (ft/ft)		---		---		---		---		---		---		0.040		0.052		0.028		0.045	

SC: Silt/Clay <0.062 mm diameter particles
(---): Data was not provided
N/A: Not Applicable
[1]Entrenchment Ratio is the flood prone width divided by the bankfull width
[2]Bank Height Ratio is the bank height divided by the max depth of the bankfull channel

Table 10e. Baseline Stream Data Summary
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT2 and UT2A

		Pre-Restoration Condition						Reference Reach Data		Design						As-Built/Baseline					
Parameter	**Gage**	**UT2 - Reach 1**		**UT2 - Reach 2**		**UT2A**		**See Table 7d**		**UT2 - Reach 1**		**UT2 - Reach 2**		**UT2A**		**UT2 - Reach 1**		**UT2 - Reach 2**		**UT2A**	
		Min	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**
Dimension and Substrate - Shallow																					
Bankfull Width (ft)		3.1	6.7	5.2		2.8				6.4		7.5		4.6		4.8	7.5	7.8		7.0	
Floodprone Width (ft)		4	9	7		9				19	82	16	28	10	18	22	47	60		31	
Bankfull Mean Depth		0.4	0.8	0.6		0.4				0.4		0.5		0.3		0.3	0.9	0.5		0.6	
Bankfull Max Depth		0.8	1.0	0.9		0.6				0.6		0.8		0.4		0.4	1.5	0.8		1.0	
Bankfull Cross-sectional Area (ft^2)	N/A	2.4	3.0	3.3		1.2		See Table 10d		2.7		3.9		1.3		1.2	6.8	4.1		4.1	
Width/Depth Ratio		4.0	14.9	8.3		6.6				15.1		14.4		16.3		8.3	18.5	14.9		11.9	
Entrenchment Ratio[1]		1.1	1.3	1.4		3.1				3.0	12.8	2.1	3.7	2.2	3.9	2.9	9.8	7.7		4.4	
Bank Height Ratio[2]		4.3	4.9	3.8		5.7				1.0		1.0		1.0		1.0		1.0		1.0	
D50 (mm)		0.1		N/A		N/A										34.6		4.5		2.5	
Riffle Length (ft)										---		---		---		4	68	7	80	3	102
Riffle Slope (ft/ft)		0.003	0.110	N/A		N/A				0.011	0.070	0.017	0.032	0.035	0.065	0.004	0.063	0.001	0.055	0.019	0.071
Pool Length (ft)										---		---		---		4	18	11	62	4	12
Pool Max Depth (ft)	N/A	1.1		N/A		N/A		See Table 10d		1.0	1.9	1.0	2.0	0.6	1.0	1.7		1.5		1.5	2.1
Pool Spacing (ft)		22	116	N/A		N/A				8	42	17	53	6	30	8	45	13	51	7	55
Pool Volume (ft^3)																					
Pattern																					
Channel Beltwidth (ft)		N/A		N/A		N/A				N/A		N/A		N/A		10	25	N/A		N/A	
Radius of Curvature (ft)		N/A		N/A		N/A				N/A		N/A		N/A		17	54	N/A		N/A	
Rc:Bankfull Width (ft/ft)	N/A	N/A		N/A		N/A		See Table 10d		N/A		N/A		N/A		3.7	9.2	N/A		N/A	
Meander Length (ft)		N/A		N/A		N/A				N/A		N/A		N/A		21	68	N/A		N/A	
Meander Width Ratio		N/A		N/A		N/A				N/A		N/A		N/A		2.2	5.6	N/A		N/A	
Substrate, Bed and Transport Parameters																					
Ri%/Ru%/P%/G%/S%																					
SC%/Sa%/G%/C%/B%/Be%																					
d16/d35/d50/d84/d95/d100	N/A	SC/SC/0.1/22.6 /36.7/90		N/A		N/A		See Table 10d								0.35/6.0/34.6/70/90/256		0.2/0.7/5/56/161/>2048		0.27/1.1/2.5/47/76/180	
Reach Shear Stress (Competency) lb/ft^2		1.80		N/A		N/A				0.95		---		---		0.31	1.05	0.45		1.32	
Max part size (mm) mobilized at bankfull																					
Stream Power (Capacity) W/m^2										---		---		---		---		---		---	
Additional Reach Parameters																					
Drainage Area (SM)		0.07		0.10		0.02				0.07		0.10		0.02		0.07		0.10		0.02	
Watershed Impervious Cover Estimate (%)		3%		3%		5%				3%		3%		5%		3%		3%		5%	
Rosgen Classification		F5		G5c		G5				B		C/E		B		C4		C5		C5	
Bankfull Velocity (fps)		3.0	3.7	3.6		3.5				3.1		3.1		2.3		1.3	7.5	2.9		1.0	
Bankfull Discharge (cfs)		9		12		4				9		12		4		9		12		4	
Q-NFF regression (2-yr)		---		---		---															
Q-USGS extrapolation (1.2-yr)	N/A	---		---		---		See Table 10d													
Q-Mannings		---		---		---															
Valley Length (ft)		1,105		595		341				1,168		591		340		1,168		591		358	
Channel Thalweg Length (ft)		1,279		731		376				1,208		645		349		1,208		643		366	
Sinuosity		1.16		1.23		1.10				1.03		1.09		1.02		1.03		1.09		1.02	
Water Surface Slope ($ft/ft)^2$		---		---		---				0.010	0.035	0.014	0.016	0.032	0.036	0.021	0.031	0.015		0.039	
Bankfull Slope (ft/ft)		---		---		---				0.038		0.019		0.038		0.023	0.032	0.014		0.040	

SC: Silt/Clay <0.062 mm diameter particles
(---): Data was not provided
N/A: Not Applicable
[1]Entrenchment Ratio is the flood prone width divided by the bankfull width
[2]Bank Height Ratio is the bank height divided by the max depth of the bankfull channel

Table 10f. Baseline Stream Data Summary
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT3, UT4, and UT5

		Pre-Restoration Condition						Reference Reach Data		Design						As-Built/Baseline					
Parameter	**Gage**	**UT3**		**UT4**		**UT5**		**See Table 7d**		**UT3**		**UT4**		**UT5**		**UT3**		**UT4**		**UT5**	
		Min	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**
Dimension and Substrate - Shallow																					
Bankfull Width (ft)		5.8		8.5		9.5				7.8		11.0		9.8		8.8		11.5	15.1	9.7	10.6
Floodprone Width (ft)		8		11		10				17	100	24	135	22	100	77		98	288	83	229
Bankfull Mean Depth		0.7		0.8		0.7				0.6		0.9		0.8		0.6		0.9	1.1	0.6	0.8
Bankfull Max Depth		0.9		1.0		1.0				0.9		1.2		1.1		1.1		1.6	2.1	0.9	1.3
Bankfull Cross-sectional Area (ft^2)	N/A	3.9		7.2		6.7		See Table 10d		4.8		9.4		7.5		5.5		11.0	15.2	6.0	8.8
Width/Depth Ratio		8.8		10.2		13.4				12.7		12.9		12.8		14.0		10.2	15.0	12.8	15.5
Entrenchment Ratio[1]		1.3		1.2		1.1				2.2	12.8	2.2	12.3	2.2	10.2	8.8		6.5	25.0	8.6	21.6
Bank Height Ratio[2]		5.4		6.2		5.6				1.0		1.0		1.0		1.0		1.0		1.0	
D50 (mm)		10.6		2.8		12.5										1.5		0.6		0.6	
Riffle Length (ft)										---		---		---		8	20	8	69	11	28
Riffle Slope (ft/ft)		0.011	0.072	0.011	0.064	0.020	0.012			0.012	0.092	0.003	0.018	0.003	0.035	0.007	0.057	0.000	0.072	0.000	0.027
Pool Length (ft)										---		---		---		8	24	9	42	12	39
Pool Max Depth (ft)	N/A	1.1		1.4		1.2		See Table 10d		1.1	2.1	1.7	2.6	1.5	2.4	1.1	2.7	2.3	2.9	1.9	
Pool Spacing (ft)		6	43	12	42	9	54			17	43	28	66	25	64	24	33	24	123	26	65
Pool Volume (ft^3)																					
Pattern																					
Channel Beltwidth (ft)		N/A		N/A		N/A				6	16	10	28	9	64	7	19	10	45	10	39
Radius of Curvature (ft)		N/A		N/A		N/A				10	27	14	28	13	49	12	24	12	33	11	48
Rc:Bankfull Width (ft/ft)	N/A	N/A		N/A		N/A		See Table 10d		1.3	3.5	1.3	2.5	1.3	5.0	1.1	2.1	1.1	2.1	0.8	3.6
Meander Length (ft)		N/A		N/A		N/A				41	101	39	105	54	127	28	76	31	72	34	71
Meander Width Ratio		N/A		N/A		N/A				0.8	2.0	0.9	2.5	0.9	6.5	0.8	1.7	0.7	2.7	0.9	2.2
Substrate, Bed and Transport Parameters																					
Ri%/Ru%/P%/G%/S%																					
SC%/Sa%/G%/C%/B%/Be%																					
d16/d35/d50/d84/d95/d100	N/A	SC/0.1/10.6/22.6/41/64		0.3/0.5/2.8/28.5/40.6/64		0.3/2.8/12.5/29.7/41/90		See Table 10d								SC/0.36/1.5/81/111/180		SC/0.16/0.6/100/161/512		SC/SC/0.6/32/143/362	
Reach Shear Stress (Competency) lb/ft^2		0.93		0.55		1.90				0.81		0.61		0.28		0.88		0.30	0.32	0.23	0.30
Max part size (mm) mobilized at bankfull																					
Stream Power (Capacity) W/m^2										---		---		---		---		---		---	
Additional Reach Parameters																					
Drainage Area (SM)		0.12		0.30		0.21				0.12		0.30		0.21		0.12		0.30		0.21	
Watershed Impervious Cover Estimate (%)		1%		0%		1%				1%		0%		1%		1%		0%		1%	
Rosgen Classification		G4		G4		F4				C/E		C/E		C/E		C5		C5/E5		C5/E5	
Bankfull Velocity (fps)		3.7		4.2		3.3				2.9		3.2		2.9		2.5		2.0	2.7	2.5	3.7
Bankfull Discharge (cfs)		14		30		22				14		30		22		14		30		22	
Q-NFF regression (2-yr)		---		---		---															
Q-USGS extrapolation (1.2-yr)	N/A	---		---		---		See Table 10d													
Q-Mannings		---		---		---															
Valley Length (ft)		238		1,058		732				301		1,111		845		301		1,111		845	
Channel Thalweg Length (ft)		346		1,270		1,012				346		1,355		1,012		346		1,356		1,012	
Sinuosity		1.45		1.20		1.38				1.15		1.22		1.20		1.15		1.22		1.20	
Water Surface Slope (ft/ft^2)		---		---		---				0.011	0.032	0.003	0.012	0.002	0.010	0.024		0.006		0.006	
Bankfull Slope (ft/ft)		---		---		---				0.016	0.032	0.012		0.012		0.022		0.006		0.007	

SC: Silt/Clay <0.062 mm diameter particles
(---): Data was not provided
N/A: Not Applicable
[1]Entrenchment Ratio is the flood prone width divided by the bankfull width
[2]Bank Height Ratio is the bank height divided by the max depth of the bankfull channel

Table 11a. Morphology and Hydraulic Summary (Dimensional Parameters - Cross-Section)
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

	Cross-Section 1, Candy Creek Reach 1 (Riffle)						Cross-Section 2, Candy Creek Reach 1 (Pool)						Cross-Section 3, Candy Creek Reach 1 (Riffle)						Cross-Section 4, Candy Creek Reach 1 (Pool)					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	765.9	765.9	765.8	765.6	766.0	766.0	763.4	763.4	763.3	763.3	763.3	763.1	763.0	763.0	763.1	763.0	763.3	763.2	757.4	757.4	757.4	757.4	757.4	757.4
Low Bank Elevation (ft)	765.9	765.9	765.8	765.6	765.9	766.0	763.4	763.4	763.3	763.3	763.3	763.1	763.0	763.0	763.1	763.0	763.3	763.0	757.4	757.4	757.4	757.4	757.4	757.4
Bankfull Width (ft)	12.8	11.3	11.4	10.3	12.2	14.2	18.7	17.0	16.8	16.8	16.6	13.0	12.0	10.6	13.0	11.3	8.9	9.2	12.5	11.7	11.7	11.8	10.0	9.8
Floodprone Width (ft)	71.0	71.0	54.6	54.5	54.6	54.5	---	---	---	---	---	---	97.0	97.0	95.6	96.2	101.7	86.1	---	---	---	---	---	---
Bankfull Mean Depth (ft)	0.7	0.7	0.6	0.6	0.6	0.6	1.0	0.9	0.9	0.8	0.7	0.8	0.5	0.5	0.5	0.5	0.7	0.5	1.1	1.1	1.1	1.0	1.2	1.2
Bankfull Max Depth (ft)	1.2	1.2	1.0	0.9	1.1	1.3	3.0	3.0	2.7	2.4	2.1	2.3	1.0	0.9	1.0	1.0	1.1	0.9	2.1	2.0	2.0	2.2	2.2	2.0
Bankfull Cross-sectional Area (ft^2)	8.9	8.3	6.9	6.5	7.3	9.1	18.4	15.8	14.5	14.2	10.9	10.5	5.7	5.1	6.2	5.9	5.8	4.3	13.5	12.3	12.3	12.3	11.7	11.4
Bankfull Width/Depth Ratio	18.4	15.4	19.0	16.5	20.4	22.1	19.0	18.3	19.4	19.9	25.2	16.3	25.3	22.2	27.2	21.6	13.7	19.5	11.6	11.1	11.1	11.4	8.5	8.5
Bankfull Entrenchment Ratio[1]	5.5	6.3	4.8	5.3	4.5	3.8	---	---	---	---	---	---	8.1	9.1	7.3	8.5	11.4	9.4	---	---	---	---	---	---
Bankfull Bank Height Ratio[2,3]	1.0	1.0	0.9	0.8	0.9	1.0	---	---	---	---	---	---	1.0	1.0	1.0	1.0	1.0	0.9	---	---	---	---	---	---
	Cross-Section 5, Candy Creek Reach 1 (Riffle)						**Cross-Section 6, Candy Creek Reach 1 (Pool)**						**Cross-Section 7, Candy Creek Reach 1 (Riffle)**						**Cross-Section 8, Candy Creek Reach 1 (Riffle)**					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	757.1	757.1	757.1	757.1	757.2	757.2	749.3	749.3	749.2	748.8	749.1	749.2	748.9	748.9	748.9	748.7	749.0	748.9	747.3	747.3	747.3	747.4	747.3	747.3
Low Bank Elevation (ft)	757.1	757.1	757.1	757.1	757.1	757.3	749.3	749.3	749.2	748.8	749.1	749.2	748.9	748.9	748.9	748.7	749.0	749.0	747.3	747.3	747.3	747.4	747.3	747.4
Bankfull Width (ft)	11.9	12.1	12.1	13.0	11.3	13.4	19.9	19.7	20.4	15.9	18.0	20.0	16.1	14.8	13.6	11.7	14.0	14.1	17.0	15.3	15.2	15.2	15.6	16.2
Floodprone Width (ft)	53.0	53.0	74.8	74.8	74.8	74.9	---	---	---	---	---	---	164.0	164.0	82.7	82.7	82.7	82.6	292.0	292.0	63.8	63.8	64.0	63.9
Bankfull Mean Depth (ft)	0.6	0.6	0.6	0.6	0.5	0.6	1.8	1.7	1.6	2.3	2.5	2.4	0.9	1.0	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.4	1.4
Bankfull Max Depth (ft)	1.2	1.2	1.3	1.3	1.2	1.4	3.3	4.0	3.8	4.6	4.9	5.0	1.8	1.8	1.7	1.8	2.1	2.1	2.3	2.3	2.2	2.3	2.4	2.4
Bankfull Cross Sectional Area (ft^2)	7.1	7.5	7.1	7.7	5.7	7.6	35.5	34.2	31.7	36.5	45.4	48.8	13.9	14.3	12.2	12.0	14.4	15.0	20.3	20.3	19.8	20.7	21.9	22.0
Bankfull Width/Depth Ratio	19.9	19.5	20.5	21.8	22.2	23.6	11.2	11.3	13.1	6.9	7.1	8.2	18.6	15.4	15.3	11.3	13.7	13.3	14.3	11.5	11.7	11.1	11.1	11.9
Bankfull Entrenchment Ratio[1]	4.4	4.4	6.2	5.8	6.6	5.6	---	---	---	---	---	---	10.2	11.1	6.1	7.1	5.9	5.9	17.1	19.1	4.2	4.2	4.1	3.9
Bankfull Bank Height Ratio[2,3]	1.0	1.0	1.0	1.0	0.9	1.0	---	---	---	---	---	---	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Cross-Section 9, Candy Creek Reach 2 (Pool)						**Cross-Section 10, Candy Creek Reach 2 (Riffle)**						**Cross-Section 11, Candy Creek Reach 2 (Riffle)**						**Cross-Section 12, Candy Creek Reach 2 (Pool)**					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	745.6	745.6	745.5	745.4	745.5	745.5	745.0	745.0	744.9	745.1	744.9	744.7	741.1	741.1	741.1	741.1	741.0	741.0	737.4	737.4	737.3	737.4	737.5	737.4
Low Bank Elevation (ft)	745.6	745.6	745.5	745.4	745.5	745.5	745.0	745.0	744.9	745.1	745.1	745.2	741.1	741.1	741.1	741.1	741.0	741.1	737.4	737.4	737.3	737.4	737.5	737.4
Bankfull Width (ft)	22.0	24.9	21.1	23.1	21.2	20.6	16.1	16.0	14.5	15.8	15.2	15.2	16.3	16.2	16.5	15.3	15.4	15.4	23.6	23.7	25.1	23.2	24.4	25.2
Floodprone Width (ft)	---	---	---	---	---	---	254.0	254.0	93.6	93.4	93.3	93.2	154.0	154.0	82.7	82.8	79.0	82.9	---	---	---	---	---	---
Bankfull Mean Depth (ft)	1.8	1.7	1.8	1.6	2.0	2.1	1.0	1.0	1.0	1.2	1.2	1.5	1.2	1.3	1.3	1.3	1.4	1.4	1.9	1.7	1.5	1.6	1.7	1.7
Bankfull Max Depth (ft)	3.5	3.9	4.0	3.5	4.2	3.9	1.9	2.0	1.9	2.4	1.8	2.7	1.9	2.3	2.3	2.2	2.4	2.3	3.3	3.5	3.5	3.6	3.8	3.8
Bankfull Cross Sectional Area (ft^2)	40.1	42.1	38.8	36.0	41.8	43.8	16.2	16.5	14.7	19.1	18.2	22.5	19.8	21.5	21.6	19.6	21.6	21.2	44.2	40.9	38.6	36.1	42.1	41.9
Bankfull Width/Depth Ratio	12.0	14.7	11.5	14.9	10.6	9.7	16.0	15.5	14.3	13.1	12.6	10.3	13.3	12.2	12.7	11.9	11.0	11.2	12.6	13.7	16.3	15.0	14.1	15.1
Bankfull Entrenchment Ratio[1]	---	---	---	---	---	---	15.8	15.9	6.5	5.9	6.2	6.1	9.5	9.5	5.0	5.4	5.1	5.4	---	---	---	---	---	---
Bankfull Bank Height Ratio[2,3]	---	---	---	---	---	---	1.0	1.0	0.9	1.1	1.1	1.2	1.0	1.0	1.0	1.0	1.1	1.0	---	---	---	---	---	---

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

Table 11b. Morphology and Hydraulic Summary (Dimensional Parameters - Cross-Section)
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

	Cross-Section 13, Candy Creek Reach 2 (Riffle)						Cross-Section 14, Candy Creek Reach 2 (Riffle)						Cross-Section 15, Candy Creek Reach 2 (Pool)						Cross-Section 16, Candy Creek Reach 3 (Pool)					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base[4] (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	737.0	737.0	736.8	737.0	737.0	736.9	733.1	733.1	733.1	733.1	733.0	733.0	733.2	733.2	733.2	733.2	733.1	732.7	729.2	729.2	729.4	729.3	729.8	729.1
Low Bank Elevation (ft)	737.0	737.0	736.8	737.0	737.0	737.1	733.1	733.1	733.1	733.1	733.0	733.0	733.2	733.2	733.2	733.2	733.1	732.7	729.2	729.2	729.4	729.3	729.8	729.1
Bankfull Width (ft)	19.5	18.2	17.9	19.1	17.7	18.6	16.7	17.3	17.5	17.4	15.7	16.1	23.9	21.8	21.6	21.7	19.5	19.4	26.2	25.8	27.4	23.1	22.5	18.5
Floodprone Width (ft)	221.0	221.0	95.7	95.8	95.8	95.8	164.0	164.0	80.8	86.5	75.0	77.4	---	---	---	---	---	---	---	---	---	---	---	---
Bankfull Mean Depth (ft)	1.2	1.3	1.2	1.1	1.3	1.4	1.2	1.3	1.2	1.3	1.3	1.3	1.9	2.2	1.9	2.2	2.3	2.8	1.9	2.1	2.0	2.5	3.1	2.0
Bankfull Max Depth (ft)	2.1	2.0	2.1	2.1	2.2	2.5	1.8	2.1	2.0	2.0	1.9	2.0	3.9	4.5	4.2	5.6	4.7	5.1	3.5	4.2	4.3	3.9	5.0	4.2
Bankfull Cross-sectional Area (ft^2)	23.3	24.3	22.3	21.6	22.9	25.2	20.8	22.7	21.8	22.0	20.5	21.0	46.3	47.8	40.0	48.6	45.4	54.6	50.0	54.3	54.1	57.4	68.5	36.9
Bankfull Width/Depth Ratio	16.3	13.7	14.3	16.9	13.7	13.7	13.5	13.2	14.0	13.7	12.1	12.3	12.3	9.9	11.7	9.7	8.4	6.9	13.8	12.3	13.9	9.3	7.4	9.3
Bankfull Entrenchment Ratio[1]	11.3	12.1	5.3	5.0	5.4	5.2	9.8	9.5	4.6	5.0	4.8	4.8	---	---	---	---	---	---	---	---	---	---	---	---
Bankfull Bank Height Ratio[2,3]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	---	---	---	---	---	---	---	---	---	---	---	---
	Cross-Section 17, Candy Creek Reach 3 (Riffle)						**Cross-Section 18, Candy Creek Reach 4 (Pool)**						**Cross-Section 19, Candy Creek Reach 4 (Riffle)**						**Cross-Section 20, Candy Creek Reach 4 (Riffle)**					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	729.1	729.1	729.2	729.2	729.3	729.4	720.6	720.6	720.6	720.1	721.1	721.0	720.5	720.5	720.5	720.5	720.9	720.9	717.8	717.8	717.7	717.7	717.7	717.9
Low Bank Elevation (ft)	729.1	729.1	729.2	729.2	729.3	729.1	720.6	720.6	720.6	720.1	721.1	721.0	720.5	720.5	720.5	720.5	720.9	720.5	717.8	717.8	717.7	717.7	717.7	717.6
Bankfull Width (ft)	19.2	18.0	20.0	19.7	18.3	18.3	26.9	26.3	25.9	22.2	17.5	18.3	19.1	19.8	20.4	19.6	16.8	13.9	22.4	22.2	22.4	21.9	22.3	20.9
Floodprone Width (ft)	57.0	57.0	53.8	53.7	53.8	53.8	---	---	---	---	---	---	222.0	222.0	85.9	85.9	86.0	86.0	158.0	158.0	100.3	100.4	100.4	100.3
Bankfull Mean Depth (ft)	1.5	1.4	1.3	1.5	1.5	1.2	2.2	2.1	2.1	1.9	3.1	3.6	1.4	1.2	1.4	1.4	1.6	1.6	1.4	1.4	1.4	1.4	1.4	1.2
Bankfull Max Depth (ft)	2.3	2.4	2.3	2.4	2.2	2.1	4.5	4.8	4.6	4.1	5.2	5.4	2.2	2.1	2.3	2.4	2.6	2.2	2.1	2.3	2.3	2.3	2.4	2.0
Bankfull Cross-Sectional Area (ft^2)	28.2	25.9	26.9	29.2	28.1	22.5	58.7	55.5	54.5	42.8	53.6	66.1	26.9	23.3	28.0	27.9	27.5	22.1	31.0	31.7	30.6	31.7	30.8	25.9
Bankfull Width/Depth Ratio	13.1	12.5	14.9	13.2	12.0	14.8	12.3	12.4	12.3	11.5	5.7	5.0	13.6	16.8	14.8	13.8	10.3	8.8	16.2	15.6	16.5	15.2	16.1	16.8
Bankfull Entrenchment Ratio[1]	3.0	3.2	2.7	2.7	2.9	2.9	---	---	---	---	---	---	11.6	11.2	4.2	4.4	5.1	6.2	7.1	7.1	4.5	4.6	4.5	4.8
Bankfull Bank Height Ratio[2,3]	1.0	1.0	1.0	1.0	1.0	0.9	---	---	---	---	---	---	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	0.9
	Cross-Section 21, Candy Creek Reach 4 (Pool)						**Cross-Section 22, Candy Creek Reach 4 (Pool)**						**Cross-Section 23, Candy Creek Reach 4 (Riffle)**						**Cross-Section 24, Candy Creek Reach 4 (Riffle)**					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	717.7	717.7	717.9	717.6	717.4	717.5	714.0	714.0	713.8	714.0	714.0	713.9	713.9	713.9	713.8	713.7	713.9	714.0	707.8	707.8	707.8	707.8	707.8	708.0
Low Bank Elevation (ft)	717.7	717.7	717.9	717.6	717.4	717.5	714.0	714.0	713.8	714.0	714.0	713.9	713.9	713.9	713.8	713.7	713.9	713.9	707.8	707.8	707.8	707.8	707.7	707.8
Bankfull Width (ft)	29.3	30.0	32.4	28.7	21.8	22.4	23.6	23.8	25.6	28.3	24.0	18.2	24.9	22.5	23.9	24.2	26.8	29.5	23.2	23.5	23.6	23.6	26.5	20.7
Floodprone Width (ft)	---	---	---	---	---	---	---	---	---	---	---	---	180.0	180.0	90.0	90.0	90.1	89.9	155.0	155.0	58.7	58.8	59.1	58.7
Bankfull Mean Depth (ft)	2.4	2.5	2.5	2.8	3.7	4.1	2.2	2.1	1.9	2.1	2.3	2.8	1.5	1.7	1.4	1.4	1.4	1.1	1.4	1.4	1.3	1.3	1.1	1.3
Bankfull Max Depth (ft)	4.6	4.6	5.5	6.6	6.5	6.5	4.6	4.0	4.3	5.5	5.6	5.5	2.9	2.8	2.6	2.5	2.8	2.6	2.9	2.5	2.4	2.5	2.7	2.5
Bankfull Cross-Sectional Area (ft^2)	70.1	74.0	80.2	79.3	81.0	91.4	51.1	50.2	47.7	59.2	54.3	51.8	38.1	37.4	34.2	33.9	38.0	33.3	31.6	32.4	31.4	29.6	29.9	27.4
Bankfull Width/Depth Ratio	12.2	12.2	13.1	10.4	5.9	5.5	10.9	11.3	13.8	13.5	10.7	6.4	16.3	13.5	16.6	17.3	18.9	26.2	17.1	17.1	17.7	18.8	23.6	15.6
Bankfull Entrenchment Ratio[1]	---	---	---	---	---	---	---	---	---	---	---	---	7.2	8.0	3.8	3.7	3.4	3.0	6.7	6.6	2.5	2.5	2.2	2.8
Bankfull Bank Height Ratio[2,3]	---	---	---	---	---	---	---	---	---	---	---	---	1.0	1.0	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0	0.9

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

Table 11c. Morphology and Hydraulic Summary (Dimensional Parameters - Cross-Section)
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

	Cross-Section 25, Candy Creek Reach 4 (Riffle)						Cross-Section 26, Candy Creek Reach 4 (Pool)						Cross-Section 27, UT1C (Riffle)						Cross-Section 28, UT1C (Pool)					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	702.6	702.6	702.7	702.6	702.5	702.6	702.1	702.1	702.4	702.0	701.8	701.9	752.2	752.2	752.3	752.3	752.2	752.0	752.1	752.1	752.0	751.9	752.0	752.0
Low Bank Elevation (ft)	702.6	702.6	702.7	702.6	702.6	702.6	702.1	702.1	702.4	702.0	701.8	701.9	752.2	752.2	752.3	752.3	752.1	752.0	752.1	752.1	752.0	751.9	752.0	752.0
Bankfull Width (ft)	21.7	21.6	22.7	23.2	21.6	21.6	23.6	24.6	24.5	23.3	23.4	23.7	7.8	7.8	10.1	11.4	7.1	7.9	6.4	9.1	5.8	6.2	6.2	6.2
Floodprone Width (ft)	132.0	132.0	85.9	85.8	85.5	85.7	---	---	---	---	---	---	28.0	28.0	24.6	24.9	21.1	19.7	---	---	---	---	---	---
Bankfull Mean Depth (ft)	1.5	1.5	1.5	1.5	1.6	1.5	2.2	2.1	2.1	2.2	2.6	2.7	0.5	0.5	0.5	0.6	0.5	0.4	0.9	0.7	0.9	0.9	0.9	0.8
Bankfull Max Depth (ft)	2.5	2.6	2.5	2.5	2.8	2.6	4.1	4.4	4.3	4.9	5.5	5.4	0.9	0.8	1.1	1.2	1.0	0.9	1.7	1.8	1.8	1.8	1.8	1.7
Bankfull Cross-Sectional Area (ft^2)	32.8	32.8	33.5	33.9	35.2	32.8	51.3	52.5	52.7	50.5	60.2	63.7	4.0	3.7	5.1	6.7	3.2	3.5	5.4	6.1	5.5	5.3	5.6	5.2
Bankfull Width/Depth Ratio	14.4	14.3	15.3	15.8	13.3	14.2	10.8	11.6	11.4	10.7	9.1	8.8	15.0	16.2	19.9	19.4	15.7	17.9	7.5	13.5	6.2	7.3	6.8	7.5
Bankfull Entrenchment Ratio[1]	6.1	6.1	3.8	3.7	4.0	4.0	---	---	---	---	---	---	3.6	3.6	2.4	2.2	3.0	2.5	---	---	---	---	---	---
Bankfull Bank Height Ratio[2,3]	1.0	1.0	1.0	1.0	1.0	1.0	---	---	---	---	---	---	1.0	1.0	1.1	1.3	0.9	0.9	---	---	---	---	---	---
	Cross-Section 29, UT1D (Riffle)						**Cross-Section 30, UT2 Reach 1 (Riffle)**						**Cross-Section 31, UT2 Reach 1 (Riffle)**						**Cross-Section 32, UT2 Reach 1 (Pool)**					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	742.7	742.7	742.7	742.6	742.9	742.8	771.9	771.9	771.6	771.7	772.0	771.9	763.8	763.8	763.6	764.0	764.0	764.0	760.4	760.4	760.1	760.2	760.2	760.2
Low Bank Elevation (ft)	742.7	742.7	742.7	742.6	742.8	742.8	771.9	771.9	771.6	771.7	771.8	771.8	763.8	763.8	763.6	764.0	763.9	763.9	760.4	760.4	760.1	760.2	760.2	760.2
Bankfull Width (ft)	7.6	7.1	8.4	7.4	7.7	8.6	7.5	7.8	7.5	7.2	8.2	9.0	4.8	4.3	3.1	3.8	2.8	2.8	10.1	11.3	6.3	6.3	4.6	6.6
Floodprone Width (ft)	15.0	15.0	18.7	17.1	16.8	15.9	22.0	22.0	21.9	21.2	21.2	21.2	47.0	47.0	42.8	48.1	46.8	48.4	---	---	---	---	---	---
Bankfull Mean Depth (ft)	0.5	0.5	0.5	0.4	0.3	0.4	0.9	0.8	0.8	0.8	0.7	0.6	0.3	0.2	0.2	0.2	0.4	0.3	0.6	0.6	0.9	0.9	1.4	1.4
Bankfull Max Depth (ft)	0.8	0.8	0.9	0.7	0.6	0.7	1.5	1.4	1.4	1.4	1.3	1.4	0.4	0.3	0.3	0.4	0.5	0.4	1.7	1.7	1.8	1.8	2.3	2.3
Bankfull Cross-Sectional Area (ft^2)	3.8	3.3	4.0	3.0	2.6	3.2	6.8	6.3	6.3	5.5	5.5	5.7	1.2	0.8	0.7	0.9	1.0	0.8	6.2	7.2	5.7	5.7	6.2	9.0
Bankfull Width/Depth Ratio	15.4	15.3	17.9	18.7	22.6	23.2	8.3	9.7	9.0	9.3	12.4	14.1	18.5	23.3	13.9	16.5	8.0	9.6	16.4	17.7	6.9	6.9	3.4	4.8
Bankfull Entrenchment Ratio[1]	2.0	2.1	2.2	2.3	2.2	1.8	2.9	2.8	2.9	3.0	2.6	2.4	9.8	11.0	13.6	12.5	16.7	17.5	---	---	---	---	---	---
Bankfull Bank Height Ratio[2,3]	1.0	1.0	1.0	0.9	0.8	0.9	1.0	1.0	1.0	0.9	0.9	0.9	1.0	1.0	0.7	0.9	0.9	0.8	---	---	---	---	---	---
	Cross-Section 33, UT2 Reach 1 (Riffle)						**Cross-Section 34, UT2 Reach 2 (Pool)**						**Cross-Section 35, UT2 Reach 2 (Riffle)**						**Cross-Section 36, UT2A (Riffle)**					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	760.0	760.0	759.8	759.9	759.9	759.9	734.8	734.8	734.8	735.0	735.0	735.1	734.6	734.6	734.6	734.7	735.3	735.3	747.7	747.7	747.7	747.7	748.0	748.0
Low Bank Elevation (ft)	760.0	760.0	759.8	759.9	759.9	759.9	734.8	734.8	734.8	735.0	735.0	735.1	734.6	734.6	734.6	734.7	735.2	735.1	747.7	747.7	747.7	747.7	747.9	747.7
Bankfull Width (ft)	7.8	7.0	6.7	6.6	5.3	8.9	10.2	9.6	8.1	9.1	8.7	4.2	7.8	7.8	7.0	6.5	7.9	5.9	7.0	7.6	7.4	5.9	10.0	3.9
Floodprone Width (ft)	88.0	88.0	79.4	78.1	78.8	78.5	---	---	---	---	---	---	60.0	60.0	24.8	60.0	51.4	49.8	31.0	31.0	22.2	40.1	31.7	36.5
Bankfull Mean Depth (ft)	0.5	0.5	0.5	0.5	0.7	0.4	0.8	0.5	0.7	0.6	0.3	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.3	0.5
Bankfull Max Depth (ft)	0.8	1.1	1.2	1.2	1.3	1.1	1.5	0.8	1.4	1.0	0.6	0.9	0.8	0.8	0.7	0.7	0.9	1.1	1.0	1.0	1.1	1.2	0.9	1.2
Bankfull Cross-sectional Area (ft^2)	3.5	3.2	3.6	3.4	3.5	3.4	7.9	4.5	5.8	5.3	2.3	1.5	4.1	3.0	3.0	2.8	3.2	2.9	4.1	3.7	3.5	3.1	2.8	2.1
Bankfull Width/Depth Ratio	17.2	15.1	12.6	12.8	8.1	23.5	13.3	20.2	11.1	15.6	32.8	11.6	14.9	20.2	16.4	14.8	19.2	12.3	11.9	15.8	15.7	11.2	36.1	7.3
Bankfull Entrenchment Ratio[1]	11.3	12.6	11.8	11.8	14.8	8.8	---	---	---	---	---	---	7.7	7.7	3.6	9.3	6.5	8.4	4.4	4.1	3.0	6.8	3.2	9.5
Bankfull Bank Height Ratio[2,3]	1.0	1.0	1.0	1.0	1.0	1.0	---	---	---	---	---	---	1.0	1.0	0.8	0.8	0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.8

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

Table 11d. Morphology and Hydraulic Summary (Dimensional Parameters - Cross-Section)
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

	Cross-Section 37, UT3 (Riffle)						Cross-Section 38, UT4 (Riffle)						Cross-Section 39, UT4 (Pool)						Cross-Section 40, UT4 (Pool)					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	749.7	749.7	749.6	749.6	749.6	749.5	753.6	753.6	753.6	753.5	753.9	753.8	753.2	753.2	753.2	753.1	753.4	753.2	750.3	750.3	750.3	750.3	750.3	750.3
Low Bank Elevation (ft)	749.7	749.7	749.6	749.6	749.6	749.6	753.6	753.6	753.6	753.5	753.7	753.7	753.2	753.2	753.2	753.1	753.4	753.2	750.3	750.3	750.3	750.3	750.3	750.3
Bankfull Width (ft)	8.8	8.7	9.0	10.4	8.0	8.6	15.1	14.7	15.3	15.6	15.4	17.8	14.1	15.2	14.2	14.0	13.3	9.9	14.5	15.0	16.3	17.0	7.6	8.2
Floodprone Width (ft)	77.0	77.0	67.6	67.3	64.2	67.5	98.0	98.0	58.4	58.0	56.2	54.5	---	---	---	---	---	---	---	---	---	---	---	---
Bankfull Mean Depth (ft)	0.6	0.6	0.7	0.5	0.7	0.7	1.0	1.0	0.9	0.9	0.7	0.8	1.3	1.1	1.1	0.9	0.8	0.8	1.3	1.1	0.9	0.9	1.6	1.3
Bankfull Max Depth (ft)	1.1	1.1	1.2	1.0	1.1	1.1	2.1	2.1	1.9	1.7	1.4	1.9	2.3	2.3	2.3	1.8	1.3	1.3	2.3	2.3	2.2	2.6	2.3	2.4
Bankfull Cross-Sectional Area (ft^2)	5.5	5.3	5.9	5.3	5.5	6.1	15.2	14.4	13.3	13.6	11.5	13.5	17.8	16.9	15.6	12.5	10.2	8.3	18.5	16.3	15.1	15.9	11.8	10.9
Bankfull Width/Depth Ratio	14.0	14.1	13.7	20.3	11.6	12.0	15.0	15.0	17.6	17.9	20.7	23.3	11.2	13.6	12.9	15.7	17.4	11.9	11.4	13.8	17.6	18.2	4.9	6.2
Bankfull Entrenchment Ratio[1]	8.8	8.9	7.5	6.5	8.1	7.9	6.5	6.7	3.8	3.7	3.6	3.1	---	---	---	---	---	---	---	---	---	---	---	---
Bankfull Bank Height Ratio[2,3]	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	1.0	---	---	---	---	---	---	---	---	---	---	---	---

	Cross-Section 41, UT4 (Riffle)						Cross-Section 42, UT4 (Riffle)						Cross-Section 43, UT4 (Pool)						Cross-Section 44, UT5 (Riffle)					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	750.2	750.2	750.2	750.2	750.4	750.5	748.3	748.3	748.3	748.3	748.5	748.5	748.0	748.0	748.0	747.9	748.0	748.0	758.4	758.4	758.4	758.6	758.4	758.8
Low Bank Elevation (ft)	750.2	750.2	750.2	750.2	750.3	750.3	748.3	748.3	748.3	748.3	748.4	748.3	748.0	748.0	748.0	747.9	748.0	748.0	758.4	758.4	758.4	758.6	758.5	758.6
Bankfull Width (ft)	11.8	12.3	12.4	12.9	10.3	10.2	11.5	12.3	13.0	12.3	12.6	12.5	16.9	15.0	17.7	11.3	10.8	10.2	9.7	9.6	11.5	9.6	8.5	9.7
Floodprone Width (ft)	172.0	172.0	69.1	69.1	69.1	68.8	288.0	288.0	49.9	49.9	49.9	47.4	---	---	---	---	---	---	83.0	83.0	82.3	82.3	82.1	82.2
Bankfull Mean Depth (ft)	0.9	0.9	0.8	0.8	1.0	0.9	1.1	1.0	1.0	1.0	1.0	0.8	1.2	1.3	1.1	1.4	1.1	1.1	0.6	0.6	0.6	0.7	0.8	0.5
Bankfull Max Depth (ft)	1.6	1.6	1.5	1.5	1.5	1.6	1.8	1.7	1.8	1.8	1.7	1.6	2.9	3.1	3.1	3.0	2.6	1.9	0.9	0.9	1.1	1.3	1.2	1.0
Bankfull Cross-Sectional Area (ft^2)	11.0	11.1	10.6	10.2	9.9	9.5	13.0	12.7	12.4	12.0	12.0	10.6	20.2	18.9	18.8	15.9	12.1	11.3	6.0	5.6	6.9	6.3	6.4	4.4
Bankfull Width/Depth Ratio	12.7	13.7	14.6	16.1	10.7	10.9	10.2	11.9	13.6	12.5	13.2	14.7	14.2	12.0	16.7	8.1	9.6	9.2	15.5	16.2	19.1	14.5	11.2	21.4
Bankfull Entrenchment Ratio[1]	14.6	13.9	5.6	5.4	6.7	6.8	25.0	23.5	3.8	4.1	4.0	3.8	---	---	---	---	---	---	8.6	8.7	7.2	8.6	9.7	8.5
Bankfull Bank Height Ratio[2,3]	1.0	1.0	1.0	1.0	0.9	0.9	1.0	1.0	1.0	1.0	1.0	0.9	---	---	---	---	---	---	1.0	1.0	1.1	1.0	1.0	0.9

	Cross-Section 45, UT5 (Pool)						Cross-Section 46, UT5 (Riffle)						Cross-Section 47, UT5 (Pool)						Cross-Section 48, UT5 (Riffle)					
Dimension and Substrate	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**	**Base (10/2016)**	**MY1 (2017)**	**MY2 (2018)**	**MY3 (2019)**	**MY5 (2021)**	**MY7 (2023)**
Bankfull Elevation	758.4	758.4	758.3	758.6	758.5	758.7	755.0	755.0	755.0	755.1	752.2	755.2	754.8	754.8	754.7	755.0	754.7	754.9	753.0	753.0	753.0	753.0	753.3	753.5
Low Bank Elevation (ft)	758.4	758.4	758.3	758.6	758.5	758.7	755.0	755.0	755.0	755.1	752.2	755.1	754.8	754.8	754.7	755.0	754.7	754.9	753.0	753.0	753.0	753.0	753.2	753.1
Bankfull Width (ft)	10.6	10.2	11.0	12.0	10.5	8.6	9.9	9.5	10.6	9.3	8.3	9.3	13.1	13.0	12.8	14.7	7.6	7.7	10.6	10.8	11.6	10.1	13.1	11.0
Floodprone Width (ft)	---	---	---	---	---	---	84.0	84.0	55.8	56.0	57.8	55.7	---	---	---	---	---	---	229.0	229.0	53.9	53.8	53.9	53.8
Bankfull Mean Depth (ft)	0.9	0.9	0.9	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.8	0.6	1.1	1.1	1.0	0.8	1.4	1.0	0.8	0.8	0.7	0.8	0.5	0.4
Bankfull Max Depth (ft)	1.9	1.9	1.9	1.7	1.4	1.2	1.0	0.9	1.0	1.0	1.5	1.1	1.9	2.0	2.0	2.0	2.3	2.0	1.3	1.3	1.3	1.3	1.1	0.7
Bankfull Cross-sectional Area (ft^2)	9.8	9.5	9.5	8.9	7.7	4.8	6.8	6.3	6.4	5.5	6.6	5.5	14.7	14.2	13.1	11.8	11.0	8.0	8.8	8.4	8.2	7.6	6.6	4.9
Bankfull Width/Depth Ratio	11.4	11.1	12.8	16.2	14.3	15.5	14.5	14.4	17.4	15.8	10.5	15.6	11.6	11.9	12.4	18.3	5.3	7.4	12.8	13.8	16.2	13.5	25.7	24.8
Bankfull Entrenchment Ratio[1]	---	---	---	---	---	---	8.5	8.8	5.3	6.0	6.9	6.0	---	---	---	---	---	---	21.6	21.2	4.7	5.3	4.1	4.9
Bankfull Bank Height Ratio[2,3]	---	---	---	---	---	---	1.0	1.0	1.0	0.9	1.0	0.9	---	---	---	---	---	---	1.0	1.0	1.0	1.0	0.9	0.7

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

Table 12a. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 1 (Sta. 100+08 - 118+91)

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	11.9	12.8	10.6	12.1	11.4	13.0	10.3	13.0	8.9	12.2	9.2	14.2
Floodprone Width (ft)	53.0	97.0	53.0	97.0	54.6	95.6	54.5	96.2	54.6	101.7	54.5	86.1
Bankfull Mean Depth	0.5	0.7	0.5	0.7	0.5	0.6	0.5	0.6	0.5	0.7	0.5	0.6
Bankfull Max Depth	1.0	1.2	0.9	1.2	1.0	1.3	0.9	1.3	1.1	1.2	0.9	1.4
Bankfull Cross-sectional Area (ft^2)	5.7	8.9	5.1	8.3	6.2	7.1	5.9	7.7	5.7	7.3	4.3	9.1
Width/Depth Ratio	18.4	25.3	15.4	22.2	19.0	27.2	16.5	21.8	13.7	22.2	19.5	23.6
Entrenchment Ratio[1]	4.4	8.1	4.4	9.1	4.8	7.3	5.3	8.5	4.5	11.4	3.8	9.4
Bank Height Ratio[2,3]	1.0		1.0		0.9	1.0	0.8	1.0	0.9	1.0	0.9	1.0
D50 (mm)[4,5]	23.6	40.9	37.9	45.0	1.4	33.6	28.5	34.4	37.4	45.7	---	---
Profile												
Riffle Length (ft)	11	55										
Riffle Slope (ft/ft)	0.002	0.055										
Pool Length (ft)	18	70										
Pool Max Depth (ft)	2.1	3.0										
Pool Spacing (ft)	23	102										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	19	47										
Radius of Curvature (ft)	17	38										
Rc:Bankfull Width (ft/ft)	1.6	3.0										
Meander Wave Length (ft)	32	92										
Meander Width Ratio	3.1	6.4										
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	1,883											
Sinuosity (ft)	1.17											
Water Surface Slope (ft/ft)	0.010											
Bankfull Slope (ft/ft)	0.010											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.35/0.9/62/114/512											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12b. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 1 (Sta. 118+91 - 125+27)

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	16.1		16.8		13.6		11.7		14.0		14.1	
Floodprone Width (ft)	164.0		164.0		82.7		82.7		82.7		82.6	
Bankfull Mean Depth	0.9		1.0		0.9		1.0		1.0		1.1	
Bankfull Max Depth	1.8		1.8		1.7		1.8		2.1		2.1	
Bankfull Cross-sectional Area (ft^2)	13.9		14.3		12.2		12.0		14.4		15.0	
Width/Depth Ratio	18.6		15.4		15.3		11.3		13.7		13.3	
Entrenchment Ratio[1]	10.2		11.1		6.1		7.1		5.9		5.9	
Bank Height Ratio[2,3]	1.0		1.0		0.9		1.0		1.0		1.0	
D50 (mm)[4,5]	46.2		35.9		68.5		49.1		43.3		---	
Profile												
Riffle Length (ft)	7	59										
Riffle Slope (ft/ft)	0.006	0.017										
Pool Length (ft)	19	57										
Pool Max Depth (ft)	3.3											
Pool Spacing (ft)	53	110										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	25	58										
Radius of Curvature (ft)	22	44										
Rc:Bankfull Width (ft/ft)	1.4	2.6										
Meander Wave Length (ft)	65	110										
Meander Width Ratio	3.6	6.2										
Additional Reach Parameters												
Rosgen Classification	C4											
Channel Thalweg Length (ft)	636											
Sinuosity (ft)	1.16											
Water Surface Slope (ft/ft)	0.008											
Bankfull Slope (ft/ft)	0.009											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.34/2.8/72/168/256											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12c. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 1 (Sta. 125+27 - 126+27)

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	17.0		15.3		15.2		15.2		15.6		16.2	
Floodprone Width (ft)	292.0		292.0		63.8		63.8		64.0		63.9	
Bankfull Mean Depth	1.2		1.3		1.3		1.4		1.4		1.4	
Bankfull Max Depth	2.3		2.3		2.2		2.3		2.4		2.4	
Bankfull Cross-sectional Area (ft^2)	20.3		20.3		19.8		20.7		21.9		22.0	
Width/Depth Ratio	14.3		11.5		11.7		11.1		11.1		11.9	
Entrenchment Ratio[1]	17.1		19.1		4.2		4.2		4.1		3.9	
Bank Height Ratio[2,3]	1.0		1.0		1.0		1.0		1.0		1.0	
D50 (mm)[4,5]	22.6		90		22.6		74.1		48.1		---	
Profile												
Riffle Length (ft)	17	29										
Riffle Slope (ft/ft)	0.007	0.017										
Pool Length (ft)	52											
Pool Max Depth (ft)	3.2											
Pool Spacing (ft)	N/A											
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	54											
Radius of Curvature (ft)	40											
Rc:Bankfull Width (ft/ft)	2.4											
Meander Wave Length (ft)	160											
Meander Width Ratio	3.2											
Additional Reach Parameters												
Rosgen Classification	C4											
Channel Thalweg Length (ft)	100											
Sinuosity (ft)	1.14											
Water Surface Slope (ft/ft)	0.009											
Bankfull Slope (ft/ft)	0.008											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	0.15/0.9/15/83/129/256											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12d. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 2 (Sta. 126+27 - 143+06)

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	16.1	19.5	16.0	18.2	14.5	17.9	15.3	19.1	15.2	17.7	15.2	18.6
Floodprone Width (ft)	154.0	254.0	154.0	254.0	82.7	95.7	82.8	95.8	79.0	95.8	82.9	95.8
Bankfull Mean Depth	1.0	1.2	1.0	1.3	1.0	1.3	1.1	1.3	1.2	1.4	1.4	1.5
Bankfull Max Depth	1.9	2.1	2.0	2.3	1.9	2.3	2.1	2.4	1.8	2.4	2.3	2.7
Bankfull Cross-sectional Area (ft^2)	16.2	23.3	16.5	24.3	14.7	22.3	19.1	21.6	18.2	22.9	21.2	25.2
Width/Depth Ratio	13.3	16.3	12.2	13.7	12.7	14.3	11.9	16.9	11.0	13.7	10.3	13.7
Entrenchment Ratio[1]	9.5	15.8	9.5	15.9	5.0	6.5	5.0	5.9	5.1	6.2	5.2	6.1
Bank Height Ratio[2,3]	1.0		1.0		0.9	1.0	1.0	1.1	1.0	1.1	1.0	1.2
D50 (mm)[4,5]	26.9	47.3	16.0	93.6	1.0	14.6	27.4	80.7	37.9	45.0	---	---
Profile												
Riffle Length (ft)	24	63										
Riffle Slope (ft/ft)	0.001	0.019										
Pool Length (ft)	23	101										
Pool Max Depth (ft)	3.3	3.5										
Pool Spacing (ft)	59	146										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	31	72										
Radius of Curvature (ft)	20	107										
Rc:Bankfull Width (ft/ft)	1.1	4.5										
Meander Wave Length (ft)	81	171										
Meander Width Ratio	1.4	3.0										
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	1,679											
Sinuosity (ft)	1.23											
Water Surface Slope (ft/ft)	0.007											
Bankfull Slope (ft/ft)	0.007											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.17/0.4/93/146/256											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12e. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 2 (Sta. 143+06 - 148+02)

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	16.7		17.3		17.5		17.4		15.7		16.1	
Floodprone Width (ft)	164		164		80.8		87		75		77.4	
Bankfull Mean Depth	1.2		1.3		1.2		1.3		1.3		1.3	
Bankfull Max Depth	1.8		2.1		2.0		2.0		1.9		2.0	
Bankfull Cross-sectional Area (ft^2)	20.8		22.7		21.8		22.0		20.5		21.0	
Width/Depth Ratio	13.5		13.2		14.0		13.7		12.1		12.3	
Entrenchment Ratio[1]	9.8		9.5		4.6		5.0		4.8		4.8	
Bank Height Ratio[2,3]	1.0		1.0		1.0		1.0		1.0		1.0	
D50 (mm)[4,5]	9.4		77.2		11.0		37.6		40.2		---	
Profile												
Riffle Length (ft)	14	60										
Riffle Slope (ft/ft)	0.001	0.019										
Pool Length (ft)	23	58										
Pool Max Depth (ft)	3.9											
Pool Spacing (ft)	55	136										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	23	68										
Radius of Curvature (ft)	27	42										
Rc:Bankfull Width (ft/ft)	1.3	1.9										
Meander Wave Length (ft)	54	121										
Meander Width Ratio	1.1	3.0										
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	536											
Sinuosity (ft)	1.26											
Water Surface Slope (ft/ft)	0.008											
Bankfull Slope (ft/ft)	0.009											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.21/0.5/72/117/362											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12f. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 3 (Sta. 149+02 - 155+05)

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	19.2		18.0		20.0		19.7		18.3		18.3	
Floodprone Width (ft)	57		57		53.8		53.7		53.8		53.8	
Bankfull Mean Depth	1.5		1.4		1.3		1.5		1.5		1.2	
Bankfull Max Depth	2.3		2.4		2.3		2.4		2.2		2.1	
Bankfull Cross-sectional Area (ft^2)	28.2		25.9		26.9		29.2		28.1		22.5	
Width/Depth Ratio	13.1		12.5		14.9		13.2		12.0		14.8	
Entrenchment Ratio[1]	3.0		3.2		2.7		2.7		2.9		2.9	
Bank Height Ratio[2,3]	1.0		1.0		1.0		1.0		1.0		0.9	
D50 (mm)[4,5]	87.8		97.2		4.0		65.8		29.1		---	
Profile												
Riffle Length (ft)	10	61										
Riffle Slope (ft/ft)	0.001	0.035										
Pool Length (ft)	22	53										
Pool Max Depth (ft)	3.5											
Pool Spacing (ft)	49	97										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	N/A											
Radius of Curvature (ft)	N/A											
Rc:Bankfull Width (ft/ft)	N/A											
Meander Wave Length (ft)	N/A											
Meander Width Ratio	N/A											
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	603											
Sinuosity (ft)	1.23											
Water Surface Slope (ft/ft)	0.004											
Bankfull Slope (ft/ft)	0.005											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.27/1.0/113/148/256											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12g. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 4 (Sta. 170+71 - 196+50)

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	19.1	24.9	19.8	22.5	20.4	23.9	19.6	24.2	16.8	26.8	13.9	29.5
Floodprone Width (ft)	158.0	222.0	158.0	222.0	85.9	100.3	85.9	100.4	86.0	100.4	86.0	100.3
Bankfull Mean Depth	1.4	1.5	1.2	1.7	1.4	1.4	1.4	1.4	1.4	1.6	1.1	1.6
Bankfull Max Depth	2.1	2.9	2.1	2.8	2.3	2.6	2.3	2.5	2.4	2.8	2.0	2.6
Bankfull Cross-sectional Area (ft^2)	26.9	38.1	23.3	37.4	28.0	34.2	27.9	33.9	27.5	38.0	22.1	33.3
Width/Depth Ratio	13.6	16.3	13.5	16.8	14.8	16.6	13.8	17.3	10.3	18.9	8.8	26.2
Entrenchment Ratio[1]	7.1	11.6	7.1	11.2	3.8	4.5	3.7	4.6	3.4	5.1	3.0	6.2
Bank Height Ratio[2,3]	1.0		1.0		0.9	1.0	0.9	1.0	1.0	1.0	0.9	0.9
D50 (mm)[4,5]	27.6	37.9	17.7	51.8	22.6	51.1	31.4	55.1	16.4	41.6	---	---
Profile												
Riffle Length (ft)	14	74										
Riffle Slope (ft/ft)	0.003	0.022										
Pool Length (ft)	20	125										
Pool Max Depth (ft)	4.5	4.6										
Pool Spacing (ft)	40	145										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	66	154										
Radius of Curvature (ft)	25	55										
Rc:Bankfull Width (ft/ft)	1.2	2.5										
Meander Wave Length (ft)	84	220										
Meander Width Ratio	3.0	7.0										
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	2,579											
Sinuosity (ft)	1.30											
Water Surface Slope (ft/ft)	0.005											
Bankfull Slope (ft/ft)	0.005											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.15/0.4/64/180/256											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12h. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Candy Creek Reach 4 (Sta. 196+50 - 206+35)

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	21.7	23.2	21.6	23.5	22.7	23.6	23.2	23.6	21.6	26.5	20.7	21.6
Floodprone Width (ft)	132.0	155.0	132.0	155.0	58.7	85.9	58.8	85.8	59.1	85.5	58.7	85.7
Bankfull Mean Depth	1.4	1.5	1.4	1.5	1.3	1.5	1.3	1.5	1.1	1.6	1.3	1.5
Bankfull Max Depth	2.5	2.9	2.5	2.6	2.4	2.5	2.5	2.5	2.7	2.8	2.5	2.6
Bankfull Cross-sectional Area (ft^2)	31.6	32.8	32.4	32.8	31.4	33.5	29.6	33.9	29.9	35.2	27.4	32.8
Width/Depth Ratio	14.4	17.1	14.3	17.1	15.3	17.7	15.8	18.8	13.3	23.6	14.2	15.6
Entrenchment Ratio[1]	6.1	6.7	6.1	6.6	2.5	3.8	2.5	3.7	2.2	4.0	2.8	4.0
Bank Height Ratio[2,3]	1.0		1.0		1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0
D50 (mm)[4,5]	29.3	39.0	28.5	102.5	1.0	100.4	41.6	60.4	41.0	92.6	---	---
Profile												
Riffle Length (ft)	15	53										
Riffle Slope (ft/ft)	0.004	0.025										
Pool Length (ft)	22	71										
Pool Max Depth (ft)	4.1											
Pool Spacing (ft)	52	111										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	30	100										
Radius of Curvature (ft)	25	50										
Rc:Bankfull Width (ft/ft)	1.3	2.5										
Meander Wave Length (ft)	80	220										
Meander Width Ratio	1.5	5.0										
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	985											
Sinuosity (ft)	1.32											
Water Surface Slope (ft/ft)	0.010											
Bankfull Slope (ft/ft)	0.008											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	0.09/0.3/0.6/49/111/180											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12i. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT1C

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	7.8		7.8		10.1		11.4		7.1		7.9	
Floodprone Width (ft)	28.0		28.0		24.6		24.9		21.1		19.7	
Bankfull Mean Depth	0.5		0.5		0.5		0.6		0.5		0.4	
Bankfull Max Depth	0.9		0.8		1.1		1.2		1.0		0.9	
Bankfull Cross-sectional Area (ft^2)	4.0		3.7		5.1		6.7		3.2		3.5	
Width/Depth Ratio	15.0		16.2		19.9		19.4		15.7		17.9	
Entrenchment Ratio[1]	3.6		3.6		2.4		2.2		3.0		2.5	
Bank Height Ratio[2,3]	1.0		1.0		1.1		1.3		0.9		0.9	
D50 (mm)[4,5]	54.5		84.6		54.1		39.4		44.2		---	
Profile												
Riffle Length (ft)	3	43										
Riffle Slope (ft/ft)	0.003	0.082										
Pool Length (ft)	5	20										
Pool Max Depth (ft)	1.7											
Pool Spacing (ft)	6	51										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	N/A											
Radius of Curvature (ft)	N/A											
Rc:Bankfull Width (ft/ft)	N/A											
Meander Wave Length (ft)	N/A											
Meander Width Ratio	N/A											
Additional Reach Parameters												
Rosgen Classification	B/C											
Channel Thalweg Length (ft)	728											
Sinuosity (ft)	1.08											
Water Surface Slope (ft/ft)	0.028											
Bankfull Slope (ft/ft)	0.028											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.4/12.8/82/117/180											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12j. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT1D

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	7.6		7.1		8.4		7.4		7.7		8.6	
Floodprone Width (ft)	15.0		15.0		18.7		17.1		16.8		15.9	
Bankfull Mean Depth	0.5		0.5		0.5		0.4		0.3		0.4	
Bankfull Max Depth	0.8		0.8		0.9		0.7		0.6		0.7	
Bankfull Cross-sectional Area (ft^2)	3.8		3.3		4.0		3.0		2.6		3.2	
Width/Depth Ratio	15.4		15.3		17.9		18.7		22.6		23.2	
Entrenchment Ratio[1]	2.0		2.1		2.2		2.3		2.2		1.8	
Bank Height Ratio[2,3]	1.0		1.0		1.0		0.9		0.8		0.9	
D50 (mm)[4,5]	25.1		33.7		34.8		0.9		0.7		---	
Profile												
Riffle Length (ft)	4	62										
Riffle Slope (ft/ft)	0.002	0.085										
Pool Length (ft)	4	15										
Pool Max Depth (ft)	1.1											
Pool Spacing (ft)	6	33										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	N/A											
Radius of Curvature (ft)	N/A											
Rc:Bankfull Width (ft/ft)	N/A											
Meander Wave Length (ft)	N/A											
Meander Width Ratio	N/A											
Additional Reach Parameters												
Rosgen Classification	B/C											
Channel Thalweg Length (ft)	379											
Sinuosity (ft)	1.04											
Water Surface Slope (ft/ft)	0.051											
Bankfull Slope (ft/ft)	0.045											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	0.3/6.1/31/57/78/128											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12k. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT2 - Reach 1

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	4.8	7.5	4.3	7.5	3.1	7.5	3.8	7.2	2.8	8.2	2.8	9.0
Floodprone Width (ft)	22.0	47.0	22.0	47.0	21.9	79.4	21.2	78.1	21.2	78.8	21.2	78.5
Bankfull Mean Depth	0.3	0.9	0.2	0.8	0.2	0.8	0.2	0.8	0.4	0.7	0.3	0.6
Bankfull Max Depth	0.4	1.5	0.3	1.4	0.3	1.4	0.4	1.4	0.5	1.3	0.4	1.4
Bankfull Cross-sectional Area (ft^2)	1.2	6.8	0.8	6.3	0.7	6.3	0.9	5.5	1.0	5.5	0.8	5.7
Width/Depth Ratio	8.3	18.5	9.7	23.3	9.0	13.9	9.3	16.5	8.0	12.4	9.6	23.5
Entrenchment Ratio[1]	2.9	9.8	2.8	11.0	2.9	13.6	3.0	12.5	2.6	16.7	2.4	17.5
Bank Height Ratio[2,3]	1.0		1.0		0.7	1.0	0.9	1.0	0.9	1.0	0.8	1.0
D50 (mm)[4,5]	34.0	39.0	34.8	40.2	9.9	33.3	25.0	36.7	26.4	52.2	---	---
Profile												
Riffle Length (ft)	4	68										
Riffle Slope (ft/ft)	0.004	0.063										
Pool Length (ft)	4	18										
Pool Max Depth (ft)	1.7											
Pool Spacing (ft)	8	45										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	10	25										
Radius of Curvature (ft)	17	54										
Rc:Bankfull Width (ft/ft)	3.7	9.2										
Meander Wave Length (ft)	21	68										
Meander Width Ratio	2.2	5.6										
Additional Reach Parameters												
Rosgen Classification	C4											
Channel Thalweg Length (ft)	1,208											
Sinuosity (ft)	1.03											
Water Surface Slope (ft/ft)	0.021	0.031										
Bankfull Slope (ft/ft)	0.023	0.032										
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	0.35/6.0/34.6/70/90/256											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12l. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT2 - Reach 2

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	7.8		7.8		7.0		6.5		7.9		5.9	
Floodprone Width (ft)	60.0		60.0		24.8		60.0		51.4		49.8	
Bankfull Mean Depth	0.5		0.4		0.4		0.4		0.4		0.5	
Bankfull Max Depth	0.8		0.8		0.7		0.7		0.9		1.1	
Bankfull Cross-sectional Area (ft^2)	4.1		3.0		3.0		2.8		3.2		2.9	
Width/Depth Ratio	14.9		20.2		16.4		14.8		19.2		12.3	
Entrenchment Ratio[1]	7.7		7.7		3.6		9.3		6.5		8.4	
Bank Height Ratio[2,3]	1.0		1.0		0.8		0.8		0.9		0.9	
D50 (mm)[4,5]	26.2		66.5		11.0		10.7		2.6		---	
Profile												
Riffle Length (ft)	7	80										
Riffle Slope (ft/ft)	0.001	0.055										
Pool Length (ft)	11	62										
Pool Max Depth (ft)	1.5											
Pool Spacing (ft)	13	51										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	N/A											
Radius of Curvature (ft)	N/A											
Rc:Bankfull Width (ft/ft)	N/A											
Meander Wave Length (ft)	N/A											
Meander Width Ratio	N/A											
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	643											
Sinuosity (ft)	1.09											
Water Surface Slope (ft/ft)	0.015											
Bankfull Slope (ft/ft)	0.014											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	0.2/0.7/5/56/161/>2048											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12m. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT2A

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	7.0		7.6		7.4		5.9		10.0		3.9	
Floodprone Width (ft)	31.0		31.0		22.2		40.1		31.7		36.5	
Bankfull Mean Depth	0.6		0.5		0.5		0.5		0.3		0.5	
Bankfull Max Depth	1.0		1.0		1.1		1.2		0.9		1.2	
Bankfull Cross-sectional Area (ft^2)	4.1		3.7		3.5		3.1		2.8		2.1	
Width/Depth Ratio	11.9		15.8		15.7		11.2		36.1		7.3	
Entrenchment Ratio[1]	4.4		4.1		3.0		6.8		3.2		9.5	
Bank Height Ratio[2,3]	1.0		1.0		0.9		0.9		0.9		0.8	
D50 (mm)[4,5]	18.2		7.5		5.6		9.3		0.5		---	
Profile												
Riffle Length (ft)	3	102										
Riffle Slope (ft/ft)	0.019	0.071										
Pool Length (ft)	4	12										
Pool Max Depth (ft)	1.5	2.1										
Pool Spacing (ft)	7	55										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	N/A											
Radius of Curvature (ft)	N/A											
Rc:Bankfull Width (ft/ft)	N/A											
Meander Wave Length (ft)	N/A											
Meander Width Ratio	N/A											
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	366											
Sinuosity (ft)	1.02											
Water Surface Slope (ft/ft)	0.039											
Bankfull Slope (ft/ft)	0.040											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	0.27/1.1/2.5/47/76/180											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12n. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT3

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	8.8		8.7		9.0		10.4		8.0		8.6	
Floodprone Width (ft)	77.0		77.0		67.6		67.3		64.2		67.5	
Bankfull Mean Depth	0.6		0.6		0.7		0.5		0.7		0.7	
Bankfull Max Depth	1.1		1.1		1.2		1.0		1.1		1.1	
Bankfull Cross-sectional Area (ft^2)	5.5		5.3		5.9		5.3		5.5		6.1	
Width/Depth Ratio	14.0		14.1		13.7		20.3		11.6		12	
Entrenchment Ratio[1]	8.8		8.9		7.5		6.5		8.1		7.9	
Bank Height Ratio[2,3]	1.0		1.0		1.0		1.0		1.0		1.1	
D50 (mm)[4,5]	74.4		96		72.7		58.6		85.5		---	
Profile												
Riffle Length (ft)	8	20										
Riffle Slope (ft/ft)	0.007	0.057										
Pool Length (ft)	8	24										
Pool Max Depth (ft)	1.1	2.1										
Pool Spacing (ft)	24	33										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	7	19										
Radius of Curvature (ft)	12	24										
Rc:Bankfull Width (ft/ft)	1.1	2.1										
Meander Wave Length (ft)	28	76										
Meander Width Ratio	0.8	1.7										
Additional Reach Parameters												
Rosgen Classification	C5											
Channel Thalweg Length (ft)	346											
Sinuosity (ft)	1.15											
Water Surface Slope (ft/ft)	0.024											
Bankfull Slope (ft/ft)	0.022											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.36/1.5/81/111/180											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12o. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT4

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	11.5	15.1	12.3	14.7	12.4	15.3	12.3	15.6	10.3	15.4	10.2	17.8
Floodprone Width (ft)	98.0	288.0	98.0	288.0	49.9	69.1	49.9	69.1	49.9	69.1	47.4	68.8
Bankfull Mean Depth	0.9	1.1	0.9	1.0	0.8	1.0	0.8	1.0	0.7	1.0	0.8	0.9
Bankfull Max Depth	1.6	2.1	1.6	2.1	1.5	1.9	1.5	1.8	1.4	1.7	1.6	1.9
Bankfull Cross-sectional Area (ft^2)	11.0	15.2	11.1	14.4	10.6	13.3	10.2	13.6	9.9	12.0	9.5	13.5
Width/Depth Ratio	10.2	15.0	11.9	15.0	13.6	17.6	12.5	17.9	10.7	20.7	10.9	23.3
Entrenchment Ratio[1]	6.5	25.0	6.7	23.5	3.8	5.6	3.7	5.4	3.6	6.7	3.1	6.8
Bank Height Ratio[2,3]	1.0		1.0		0.9	1.0	0.9	1.0	0.9	1.0	0.9	1.0
D50 (mm)[4,5]	16.0	45.0	22.6	79.4	25.4	64.7	1.9	77.2	1.6	66.0	---	---
Profile												
Riffle Length (ft)	8	69										
Riffle Slope (ft/ft)	0.000	0.072										
Pool Length (ft)	9	42										
Pool Max Depth (ft)	2.3											
Pool Spacing (ft)	24	123										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	10	45										
Radius of Curvature (ft)	12	33										
Rc:Bankfull Width (ft/ft)	1.1	2.1										
Meander Wave Length (ft)	31	72										
Meander Width Ratio	0.7	2.7										
Additional Reach Parameters												
Rosgen Classification	C4											
Channel Thalweg Length (ft)	1,356											
Sinuosity (ft)	1.22											
Water Surface Slope (ft/ft)	0.006											
Bankfull Slope (ft/ft)	0.006											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/0.2/0.6/100/161/512											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Table 12p. Monitoring Data - Stream Reach Data Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

UT5

Parameter	As-Built/Baseline 2016		MY1 2017		MY2 2018		MY3 2019		MY5 2021		MY7 2023	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Dimension and Substrate												
Bankfull Width (ft)	9.7	10.6	9.6	10.8	10.6	11.6	9.3	10.1	8.3	13.1	9.3	11.0
Floodprone Width (ft)	83.0	229.0	83.0	229.0	53.9	82.3	53.8	82.3	53.9	82.1	53.8	82.2
Bankfull Mean Depth	0.6	0.8	0.6	0.8	0.6	0.7	0.6	0.8	0.5	0.8	0.4	0.6
Bankfull Max Depth	0.9	1.3	0.9	1.3	1.0	1.3	1.0	1.3	1.1	1.5	0.7	1.1
Bankfull Cross-sectional Area (ft^2)	6.0	8.8	5.6	8.4	6.4	8.2	5.5	7.6	6.4	6.6	4.4	5.5
Width/Depth Ratio	12.8	15.5	13.8	16.2	16.2	19.1	13.5	15.8	10.5	25.7	15.6	24.8
Entrenchment Ratio[1]	8.6	21.6	8.8	21.2	4.7	7.2	5.3	8.6	4.1	9.7	4.9	8.5
Bank Height Ratio[2,3]	1.0		1.0		1.0	1.1	0.9	1.0	0.9	1.0	0.7	0.9
D50 (mm)[4,5]	11.0	46.2	40.6	53.0	18.0	45.0	1.0	47.7	0.7	40.8	---	---
Profile												
Riffle Length (ft)	11	28										
Riffle Slope (ft/ft)	0.000	0.027										
Pool Length (ft)	12	39										
Pool Max Depth (ft)	1.9											
Pool Spacing (ft)	26	65										
Pool Volume (ft^3)												
Pattern												
Channel Beltwidth (ft)	10	39										
Radius of Curvature (ft)	11	48										
Rc:Bankfull Width (ft/ft)	0.8	3.6										
Meander Wave Length (ft)	34	71										
Meander Width Ratio	0.9	2.2										
Additional Reach Parameters												
Rosgen Classification	C5/E5											
Channel Thalweg Length (ft)	1,012											
Sinuosity (ft)	1.20											
Water Surface Slope (ft/ft)	0.006											
Bankfull Slope (ft/ft)	0.007											
Ri%/Ru%/P%/G%/S%	---											
SC%/Sa%/G%/C%/B%/Be%	---											
d16/d35/d50/d84/d95/d100	SC/SC/0.6/32/143/362											

(---): Data was not provided

[1] ER in MY2 is based on the width of the cross-section, in lieu of assuming the width across the floodplain as was done in previous monitoring years.

[2] Prior to MY2, bankfull dimensions were calculated using a fixed bankfull elevation.

[3] MY2-MY7 Bank Height Ratio was calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document provided by the NCIRT (9/2018). The remainder of the cross-section dimension parameters were calculated based on the current year's low bank height.

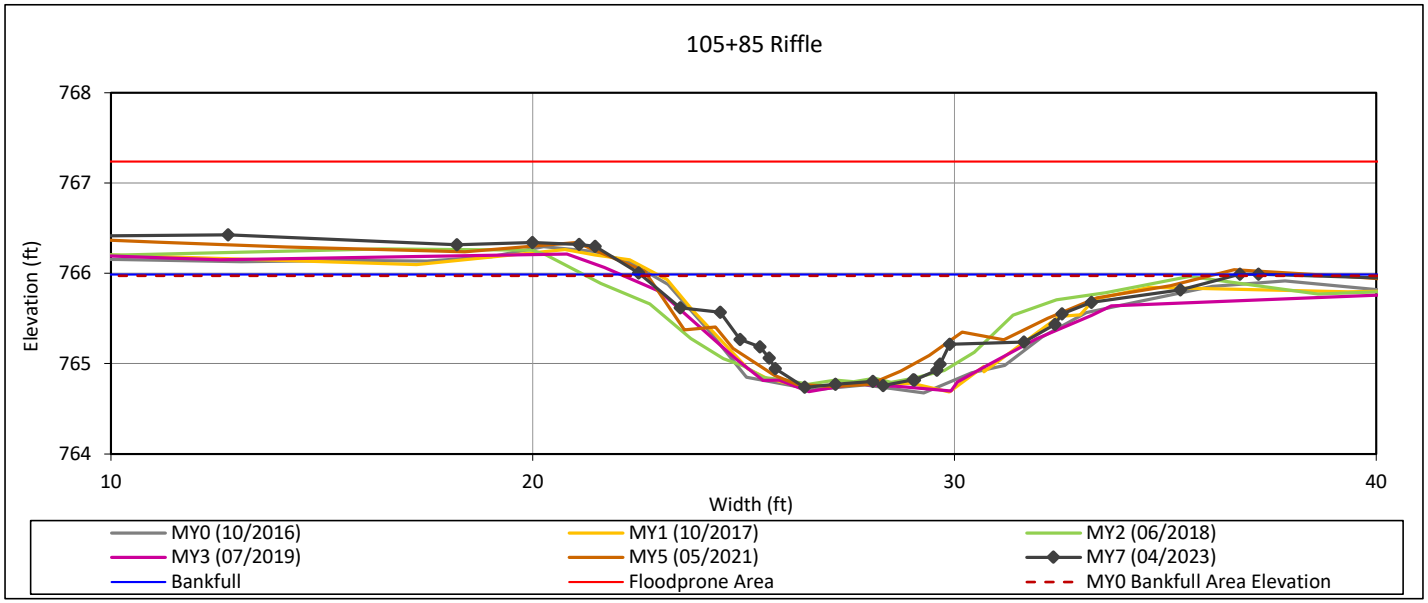
[4] All D50 values revised in the MY3 report (2019) to correct a previous error. Previous years reported a reachwide value rather than a riffle-only value.

[5] Pebble counts not conducted after MY5.

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 1 - Candy Creek Reach 1



Bankfull Dimensions	
9.1	x-section area (ft.sq.)
14.2	width (ft)
0.6	mean depth (ft)
1.3	max depth (ft)
14.7	wetted perimeter (ft)
0.6	hydraulic radius (ft)
22.1	width-depth ratio
54.5	W flood prone area (ft)
3.8	entrenchment ratio
1.0	low bank height ratio

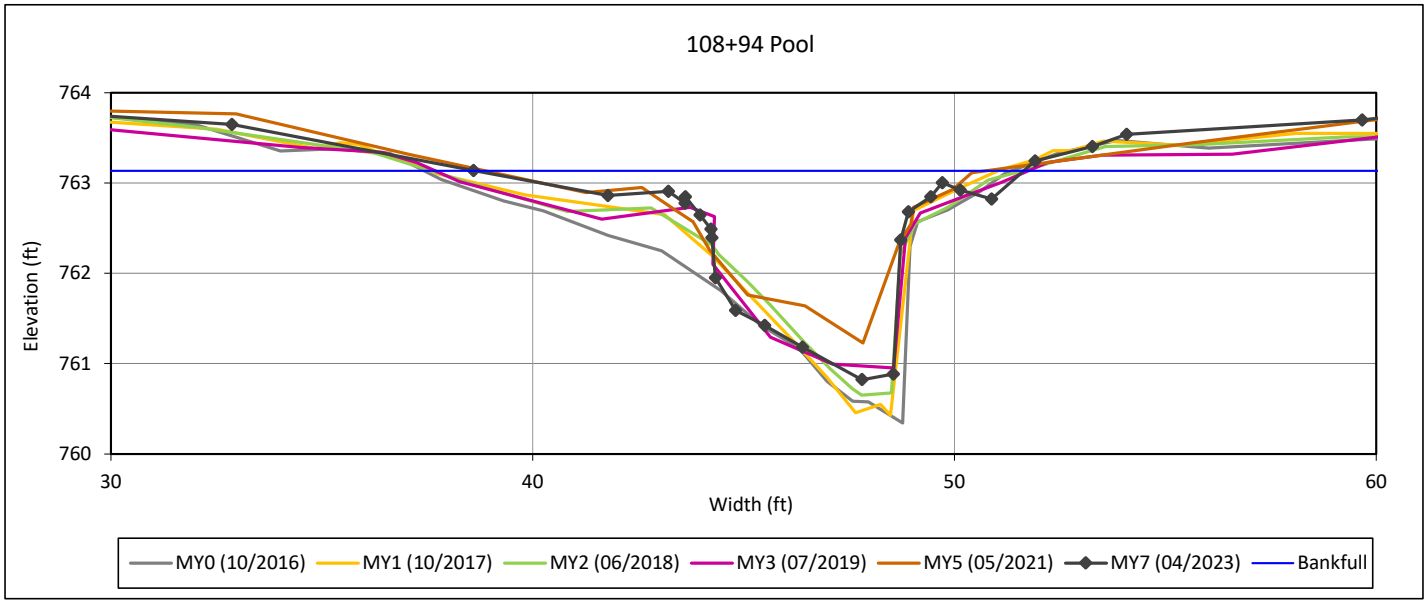
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 2 - Candy Creek Reach 1



Bankfull Dimensions	
10.5	x-section area (ft.sq.)
13.0	width (ft)
0.8	mean depth (ft)
2.3	max depth (ft)
15.5	wetted perimeter (ft)
0.7	hydraulic radius (ft)
16.3	width-depth ratio

Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

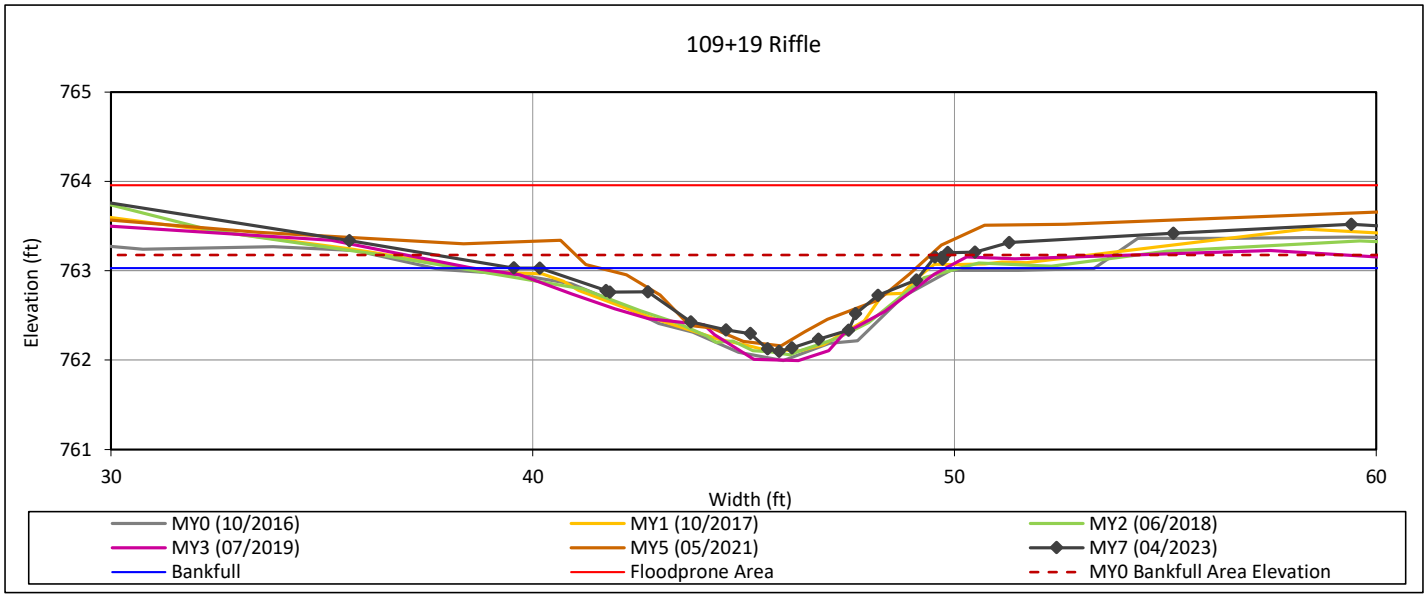
Cross-Section Plots

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023

Cross-Section 3 - Candy Creek Reach 1



Bankfull Dimensions	
4.3	x-section area (ft.sq.)
9.2	width (ft)
0.5	mean depth (ft)
0.9	max depth (ft)
9.5	wetted perimeter (ft)
0.5	hydraulic radius (ft)
19.5	width-depth ratio
86.1	W flood prone area (ft)
9.4	entrenchment ratio
0.9	low bank height ratio

Survey Date: 04/2023

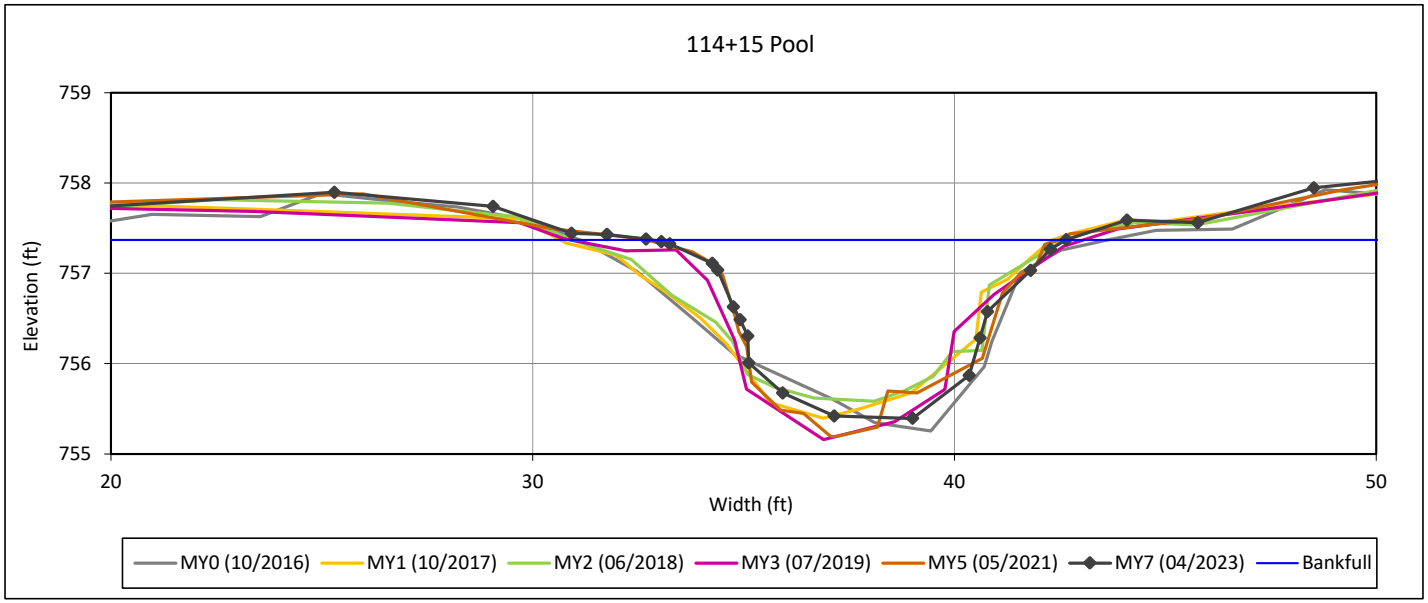
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross Section 4 - Candy Creek Reach 1



Bankfull Dimensions	
11.4	x-section area (ft.sq.)
9.8	width (ft)
1.2	mean depth (ft)
2.0	max depth (ft)
11.2	wetted perimeter (ft)
1.0	hydraulic radius (ft)
8.5	width-depth ratio

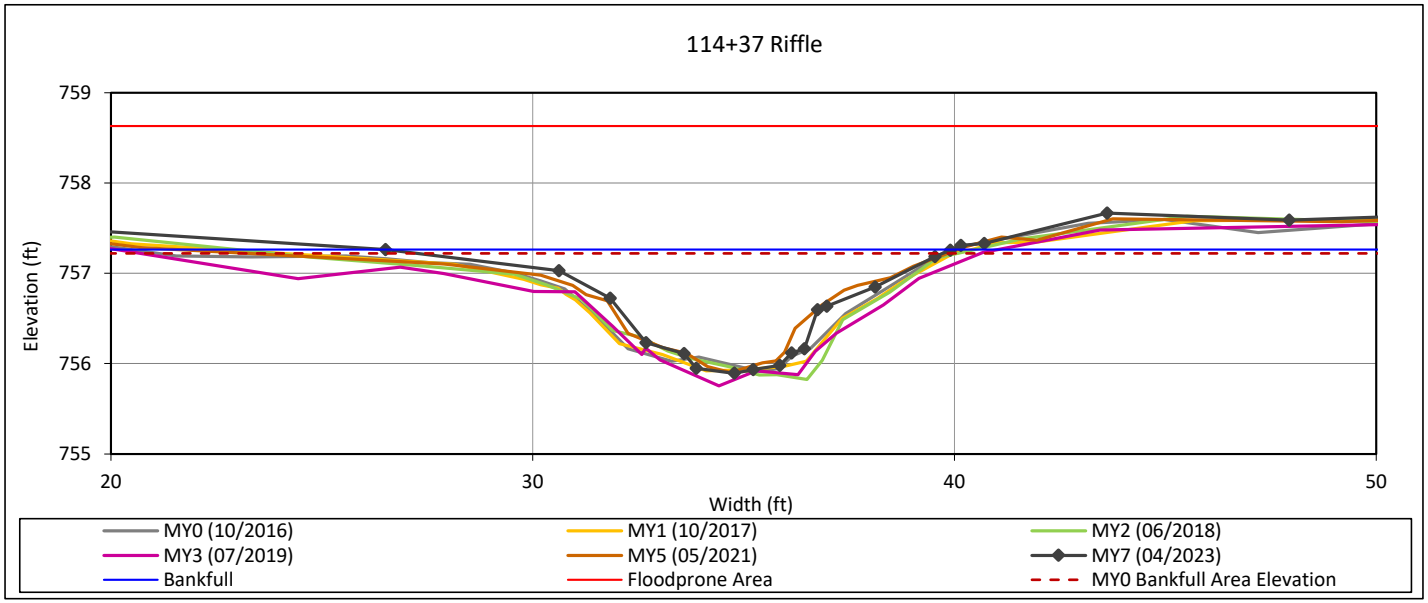
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 5 - Candy Creek Reach 1



Bankfull Dimensions	
7.6	x-section area (ft.sq.)
13.4	width (ft)
0.6	mean depth (ft)
1.4	max depth (ft)
14.0	wetted perimeter (ft)
0.5	hydraulic radius (ft)
23.6	width-depth ratio
74.9	W flood prone area (ft)
5.6	entrenchment ratio
1.0	low bank height ratio

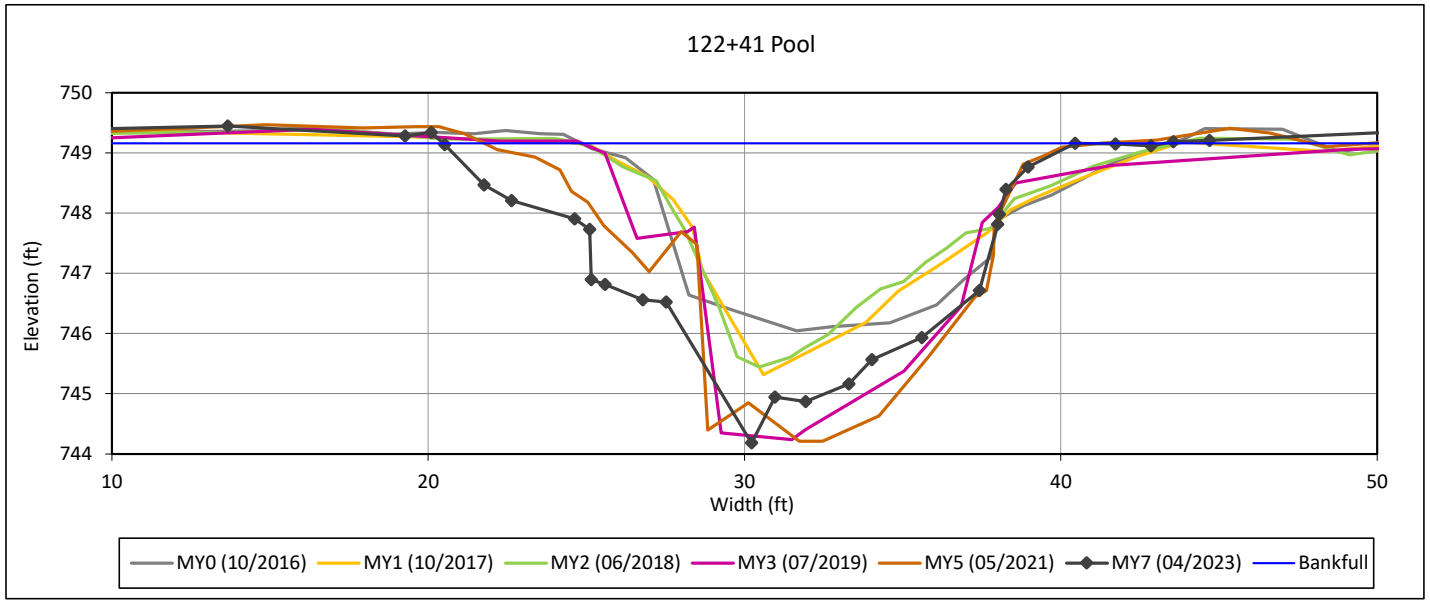
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 6 - Candy Creek Reach 1



Bankfull Dimensions	
48.8	x-section area (ft.sq.)
20.0	width (ft)
2.4	mean depth (ft)
5.0	max depth (ft)
23.8	wetted perimeter (ft)
2.1	hydraulic radius (ft)
8.2	width-depth ratio

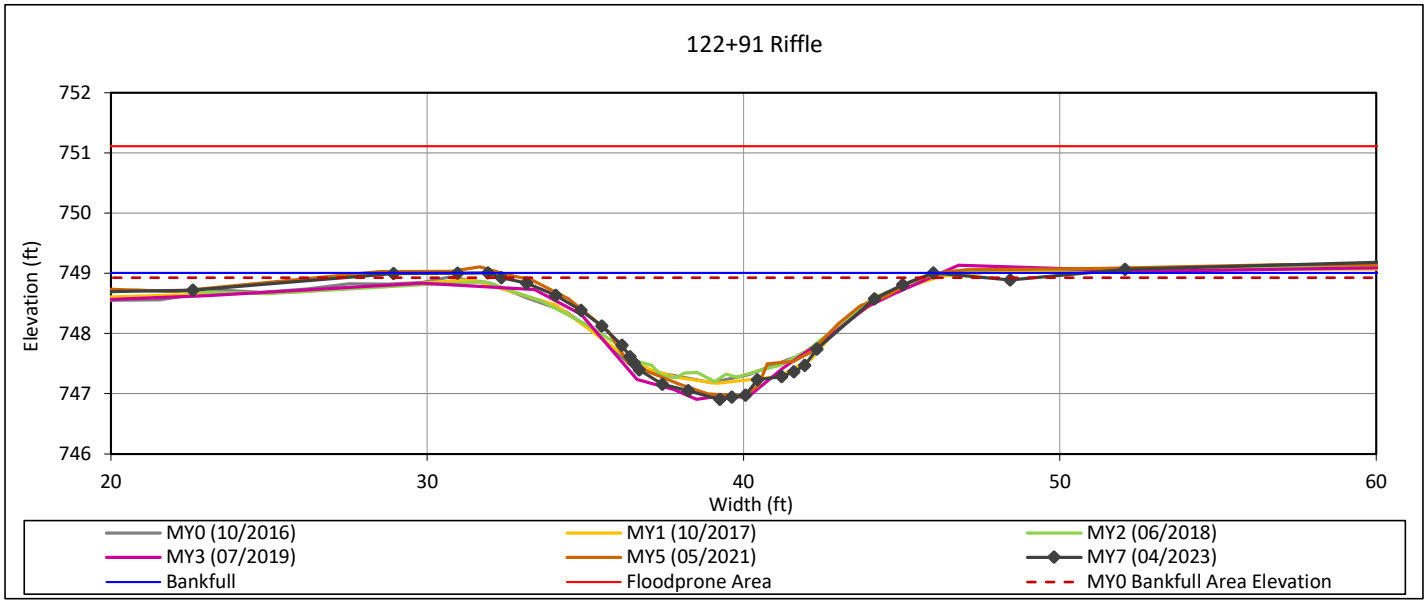
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 7 - Candy Creek Reach 1



Bankfull Dimensions	
15.0	x-section area (ft.sq.)
14.1	width (ft)
1.1	mean depth (ft)
2.1	max depth (ft)
14.9	wetted perimeter (ft)
1.0	hydraulic radius (ft)
13.3	width-depth ratio
82.6	W flood prone area (ft)
5.9	entrenchment ratio
1.0	low bank height ratio

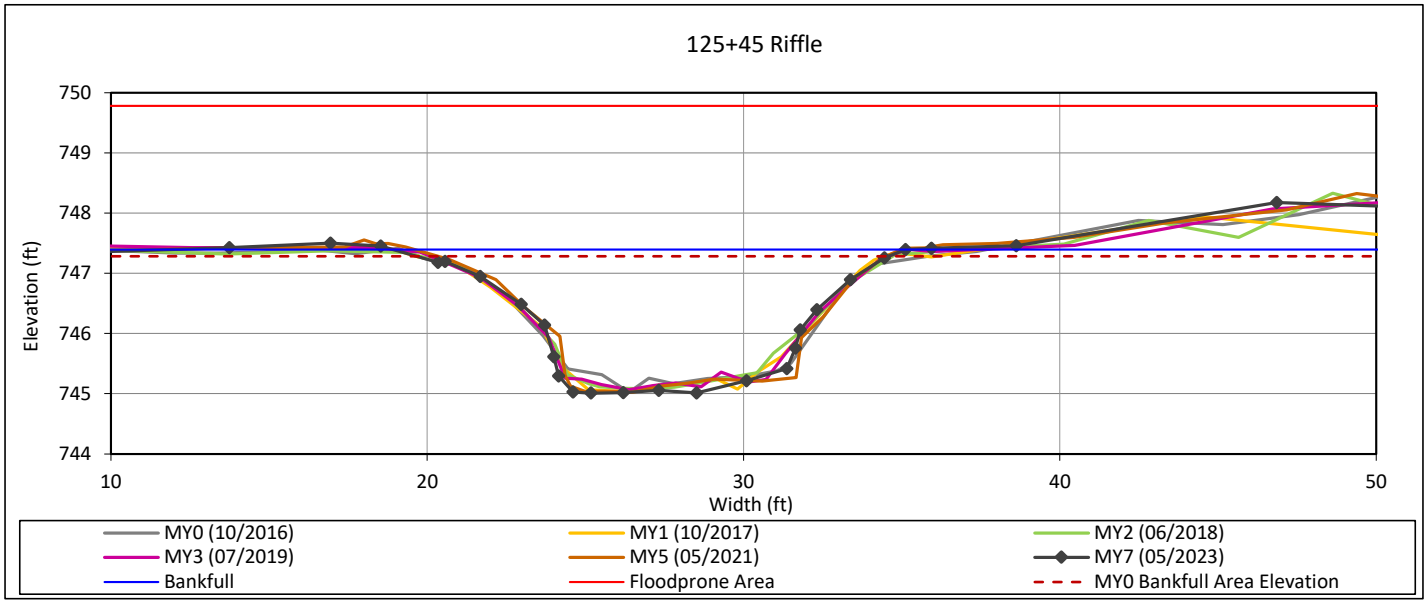
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 8 - Candy Creek Reach 1



Bankfull Dimensions	
22.0	x-section area (ft.sq.)
16.2	width (ft)
1.4	mean depth (ft)
2.4	max depth (ft)
17.7	wetted perimeter (ft)
1.2	hydraulic radius (ft)
11.9	width-depth ratio
63.9	W flood prone area (ft)
3.9	entrenchment ratio
1.0	low bank height ratio

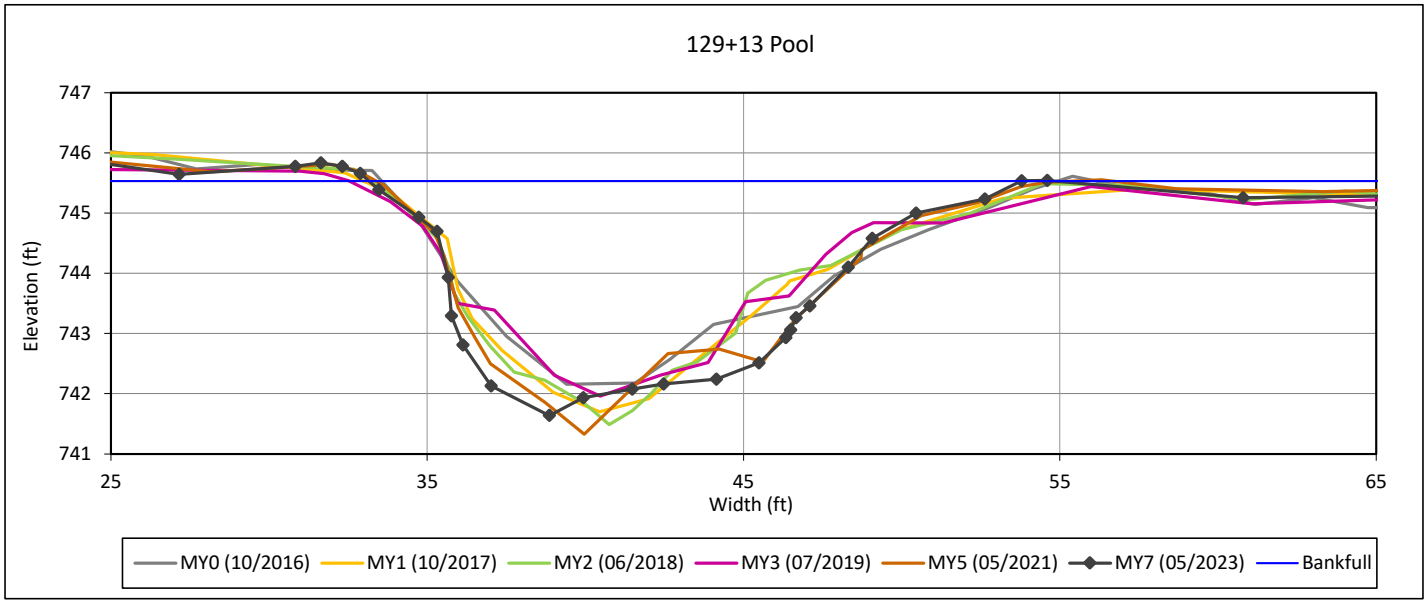
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 9 - Candy Creek Reach 2



Bankfull Dimensions	
43.8	x-section area (ft.sq.)
20.6	width (ft)
2.1	mean depth (ft)
3.9	max depth (ft)
23.1	wetted perimeter (ft)
1.9	hydraulic radius (ft)
9.7	width-depth ratio

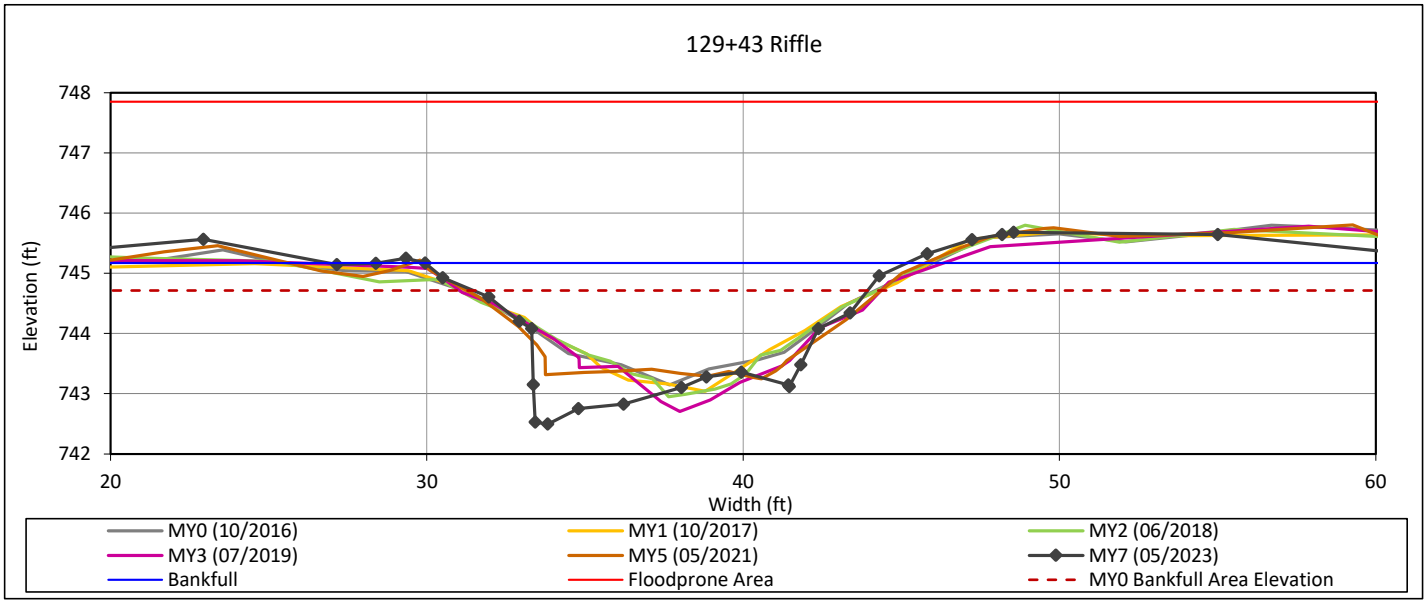
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 10 - Candy Creek Reach 2



Bankfull Dimensions	
22.5	x-section area (ft.sq.)
15.2	width (ft)
1.5	mean depth (ft)
2.7	max depth (ft)
17.6	wetted perimeter (ft)
1.3	hydraulic radius (ft)
10.3	width-depth ratio
93.2	W flood prone area (ft)
6.1	entrenchment ratio
1.2	low bank height ratio

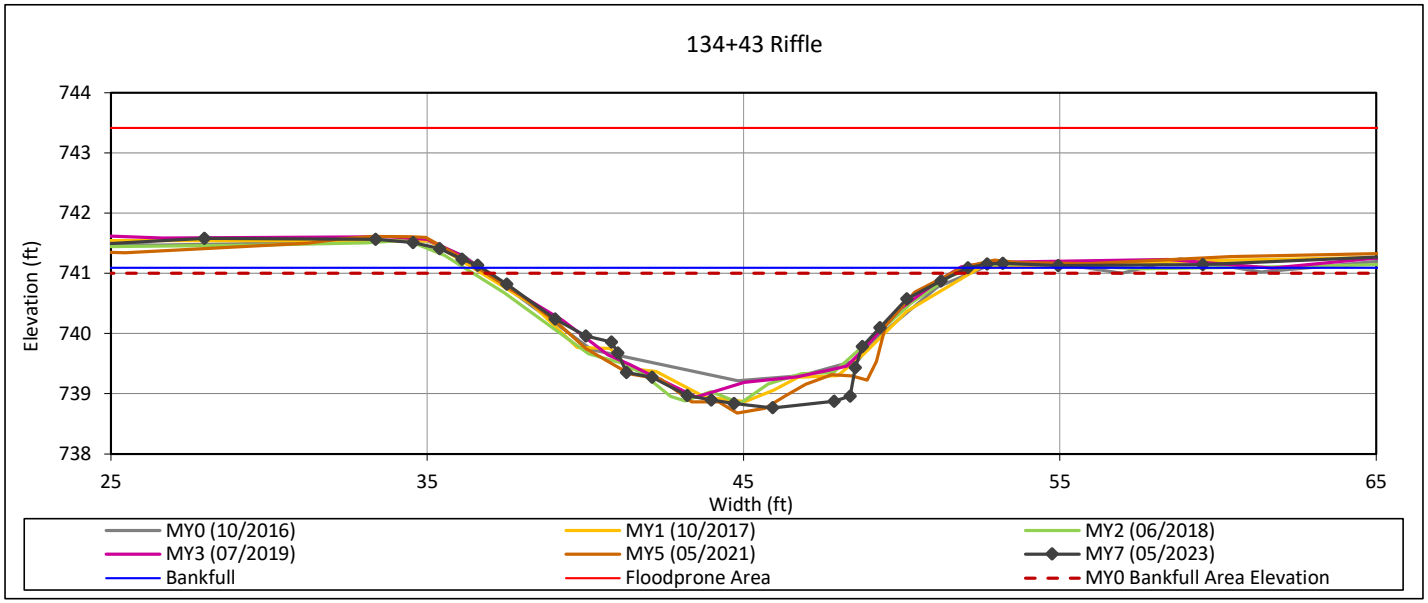
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 11 - Candy Creek Reach 2



Bankfull Dimensions	
21.2	x-section area (ft.sq.)
15.4	width (ft)
1.4	mean depth (ft)
2.3	max depth (ft)
16.7	wetted perimeter (ft)
1.3	hydraulic radius (ft)
11.2	width-depth ratio
82.9	W flood prone area (ft)
5.4	entrenchment ratio
1.0	low bank height ratio

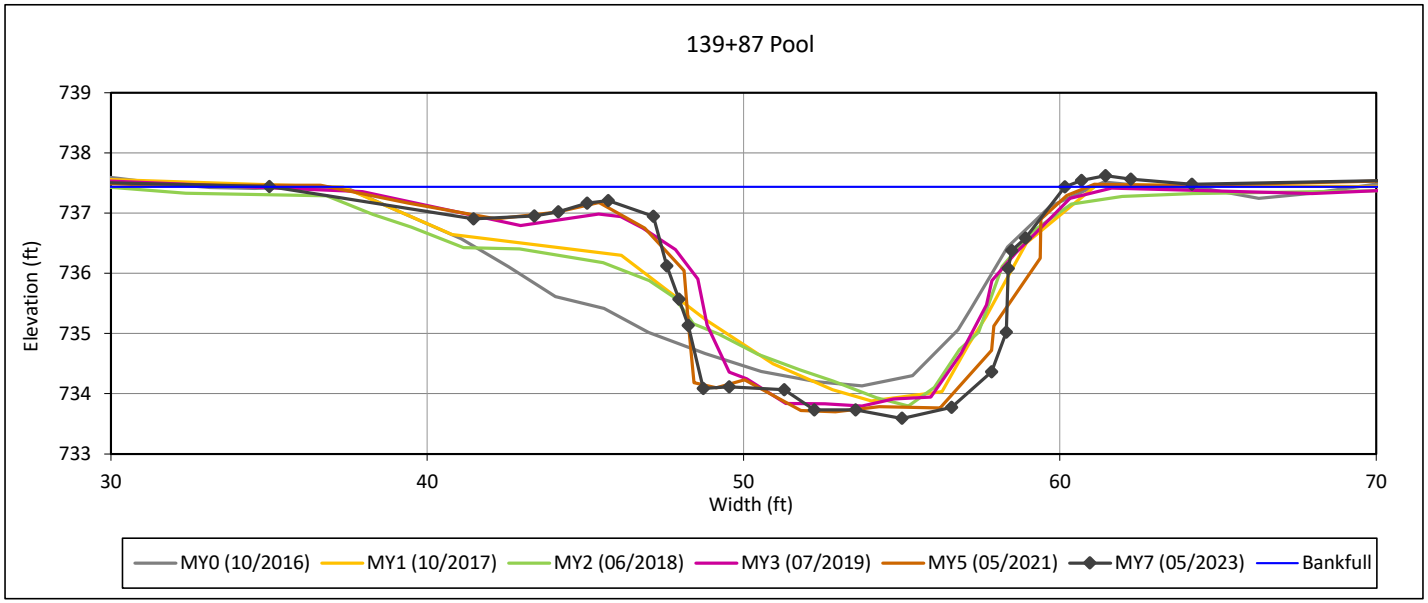
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 12 - Candy Creek Reach 2



Bankfull Dimensions	
41.9	x-section area (ft.sq.)
25.2	width (ft)
1.7	mean depth (ft)
3.8	max depth (ft)
29.0	wetted perimeter (ft)
1.4	hydraulic radius (ft)
15.1	width-depth ratio

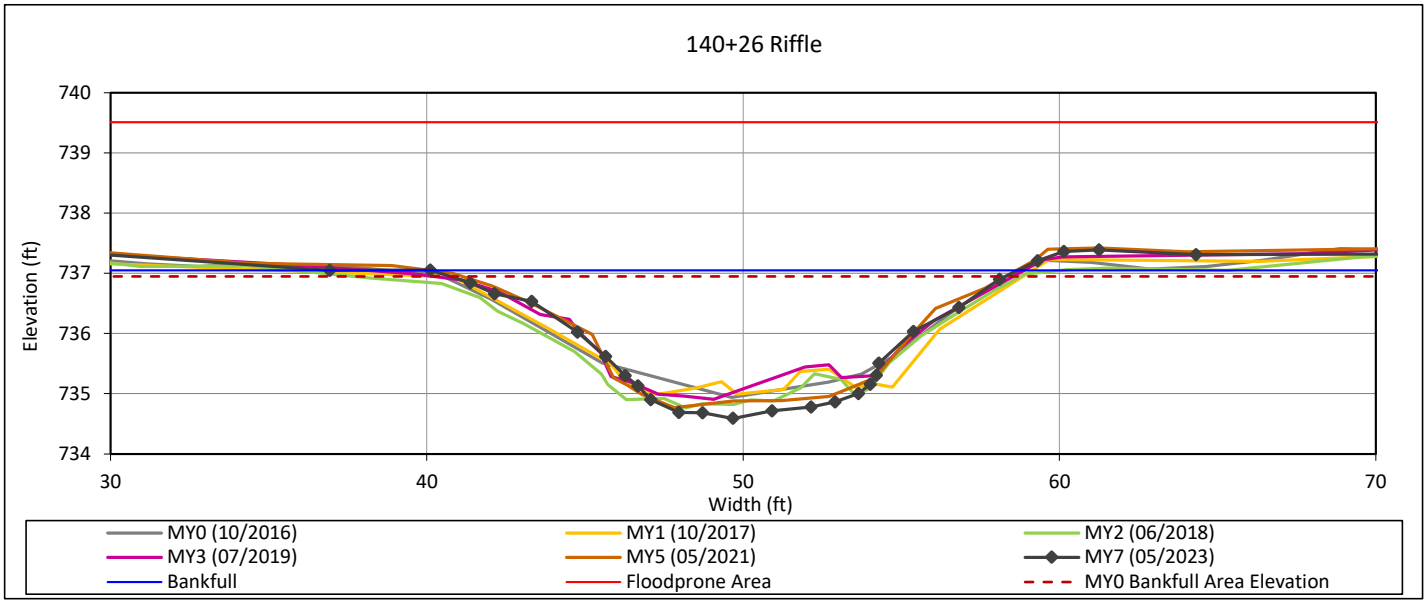
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 13 - Candy Creek Reach 2



Bankfull Dimensions	
25.2	x-section area (ft.sq.)
18.6	width (ft)
1.4	mean depth (ft)
2.5	max depth (ft)
19.5	wetted perimeter (ft)
1.3	hydraulic radius (ft)
13.7	width-depth ratio
95.8	W flood prone area (ft)
5.2	entrenchment ratio
1.0	low bank height ratio

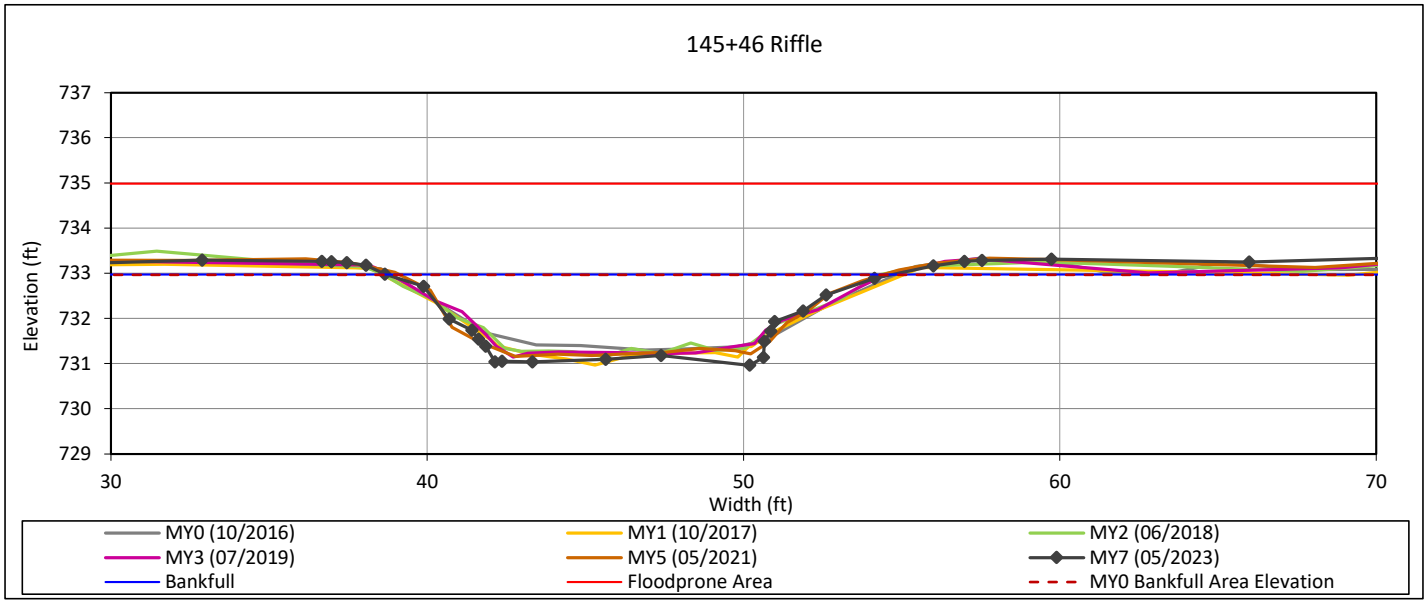
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 14 - Candy Creek Reach 2



Bankfull Dimensions	
21.0	x-section area (ft.sq.)
16.1	width (ft)
1.3	mean depth (ft)
2.0	max depth (ft)
17.5	wetted perimeter (ft)
1.2	hydraulic radius (ft)
12.3	width-depth ratio
77.4	W flood prone area (ft)
4.8	entrenchment ratio
1.0	low bank height ratio

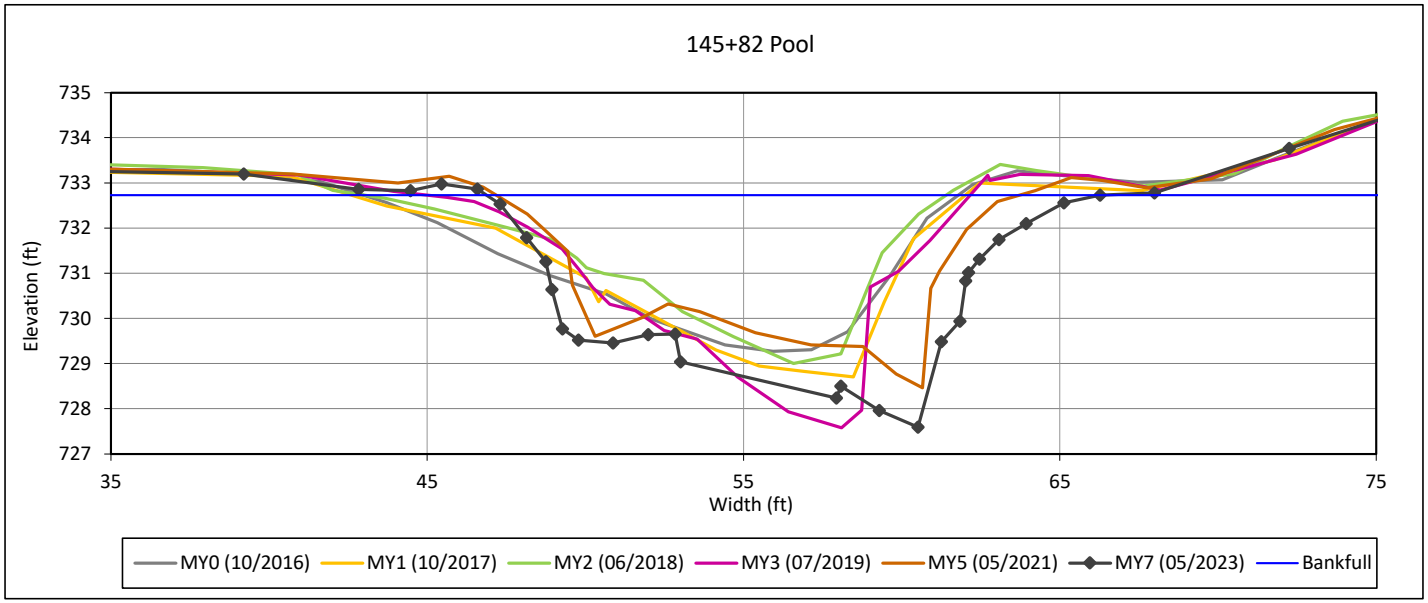
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 15 - Candy Creek Reach 2



Bankfull Dimensions	
54.6	x-section area (ft.sq.)
19.4	width (ft)
2.8	mean depth (ft)
5.1	max depth (ft)
24.6	wetted perimeter (ft)
2.2	hydraulic radius (ft)
6.9	width-depth ratio

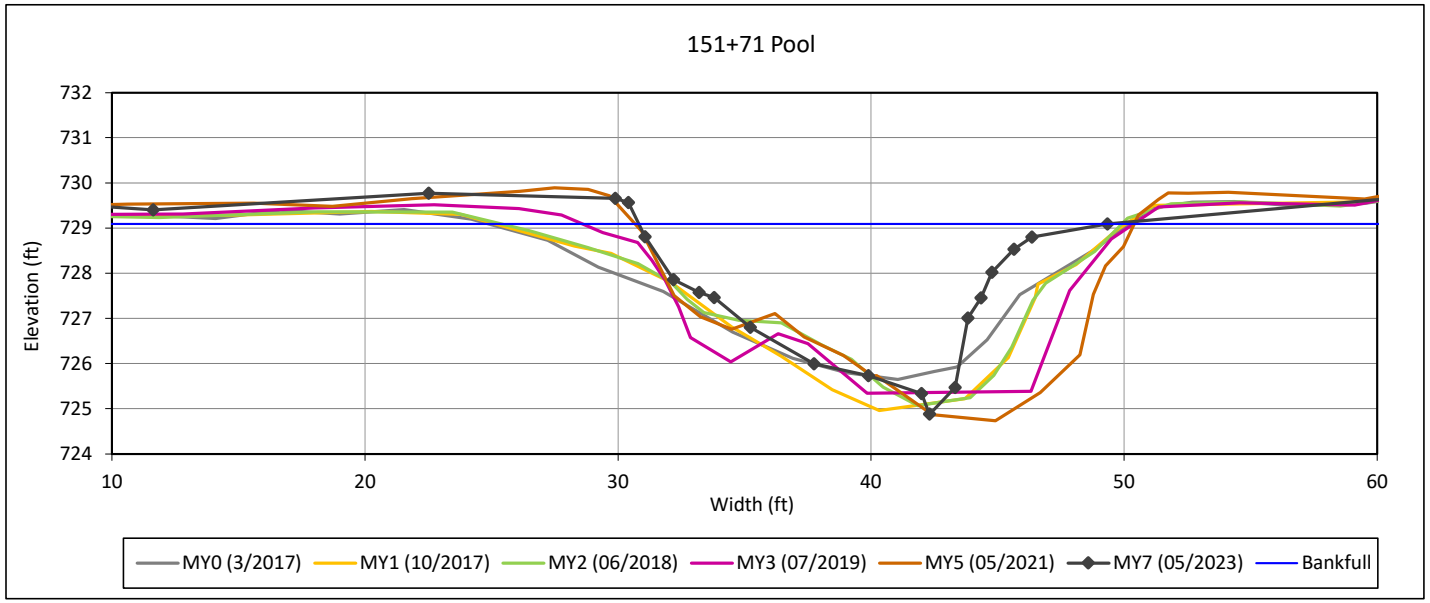
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 16 - Candy Creek Reach 3



Bankfull Dimensions	
36.9	x-section area (ft.sq.)
18.5	width (ft)
2.0	mean depth (ft)
4.2	max depth (ft)
21.5	wetted perimeter (ft)
1.7	hydraulic radius (ft)
9.3	width-depth ratio

View Downstream

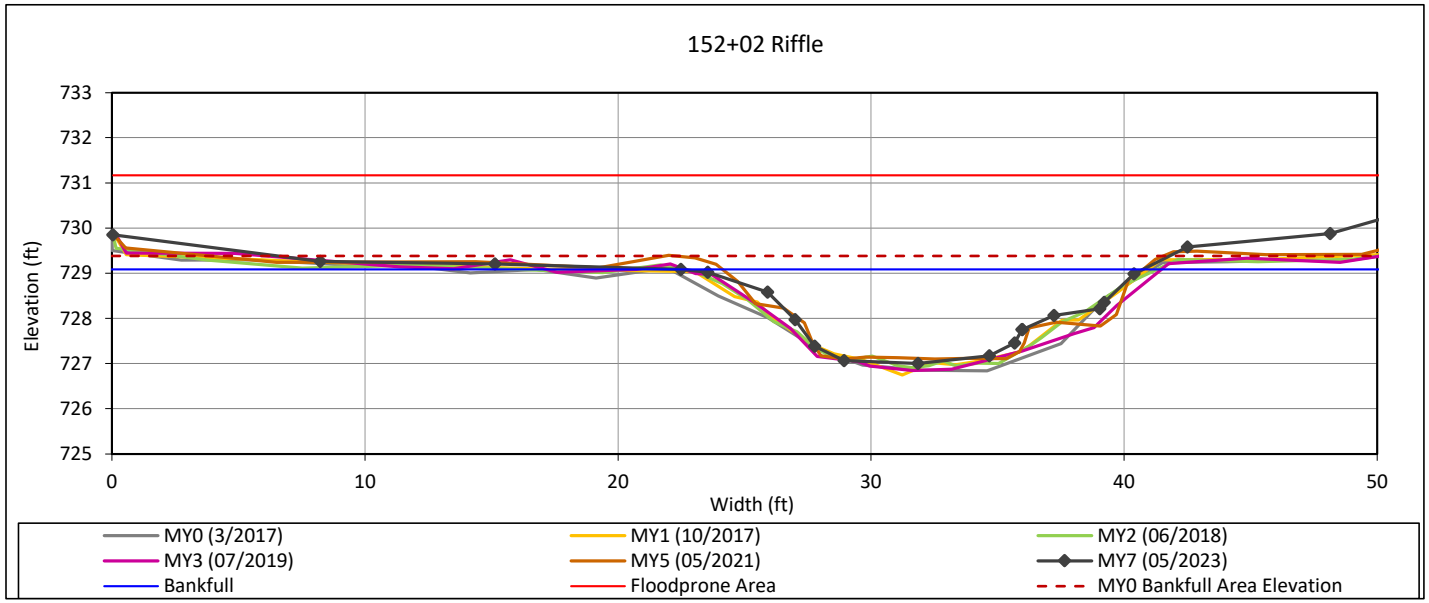
Survey Date: 05/2023
Field Crew: Wildlands Engineering

*Right bank rebuilt in September 2022.

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 17 - Candy Creek Reach 3



Bankfull Dimensions	
22.5	x-section area (ft.sq.)
18.3	width (ft)
1.2	mean depth (ft)
2.1	max depth (ft)
19.1	wetted perimeter (ft)
1.2	hydraulic radius (ft)
14.8	width-depth ratio
53.8	W flood prone area (ft)
2.9	entrenchment ratio
0.9	low bank height ratio

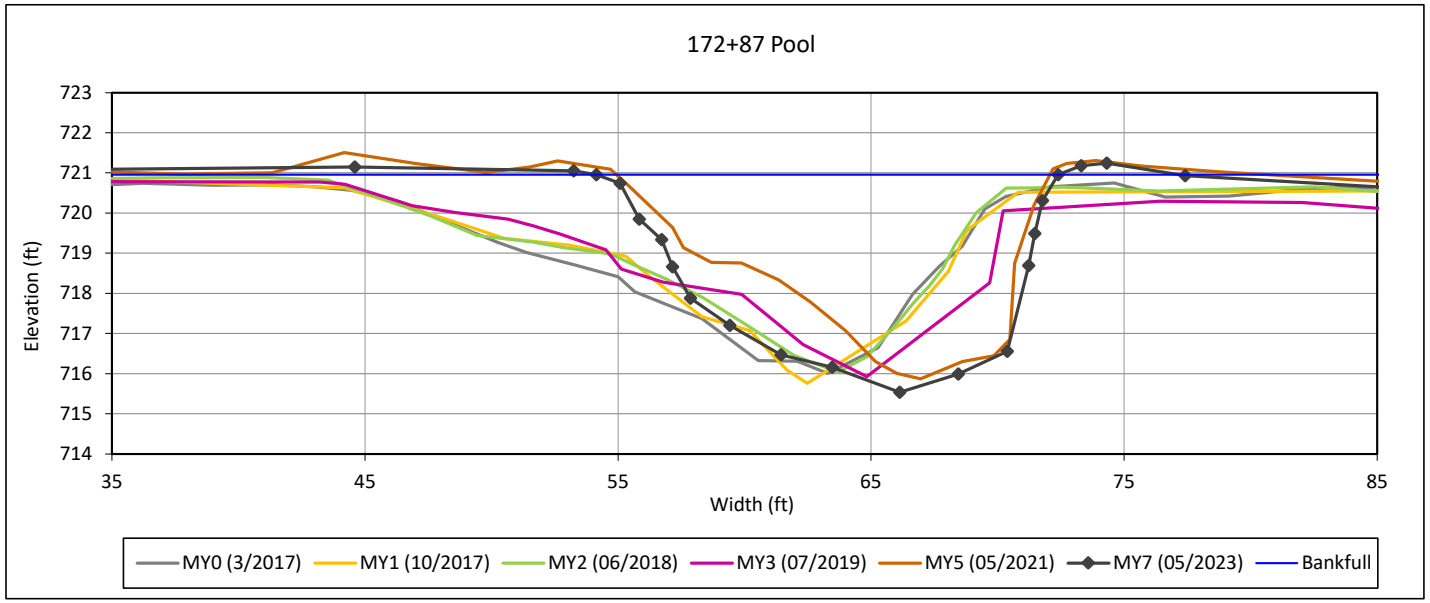
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 18 - Candy Creek Reach 4



Bankfull Dimensions	
66.1	x-section area (ft.sq.)
18.3	width (ft)
3.6	mean depth (ft)
5.4	max depth (ft)
22.9	wetted perimeter (ft)
2.9	hydraulic radius (ft)
5.0	width-depth ratio

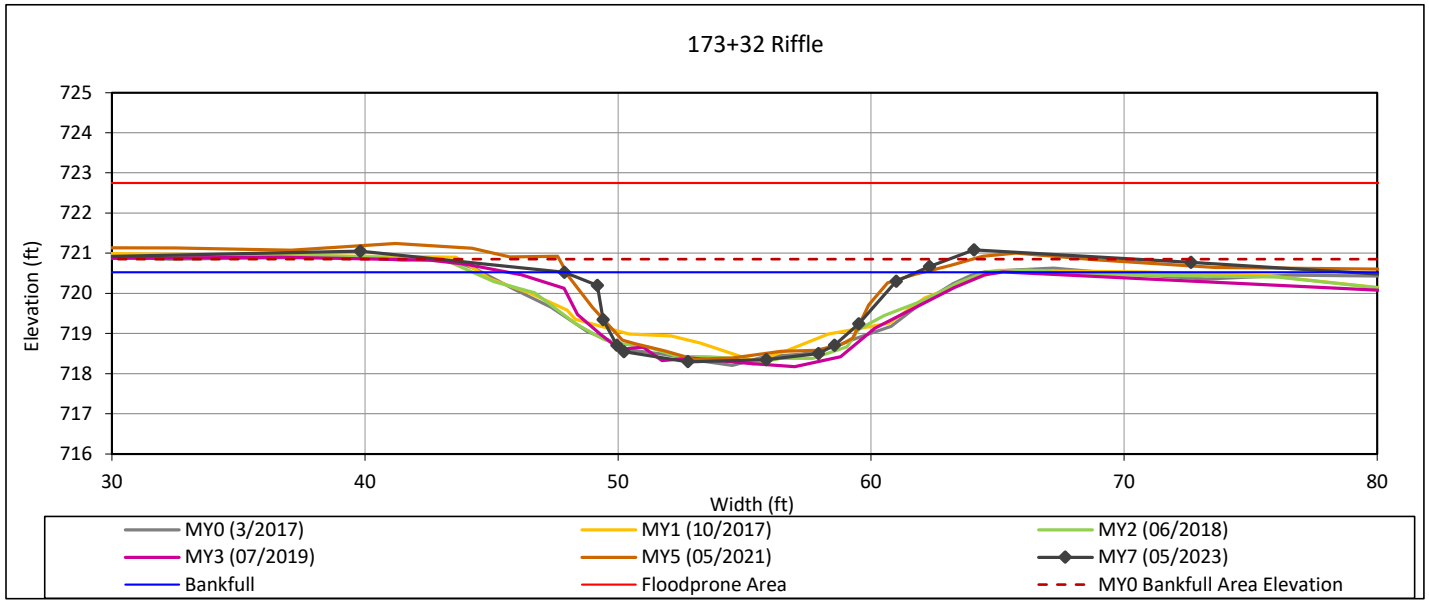
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 19 - Candy Creek Reach 4



Bankfull Dimensions	
22.1	x-section area (ft.sq.)
13.9	width (ft)
1.6	mean depth (ft)
2.2	max depth (ft)
15.5	wetted perimeter (ft)
1.4	hydraulic radius (ft)
8.8	width-depth ratio
86.0	W flood prone area (ft)
6.2	entrenchment ratio
0.9	low bank height ratio

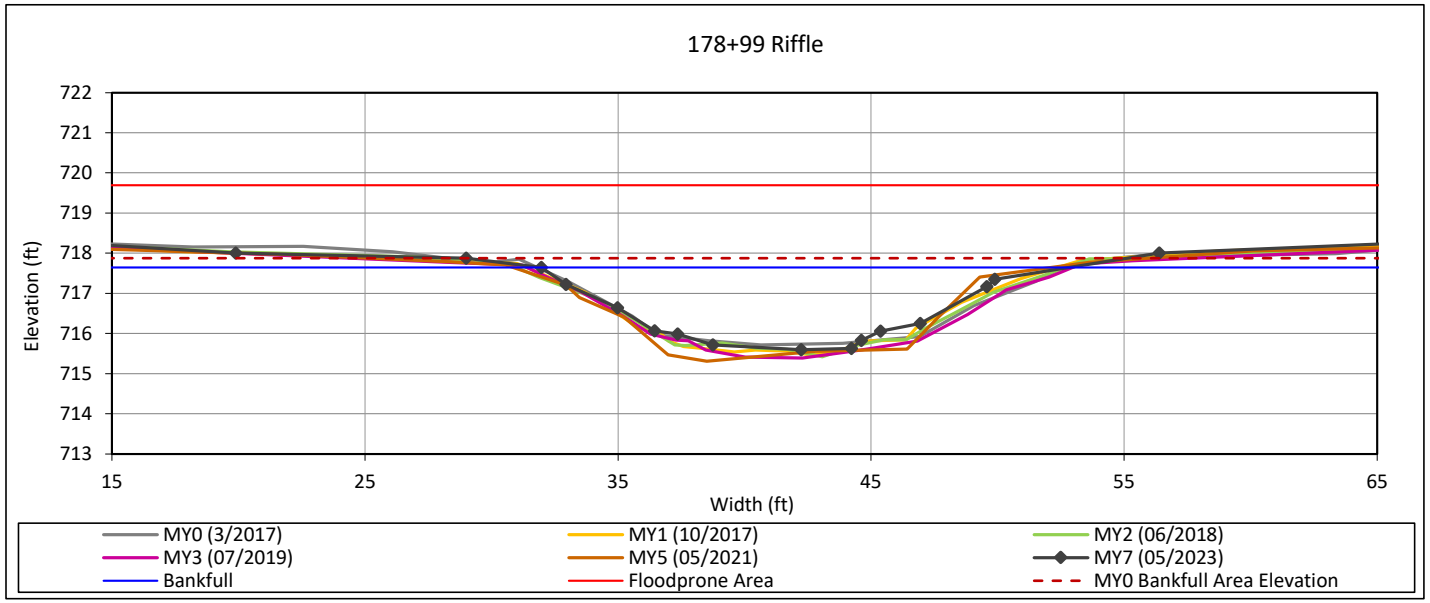
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 20 - Candy Creek Reach 4



Bankfull Dimensions	
25.9	x-section area (ft.sq.)
20.9	width (ft)
1.2	mean depth (ft)
2.0	max depth (ft)
21.5	wetted perimeter (ft)
1.2	hydraulic radius (ft)
16.8	width-depth ratio
100.3	W flood prone area (ft)
4.8	entrenchment ratio
0.9	low bank height ratio

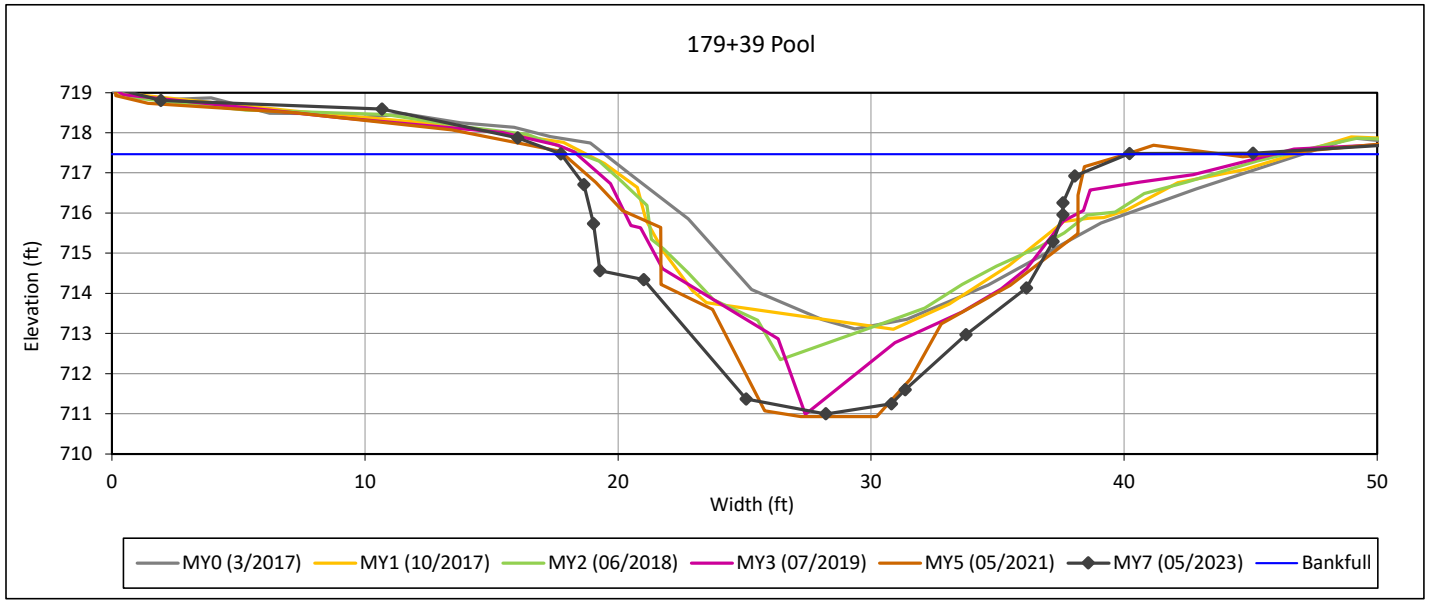
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 21 - Candy Creek Reach 4



Bankfull Dimensions	
91.4	x-section area (ft.sq.)
22.4	width (ft)
4.1	mean depth (ft)
6.5	max depth (ft)
27.7	wetted perimeter (ft)
3.3	hydraulic radius (ft)
5.5	width-depth ratio

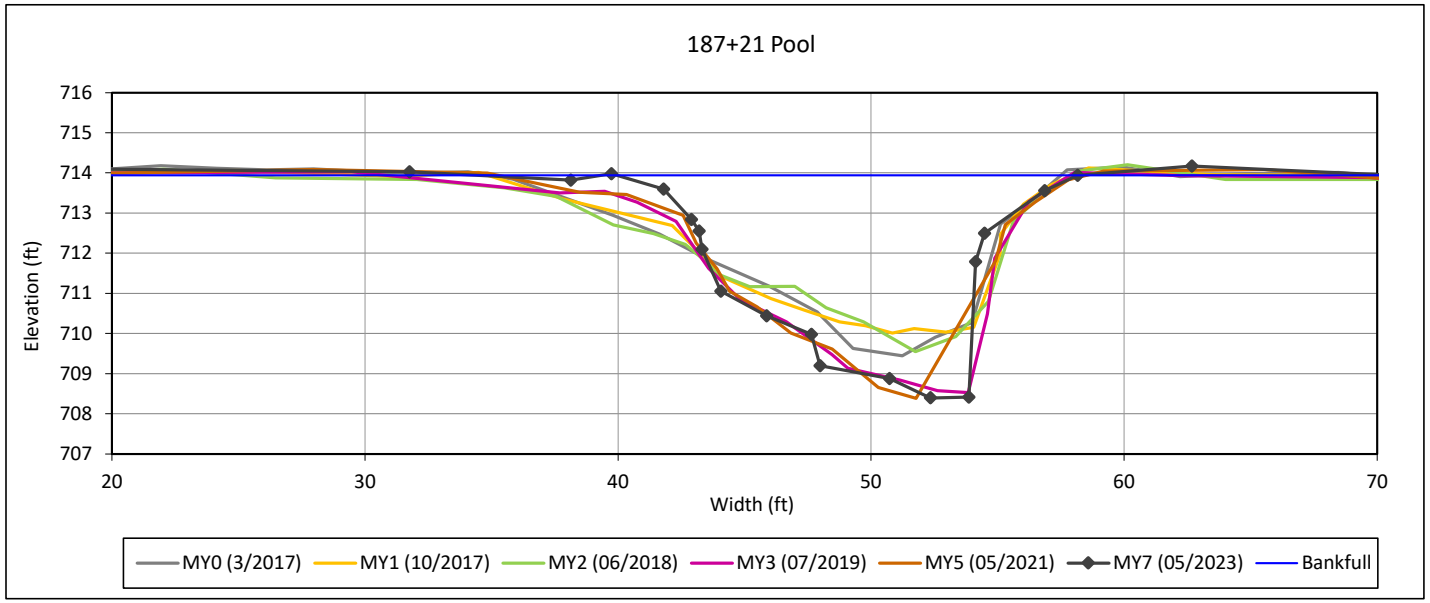
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 22 - Candy Creek Reach 4



Bankfull Dimensions	
51.8	x-section area (ft.sq.)
18.2	width (ft)
2.8	mean depth (ft)
5.5	max depth (ft)
24.1	wetted perimeter (ft)
2.2	hydraulic radius (ft)
6.4	width-depth ratio

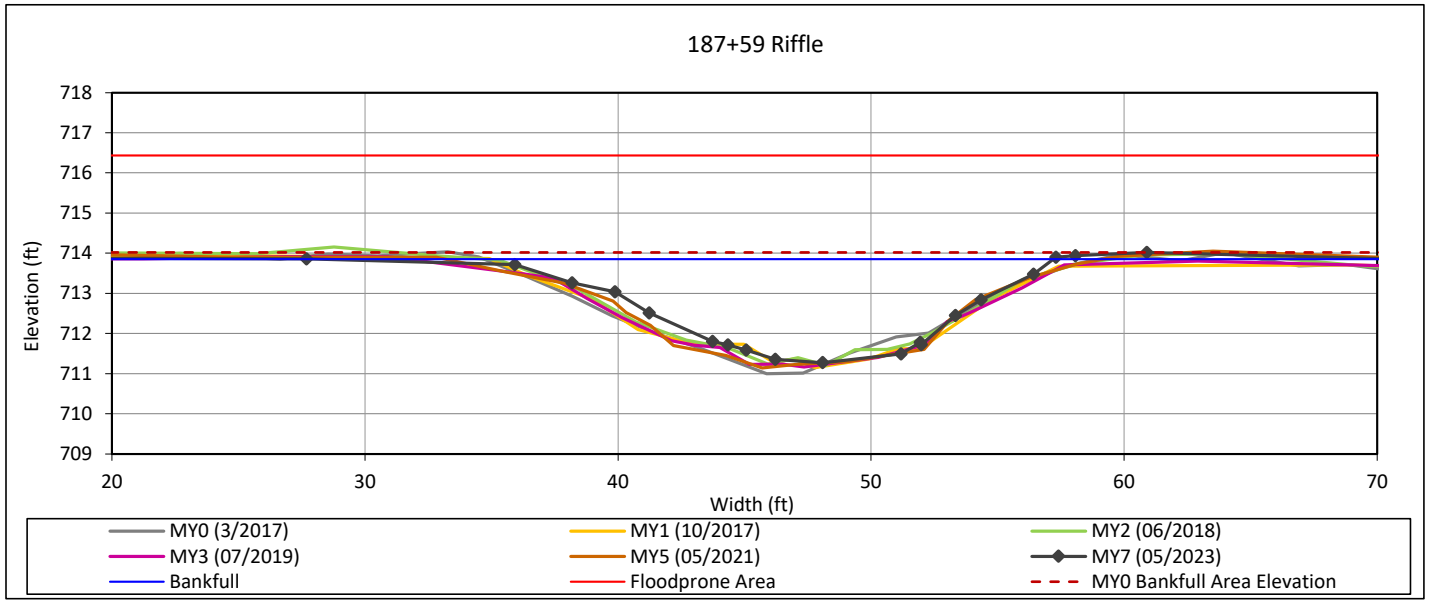
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 23 - Candy Creek Reach 4



Bankfull Dimensions	
33.3	x-section area (ft.sq.)
29.5	width (ft)
1.1	mean depth (ft)
2.6	max depth (ft)
30.3	wetted perimeter (ft)
1.1	hydraulic radius (ft)
26.2	width-depth ratio
89.9	W flood prone area (ft)
3.0	entrenchment ratio
0.9	low bank height ratio

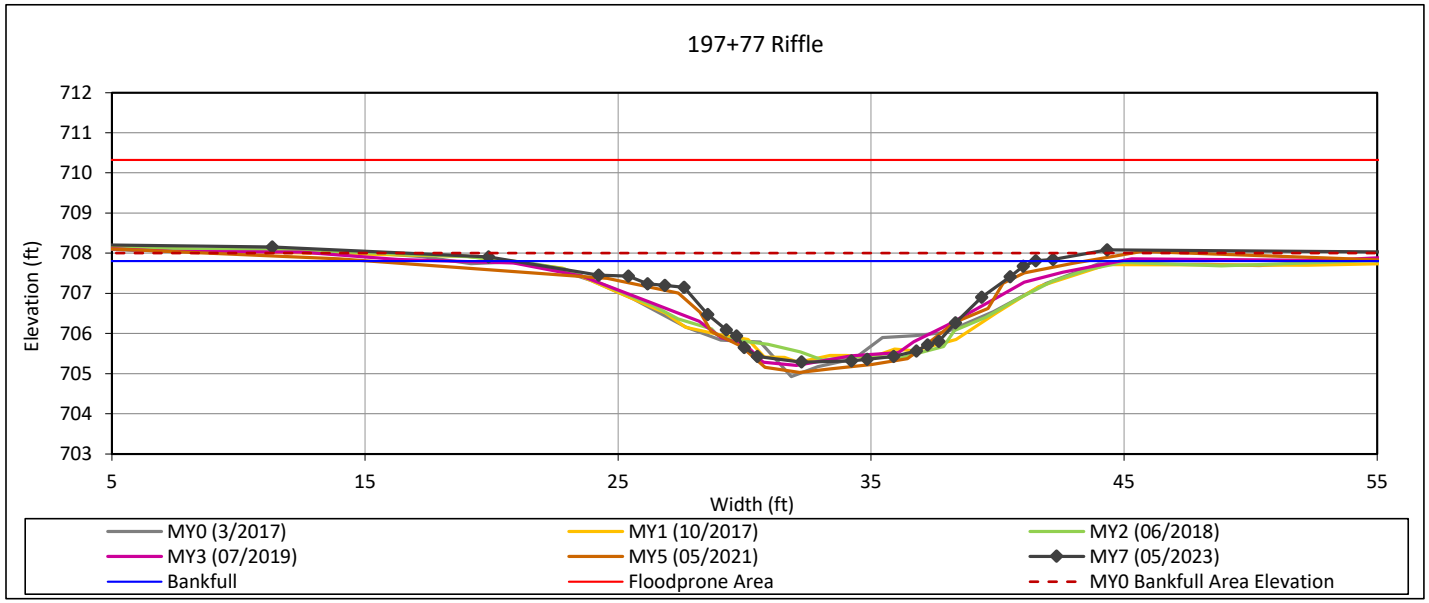
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 24 - Candy Creek Reach 4



Bankfull Dimensions	
27.4	x-section area (ft.sq.)
20.7	width (ft)
1.3	mean depth (ft)
2.5	max depth (ft)
21.8	wetted perimeter (ft)
1.3	hydraulic radius (ft)
15.6	width-depth ratio
58.7	W flood prone area (ft)
2.8	entrenchment ratio
0.9	low bank height ratio

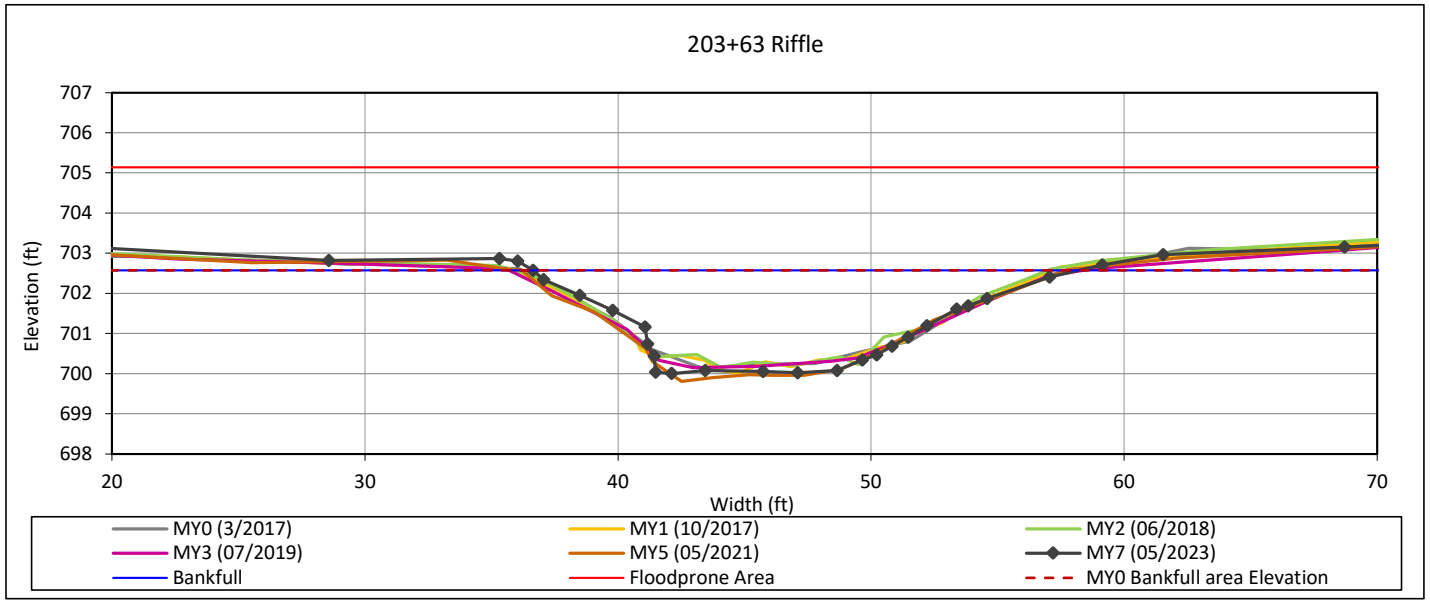
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 25 - Candy Creek Reach 4



Bankfull Dimensions	
32.8	x-section area (ft.sq.)
21.6	width (ft)
1.5	mean depth (ft)
2.6	max depth (ft)
23.0	wetted perimeter (ft)
1.4	hydraulic radius (ft)
14.2	width-depth ratio
85.7	W flood prone area (ft)
4.0	entrenchment ratio
1.0	low bank height ratio

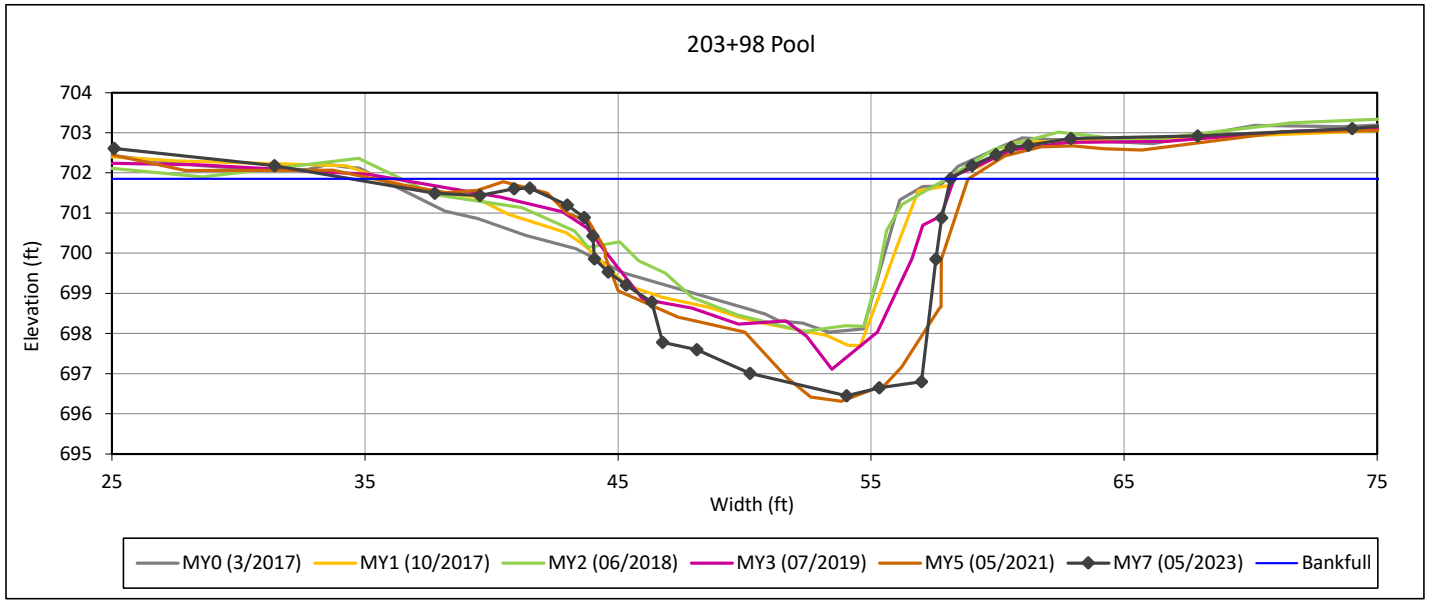
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 26 - Candy Creek Reach 4



Bankfull Dimensions	
63.7	x-section area (ft.sq.)
23.7	width (ft)
2.7	mean depth (ft)
5.4	max depth (ft)
29.7	wetted perimeter (ft)
2.1	hydraulic radius (ft)
8.8	width-depth ratio

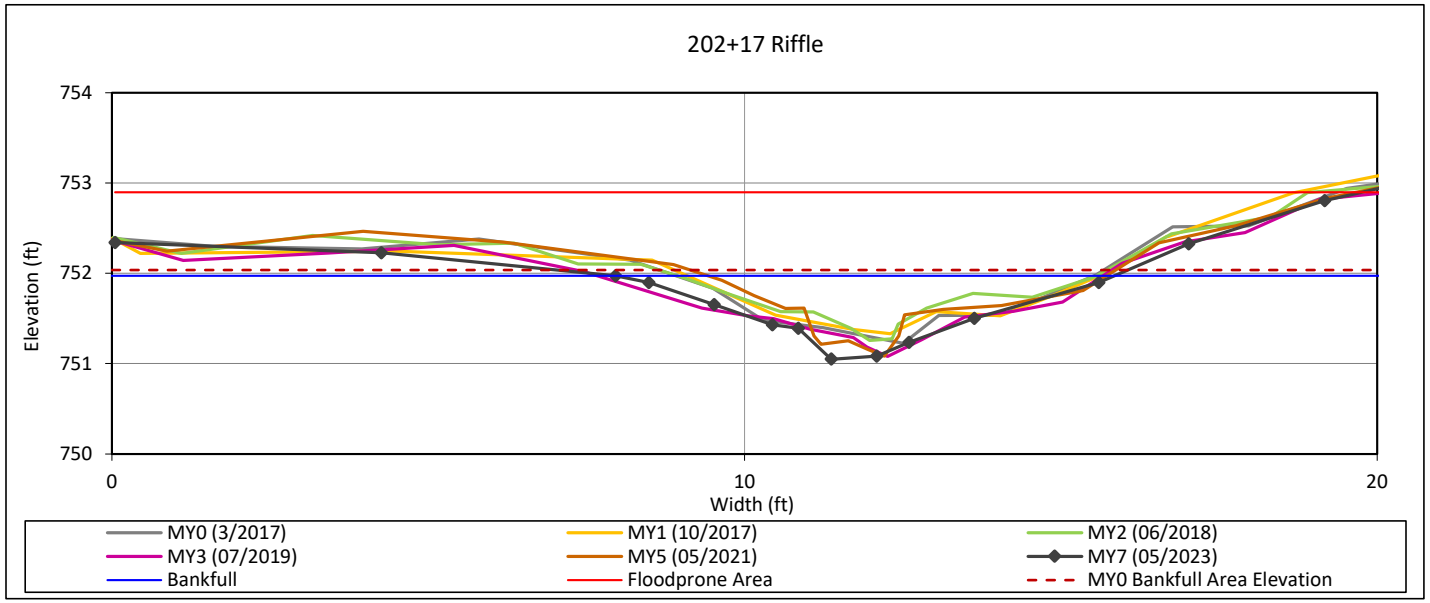
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 27 - UT1C



Bankfull Dimensions	
3.5	x-section area (ft.sq.)
7.9	width (ft)
0.4	mean depth (ft)
0.9	max depth (ft)
8.2	wetted perimeter (ft)
0.4	hydraulic radius (ft)
17.9	width-depth ratio
19.7	W flood prone area (ft)
2.5	entrenchment ratio
0.9	low bank height ratio

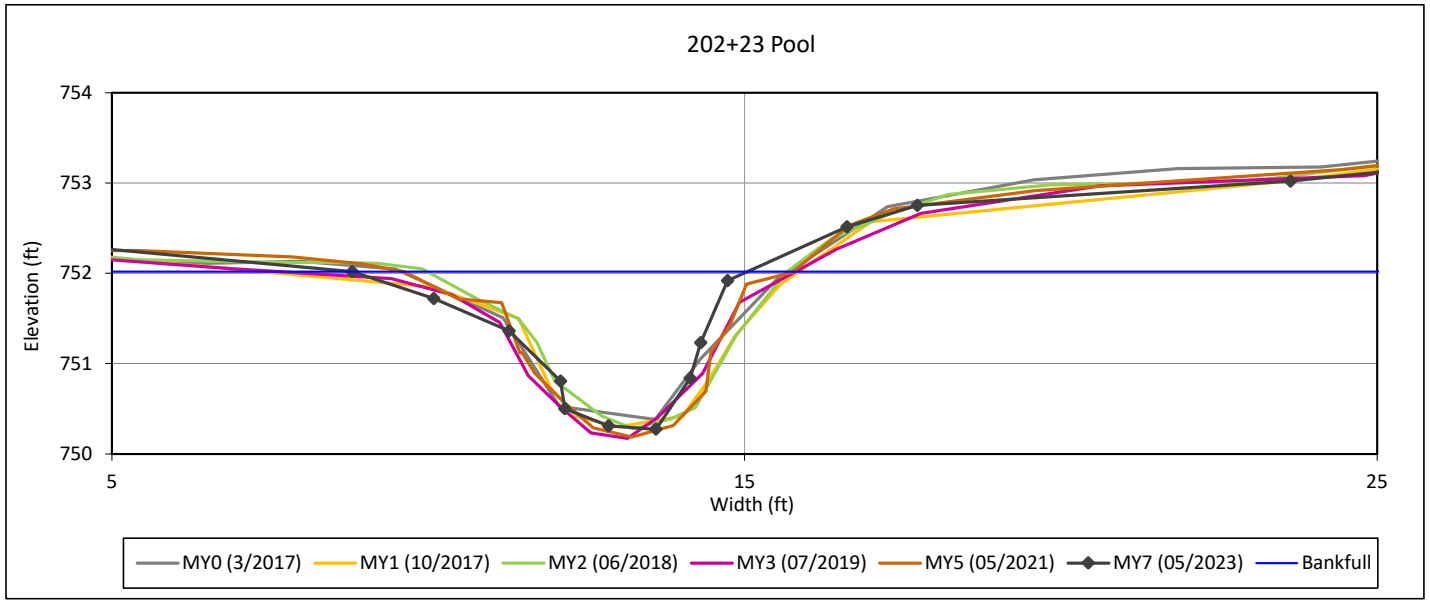
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 28 - UT1C



Bankfull Dimensions	
5.2	x-section area (ft.sq.)
6.2	width (ft)
0.8	mean depth (ft)
1.7	max depth (ft)
7.7	wetted perimeter (ft)
0.7	hydraulic radius (ft)
7.5	width-depth ratio

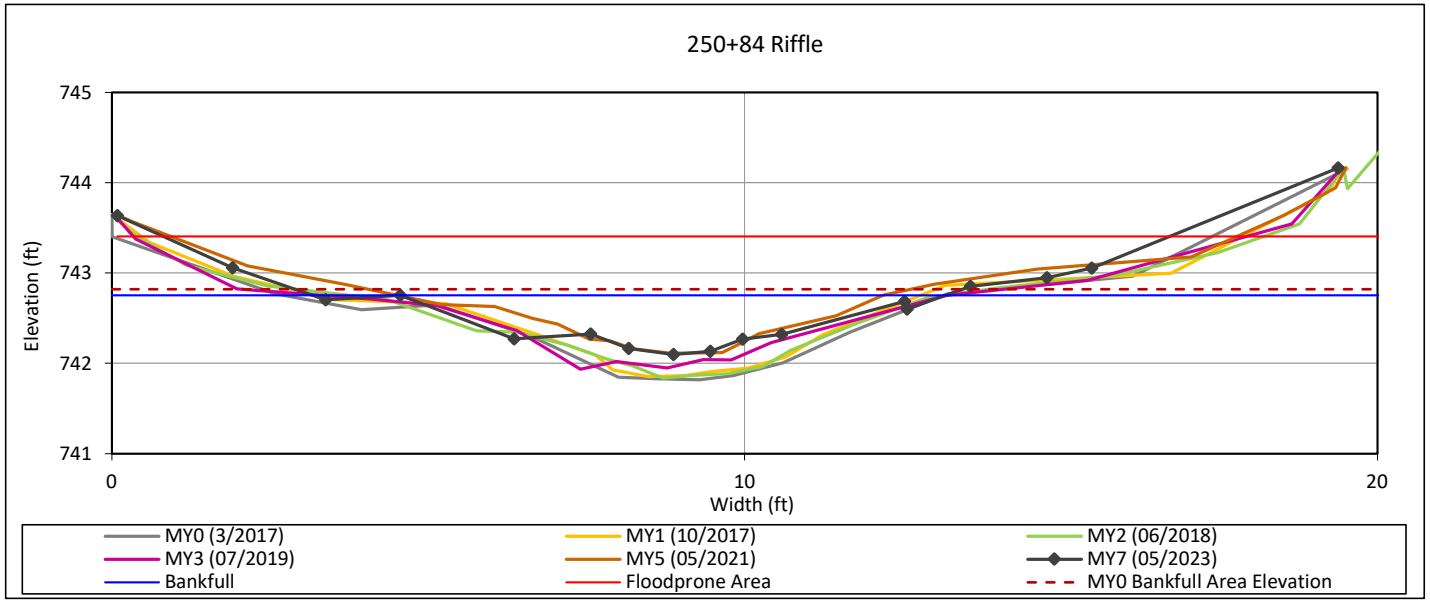
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 29 - UT1D



Bankfull Dimensions	
3.2	x-section area (ft.sq.)
8.6	width (ft)
0.4	mean depth (ft)
0.7	max depth (ft)
8.8	wetted perimeter (ft)
0.4	hydraulic radius (ft)
23.2	width-depth ratio
15.9	W flood prone area (ft)
1.8	entrenchment ratio
0.9	low bank height ratio

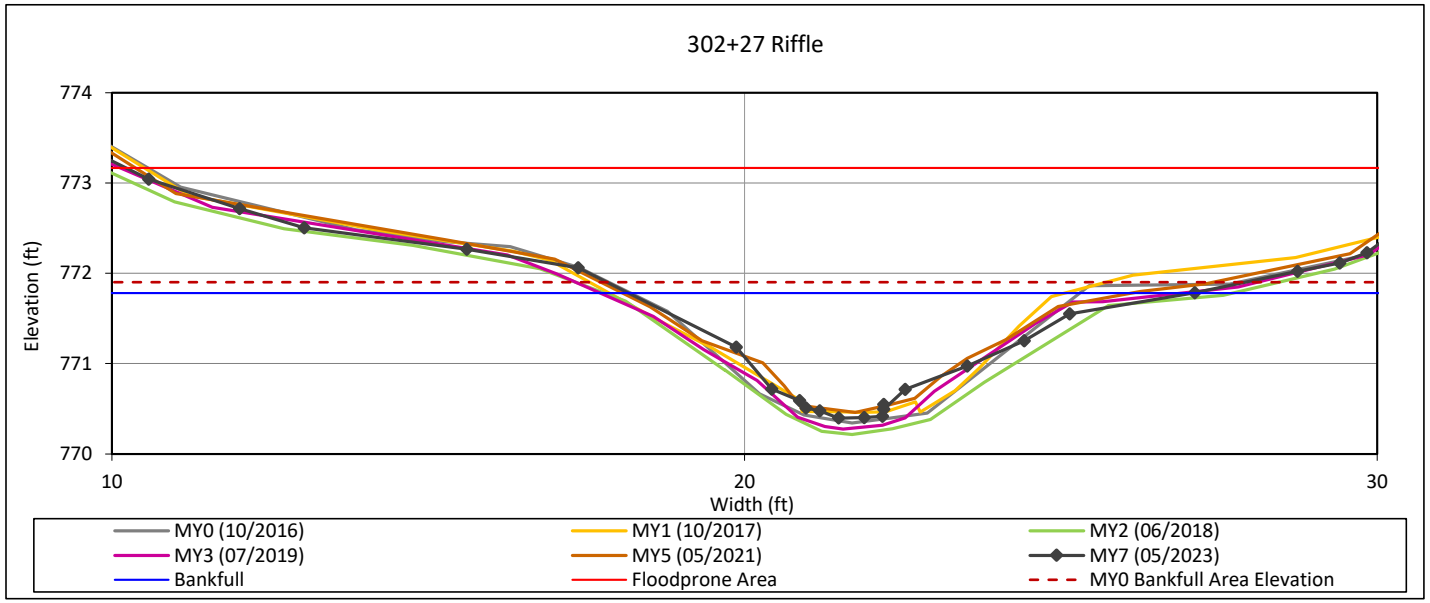
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 30 - UT2 Reach 1



Bankfull Dimensions	
5.7	x-section area (ft.sq.)
9.0	width (ft)
0.6	mean depth (ft)
1.4	max depth (ft)
9.7	wetted perimeter (ft)
0.6	hydraulic radius (ft)
14.1	width-depth ratio
21.2	W flood prone area (ft)
2.4	entrenchment ratio
0.9	low bank height ratio

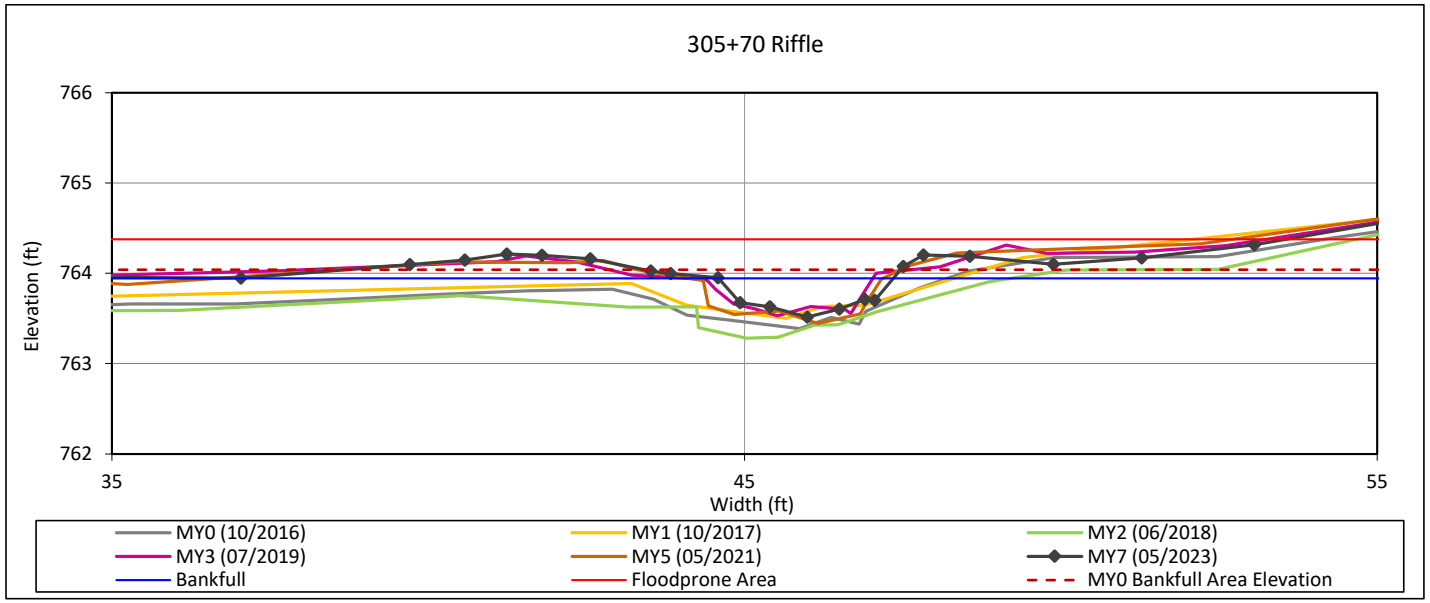
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 31 - UT2 Reach 1



Bankfull Dimensions	
0.8	x-section area (ft.sq.)
2.8	width (ft)
0.3	mean depth (ft)
0.4	max depth (ft)
3.0	wetted perimeter (ft)
0.3	hydraulic radius (ft)
9.6	width-depth ratio
48.4	W flood prone area (ft)
17.5	entrenchment ratio
0.8	low bank height ratio

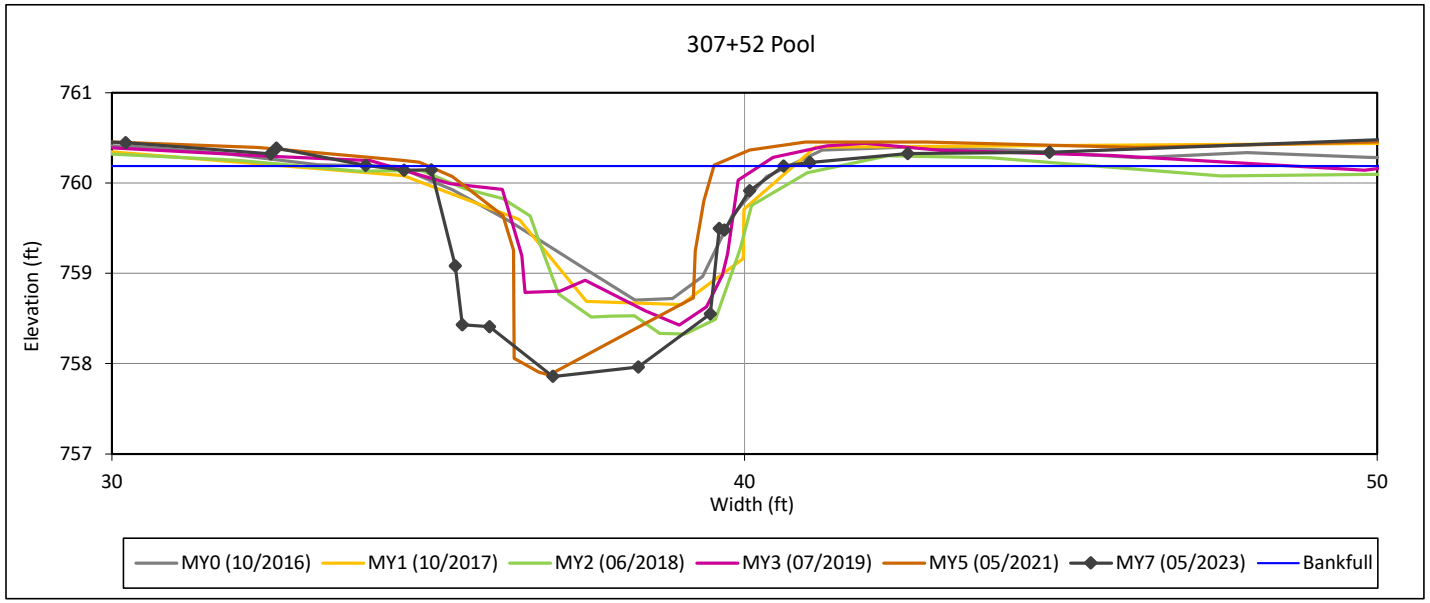
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 32 - UT2 Reach 1



Bankfull Dimensions	
9.0	x-section area (ft.sq.)
6.6	width (ft)
1.4	mean depth (ft)
2.3	max depth (ft)
9.2	wetted perimeter (ft)
1.0	hydraulic radius (ft)
4.8	width-depth ratio

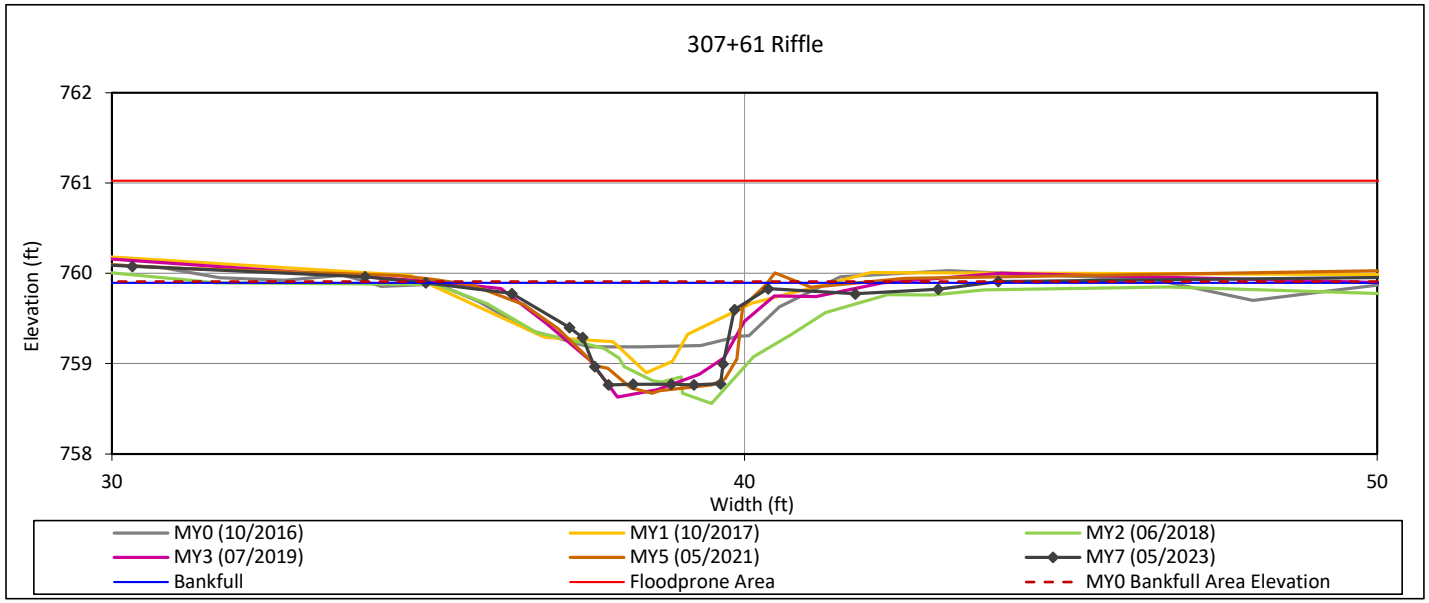
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 33 - UT2 Reach 1



Bankfull Dimensions	
3.4	x-section area (ft.sq.)
8.9	width (ft)
0.4	mean depth (ft)
1.1	max depth (ft)
10.0	wetted perimeter (ft)
0.3	hydraulic radius (ft)
23.5	width-depth ratio
78.5	W flood prone area (ft)
8.8	entrenchment ratio
1.0	low bank height ratio

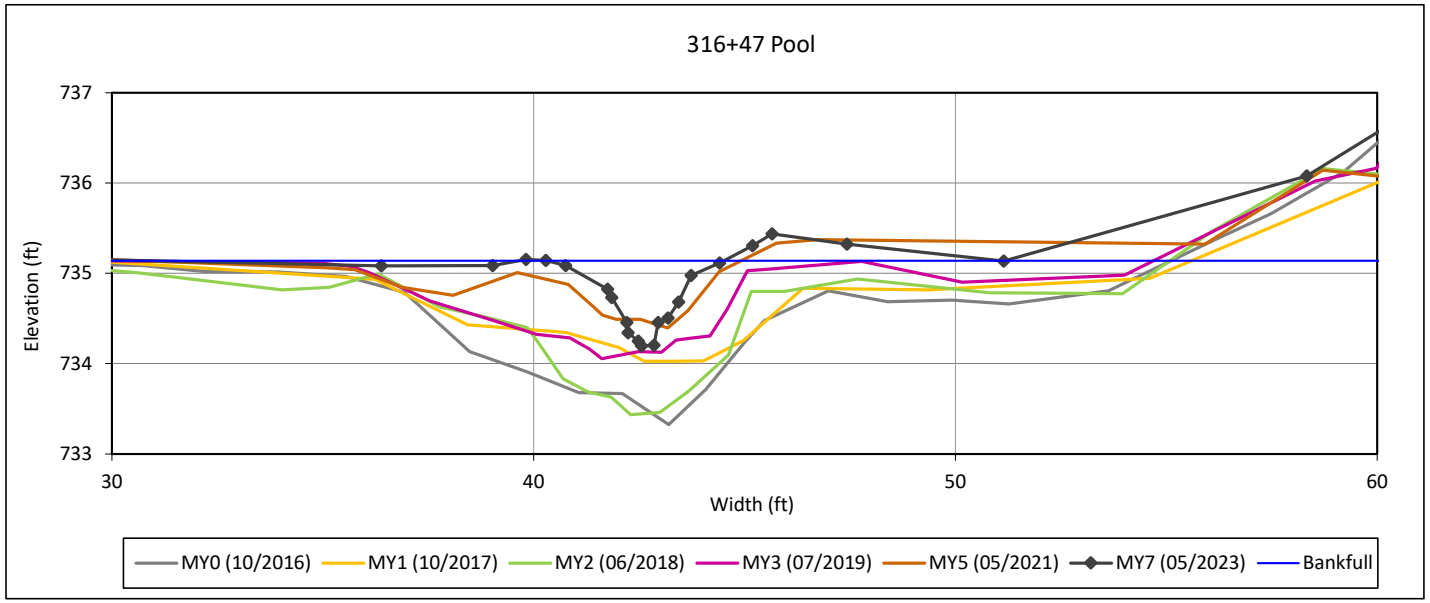
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 34 - UT2 Reach 2



Bankfull Dimensions	
1.5	x-section area (ft.sq.)
4.2	width (ft)
0.4	mean depth (ft)
0.9	max depth (ft)
4.9	wetted perimeter (ft)
0.3	hydraulic radius (ft)
11.6	width-depth ratio

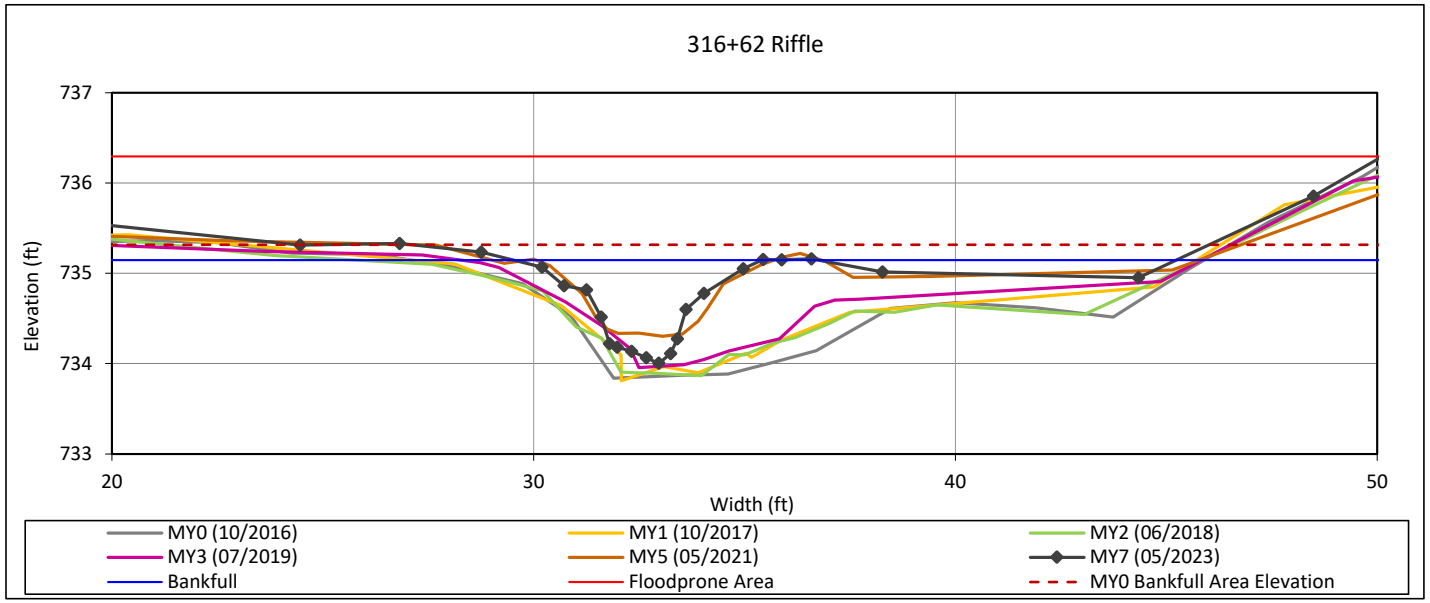
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 35 - UT2 Reach 2



Bankfull Dimensions	
2.9	x-section area (ft.sq.)
5.9	width (ft)
0.5	mean depth (ft)
1.1	max depth (ft)
6.6	wetted perimeter (ft)
0.4	hydraulic radius (ft)
12.3	width-depth ratio
49.8	W flood prone area (ft)
8.4	entrenchment ratio
0.9	low bank height ratio

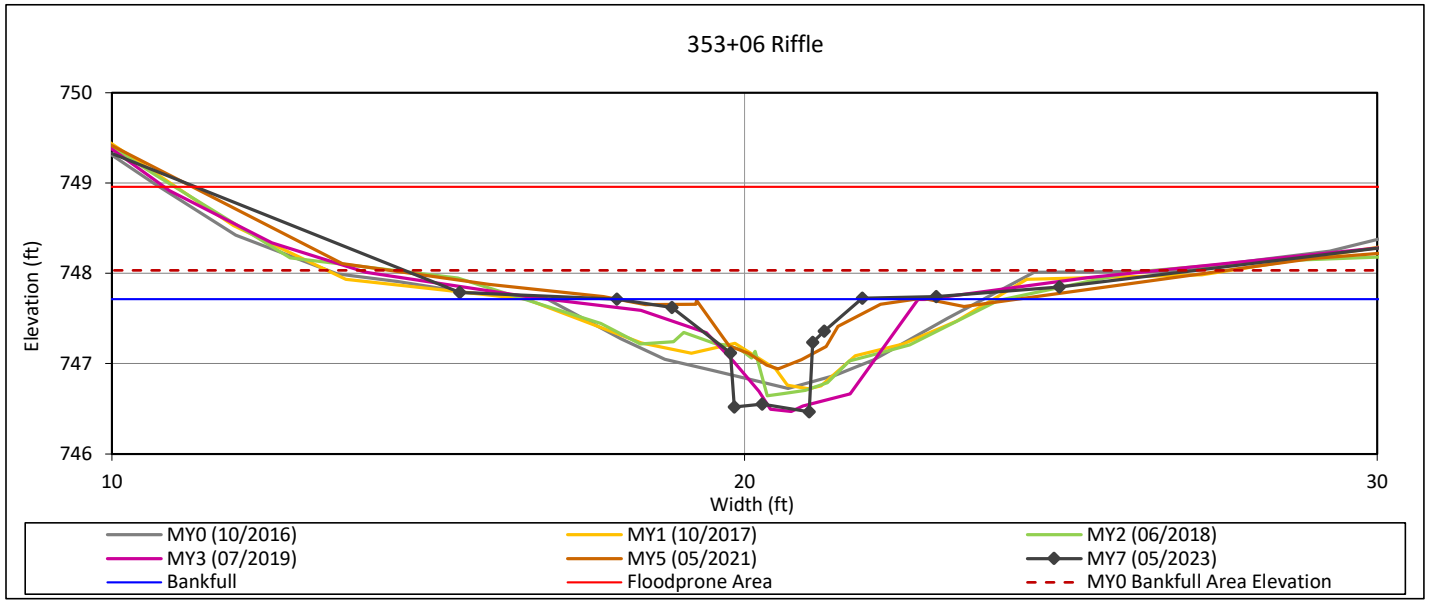
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 36 - UT2A



Bankfull Dimensions	
2.1	x-section area (ft.sq.)
3.9	width (ft)
0.5	mean depth (ft)
1.2	max depth (ft)
5.4	wetted perimeter (ft)
0.4	hydraulic radius (ft)
7.3	width-depth ratio
36.5	W flood prone area (ft)
9.5	entrenchment ratio
0.8	low bank height ratio

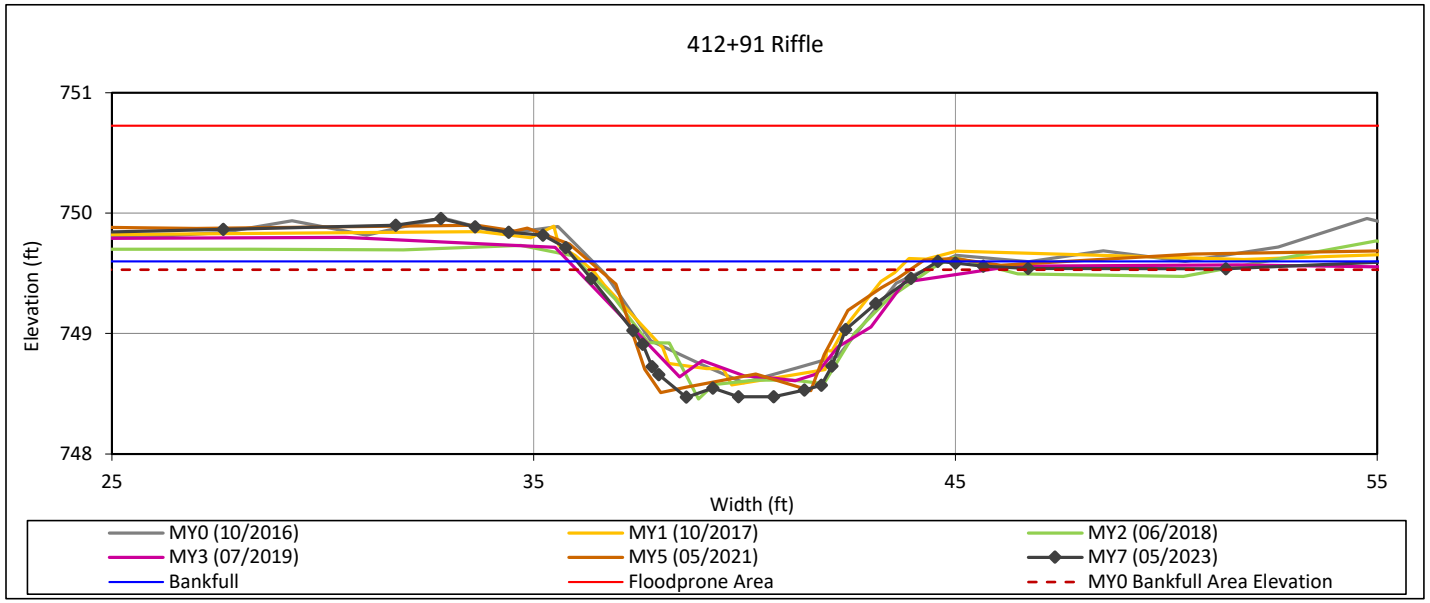
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 37 - UT3



Bankfull Dimensions	
6.1	x-section area (ft.sq.)
8.6	width (ft)
0.7	mean depth (ft)
1.1	max depth (ft)
9.1	wetted perimeter (ft)
0.7	hydraulic radius (ft)
12.0	width-depth ratio
67.5	W flood prone area (ft)
7.9	entrenchment ratio
1.1	low bank height ratio

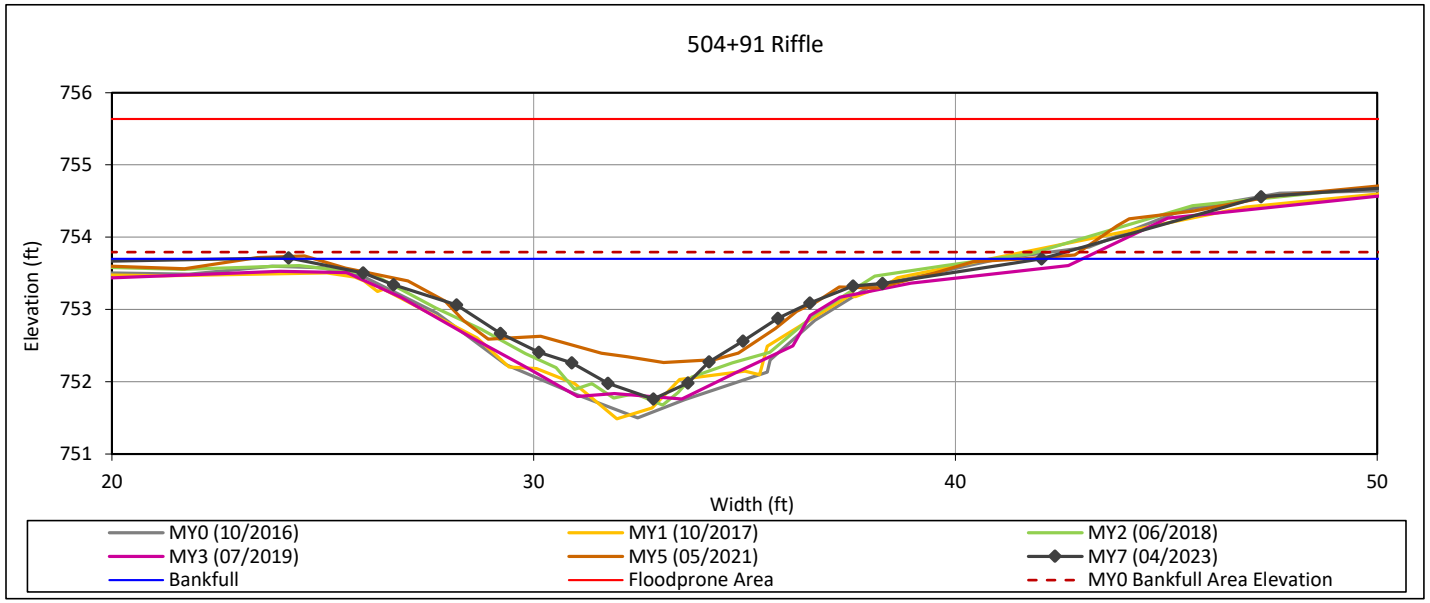
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 38 - UT4



Bankfull Dimensions	
13.5	x-section area (ft.sq.)
17.8	width (ft)
0.8	mean depth (ft)
1.9	max depth (ft)
18.3	wetted perimeter (ft)
0.7	hydraulic radius (ft)
23.3	width-depth ratio
54.5	W flood prone area (ft)
3.1	entrenchment ratio
1.0	low bank height ratio

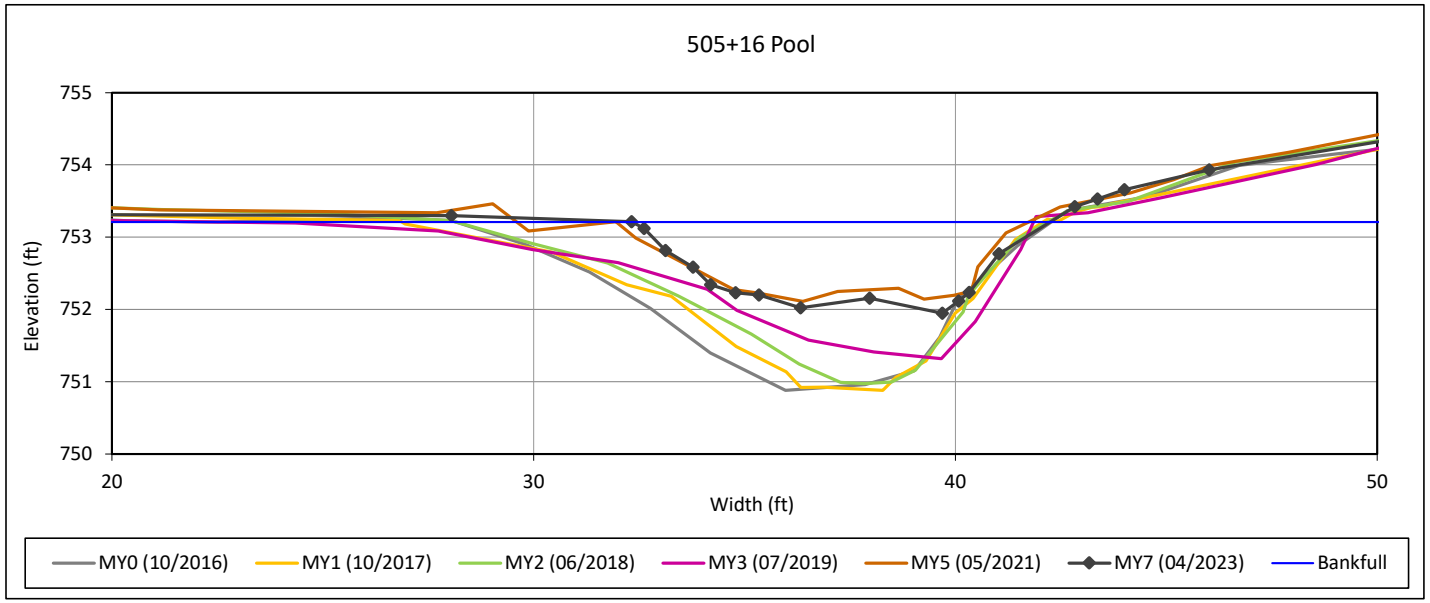
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 39 - UT4



Bankfull Dimensions	
8.3	x-section area (ft.sq.)
9.9	width (ft)
0.8	mean depth (ft)
1.3	max depth (ft)
10.5	wetted perimeter (ft)
0.8	hydraulic radius (ft)
11.9	width-depth ratio

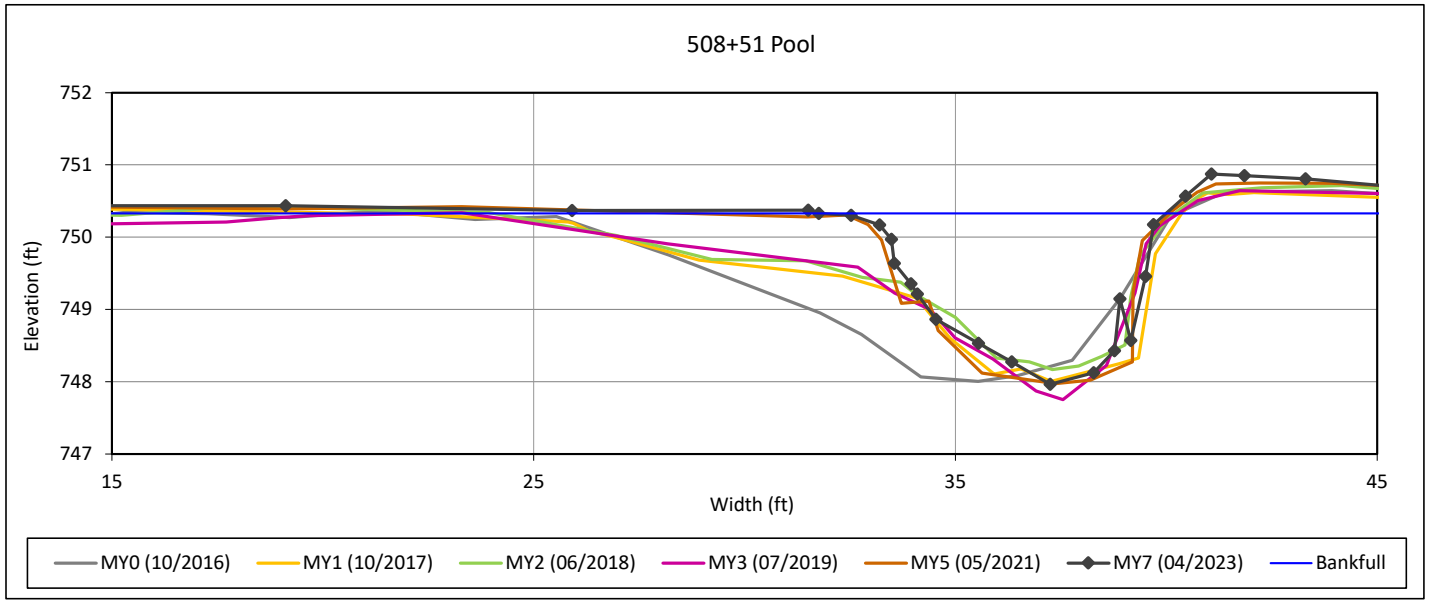
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 40 - UT4



Bankfull Dimensions	
10.9	x-section area (ft.sq.)
8.2	width (ft)
1.3	mean depth (ft)
2.4	max depth (ft)
11.3	wetted perimeter (ft)
1.0	hydraulic radius (ft)
6.2	width-depth ratio

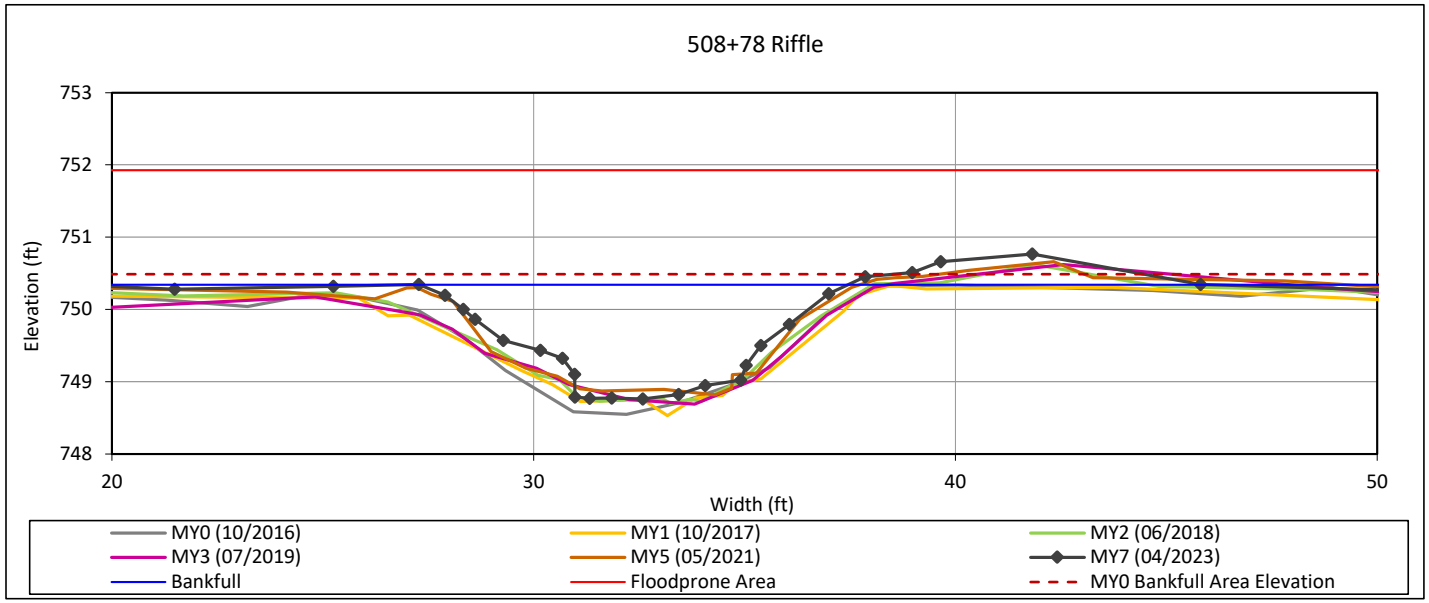
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 41 - UT4



Bankfull Dimensions	
9.5	x-section area (ft.sq.)
10.2	width (ft)
0.9	mean depth (ft)
1.6	max depth (ft)
11.1	wetted perimeter (ft)
0.9	hydraulic radius (ft)
10.9	width-depth ratio
68.8	W flood prone area (ft)
6.8	entrenchment ratio
0.9	low bank height ratio

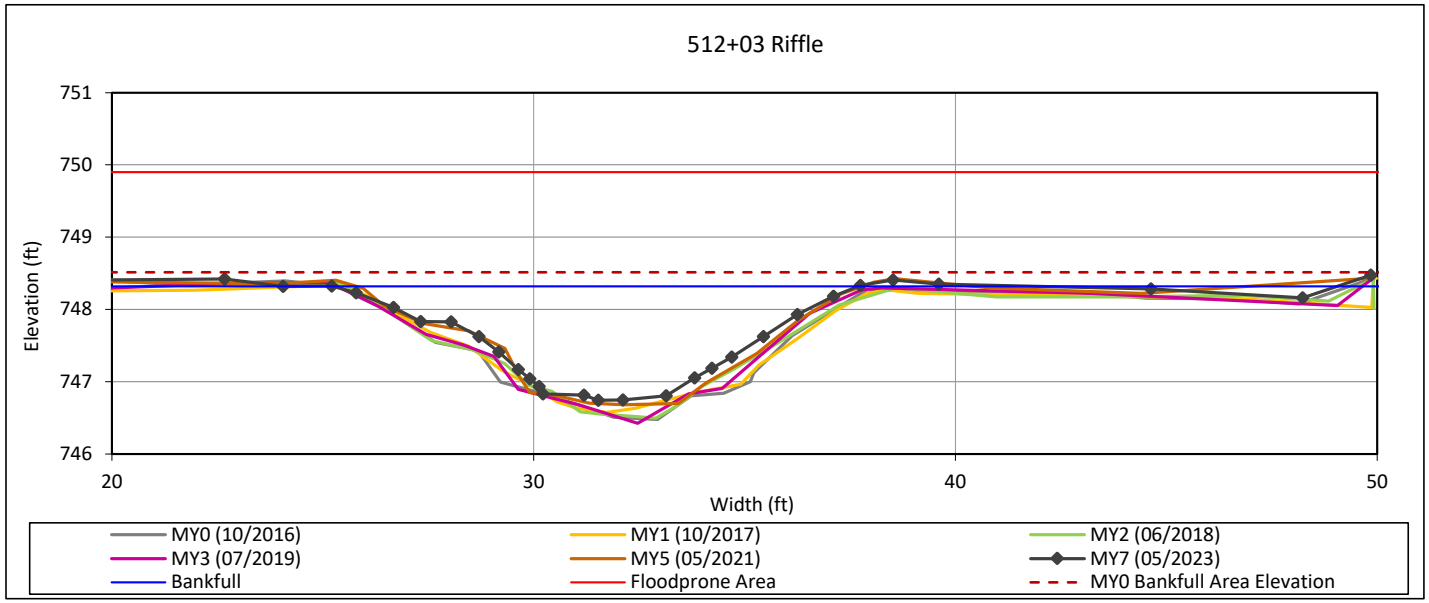
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 42 - UT4



Bankfull Dimensions	
10.6	x-section area (ft.sq.)
12.5	width (ft)
0.8	mean depth (ft)
1.6	max depth (ft)
13.0	wetted perimeter (ft)
0.8	hydraulic radius (ft)
14.7	width-depth ratio
47.4	W flood prone area (ft)
3.8	entrenchment ratio
0.9	low bank height ratio

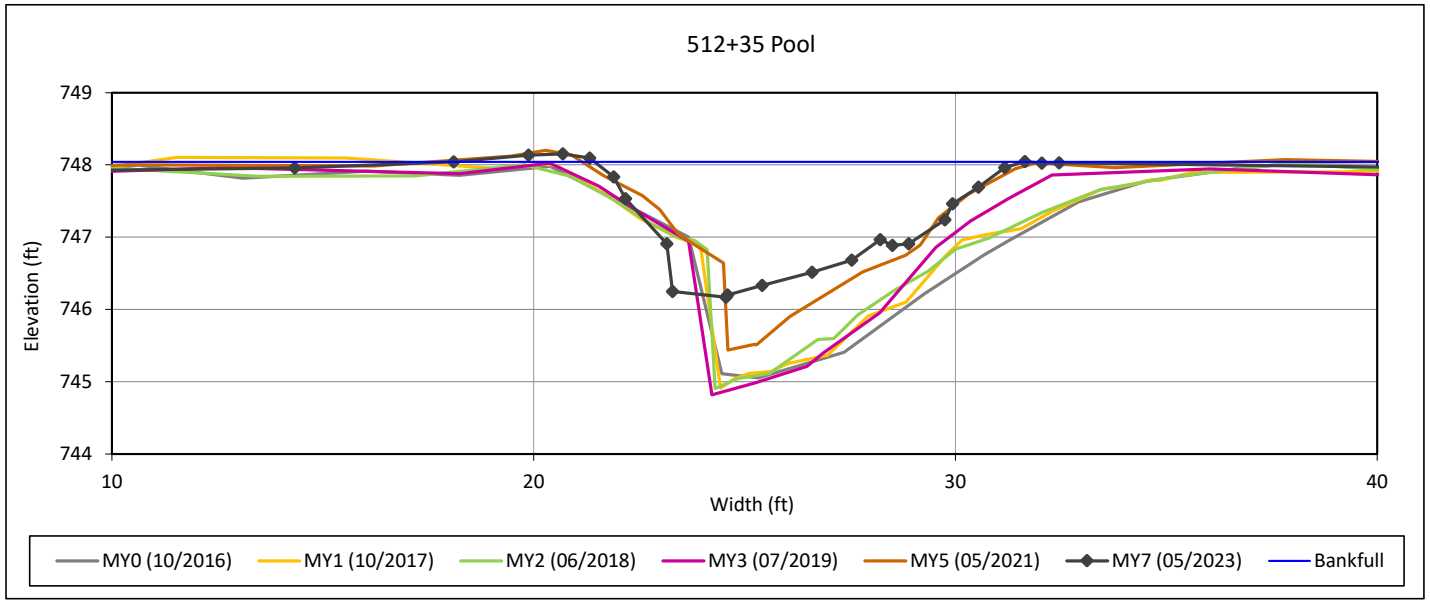
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 43 - UT4



Bankfull Dimensions	
11.3	x-section area (ft.sq.)
10.2	width (ft)
1.1	mean depth (ft)
1.9	max depth (ft)
11.5	wetted perimeter (ft)
1.0	hydraulic radius (ft)
9.2	width-depth ratio

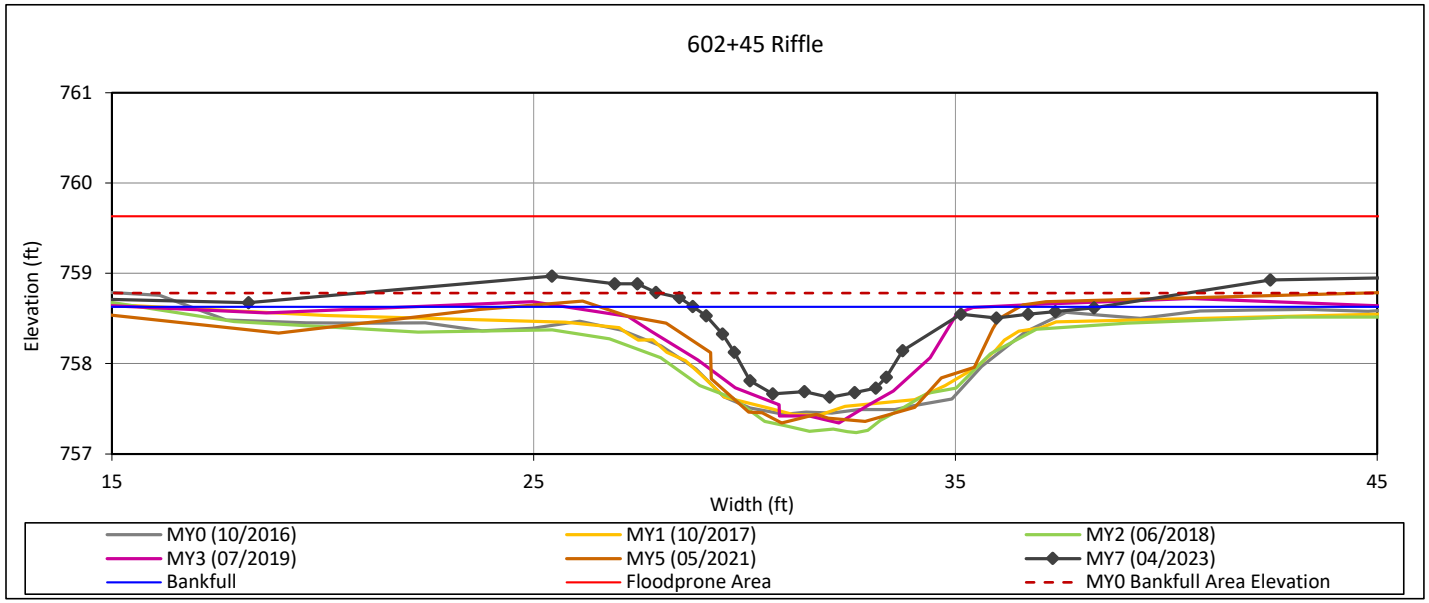
Survey Date: 05/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 44 - UT5



Bankfull Dimensions	
4.4	x-section area (ft.sq.)
9.7	width (ft)
0.5	mean depth (ft)
1.0	max depth (ft)
10.1	wetted perimeter (ft)
0.4	hydraulic radius (ft)
21.4	width-depth ratio
82.2	W flood prone area (ft)
8.5	entrenchment ratio
0.9	low bank height ratio

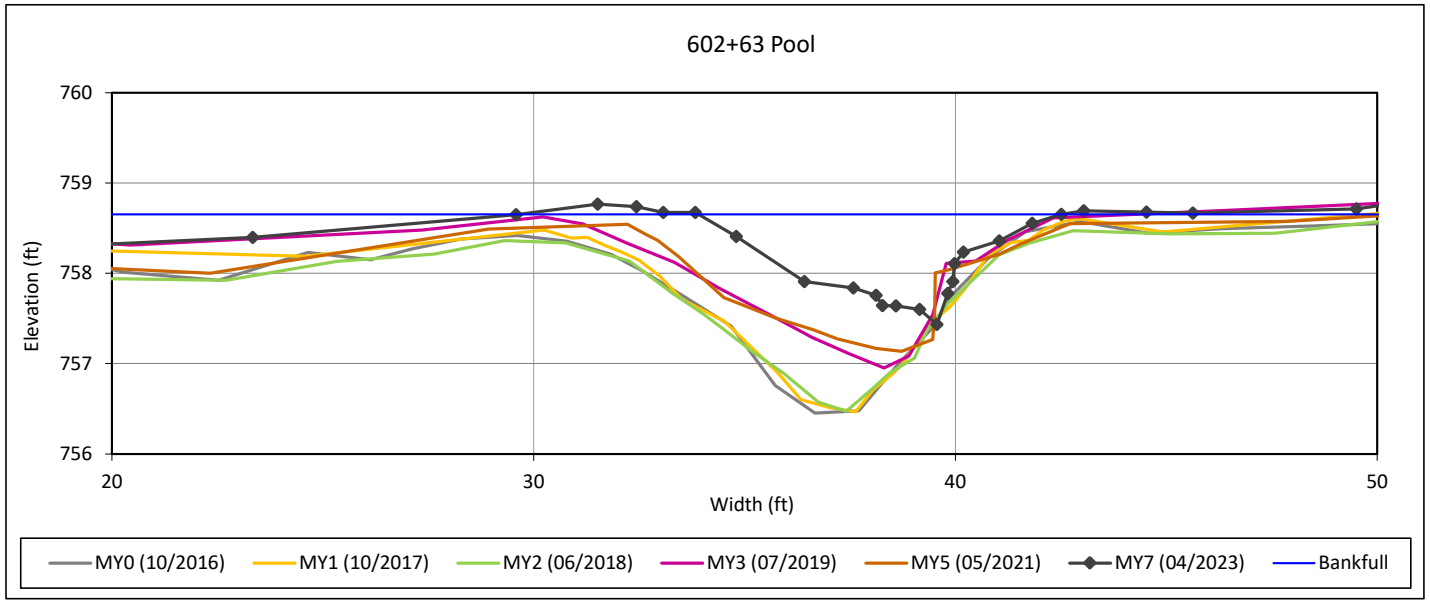
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 45 - UT5



Bankfull Dimensions	
4.8	x-section area (ft.sq.)
8.6	width (ft)
0.6	mean depth (ft)
1.2	max depth (ft)
9.3	wetted perimeter (ft)
0.5	hydraulic radius (ft)
15.5	width-depth ratio

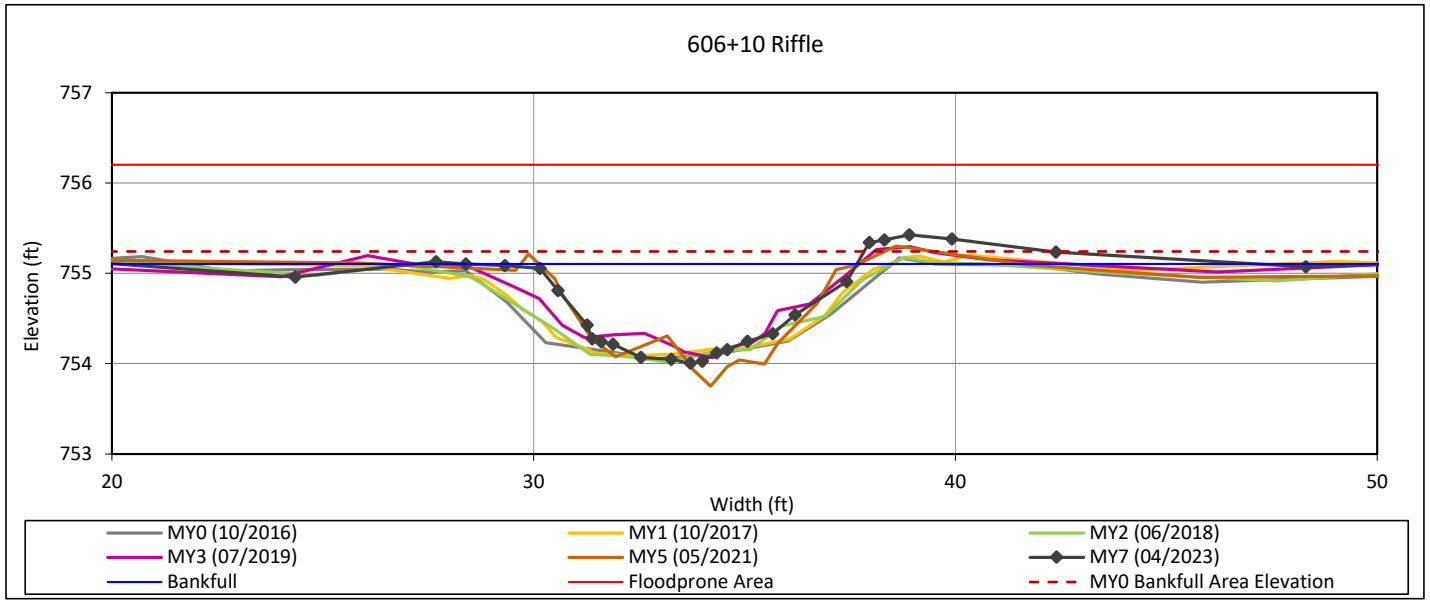
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 46 - UT5



Bankfull Dimensions	
5.5	x-section area (ft.sq.)
9.3	width (ft)
0.6	mean depth (ft)
1.1	max depth (ft)
9.7	wetted perimeter (ft)
0.6	hydraulic radius (ft)
15.6	width-depth ratio
55.7	W flood prone area (ft)
6.0	entrenchment ratio
0.9	low bank height ratio

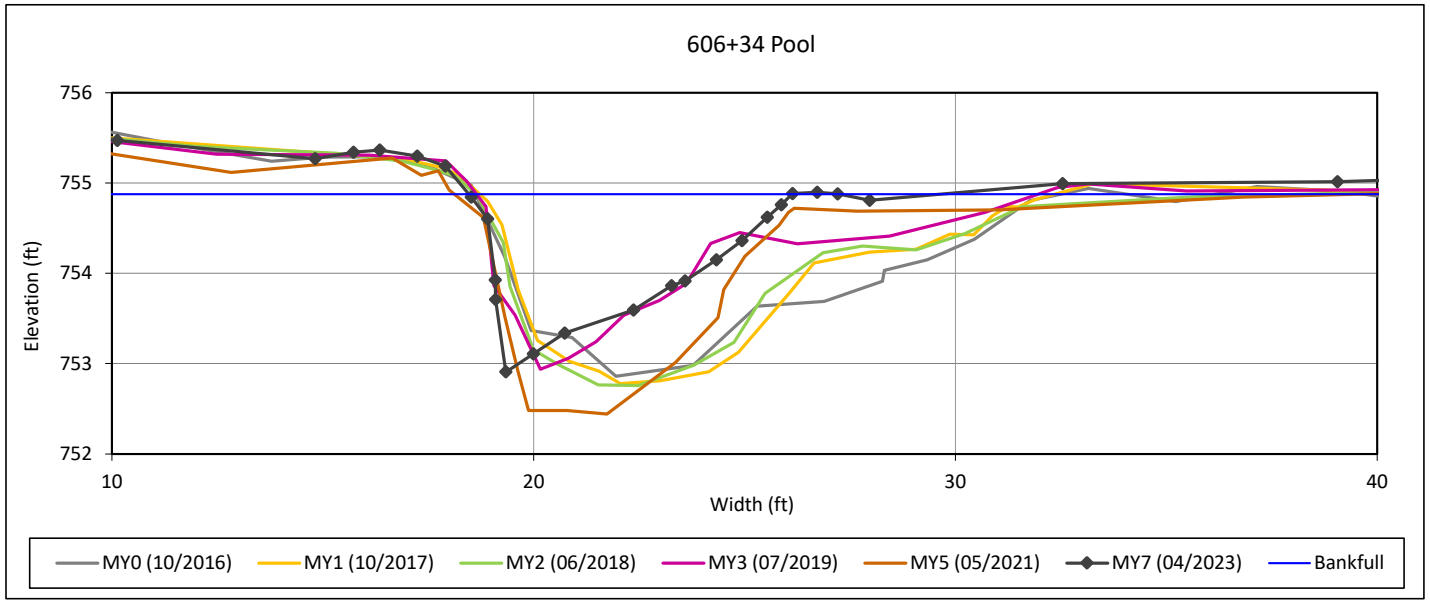
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 47 - UT5



Bankfull Dimensions	
8.0	x-section area (ft.sq.)
7.7	width (ft)
1.0	mean depth (ft)
2.0	max depth (ft)
9.4	wetted perimeter (ft)
0.9	hydraulic radius (ft)
7.4	width-depth ratio

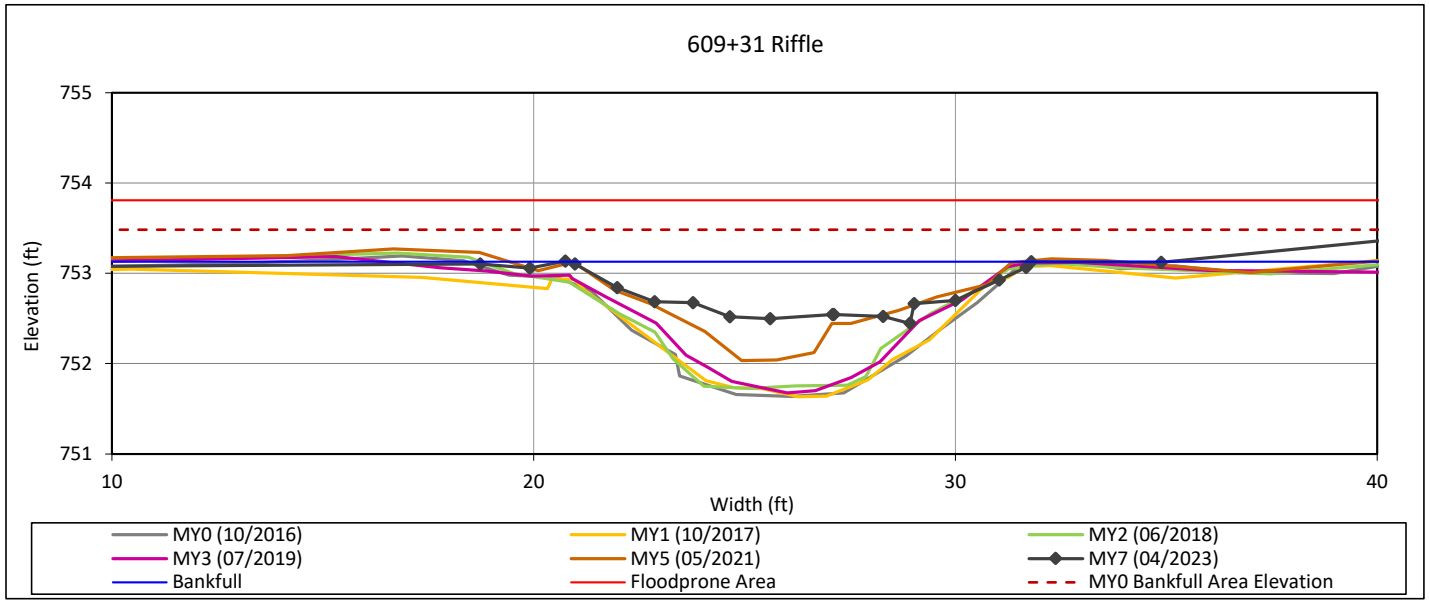
Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

Cross-Section Plots

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Cross-Section 48 - UT5



Bankfull Dimensions	
4.9	x-section area (ft.sq.)
11.0	width (ft)
0.4	mean depth (ft)
0.7	max depth (ft)
11.3	wetted perimeter (ft)
0.4	hydraulic radius (ft)
24.8	width-depth ratio
53.8	W flood prone area (ft)
4.9	entrenchment ratio
0.7	low bank height ratio

Survey Date: 04/2023
Field Crew: Wildlands Engineering

View Downstream

APPENDIX 5. Hydrology Summary Data and Plot

Table 13a. Verification of Bankfull Events

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Reach	Monitoring Year	Date of Occurrence	Method
Candy Creek Reach 2 (XS14)	MY1	None	Automated Crest Gage
	MY2	10/11/2018	
	MY3	1/21/2019	
		1/30/2019	
		2/23/2019	
		3/7/2019	
	MY4	2/6/2020	
		5/21/2020	
	MY5	None	
	MY6	8/22/2022	
	MY7	None	
Candy Creek Reach 4 (XS23)	MY1	6/19/2017	
	MY2	7/30/2018	
		9/17/2018	
		10/11/2018	
	MY3	2/23/2019	
	MY4	2/6/2020	
		5/21/2020	
	MY5	7/24/2021	
		8/14/2021	
	MY6	8/22/2022	
	MY7	None	
UT1C (XS27)	MY1	None	
	MY2	2/9/2018	
		3/9/2018	
		10/22/2018	
	MY3	1/10/2019	
		1/16/2019	
		1/21/2019	
		1/31/2019	
	MY4	1/22/2020	
	MY5	7/24/2021	
		8/14/2021	
	MY6	8/22/2022	
	MY7	None	
UT2 (XS33)	MY1	None	
	MY2	1/27/2018	
		7/30/2018	
		9/17/2018	
		10/11/2018	
	MY3	1/11/2019	
		1/21/2019	
		1/26/2019	
		1/30/2019	

Table 13b. Verification of Bankfull Events

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Reach	Monitoring Year	Date of Occurrence	Method
UT2 (XS33) (cont.)	MY4	2/6/2020	Automated Crest Gage
		5/21/2020	
	MY5	7/24/2021	
		8/14/2021	
	MY6	None	
	MY7	None	
UT2A (XS36)	MY1	None	
	MY2	2/9/2018	
	MY3	1/21/2019	
		1/27/2019	
		1/30/2019	
	MY4	5/21/2020	
	MY5	7/24-28/2021	
	MY6	None	
	MY7	None	
UT3 (XS37)	MY1	None	
	MY2	10/11/2018	
	MY3	1/21/2019	
	MY4	None	
	MY5	10/19/2021	Manual Crest Gage & Visual Documentation
	MY6	None	Automated Crest Gage
	MY7	None	
UT4 (XS42)	MY1	None	
	MY2	1/31/2018	
		7/30/2018	
		9/17/2018	
		10/11/2018	
	MY3	1/21/2019	
		2/23/2019	
		6/8/2019	
	MY4	2/6/2020	
		2/22/2020	
		5/21/2020	
	MY5	7/24-25/2021	
		8/14/2021	
		9/22/2021	
	MY6	1/3/2022	
		8/22-24/2022	
		9/8-13/2022	
	MY7	None	

Table 13c. Verification of Bankfull Events

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Reach	Monitoring Year	Date of Occurrence	Method
UT5 (XS48)	MY1	4/24/2017	Automated Crest Gage
		6/19/2017	
	MY2	1/31/2018	
		2/6/2018	
		3/9/2018	
		7/30/2018	
		9/17/2018	
		10/11/2018	
	MY3	1/21/2019	
		1/26/2019	
		1/30/2019	
		2/23/2019	
		8/8/2019	
	MY4	10/31/2019	
		2/6/2020	
		5/20/2020	
		6/5/2020	
		6/8/2020	
		6/11/2020	
	MY5	7/19/2021	
		7/24/2021	
		8/14/2021	
		9/22/2021	
	MY6	1/3/2022	
		2/23-24/2022	
		3/12/2022	
		8/22/2022	
	MY7	1/13/2023	
		1/25/2023	
		2/12/2023	

Table 14. Recorded In-Stream Flow Events Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

Reach	Max Consecutive Days Meeting Success Criteria[1]						
	MY1 (2017)	MY2 (2018)	MY3 (2019)	MY4 (2020)	MY5 (2021)	MY6 (2022)	MY7 (2023)
UT1D	222	301	280	366	132[2]	272	285

[1] Success criteria is 30 consecutive days of flow.

[2] Gage malfunctioned; no data for part of the year.

Table 15. Rainfall Summary

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023

	MY1 (2017)	MY2 (2018)	MY3 (2019)	MY4 (2020)	MY5 (2021)	MY6 (2022)	MY7 (2023)
Annual Precip Total	42.83	64.11	51.98	63.37	40.65	47.79	45.82
WETS 30th Percentile	38.57	38.46	38.93	38.95	39.16	39.12	39.21
WETS 70th Percentile	45.62	45.42	46.75	46.81	47.80	47.76	47.91
Normal	42.36	42.19	43.15	43.20	43.95	43.82	43.95

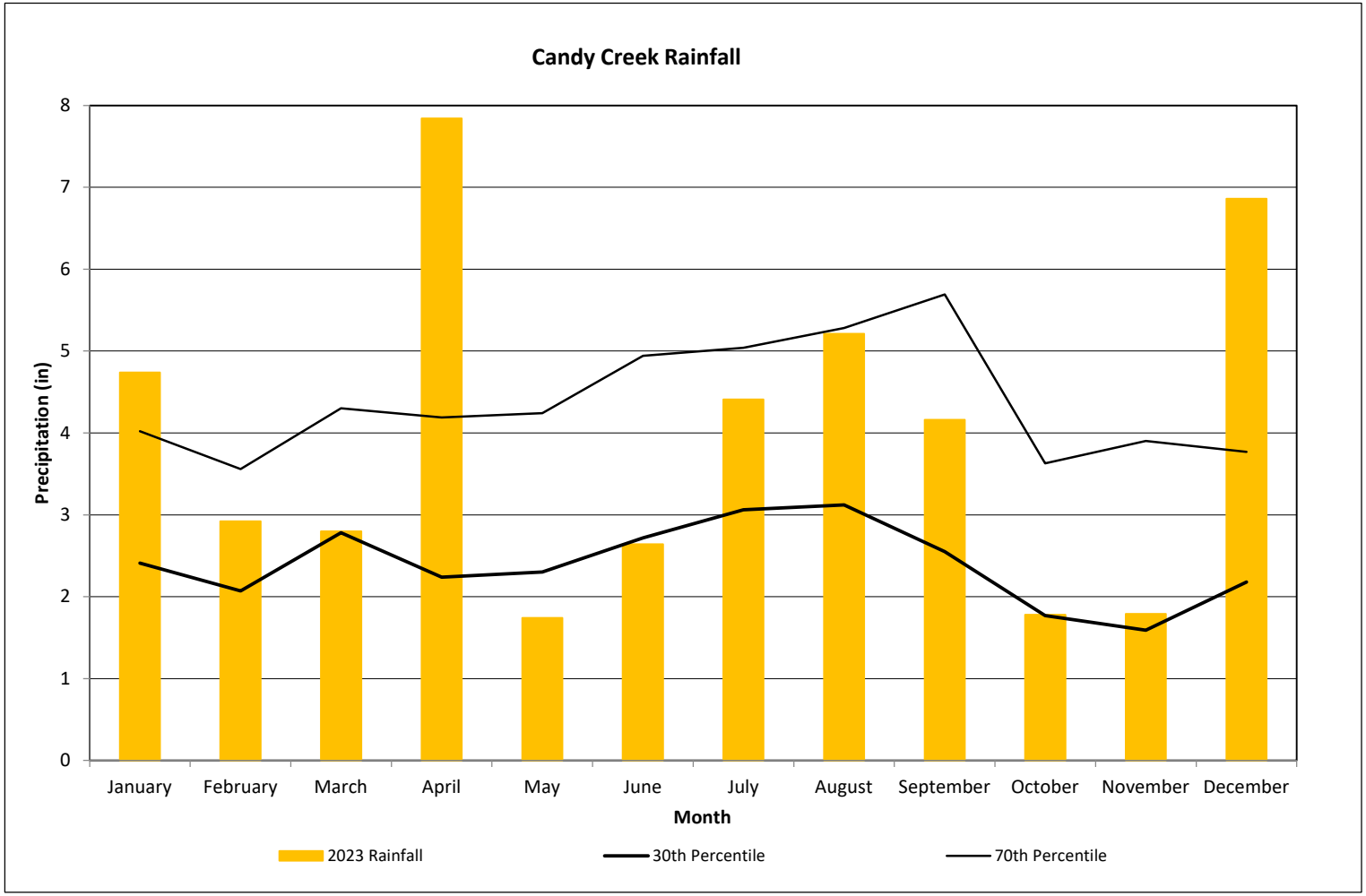
WETS & Annual Precipitation Station: GREENSBORO/PIEDMONT TRIAD INTERNATIONAL AIRPORT, NC (313630) https://agacis.rcc-acis.org/?fips=37081.
Located approximately 18 mi. SW of the Site.
WETS Percentiles are recalculated each year based on the most recent 30-yr time period.

Monthly Rainfall Data

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 7 - 2023



WETS Station: GREENSBORO/PIEDMONT TRIAD INTERNATIONAL AIRPORT, NC (313630) https://agacis.rcc-acis.org/?fips=37081. Located approximately 18 mi. SW of the Site.

Annual Precipitation Station: NC A&T SU Research Farm (NCAT) <https://products.climate.ncsu.edu/cardinal/scout/>. Located approximately 11.5 mi. SW of the Site.

30th and 70th percentile rainfall data based on 30-yr climate normal (1993-2022)

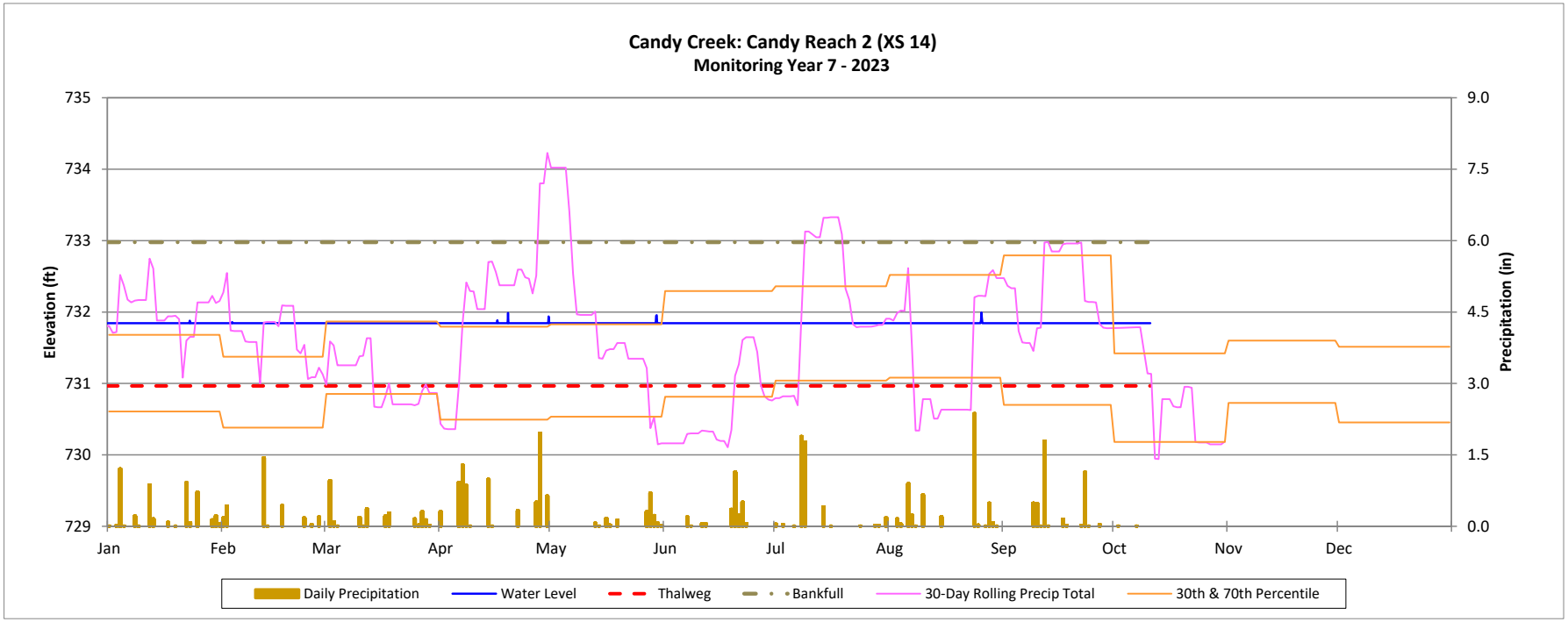
Last Updated: 01/09/2024

Recorded Bankfull Events Plot

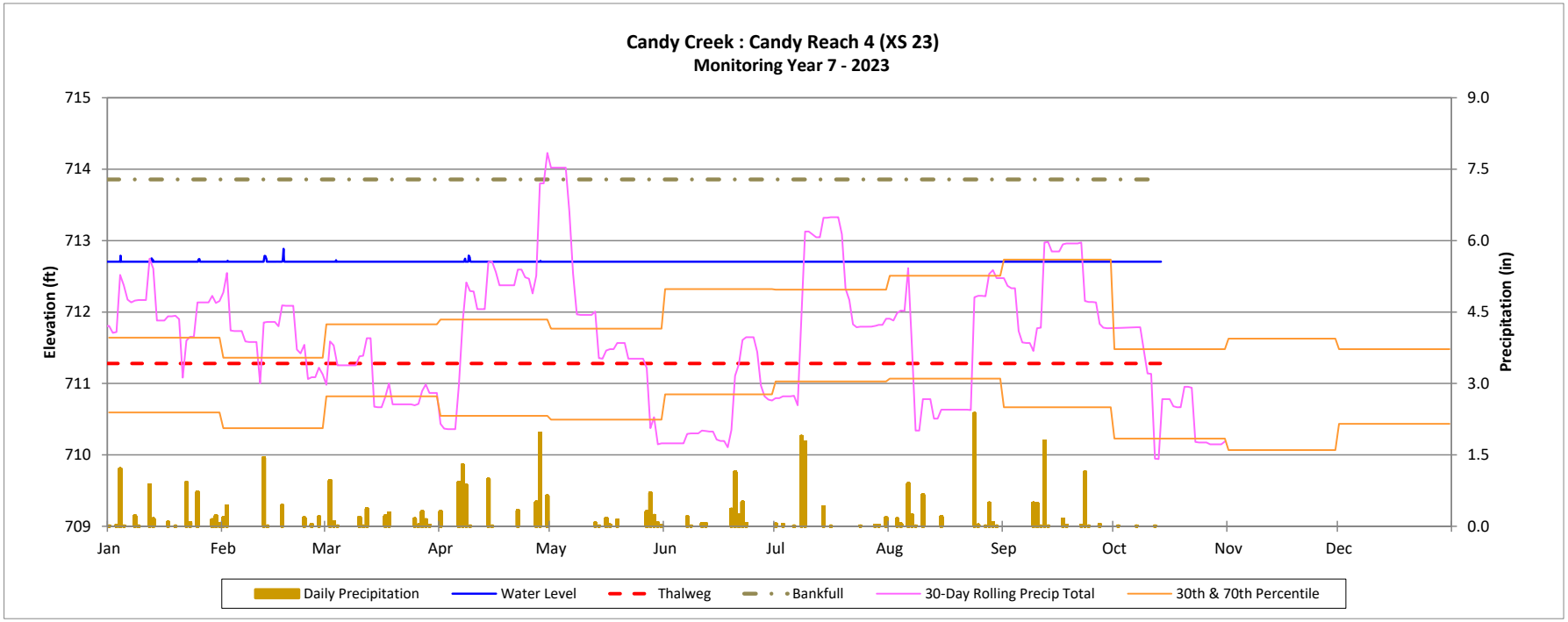
Candy Creek Mitigation Site

DMS Project No. 96315

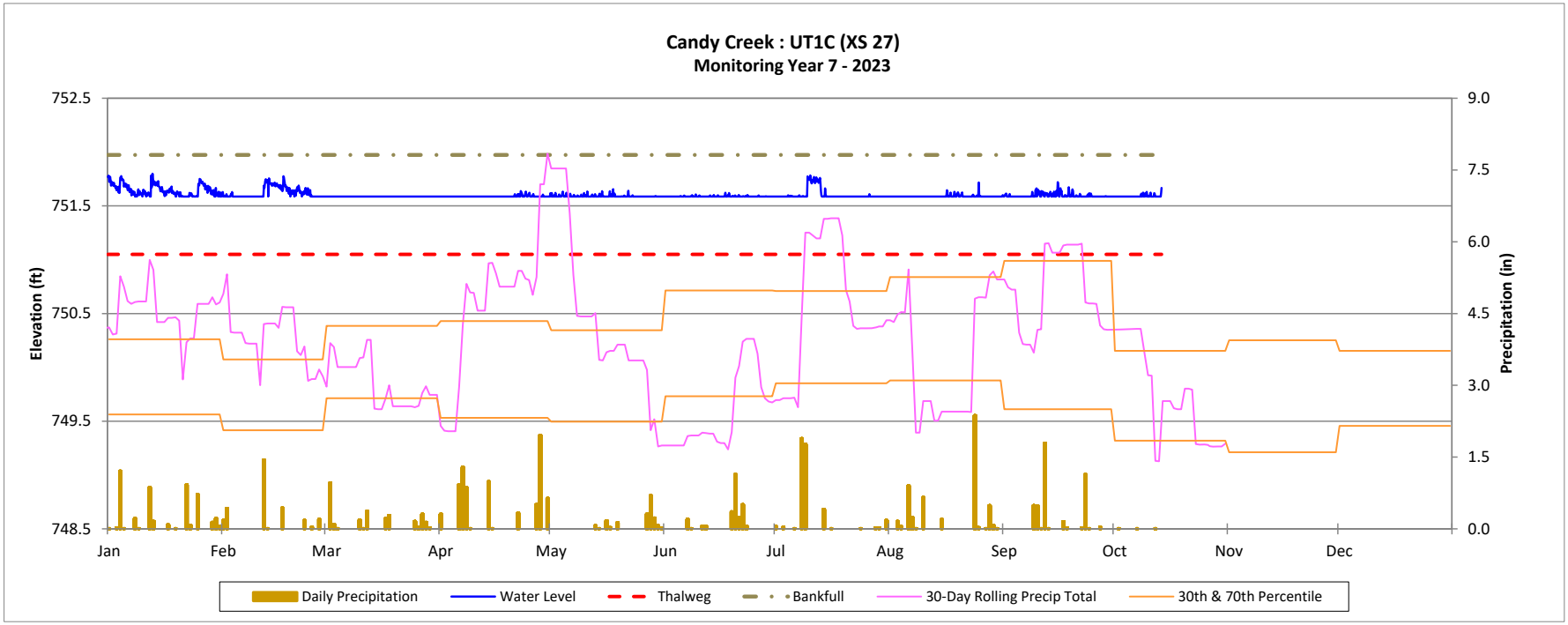
Monitoring Year 7 - 2023



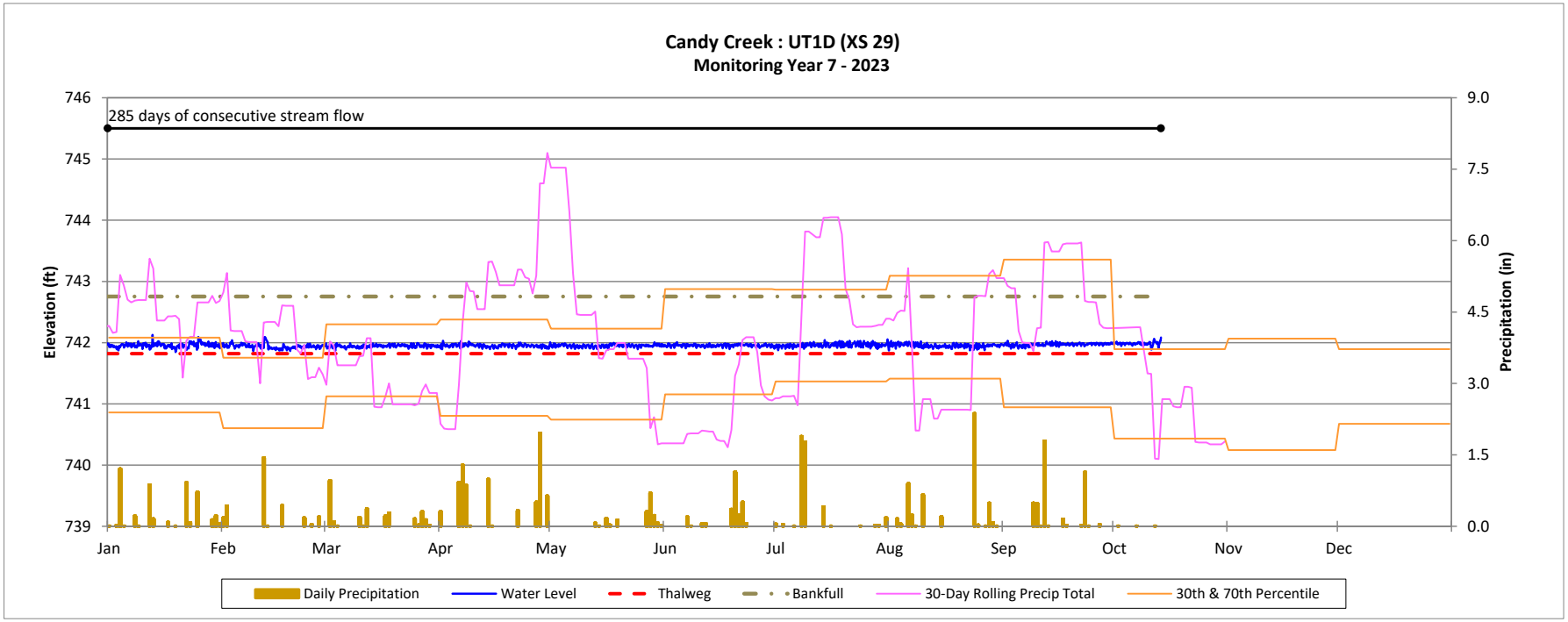
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023



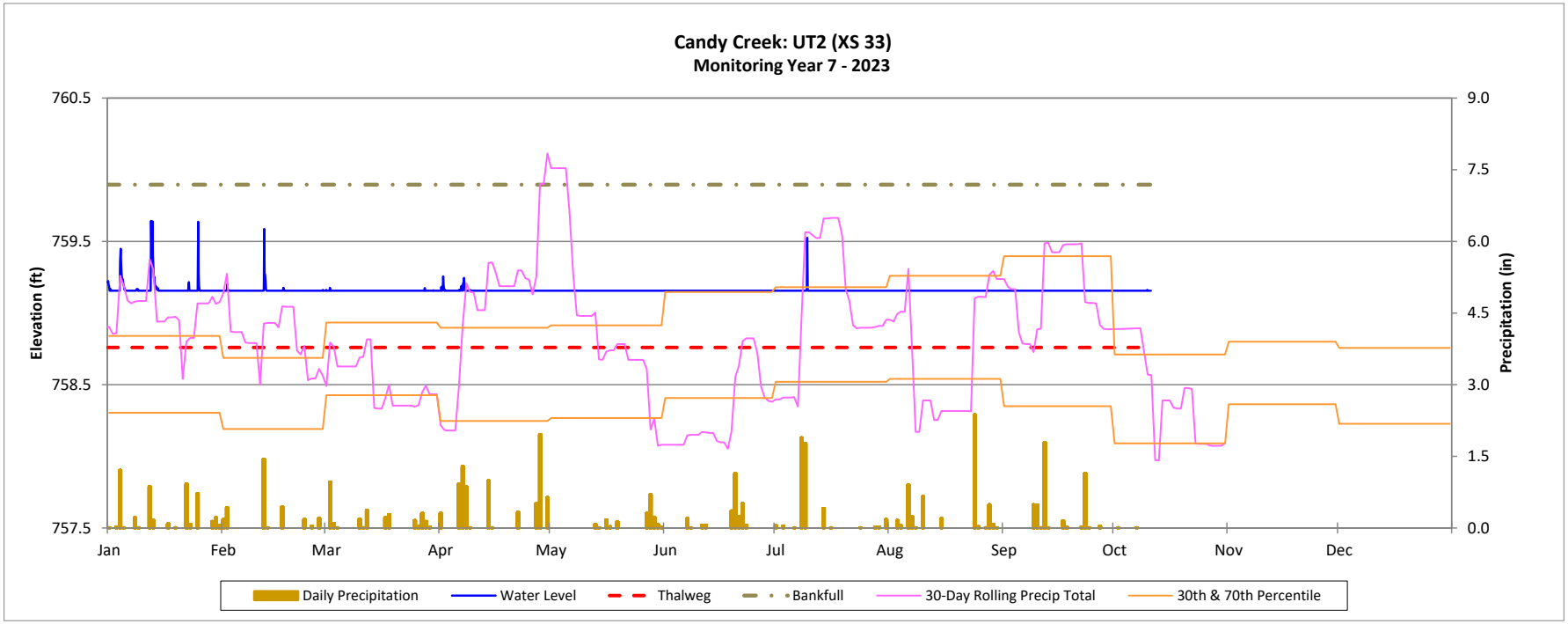
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023



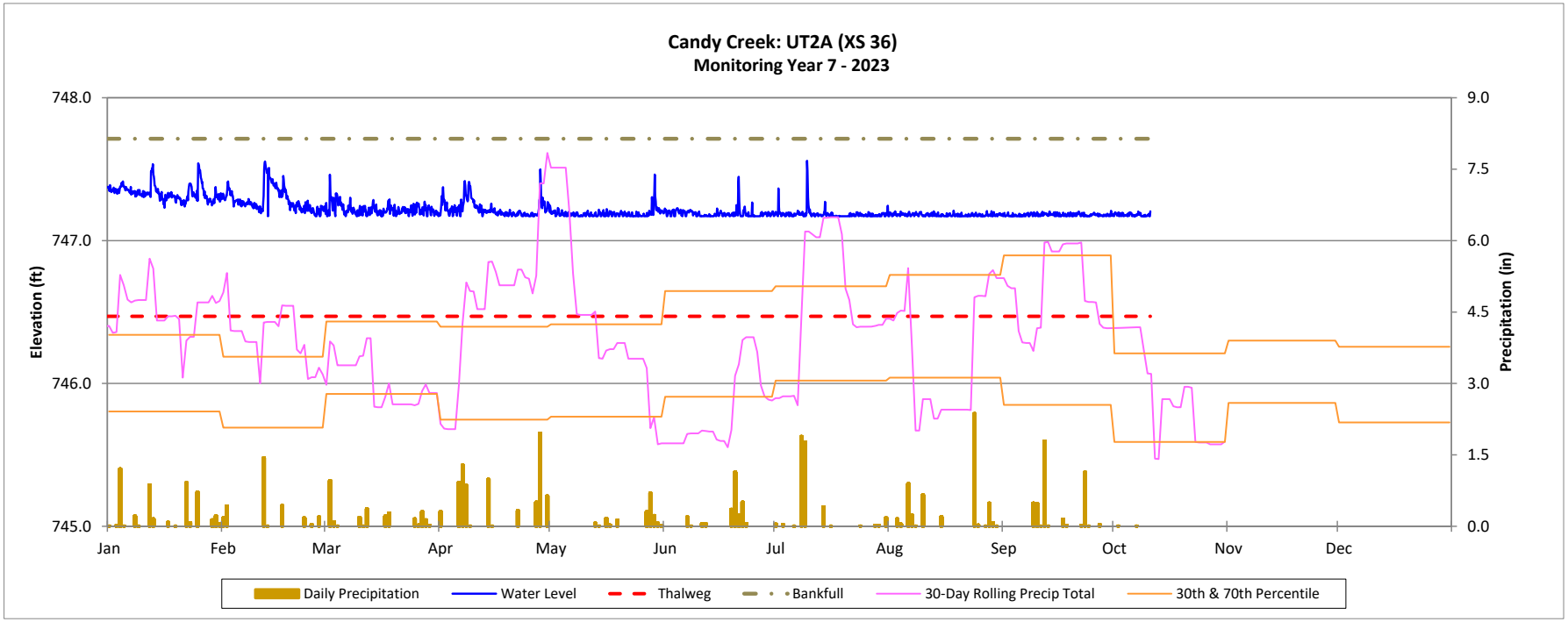
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023



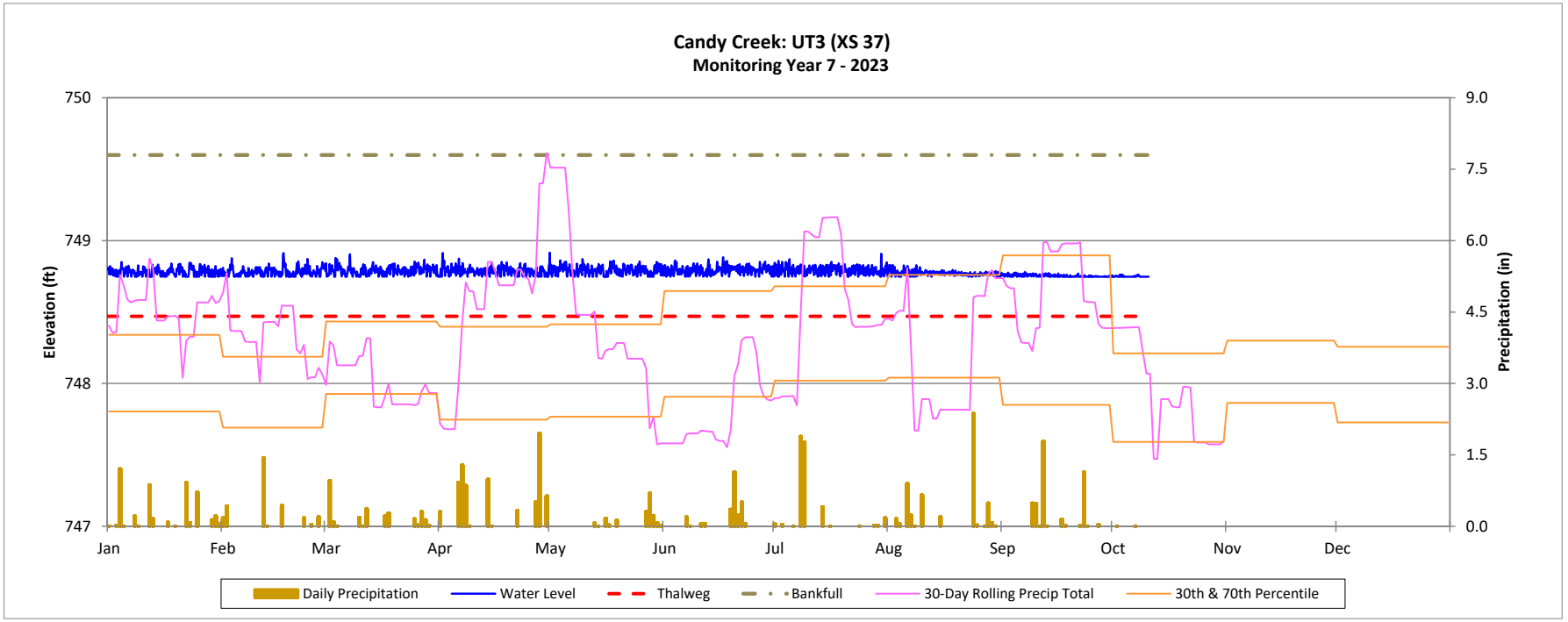
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023



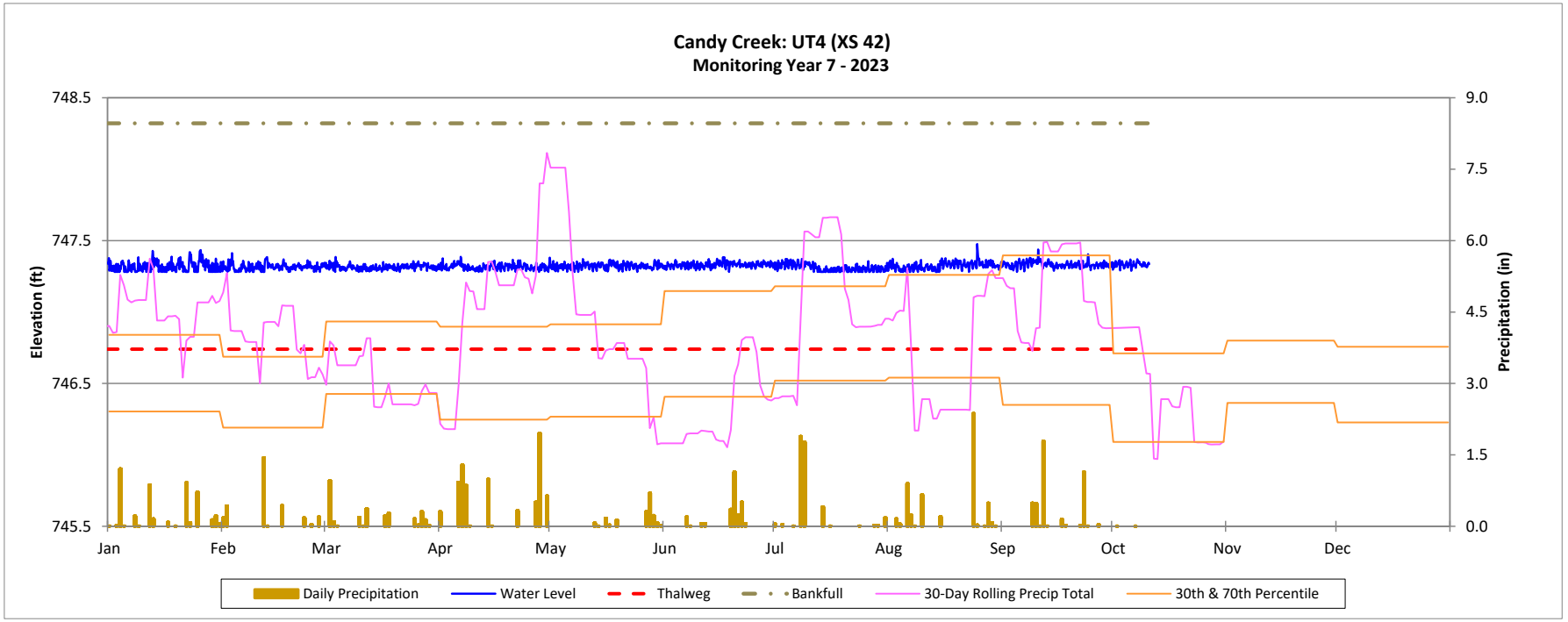
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023



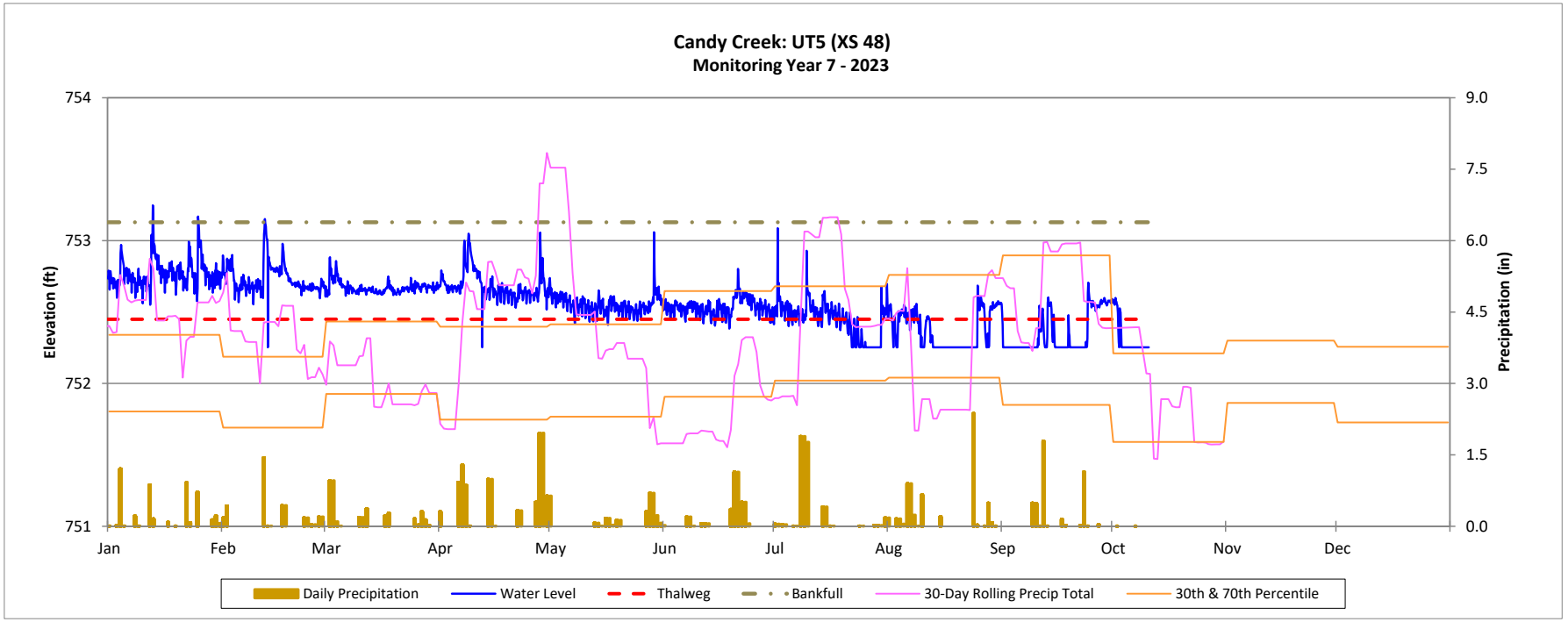
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023



Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023



Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 7 - 2023



APPENDIX 6. Correspondence

WILDLANDS ENGINEERING

MEETING MINUTES

MEETING: IRT Credit Release Site Walk (MY4)
Candy Creek Mitigation Site

MEETING DATE: July 7, 2021

LOCATION: Browns Summit, NC

Participants:

- Aaron Earley, Wildlands Project Manager
- Andrew Radecki, Wildlands Stewardship Lead
- Erin Davis, NC IRT for DWR
- Jeff Turner, Wildlands Monitoring Lead
- John Hutton, Wildlands Principal
- Kelly Phillips, NC DMS Project Manager
- Kristi Suggs, Wildlands Monitoring Supervisor
- Lindsay Crocker, NC DMS Eastern Regional Supervisor
- Melonie Allen, NC DMS Closeout & Credit Release Coordinator
- Olivia Munzer, NC IRT for WRC Western Piedmont Habitat Conservation Coordinator

1. Met at the Hopkins Road crossing between Candy R2 and R3.
2. Introductions
3. Walked to the encroachment area of Candy R3 (~STA149+50)
    a. The area was evidently not being mowed as the grass was tall.
    b. Tree and/or shrub plantings should be scheduled for this winter.
4. Walked downstream along Candy R3
    a. Erosion along the inside bend of a pool (~STA150+00)
        i. Well vegetated and naturally stabilized. It is developing into more of a point bar. IRT agreed that this area was no longer of concern.
    b. Erosion along outer bend of a pool (~STA151+50) where stream repair work is planned for the fall/winter of 2021.
        i. Discussed installing a brush toe and perhaps some live stakes. It was thought that this might also help allow for a better bar development on the inside bend.
5. Walked to UT1D where there are a series of failed structures that are piping underneath
    a. Piping structures (~STA~253+00); repair work is also planned for the same period of the fall/winter of 2021.

   i. Suspected cause is the increased elevation change where the flatter headwaters ties into the lower elevation of the main channel. The steeper grade likely undercut the structures.
   ii. No main concerns were raised.

6. For #4b and #5a, IRT was concerned about access to conduct the repairs so that vegetation damage would be minimized during the repairs.
   a. WEI noted that the site would be accessed by the internal crossing located just downstream of UT1D.
   b. It was also discussed at the end of the meeting that if the repair work is completed after the current monitoring year (MY5) report has been submitted then the repair items should be highlighted in a photolog and sent to DMS for inclusion into the monitoring report prior to the credit release meeting as there will likely be a discussion about it. The work is planned for the fall/winter so would most likely occur during MY6 and be submitted with the MY6 report.
7. There is a dead snag along Candy R3 that needs to be monitored. It is somewhat near a neighbor's structure for which it could possibly damage if it were to fall.
8. Walked upstream to Candy R2.
   a. Looked at manual repair area from 2019/2020. Herbaceous vegetation was well established and was obscuring any substantial view of the bank. No concerns were raised.
9. Walked to UT2.
   a. Looked at the bare area along UT2 R2 (~STA315+00); discussed giving one more attempted treatment to improve the bare area and keeping the lespedeza at bay but it is a minimal problem given the total area of the project and because there are still trees both along the fence line and the stream in that area.
   b. Looked at the area where the dam was removed (~STA310+00-311+00)
      i. No concerns were raised. The process of removing the dam constructing the channel in the pond muck was discussed. It is still maintaining a single-thread channel.
10. Drove upstream to Candy R1 and UT5.
11. Walked part of UT5 (~STA604+00-608+00).
   a. The aggradation on this channel and how to report it was discussed in detail. The main take away is that the aggradation and sedimentation in the channel that was observed was not negatively impacting the overall structure or function of the stream.
   b. The sedimentation was mostly within the banks, but some was also on the floodplain. Its structure was coarse sand. The source is suspected to have come from off-site as no erosive areas have been observed within the easement. There are several farm ponds upstream of the project (above UT5-preservation) that drain a large agricultural tract and could have provided the sediment load, as could have an overflowing or breached pond dam (although no direct source has been confirmed).
   c. For the effects on the stream, it was noted that while the pools are filling with some sand, the stream is functioning more like a sand-bed stream. The pools are present but shallow, and the sediment is not collecting or burying the riffles as noted by the macroinvertebrates present today on the riffle substrate.
   d. It was discussed how this stream is geographically positioned in a transitional area of the piedmont and the slate belt and that some watersheds have soils with a greater

sand load. The sand load in the watershed was not expected during the Mitigation Plan stage but isn't unexpected given the geographic location.

e. How to report the aggradation changes was discussed. The official DMS guidance should be followed; however, the following ideas were mentioned and could be considered if given approval:
    i. Getting photographs early in the year (prior to leaf-out) would be beneficial.
    ii. Survey is still desired later in the year to capture changes that occurred during the monitoring year, but it was noted that even if the survey occurs early, the profile will still capture 12 months of change from the last survey period.
    iii. Using a 360-camera is an idea to show the streams, although the vegetation would be a problem. Using a story map and drones are also ideas, but the latter are better for early projects, or showing vegetation change from year to year. This idea may not be an option for this project, especially within the next few years.

12. The general idea was that the aggradation should continue to be shown and reported, and it should be discussed in the narrative of the text. (It was noted that any area of concern should be discussed in the narrative.) However, the discussion can cover how the aggradation (or any issue) is being reported but is not a substantial cause for concern because of X, Y, or Z.
13. Walked to Candy R1
    a. Encroachment area (~STA101+00)
        i. The area is being encroached upon by an adjacent landowner who is not part of the project. He has been contacted and asked to stop mowing the area.
        ii. Horse tape is being used as are additional easement markers.
        iii. Trees and/or shrubs should also be planted in this area.
14. Action items:
    a. Use the narrative portion of the report to discuss areas of concern; use the text to convey the level of concern about it and if any action is needed. For example using UT5, continue to report its presence but provide information about whether the aggradation is/is not getting worse and if any action is/is not needed.
    b. Continue to report the current aggradation on UT5 but currently it is not a substantial concern making sure to discuss its current state and to refer to the discussion we had on-site. Include the meeting notes in the monitoring report appendix.
    c. Look into giving one more attempted treatment to improve the bare area along UT2 R2 and keep the lespedeza at bay. However, don't go overboard with trying to establish vegetation because it is a minimal problem given the total area of the project and there are still trees both along the fence line and the stream in that area.
    d. Repairs planned for items #4 and #5. In the MY5 report, discuss the areas of concern in the narrative, provide photos if available, and discuss the repair plan documenting if it has been completed or when it is to be completed. If the work is done prior to the submittal of the MY5 report to DMS, include photos of the repair area. If it is done after the submittal to DMS, send a photolog of the repairs to DMS for inclusion in the report prior to the credit release meeting.
    e. Encroachment areas should include supplemental plantings of trees/shrubs.
    f. The next IRT walk is not expected until the final close-out. At that point, any continuing/new encroachment areas could be an issue in getting the final credit release.

From:	Dunnigan, Emily
To:	Kristi Suggs
Cc:	Aaron Earley; Jeff Turner; Andrew Radecki
Subject:	RE: [External] RE: Candy Creek #96315 - Early Close-out request
Date:	Wednesday, October 4, 2023 3:34:39 PM
Attachments:	image001.png 96315_Candy Creek Stream Mitigation Site_DMS_Memo_to_SP.pdf Candy Creek_96315_MY6_Easement Report.pdf 96315_Candy Creek Stream Mitigation Site_JMH.kmz

Hi Kristi,

Please find the attached action item memo for transfer to long term stewardship. Also, attached is the easement report from February and a KMZ of issues found during the September site visit. Please complete the listed tasks by 2/15/2024 for the project to smoothly transition into long term stewardship when the time comes. For the project to be a candidate for early close-out, the items and documentation would need to be provided by December 1st, 2023. Please provide documentation of completed tasks (necessary photos, maps, etc.) and complete the other memo items.

Let me know if you have any questions.
Thanks,
Emily

Emily Dunnigan
Project Manager – Eastern Region
Division of Mitigation Services
217 West Jones St., Raleigh, NC 27603
Cell: 919-817-6534

From: Kristi Suggs <ksuggs@wildlandseng.com>
Sent: Friday, September 29, 2023 12:02 PM
To: Dunnigan, Emily <Emily.Dunnigan@deq.nc.gov>
Cc: Aaron Earley <aearley@wildlandseng.com>; Jeff Turner <jturner@wildlandseng.com>; Andrew Radecki <aradecki@wildlandseng.com>
Subject: RE: [External] RE: Candy Creek #96315 - Early Close-out request

Thanks, Emily! We will be looking for the Stewardship Transfer Memo and continue tying up outstanding items. Have a great weekend as well.

Kristi

Kristi Suggs | *Senior Environmental Scientist*
O: 704.332.7754 x110 M: 704.579.4828

Wildlands Engineering, Inc.
1430 S. Mint St, Suite 104
Charlotte, NC 28203

From: Dunnigan, Emily <Emily.Dunnigan@deq.nc.gov>
Sent: Friday, September 29, 2023 10:49 AM

To: Kristi Suggs <ksuggs@wildlandseng.com>
Cc: Aaron Earley <aearley@wildlandseng.com>; Jeff Turner <jturner@wildlandseng.com>; Andrew Radecki <aradecki@wildlandseng.com>
Subject: RE: [External] RE: Candy Creek #96315 - Early Close-out request

Hi Kristi,

I'm glad the boundary issues will be fixed up by December 1. You can submit the draft report at any time. Please include any documentation of completed boundary items and mention in the report any that are ongoing with an estimated completion date.

I will be sending a stewardship transfer memo soon that will detail the action items (many you are already working on) to be completed. Once those are all completed, and you provide documentation I think the site will be good to go. If you can turn that memo around shortly after 11/28 or by 12/1 than I get this scheduled for early close out.

Have a great weekend and let me know if you have any other questions.
Emily

Emily Dunnigan
Project Manager – Eastern Region
Division of Mitigation Services
217 West Jones St., Raleigh, NC 27603
Cell: 919-817-6534

From: Kristi Suggs <ksuggs@wildlandseng.com>
Sent: Thursday, September 28, 2023 12:32 PM
To: Dunnigan, Emily <Emily.Dunnigan@deq.nc.gov>
Cc: Aaron Earley <aearley@wildlandseng.com>; Jeff Turner <jturner@wildlandseng.com>; Andrew Radecki <aradecki@wildlandseng.com>
Subject: [External] RE: Candy Creek #96315 - Early Close-out request

Emily,

Thank you for the information. Also, I spoke with Aaron about the timing for the completion of the outstanding boundary items, so that we can request an early close-out. He said that all the boundary issues, including the easement cap stamping, will be completed by 11/28/2023; therefore, we will be able to submit the MY7 report by 12/1/2023 and request an early close-out. However, I was wondering if we have everything completed prior to 11/28/2023, except for the stamping of the easement caps, should we go ahead and submit the draft MY7 report to DMS for review with the caveat in the report that the cap stamping will be completed by 11/28 or should we hold the draft report until the stamping is done? Thanks for your assistance!

Kristi

Kristi Suggs | *Senior Environmental Scientist*
O: 704.332.7754 x110 M: 704.579.4828

Wildlands Engineering, Inc.
1430 S. Mint St, Suite 104

Charlotte, NC 28203

From: Dunnigan, Emily <Emily.Dunnigan@deq.nc.gov>
Sent: Tuesday, September 26, 2023 10:33 AM
To: Jeff Turner <jturner@wildlandseng.com>
Cc: Aaron Earley <aearley@wildlandseng.com>; Kristi Suggs <ksuggs@wildlandseng.com>
Subject: RE: [External] Candy Creek #96315 - Report Question

Hi Jeff,

I don't think there's anything special you need to include in the report. If repairs or any issues were addressed in MY7 they should still be in the report and on the CCPV. If any issues were resolved prior to MY7 then they don't need to be included.

This site is a good candidate for early close-out (assuming no major issues) and the boundary issues are completed. For that to work the report would need to be completed by December 1st.

Thanks,
Emily

Emily Dunnigan
Project Manager – Eastern Region
Division of Mitigation Services
217 West Jones St., Raleigh, NC 27603
Cell: 919-817-6534

From: Jeff Turner <jturner@wildlandseng.com>
Sent: Monday, September 25, 2023 4:16 PM
To: Dunnigan, Emily <Emily.Dunnigan@deq.nc.gov>
Cc: Aaron Earley <aearley@wildlandseng.com>; Kristi Suggs <ksuggs@wildlandseng.com>
Subject: [External] Candy Creek #96315 - Report Question

Hello Ms. Dunnigan,
I hope that you are doing well. We are working on the MY7 report for Candy Creek (DMS#96315) and I wanted to check that there wasn't anything special that you wanted us report on for the final report, outside of what Wildlands typically reports on for the final report? For the MY7 reports we usually report photo points and vegetation data for the life of the project, and that will be done again. We don't typically show resolved areas of concern on the CCPV figures. Please let me know if there are new additions or sections that you would like specifically included outside of what we normally submit. Thank you for your assistance.

Sincerely,

Jeff Turner, MS | *Environmental Scientist*
O: 704.332.7754 x118

Wildlands Engineering, Inc.
1430 S. Mint St, Suite 104

Charlotte, NC 28203

DMS Transfer Preparation Memo:

This memo documents required action items per the NC Stewardship Program that must be completed prior to issuing an Acceptance to Transfer letter for the long-term stewardship of this conservation easement. Easement violations and boundary marking issues were noted and will require action to remedy.

Site Name: Candy Creek Stream Mitigation Site

DocuSigned by:
Edward Haynes
F37EFC15C73A47E...
9/28/2023

ID: 96315
Project Manager: Emily Dunnigan
Site Visit Date: 09/12/23
Target Resolution Date: 02/15/2024

DS
ED
9/28/2023

Please complete the following action items by the Target Resolution Date above: A .kmz file noting examples of action items listed below accompanies this memo.

1. **Boundary Marking:**

   - Refer to the February 21, 2023 Conservation Easement Inspection Report and complete all requested items.
   - See SP KML #3. Replace this sign with an approved easement holder sign.
   - See SP KML #5. We were unable to locate this corner and witness. Please locate and ensure it adheres to the RFP witness marking requirements.

2. **Easement Violation:** Refer to the February 21, 2023 Conservation Easement Inspection Report and complete all requested items. The scalloping items were also noted on this field visit. They must be addressed and all verbal or written communications with the landowners summarized and reported to the project manager.

3. **Misc.**
   - See SP KML #2. Remove tree on fence.
   - See SP KML #4. Remove old fencing from within CE.
   - See SP KML #6. Re-Install horse tape to prevent scalloping.

4. L**andowner Contacts:** DMS property has identified the following participating landowners. Review and correct the table for existing contact information. Provide the missing contact information for all landowners listed below. Notify each landowner of pending management transfer to Long Term Stewards. A formal letter will be sent to the participating landowner upon successful transfer to stewardship.

(Source online NC GIA Parcel Data)

Property Owner	Mailing Address	Phone Number	Email Address
TAYLOR, DONALD E;BRAY, NANCY			
CARR, DARIN W;CARR, PAMELA P			
GRAHAM, DEVON SCOTT;GRAHAM, SHANA HOPKINS			
HOPKINS, HERBERT WALLACE;HOPKINS, MARJORIE			
HOPKINS, JEFFERSON TODD;HOPKINS, MARY ANN			
MAY, JUSTIN L;MAY, ALICIA S			
CHRISMON, BRUCE H;CHRISMON, MARGIE L			
CRIDER, ARTHUR WADE JR;CRIDER, STACEY SMITH			
TROXLER, KENNETH REID;TROXLER, RENEE BUSICK			
KENNEY, BRITTANI R;VAUGHN, DAVID A			
ANIYIKAIYE, BARBARA			
HOPKINS, JEFFERSON TODD;HOPKINS, MARY ANN			

5. **Verify that there are no unrecorded, undocumented, or verbal agreements pertaining to management of, access into or through, or subdivision of parent parcel of the conservation easement.** Note any agreements here that conflict in any way with prohibited uses as specified in the recorded easement document. Provide copies of any formal correspondence with participating landowners, designated representatives, or other interested parties.

Updated Landowner Contacts

Property Owner	Mailing Address	Phone Number	Email Address
ANIYIKAIYE, BARBARA	5305 Misty Way, Brown Summit, NC 27214	(336) 404-8571	deleagnanews.com barbaraaniyikaiye@yahoo.com
CARR, DARIN W; CARR, PAMELA P	7543 Friendship Church Road, Brown Summit, NC 27214	(336) 404-0741	dcarr@cgrproducts.com
CHRISMON, BRUCE H; CHRISMON, MARGIE L	5245 Hopkins Road, Brown Summit, NC 27214	(336) 656-9220 (336) 601-3537	bchrismon@att.net
CRIDER, ARTHUR WADE JR; CRIDER, STACEY SMITH	5306 Hopkins Road, Browns Summit, NC 27214	(336) 382-1378	Acrider769@gmail.com
GRAHAM, DEVON SCOTT; GRAHAM, SHANA HOPKINS	1819 Natchez Trce, Greensboro, NC 27455	N/A	N/A
HOPKINS, HERBERT WALLACE; HOPKINS, MARJORIE	8076 Old Reidsville Road, Brown Summit, NC 27214	(336) 656-7663 (336) 362-2692	wallace@hopkinspaint.com marjorie@hopkinspaint.com
HOPKINS, JEFFERSON TODD; HOPKINS, MARY ANN	5315 Hopkins Road, Browns Summit, NC 27214	(336) 669-3313 (336) 669-3316	mahpk4@aol.com
KENNEY, BRITTANI R; VAUGHN, DAVID A	5237 Hopkins Road, Brown Summit, NC 27214	N/A	N/A
MAY, JUSTIN L; MAY, ALICIA S	226 Somers Loop, Reidsville, NC 27320	N/A	N/A
TAYLOR, DONALD E; BRAY, NANCY	PO Box 14323, Greensboro, NC 27415	(336) 656-4919	N/A
TROXLER, KENNETH REID; TROXLER, RENEE BUSICK	7755 Ferrin Rd, Browns Summit, NC 27214	336-317-4902	renee.troxler@yahoo.com
WAGONER, BRIAN P; WAGONER, DAVID G JR	5123, 5141, 5159 Highway 150, Browns Summit, NC 28214	(336) 621-4387 (336) 580-5883	N/A

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
MARC RECKTENWALD
Director

NORTH CAROLINA
Environmental Quality

February 21, 2023

Emily Dunnigan
Project Manager
NCDEQ-DMS
Green Square
217 West Jones Street
Raleigh, NC 27603
Cell: (919) 817-6534

Subject: Conservation Easement Inspection Report – MY6 Site
Candy Creek Mitigation Site
Cape Fear River Basin - CU# 03030002 - Guilford County
DMS ID No.96315 - DMS Contract # 5794

Emily,

The MY6 boundary field inspection was conducted by DMS on January 19, 2023. The inspection was conducted in accordance with the DMS Property Checklist which included a pre-inspection office review of the plat, aerial photographs, as-built, conservation easement and monitoring reports. The entire easement boundary was inspected to validate the easement integrity and identify any potential issues on the site. The site inspection results are shown in the attached checklist and kmz map.

Office Review:

- Three areas of historical mowing encroachments were identified in the MY6 report. The report indicated the total area of the encroachments was 0.07 acres and each area had been taped off and replanted.
- Aerial photos show the three historical encroachments and several areas to be field check for potential row crop encroachment into the conservation easement.

Field Inspection:

- None of the aluminum monument caps observed onsite were stamped.
- A small area of scallop mowing is continuing between the newly installed T-posts at the Hopkins Road encroachment.
- A small area of scallop mowing is continuing beneath the horse tape at the encroachment at the southeast corner of the site.
- Previously unidentified scallop mowing was observed on the east side of the pond located on the southeast end of the site.
- Detached horse tape protecting the easement boundary was observed in two areas.
- A permanent deer stand has been installed within the easement at the southwest corner of the site.
- Two easement marker signs were missing from their posts.
- A downed tree is across the barbed wire fence on the eastern boundary approximately 700 feet north of Hopkins Road.

Action Items

- The aluminum monument caps should be stamped in accordance with the boundary marking specifications.
- A small area of scallop mowing is continuing between the newly installed T-posts at the Hopkins Road encroachment. This ongoing and historical encroachment needs to be corrected. Supplemental marking and communication with the landowner should be implemented to prevent future mowing within the easement.

- A small area of scallop mowing is continuing beneath the newly installed horse tape in the southeast encroachment area. This ongoing and historical encroachment needs to be corrected. Supplemental marking and communication with the landowner should be implemented to prevent future mowing within the easement.
- The newly identified scallop mowing observed on the east side of the pond located at the southeast end of the site needs to be corrected. Supplemental marking and communication with the landowner should be implemented to prevent future mowing within the easement. Supplemental planting should be considered and re-planting should be conducted in accordance with the approved mitigation plan and IRT coordination.
- The two areas of detached horse tape should be repaired to prevent scallop mowing.
- The permanent deer stand installed within the easement at the southwest corner of the site must be removed from the conservation easement.
- Replace missing easement signs.
- Remove downed tree and repair barbed wire fence north of Hopkins Road.

Let me know if you have any questions or need additional information.

Sincerely,
Kelly Phillips

Project Manager
NCDEQ-DMS
610 East Center Avenue, Suite 301
Mooresville, NC 28115
Cell: (919) 723-7565

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November 30, 2023

Kelly Phillips
Project Manager
NCDEQ – Division of Mitigation Services
610 East Center Avenue, Suite 301
Mooresville, NC 28115

RE: **Conservation Easement Inspection Report – MY6 Site**
Candy Creek Mitigation Site
Cape Fear River Basin – CU# 03030002 - Guilford County
DMS ID No.96315 - Contract # 5794

Dear Mr. Phillips:

Wildlands Engineering, Inc. (Wildlands) has reviewed the Division of Mitigation Services (DMS) comments from the Conservation Easement Inspection Report – MY6 Site for the Candy Creek Mitigation Project that conducted on January 19, 2023. The draft report has been updated to reflect those comments. DMS' comments and observations from the report are listed below and noted in **bold**. Wildlands' response to those comments are noted in *Italics*.

Action Items:

1. **DMS' comment: The aluminum monument caps should be stamped in accordance with the boundary marking specifications.**

   Wildlands' response: All of the aluminum monuments were replaced with stamped monuments in November 2023.

2. **DMS' comment: A small area of scallop mowing is continuing between the newly installed T-posts at the Hopkins Road encroachment. This ongoing and historical encroachment needs to be corrected. Supplemental marking and communication with the landowner should be implemented to prevent future mowing within the easement.**

   *Wildlands' response: As of the last field inspection in October 2023, no additional mowing encroachment was observed, as shown in the Improved Areas of Concern Photographs. The landowner was contacted on June 29, 2023 and agreed to stop mowing the area. Additionally, herbaceous plugs, including butterfly weed (*Asclepias tuberosa*), were planted in a double row to help demarcate the boundary.*

3. **DMS' comment: A small area of scallop mowing is continuing beneath the newly installed horse tape in the southeast encroachment area. This ongoing and historical encroachment needs to be corrected. Supplemental marking and communication with the landowner should be implemented to prevent future mowing within the easement.**

   Wildlands' response: The landowner was contacted on September 19, 2023 and agreed to stop mowing the area. As of the last field inspection in October 2023, the newly installed horse tape was intact and visible. Photo documentation of the easement during this field inspection shows that the landowner is using the horse tape as a guide for the easement boundary and no additional mowing encroachments have occurred. See the Improved Areas of Concern Photographs in Appendix 2 of the MY7/Closeout Report.

4. **DMS' comment: The newly identified scallop mowing observed on the east side of the pond located at the southeast end of the site needs to be corrected. Supplemental marking and communication with the landowner should be implemented to prevent future mowing within the easement. Supplemental planting should be considered and re-planting should be conducted in accordance with the approved mitigation plan and IRT coordination.**

   *Wildlands' response: The landowner was contacted on September 19, 2023 and agreed to stop mowing the area. As of the last field inspection in October 2023, this area was observed to be close to, but outside of the easement. Therefore, it was not mapped in the MY7 CCPV figures, but it was shown in the Improved Areas of Concern Photolog. Additionally, herbaceous plugs, including butterfly weed (*Asclepias tuberosa*), were planted in a double row to help demarcate the boundary.*

5. **DMS' comment: The two areas of detached horse tape should be repaired to prevent scallop mowing.**

   Wildlands' response: New horse tape was pulled in areas where the tape was broken, including in the right boundary of UT1C, as shown in the Improved Areas of Concern Photographs.

6. **DMS' comment: The permanent deer stand installed within the easement at the southwest corner of the site must be removed from the conservation easement.**

   Wildlands' response: The structure was removed in November 2023.

7. **DMS' comment: Replace missing easement signs.**

   Wildlands' response: Missing easement signs were replaced, including the area just north of the internal crossing on Candy Creek Reach 3, as shown in the Improved Areas of Concern Photographs.

8. **DMS' comment: Remove downed tree and repair barbed wire fence north of Hopkins Road.**

   Wildlands' response: The fallen tree was removed and the fence was repaired as needed.

Additional Issues on the KMZ file:

9. **DMS' comment: #2: remove down tree on fence.**

   Wildlands' response: The fallen tree was removed and the fence was repaired as needed.

10. **DMS' comment: #4: Remove old fence.**

    Wildlands' response: The old fence located on the left floodplain of Candy Creek Reach 2, just south of Hopkins Road, was removed.

11. **DMS' comment: #5: Shed debris corner not located.**

    Wildlands' response: All monuments were located and replaced with stamped monuments.

The landowner contacts have also been updated, as requested in the DMS Transfer Preparation Memo, and are included in Appendix 6 of the MY7 report. Please let me know if you have any questions.

Sincerely,

Kristi Suggs
Senior Environmental Scientist