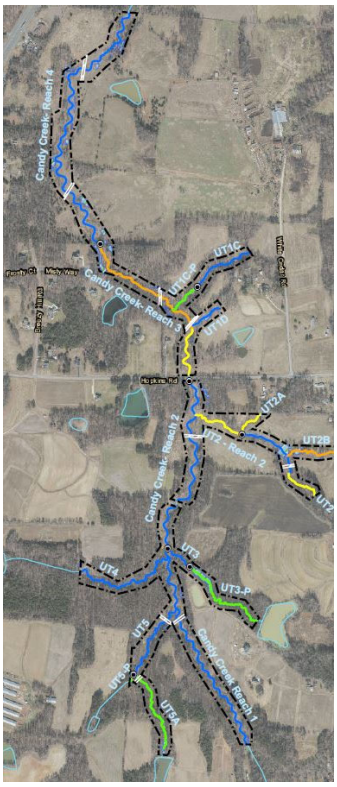

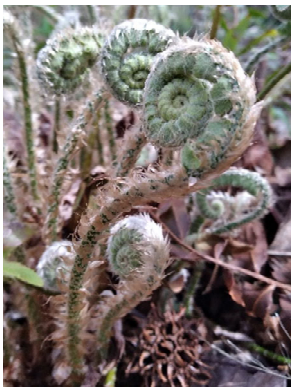

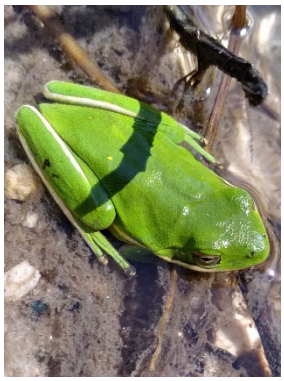


MONITORING YEAR 6 ANNUAL REPORT

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 2022
Draft Submission Date: November 2022
Final Submission Date: February 2023

PREPARED FOR:

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February 10, 2023

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

RE: **Draft Monitoring Year 6 Report Comments**
Candy Creek Mitigation Site (DMS #96315)
Cape Fear River Basin 03030002, Guilford County
Contract No. 005794

Dear Ms. Dunnigan:

Wildlands Engineering, Inc. (Wildlands) has reviewed the Division of Mitigation Services (DMS) comments from the Draft Monitoring Year 6 report for the Candy Creek Mitigation Project and the site walk conducted on January 19, 2023. The 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*.

DMS' comment: Executive Summary: Please reference prior IRT coordination with respect to the 2022 repair work.

Wildlands' response: The partial repairs conducted as part of the IRT site walk in July 2021 were briefly discussed in the third to last paragraph of the Executive Summary as requested.

DMS' comment: Section 1.2 Monitoring Year 6 Data Assessment - This section indicates land stewardship activities have been implemented and references several areas of encroachment that have been resolved. In addition to these activities, was the entire easement boundary inspected to verify compliance with the boundary marking specifications and requirements and easement integrity? Verification of the entire conservation easement boundary needs to be validated in this report.

Wildlands' response: Table 6 notes that there were no unresolved encroachment issues for MY6. The following text was added to section 1.2.4 (Vegetative Areas of Concern and Adaptive Management Activities): "The entire easement boundary was inspected for encroachment and boundary marking issues. No issues were observed."

DMS' comment: Section 1.2.2 Stream Areas of Concern and Adaptive Management Activities - Were the floodplain areas disturbed by machines replanted/seeded after repairs were complete? Please include in narrative if so.

Wildlands' response: Originally these areas had been left to naturalize on their own because much of the area is wet and would not be conducive for planting container trees. However, after a brief discussion with DMS during the site walk in January 2023, Wildlands has decided to harvest live stakes on site and replant in the area in early 2023 where machine work was conducted. A brief discussion of this has been included in Section 1.2.2.

DMS' comment: Section 1.2.2 Stream Areas of Concern and Adaptive Management Activities - Approximately how long was the channel impounded by the beaver dam? Was there extensive vegetation damage or sedimentation?

Wildlands' response: The text of the report was expanded to say that "the slope of the stream in this reach is large enough that the water only backed up for one pool. The dam was present for less than a month. No vegetation damage was observed later in the year, as shown in the Improve Areas of Concern photo log."

DMS' comment: Section 1.2.4 Vegetative Areas of Concern and Adaptive Management Activities - Please indicate which species were not included in the original planting plan and confirm that they are appropriate for the vegetative community on site.

Wildlands' response: The species were selected based on the target community and the immediate availability from the local nurseries. Two species, Carpinus caroliniana *and* Quercus pagoda*, were part of the original and approved mitigation planting plan. The remaining eight species were not included in the original planting plan. The Piedmont Bottomland Forest community was the specified target community for the project as a whole. Six of the selected species are appropriate for either the Bottomland Forest community or the similar Southern Piedmont Small Floodplain ecological system. The other three (*Amelanchier canadensis*,* Calycanthus floridus*,* Cercis canadensis*, and* Symphoricarpos orbiculatus*) are associated with the more upland Mixed Mesic Forest community, which is appropriate since the encroachment areas occurred on the slopes, outside of the floodplain.*

DMS' comment: MY6 Site Walk - As discussed in the field, failing structures on EII reaches that meet the reporting threshold need to be discussed and included in the report/CCPV/tables.

Wildlands' response: Structural issues on EII reaches will be discussed in future reports. The structural issues on UT1C and UT1D were added to the CCPV maps.

DMS' comment: MY6 Site Walk - Section 1.2.2: Repairs on UT1C have not been completed, please update the narrative and include future repair plan.

Wildlands' response: The report was updated to state, "Both UT1C and UT1D will require additional manual repairs because water is still piping under the repaired structures. This work will be completed early in 2023."

As requested, Wildlands has included an electronic submittal of one (1) pdf copy of the final report and a full final electronic submittal of the support files. A copy of our responses to the DMS' comment letter has been included inside the cover of the report, as well. Please let me know if you have any questions.

Sincerely,

Kristi Suggs

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 2022. Monitoring Year (MY) 6 assessments and site visits were completed between February and October 2022 to assess the conditions of the project. Per IRT guidelines, detailed monitoring and analysis of vegetation and channel cross-sectional dimensions were omitted during MY6. Visual observations, hydrology data, and management practices are included in this report. To preserve clarity and continuity of reporting structure, this report maintains section and appendix numbering from previous monitoring reports. Omitted sections are noted in the table of contents.

Overall, the majority of the Site has met the required stream, vegetation, and hydrology success criteria for MY6, and is on track to meet in MY7. Stream problem areas discussed during the IRT site walk in July 2021 were partially repaired in September 2022. Repairs included rebuilding and stabilizing a meander bend on the right bank of Candy Creek Reach 3 and the removal of fallen trees from channel, partial piping repairs on UT1D, and dropping several large trees into the floodplain that had died and were likely to fall into the channel. The sediment influx first reported during MY4 is continuing to move through the system and is naturally stabilizing. Aggregational areas will continue to be assessed in future monitoring years. Additional problem areas throughout the Site are minimal with few erosional areas.

The stream hydrology assessment criteria of having at least two bankfull events in separate monitoring years for each reach has been met. The stream flow gage established on the upstream, intermittent section of UT1D exceeded the minimum 30 consecutive day hydrologic baseflow criteria.

Areas of invasive species were treated between 2017 and 2022 and currently make up approximately 1.5% of the total easement area. Three areas of prior mowing encroachments were supplementally planted, and no additional mowing has been observed. 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.

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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 will be 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 6 Data Assessment

Annual monitoring and quarterly site-visits were conducted during MY6 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

MY6 is a reduced monitoring year and detailed geomorphologic surveys or analysis are not required. As discussed in the MY5 report, sediment data will not be collected during MY7 (Wildlands 2022). However, based on field observations during site assessments, site maintenance, and the implementation of land stewardship activities, the majority of the project reaches within the Site continue to remain stable and are functioning as designed. Areas where current and/or former instability or stream functional issues have been noted are discussed in Section 1.2.2, outlined in Tables 5a-5m, and depicted in Figures 3.1 – 3.7.

1.2.2 Stream Areas of Concern and Adaptive Management Activities

The Stream Photographs and Areas of Concern Photographs are shown in Appendix 2. The aggradation throughout the Site has continued to improve since the storms in MY4 deposited a lot of off-site sediment into the system. Less aggradation was observed throughout UT5 as the stream continues to move and sort out the bed materials; therefore, no adaptive management activities are needed at this time.

As was discussed during the IRT site walk in July 2021, machine repairs were scheduled for Candy Creek Reach 3 and UT1D. These repairs were performed in September 2022. The right bank of Candy Creek Reach 3 was reshaped to stop the outward erosion of the pool. A brush toe was added using the brush harvested from nearby trees that had fallen in the floodplain. The brush toe was capped with sod or woody transplants from the disturbed area along the bend. Originally these areas had been left to naturalize on their own because much of the area is wet and would not be conducive for planting container trees. However, after a brief discussion with DMS during the site walk in January 2023, Wildlands has decided to harvest live stakes on site and replant in the area in early 2023 where machine work was conducted. Trees that had fallen in the channel near the bridge across Candy Creek Reach 3 were also removed. Several large trees that had died and were likely to fall into the channel were removed or dropped into the conservation easement. The step-pool structures along UT1D were also repaired. Brush harvested from the channel debris removal was used to create mini brush toes where

erosion was occurring below the sills. The brush was then capped with sod harvested from the floodplain. Both UT1C and UT1D will require additional manual repairs because water is still piping under the repaired structures. This work will be completed early in 2023. Photos of the repair areas are shown in the Areas of Concern and Improved Areas of Concern Photographs (Appendix 2).

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 50 feet of bank erosion documented this year. Bank erosion was observed only in isolated pockets along outer meander bends, behind lunker logs, at the tie-ins of in-stream structures, or as scour lines below vegetated tops of bank. There are very few areas that indicate instability for the streams throughout the project in MY6. Visual assessments in subsequent monitoring years will continue to monitor these areas.

During MY6, a beaver colonized the upstream portion of Candy Creek Reach 2 and built a dam near station 128+25. A contractor trapped the beaver and removed the dam in April of 2022. The slope of the stream in this reach is large enough that the water only backed up for one pool. The dam was present for less than a month. No vegetation damage was observed later in the year, as shown in the Improve Areas of Concern photo log. No beaver activity was observed during the October 2022 site walk. A photo log is also included in Appendix 2.

Stream AOCs will continue to be monitored but are expected to stabilize as the vegetation along the bank continues to mature.

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

Detailed vegetation inventory and analysis is not required during MY6. However, visual assessment during the year indicated that vegetation on the Site is performing well.

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. Only one area of low stem density accounting for only 0.2% of the Site's planted acreage was observed around vegetation plot 35. Invasive plant populations were observed on only 1.5% of the Site. The areas of invasive vegetation have not expanded from the previous year and do not represent a significant risk to the project's performance. Invasive treatments continued in MY6, focusing on the patch of kudzu (*Pueraria montana*), along Candy Creek Reach 4. The kudzu population was greatly reduced from MY5, but follow up treatments will be required again in MY7. Locations of the vegetation AOCs are depicted in Figures 3.1 - 3.7. Invasive species will continue to be monitored and controlled, as necessary.

A bare area along the left floodplain of UT2 and previously discussed in MY5 was seeded and amended in the fall of 2022. As was noted during the IRT walk in 2021, this area was small, not representative of the entire project, and was slowly starting to revegetate. Therefore, this area has been removed from CCPV figures as it has improved significantly.

The entire easement boundary was inspected for encroachment and boundary marking issues. No issues were observed. Three areas of mowing encroachment that were previously mapped and discussed with the IRT consisted of a total of 0.07 acres (0.1% of the easement acreage. These areas were all taped off and replanted in March 2022 with the species list shown below. The encroachment mowing has stopped in all locations. These areas are now represented on the CCPV figures as replanting areas and are considered resolved. Refer to Appendix 6 for the IRT site walk minutes from July 7, 2021.

Table B: Species list for the encroachment areas that were supplementally planted in March 2022.

Common Name	Species	Included in the Approved Mitigation Planting Plan (Yes/No)	Wetland Indicator Status	Area 1 (Candy R1, LB)[1]	Area 2 (Candy R1, RB)[1]	Area 3 (Candy R3, LB)[2]
Serviceberry	*Amelanchier canadensis*	No	FAC	-	3	-
Pawpaw	*Asimina triloba*	No	FAC	-	3	-
Eastern sweetshrub	*Calycanthus floridus*	No	FACU	-	-	3
Ironwood	*Carpinus caroliniana*	Yes	FAC	5	-	-
Eastern Redbud	*Cercis canadensis*	No	FACU	-	8	-
Spicebush	*Lindera benzoin*	No	FAC	-	-	4
Sourwood	*Oxydendrum arboreum*	No	UPL	4	1	-
Water Oak	*Quercus nigra*	No	FAC	-	4	-
Cherrybark Oak	*Quercus pagoda*	Yes	FACW	5	-	-
Coralberry	*Symphoricarpos orbiculatus*	No	FACU	-	-	3
			Total stems:	**14**	**19**	**10**

1 – Bare roots
2 – 1 gal. plants

1.2.5 Hydrology Assessment

For the second year in a row, MY6 had slightly lower amounts of rainfall than average (through October 2022) and only had one rain event greater than 1.5 inches. Nevertheless, five (Candy Creek R2 and R4, UT1C, UT4, and UT5) of the eight gages recorded at least one bankfull event. However, all stream reaches have met the project's bankfull criteria of two or more bankfull events in separate years.

UT1D has also met the project's criteria of at least 30 consecutive days of seasonal flow. The gage registered 272 consecutive days above the thalweg in MY6. Refer to Appendix 5 for hydrologic summary data and plots.

The crest gage on UT3, at cross-section 37, showed several water level spikes from January 22 – February 7, 2022. These readings do not appear to correspond with rainfall events, but there is a correlation between the spikes and freezing temperatures (raw data provided in electronic files). Wildlands previously contacted In-Situ on 11/18/2021 to confirm similar findings. Based on the discussion with In-situ, it is likely that these are the result of ice forming on the probes leading the false pressure readings during these times (Haynes 2021). Therefore, these spikes were not counted towards a bankfull event. The probes' calibrations were checked in mid-February 2022 and were working (as shown in the table below). Because the gage on UT3 did not record any water level fluctuations in MY5, the probe was replaced as a precaution on 2/15/2022.

Due to the issues incurred in MY5, all of the gages throughout the Site were tested early in MY6 to verify that they were working correctly. The results of the testing (in the table below) indicate that all of the

probes are working and are reporting correct pressure and water level values. All probes registered an approximate 0.5-foot change in water depth when submerged approximately 0.5-feet in water. The field tests were simply to check if the gages were registering pressure differences when submerged in water; the 10% error is considered reasonable as this was just a quick validation check.

The crest gage on UT2 at cross-section 33 malfunctioned when it was downloaded in July 2022. The probe had only recorded data through April of 2022. Multiple troubleshooting attempts were made from July to October, but it was ultimately decided to replace the probe in October 2022. Field testing of the new probe (analysis not shown) indicated that the pressure sensor was working correctly prior to its installation.

Table A: Field test results for pressure transducers (gages) at Candy Creek. Conducted 2/15/2022.

Probe	Reading 1 (air)		Reading 2 (0.5 ft water)		Difference		Error
	Pressure (psi)	Depth (ft)	Pressure (psi)	Depth (ft)	Pressure (psi)	Depth (ft)	Error (%)
Candy UT2A	14.63	33.78	14.84	34.26	0.21	0.48	-4%
Candy UT2	14.63	33.77	14.83	34.24	0.20	0.47	-6%
Candy Upper	14.58	33.66	14.79	34.14	0.21	0.48	-4%
UT1D	14.62	33.75	14.82	34.22	0.20	0.47	-6%
UT1C	14.60	33.70	14.81	34.20	0.21	0.50	0%
Candy Lower	14.57	33.63	14.78	34.13	0.21	0.50	0%
UT3[1]	14.59	33.68	14.80	34.17	0.21	0.49	-2%
UT3[2]	14.62	33.74	14.82	34.22	0.20	0.48	-4%
UT4	14.61	33.72	14.82	34.22	0.21	0.50	0%
UT5	14.59	33.70	14.81	34.19	0.20	0.45	-10%

1 – Probe removed 2/15/22

2 – Replacement probe. Installed 2/15/22

1.3 Monitoring Year 6 Summary

The Candy Creek Mitigation Site is on track to meet monitoring success criteria for geomorphology, hydrology, and vegetation performance standards. While the vegetation plots were not assessed this year, the Site is expected to exceed the final requirement of 210 stems per acre. All of the streams have met their bankfull criteria; the intermittent reach of UT1D exceeded the 30-days of consecutive flow criteria in MY6. Most of the banks and structures are stable and functioning. Repairs were performed along Candy Creek Reach 3, UT1C, and UT1D in September 2022 to fix bank erosion and structure issues. Currently, invasive species occupy less than 2% of the Site. The small patch of kudzu on Candy Creek Reach 4 will continue to be treated in MY7. The sediment influx reported during MY4 is moving through the system and no action is required to further address this. The bare area along UT2 was treated with amendments and has improved from the previous year. Three areas of prior mowing encroachments were supplementally planted, and no additional mowing has been observed. 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.

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 data supporting the tables and figures in the appendices are included in the digital submittal.

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

Doll, B.A., Grabow, G.L., Hall, K.A., Halley, J., Harman, W.A., Jennings, G.D., and Wise, D.E. 2003. Stream Restoration A Natural Channel Design Handbook.

Harrelson, C.C., Rawlins, C.L., Potyondy, J.P. 1994. Stream Channel Reference Sites: An Illustrated Guide to Field Technique. Gen. Tech. Rep. RM-245.Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.61 p.

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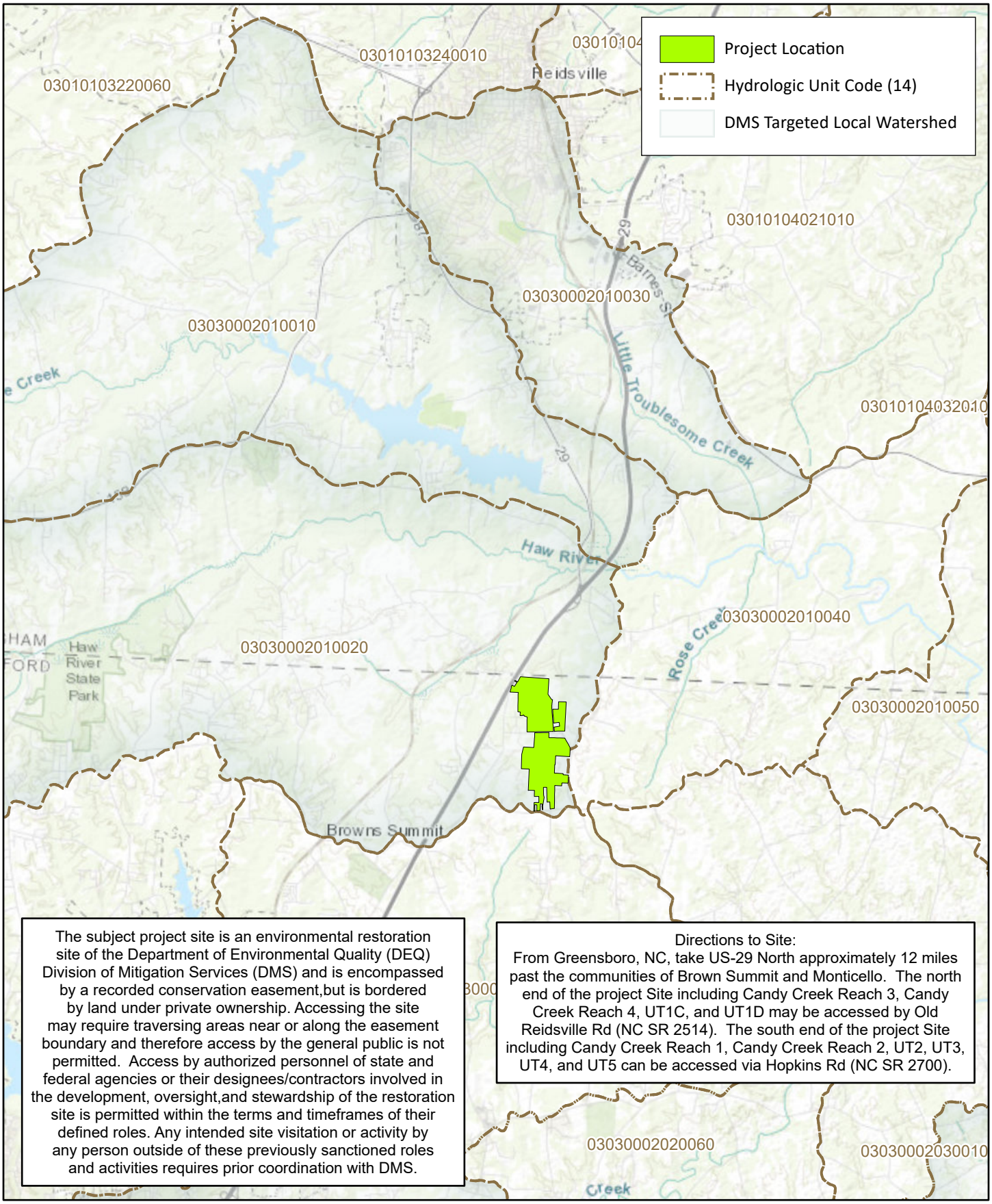
APPENDIX 1. General Figures and Tables



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).

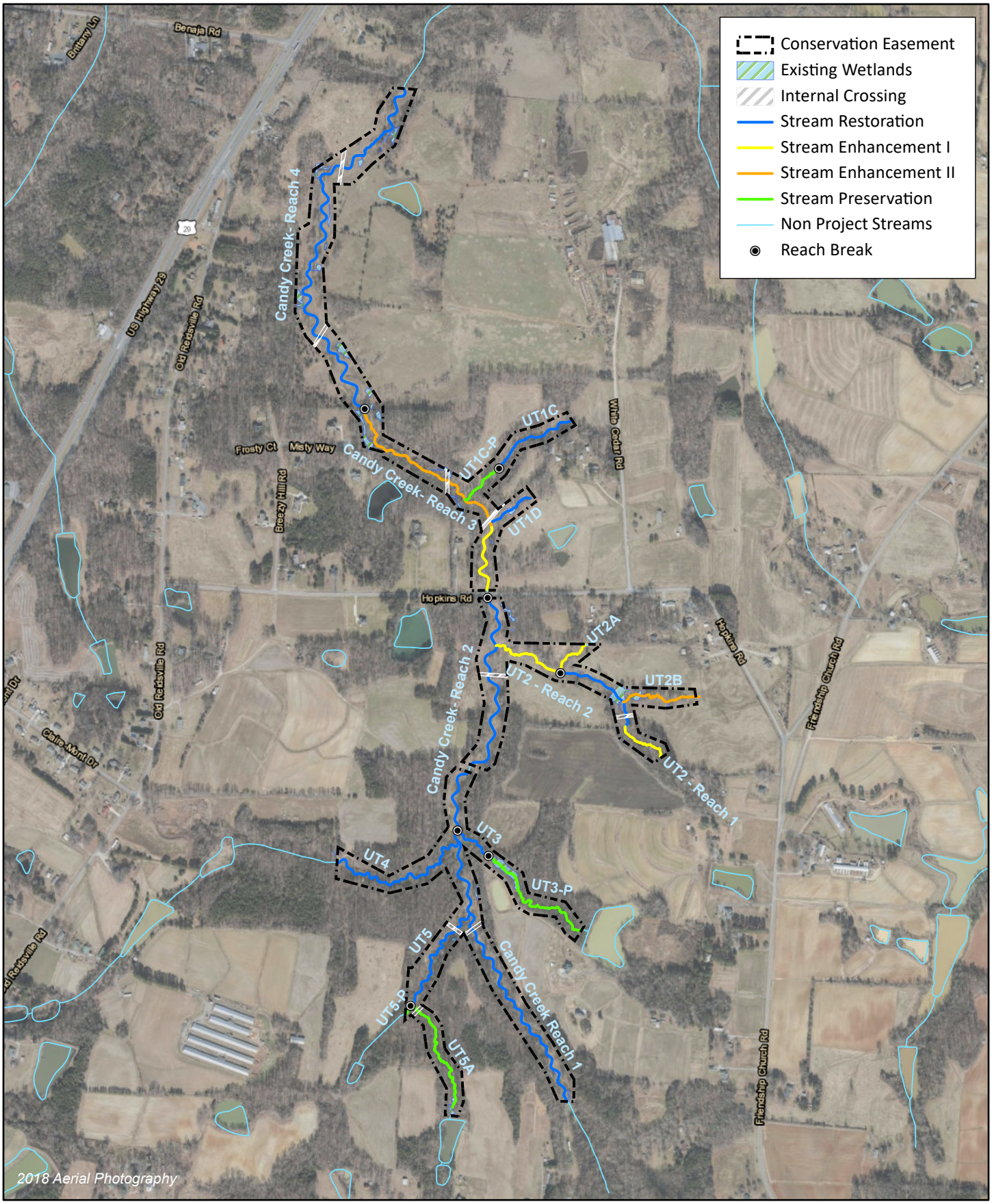
WILDLANDS ENGINEERING

Environmental Quality

0 1.75 3.5 Miles

N

Figure 1 Project Vicinity Map
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022
Guilford County, NC



WILDLANDS ENGINEERING

Environmental Quality

0 1,000 2,000 Feet

N

Figure 2 Project Components/Assets Map
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022
Guilford County, NC

Table 1. Project Components and Mitigation Credits

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022

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 6 - 2022

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		
	Vegetation Survey		

[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 6 - 2022

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 6 - 2022

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

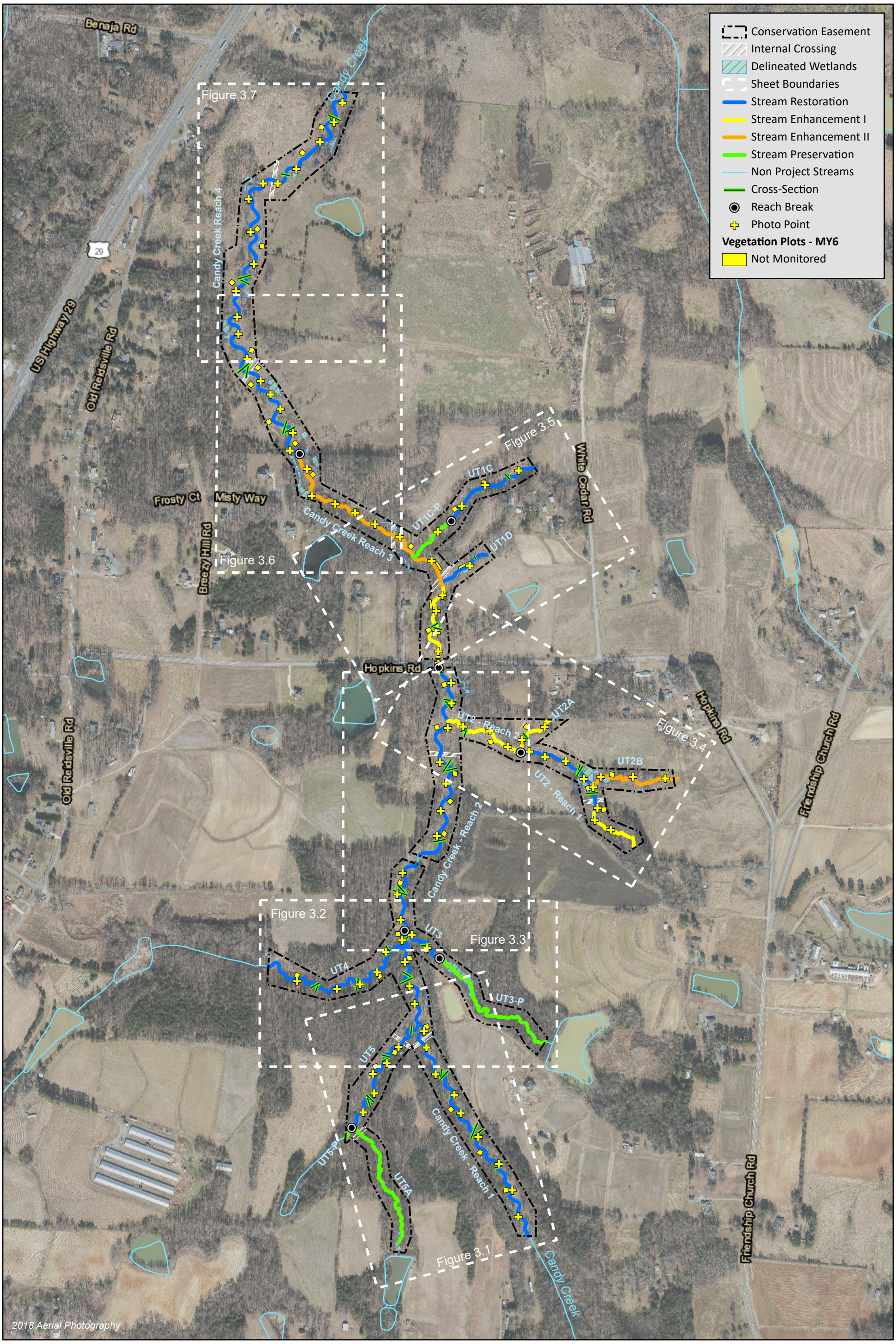
Project Watershed Summary Information	
Physiographic Province	Inner Piedmont Belt of the Piedmont Physiographic Province
River Basin	Cape Fear
USGS Hydrologic Unit 8-digit	03030002
USGS Hydrologic Unit 14-digit	03030002010020
DWR Sub-basin	03-06-01
Project Drainiage Area (acres)	937
Project Drainage 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	2%			

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	1%								

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

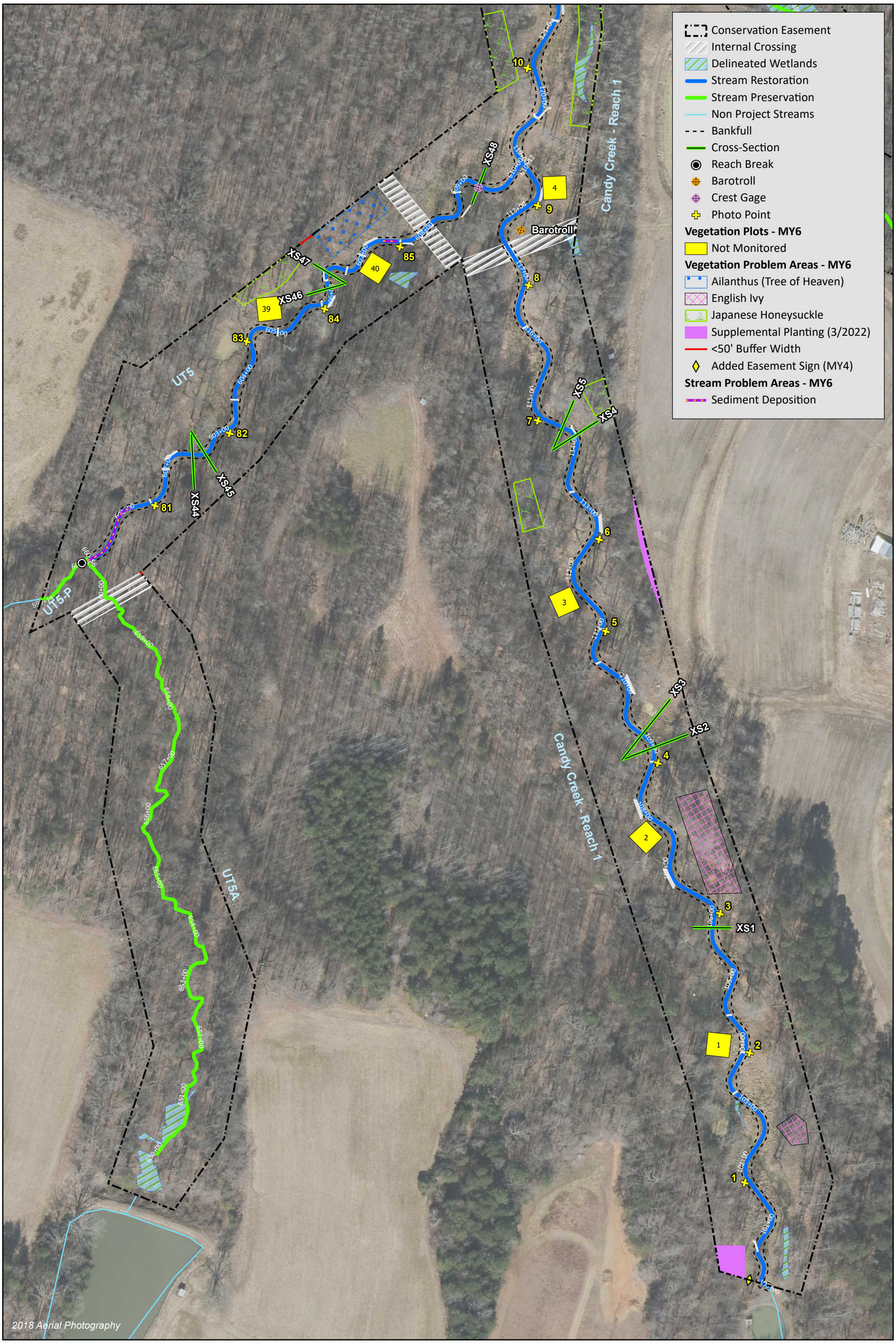
Environmental Quality

0 600 1,200 Feet

N

Figure 3.0 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022

Guilford County, NC



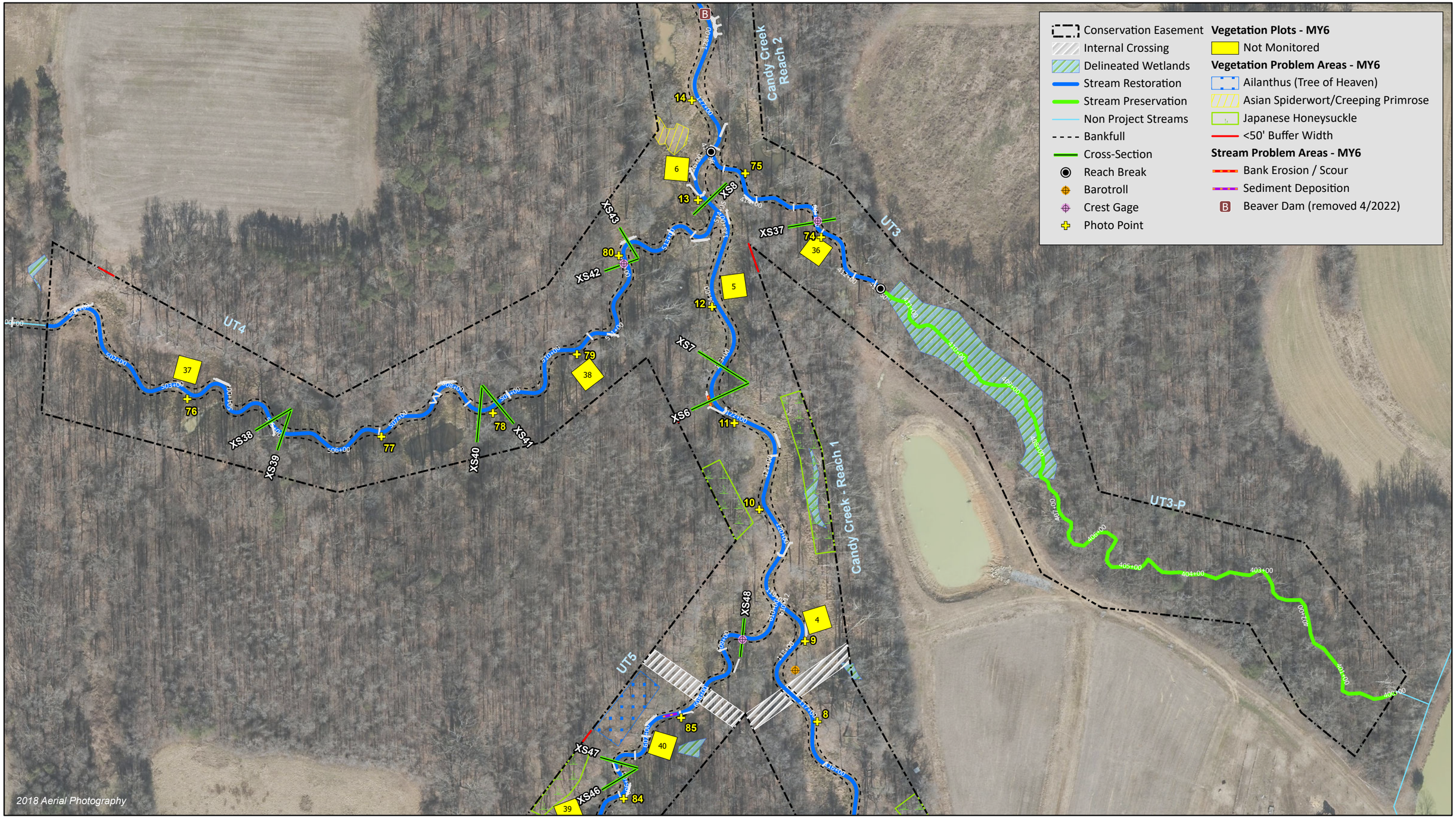
WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.1 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022

Guilford County, NC

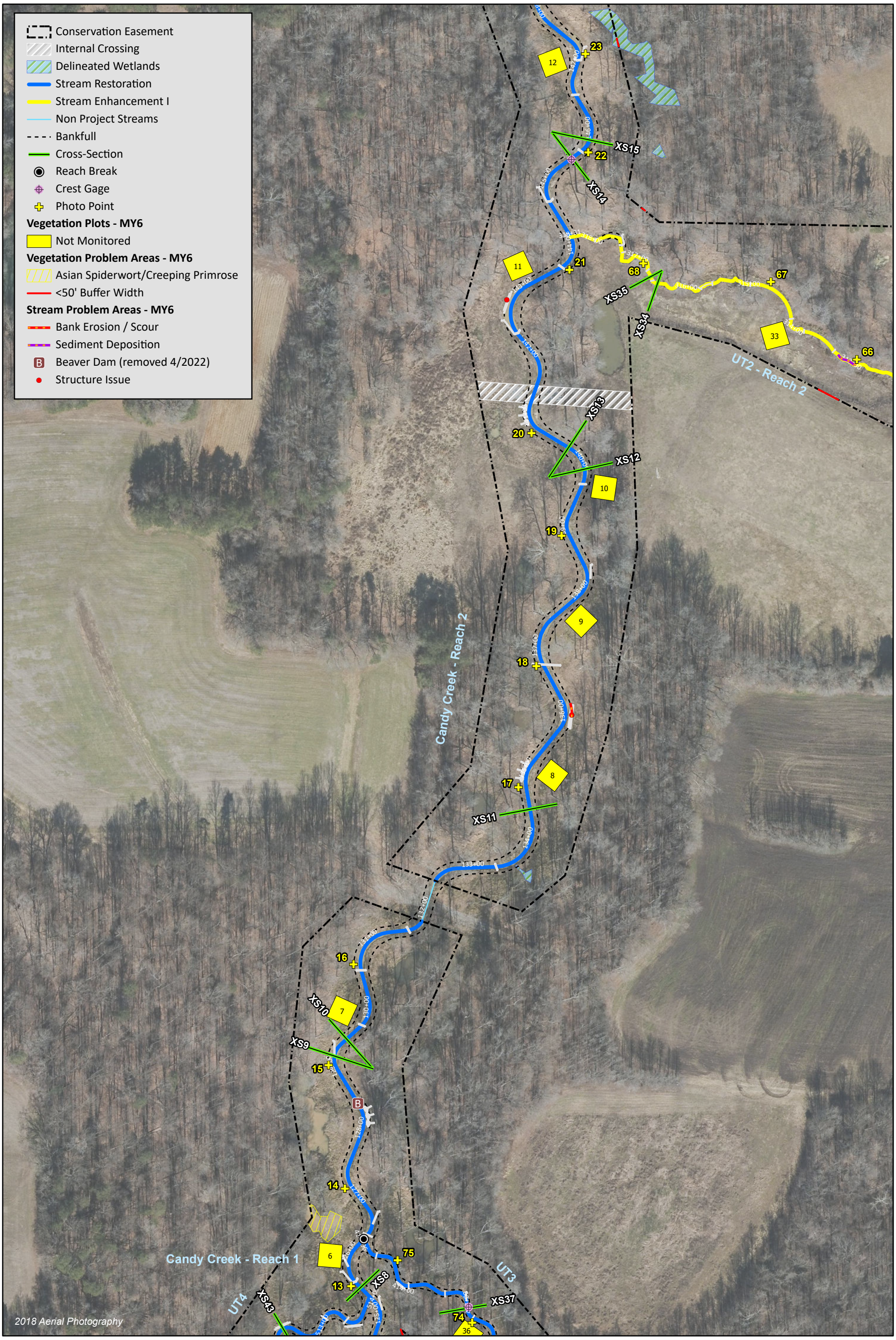


WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.2 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022
Guilford County, NC



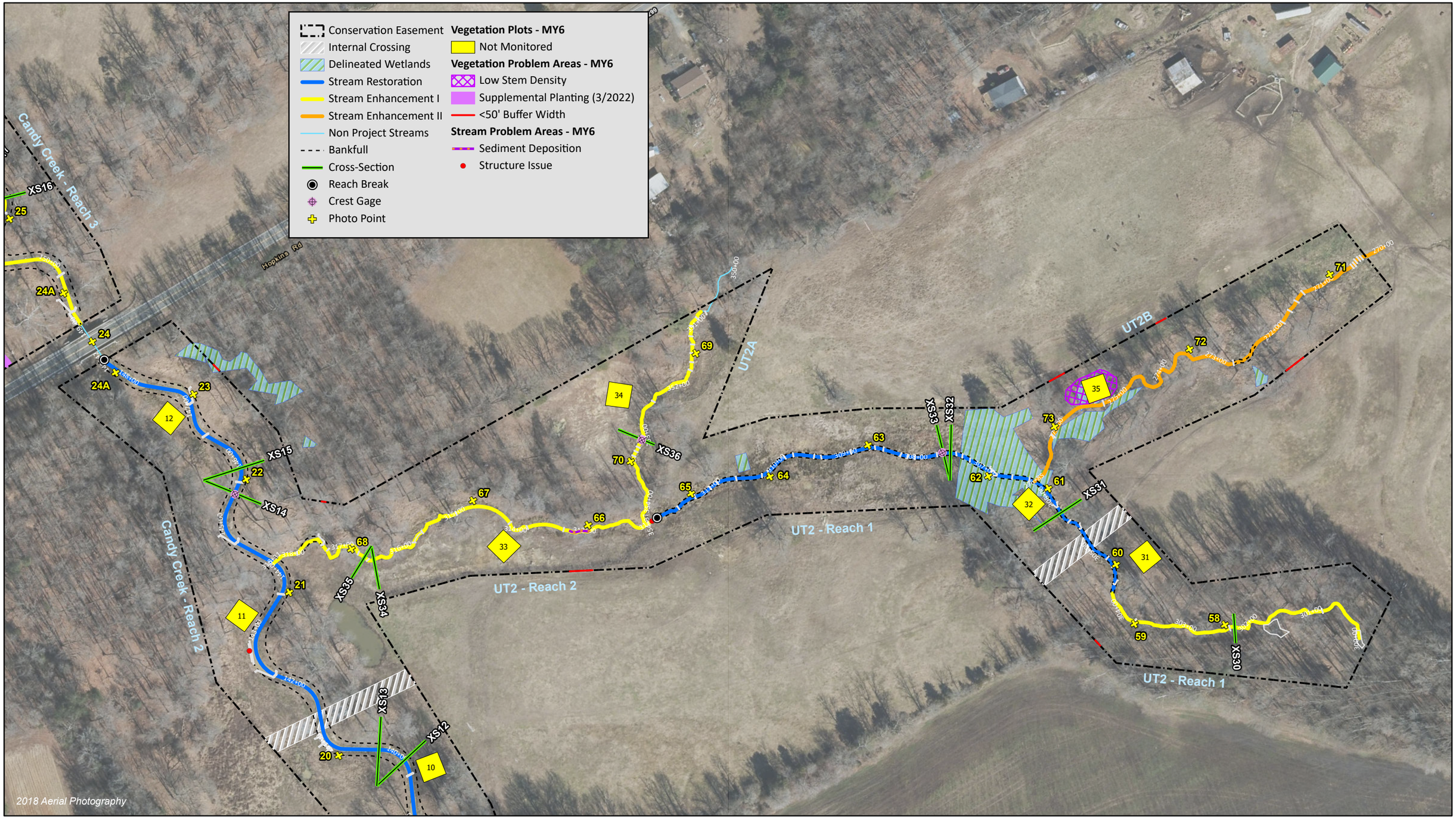
WILDLANDS ENGINEERING

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 6 - 2022
Guilford County, NC



WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.4 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022
Guilford County, NC

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

Vegetation Plots - MY6

Not Monitored

Vegetation Problem Areas - MY6

Ailanthus (Tree of Heaven)
Supplemental Planting (3/2022)
<50' Buffer Width
Structure Issue

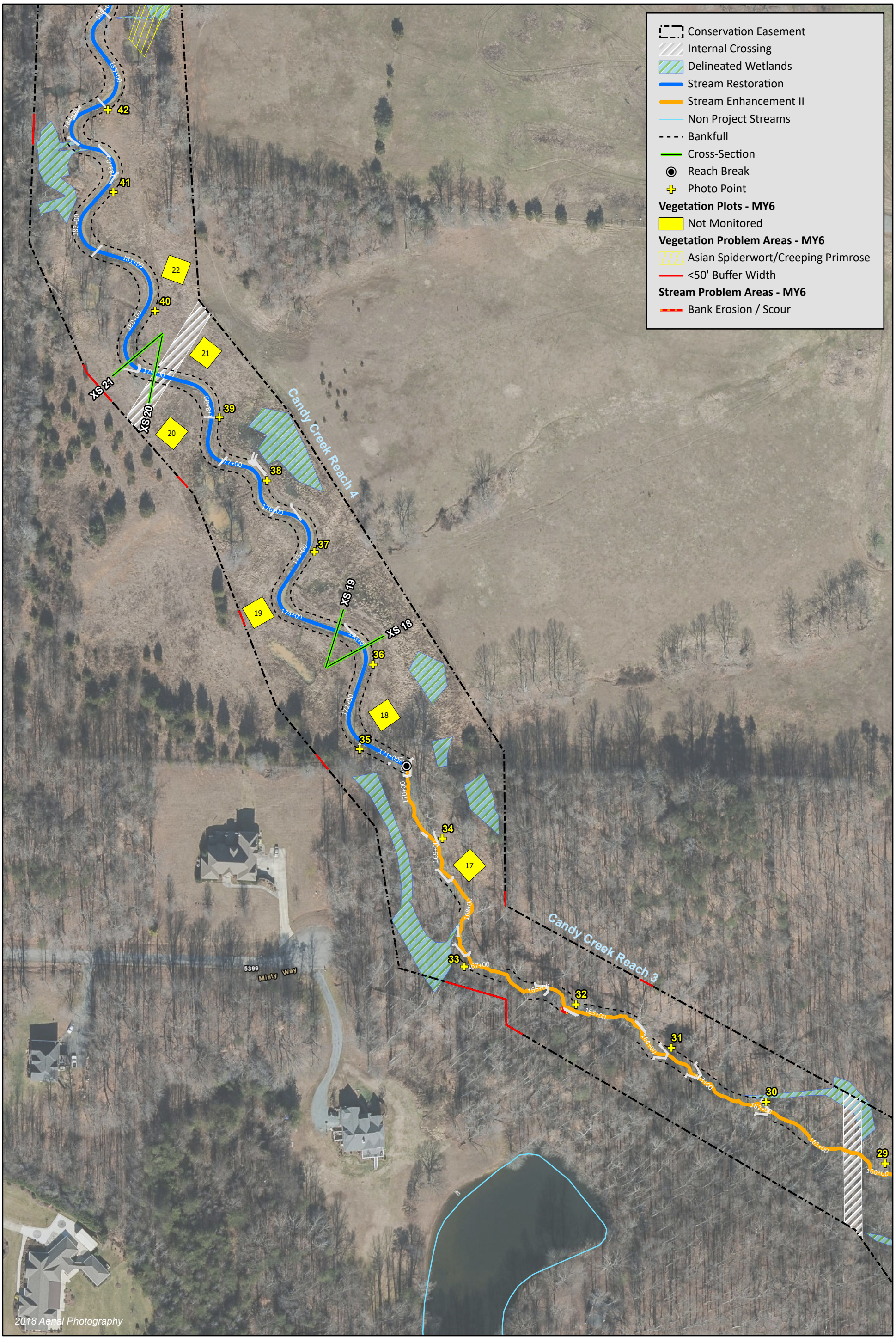
Candy Creek - Reach 3
UT1C
UT1C-P
UT1D
Hopkins Rd
3299
XS 28
XS 27
XS 29
XS 17
XS 16
2018 Aerial Photography

WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.5 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022
Guilford County, NC

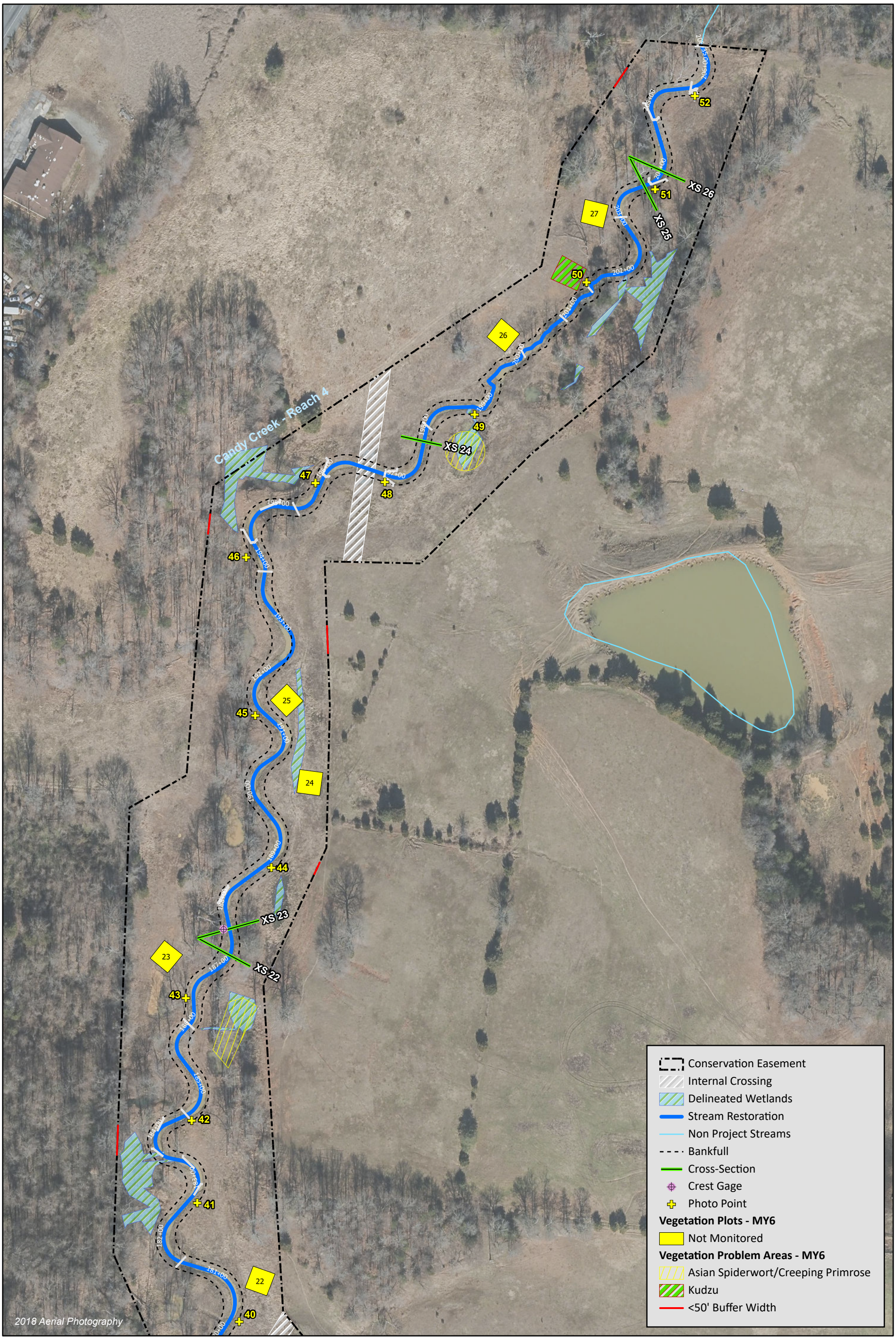


WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

Figure 3.6 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022
Guilford County, NC



WILDLANDS ENGINEERING

Environmental Quality

0 125 250 Feet

N

Figure 3.7 Integrated Current Condition Plan View
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022
Guilford County, NC

Table 5a. Visual Stream Morphology Stability Assessment Table

Candy Creek Mitigation Site

DMS Project No. 96315

Monitoring Year 6 - 2022

Candy Creek Reach 1 (2,619 LF)

Last assessed on 10/17/2022

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 6 - 2022

Candy Creek Reach 2 (2,215 LF)

Last assessed on 10/17/2022

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 6 - 2022

Candy Creek Reach 3 (2,135 LF)

Last assessed on 10/17/2022

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.			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.	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 6 - 2022

Candy Creek Reach 4 (3,564 LF)

Last assessed on 10/17/2022

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 6 - 2022

UT1C (728 LF)
Last assessed on 10/17/2022

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.	20	22			91%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	20	22			91%			
	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 6 - 2022

UT1D (379 LF)
Last assessed on 10/17/2022

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.	26	29			90%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	26	29			90%			
	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 6 - 2022

UT2 Reach 1 (1,188 LF)

Last assessed on 10/17/2022

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 6 - 2022

UT2 Reach 2 (643 LF)

Last assessed on 10/17/2022

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			1	30	95%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	6	6			100%			
	3. Meander Pool Condition	Depth Sufficient	6	7			86%			
		Length Appropriate	6	7			86%			
	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.	7	8			88%			
	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 6 - 2022

UT2A (353 LF)

Last assessed on 10/17/2022

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 6 - 2022

UT2B (657 LF)
Last assessed on 10/17/2022

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 6 - 2022

UT3 (346 LF)
Last assessed on 10/17/2022

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 6 - 2022

UT4 (1,356 LF)
Last assessed on 10/17/2022

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 6 - 2022

UT5 (1,012 LF)
Last assessed on 10/17/2022

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			2	130	87%			
		Degradation			0	0	100%			
	2. Riffle Condition	Texture/Substrate	19	21			90%			
	3. Meander Pool Condition	Depth Sufficient	20	21			95%			
		Length Appropriate	20	21			95%			
	4. Thalweg Position	Thalweg centering at upstream of meander bend (Run)	20	21			95%			
		Thalweg centering at downstream of meander bend (Glide)	20	21			95%			
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.	11	12			92%			

[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 6 - 2022

Last assessed on 10/17/2022

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	1	0.05	0.2%
		Total	**1**	**0.1**	**0.2%**
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	0%
		Cumulative Total	**1**	**0.1**	**0.2%**

Easement Acreage **62**

Vegetation Category	Definitions	Mapping Threshold (SF)	Number of Polygons	Combined Acreage	% of Easement Acreage
Invasive Areas of Concern[1]	Areas of points (if too small to render as polygons at map scale).	1,000	12	0.95	1.5%
Easement Encroachment Areas	Areas of points (if too small to render as polygons at map scale).	none	0	0	0.0%

[1] Asian Spiderwort/Creeping Primrose was counted as one polygon because each individual polygon would have been to small to meet the minimum mapping threshold.

STREAM PHOTOGRAPHS

Candy Creek
Monitoring Year 6

	
PHOTO POINT 1 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 1** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 2 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 2** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 3 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 3** Candy Creek R1 – downstream *(3/29/2022)*

	
PHOTO POINT 4 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 4** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 5 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 5** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 6 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 6** Candy Creek R1 – downstream *(3/29/2022)*

	
PHOTO POINT 7 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 7** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 8 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 8** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 9 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 9** Candy Creek R1 – downstream *(3/29/2022)*

	
PHOTO POINT 10 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 10** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 11 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 11** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 12 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 12** Candy Creek R1 – downstream *(3/29/2022)*

	
PHOTO POINT 13 Candy Creek R1 – upstream *(3/29/2022)*	**PHOTO POINT 13** Candy Creek R1 – downstream *(3/29/2022)*
	
PHOTO POINT 14 Candy Creek R2 – upstream *(3/29/2022)*	**PHOTO POINT 14** Candy Creek R2 – downstream *(3/29/2022)*
	
PHOTO POINT 15 Candy Creek R2 – upstream *(3/29/2022)*	**PHOTO POINT 15** Candy Creek R2 – downstream *(3/29/2022)*

	
PHOTO POINT 16 Candy Creek R2 – upstream *(3/29/2022)*	**PHOTO POINT 16** Candy Creek R2 – downstream *(3/29/2022)*
	
PHOTO POINT 17 Candy Creek R2 – upstream *(3/29/2022)*	**PHOTO POINT 17** Candy Creek R2 – downstream *(3/29/2022)*
	
PHOTO POINT 18 Candy Creek R2 – upstream *(3/29/2022)*	**PHOTO POINT 18** Candy Creek R2 – downstream *(3/29/2022)*

	
PHOTO POINT 19 Candy Creek R2 – upstream *(3/29/2022)*	**PHOTO POINT 19** Candy Creek R2 – downstream *(3/29/2022)*
	
PHOTO POINT 20 Candy Creek R2 – upstream *(3/29/2022)*	**PHOTO POINT 20** Candy Creek R2 – downstream *(3/29/2022)*
	
PHOTO POINT 21 Candy Creek R2 – upstream *(3/29/2022)*	**PHOTO POINT 21** Candy Creek R2 – downstream *(3/29/2022)*

	
PHOTO POINT 22 Candy Creek R2 – upstream *(3/28/2022)*	**PHOTO POINT 22** Candy Creek R2 – downstream *(3/28/2022)*
	
PHOTO POINT 23 Candy Creek R2 – upstream *(3/28/2022)*	**PHOTO POINT 23** Candy Creek R2 – downstream *(3/28/2022)*
	
PHOTO POINT 24A Candy Creek R2 – upstream *(3/28/2022)*	**PHOTO POINT 24A** Candy Creek R2 – downstream *(3/28/2022)*

	
PHOTO POINT 24 Candy Creek R2 – upstream *(3/28/2022)*	**PHOTO POINT 24** Candy Creek R3 – downstream *(3/28/2022)*
	
PHOTO POINT 24B Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 24B** Candy Creek R3 – downstream *(3/28/2022)*
	
PHOTO POINT 25 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 25** Candy Creek R3 – downstream *(3/28/2022)*

	
PHOTO POINT 26 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 26** Candy Creek R3 – downstream *(3/28/2022)*
	
PHOTO POINT 27 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 27** Candy Creek R3 – downstream *(3/28/2022)*
	
PHOTO POINT 28 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 28** Candy Creek R3 – downstream *(3/28/2022)*

	
PHOTO POINT 29 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 29** Candy Creek R3 – downstream *(3/28/2022)*
	
PHOTO POINT 30 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 30** Candy Creek R3 – downstream *(3/28/2022)*
	
PHOTO POINT 31 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 31** Candy Creek R3 – downstream *(3/28/2022)*

	
PHOTO POINT 32 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 32** Candy Creek R3 – downstream *(3/28/2022)*
	
PHOTO POINT 33 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 33** Candy Creek R3 – downstream *(3/28/2022)*
	
PHOTO POINT 34 Candy Creek R3 – upstream *(3/28/2022)*	**PHOTO POINT 34** Candy Creek R3 – downstream *(3/28/2022)*

	
PHOTO POINT 35 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 35** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 36 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 36** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 37 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 37** Candy Creek R4 – downstream *(3/28/2022)*

	
PHOTO POINT 38 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 38** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 39 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 39** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 40 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 40** Candy Creek R4 – downstream *(3/28/2022)*

	
PHOTO POINT 41 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 41** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 42 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 42** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 43 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 43** Candy Creek R4 – downstream *(3/28/2022)*

	
PHOTO POINT 44 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 44** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 45 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 45** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 46 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 46** Candy Creek R4 – downstream *(3/28/2022)*

	
PHOTO POINT 47 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 47** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 48 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 48** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 49 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 49** Candy Creek R4 – downstream *(3/28/2022)*

	
PHOTO POINT 50 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 50** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 51 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 51** Candy Creek R4 – downstream *(3/28/2022)*
	
PHOTO POINT 52 Candy Creek R4 – upstream *(3/28/2022)*	**PHOTO POINT 52** Candy Creek R4 – downstream *(3/28/2022)*

	
PHOTO POINT 53 UT1C – upstream *(3/28/2022)*	**PHOTO POINT 53** UT1C – downstream *(3/28/2022)*
	
PHOTO POINT 54 UT1C – upstream *(3/28/2022)*	**PHOTO POINT 54** UT1C – downstream *(3/28/2022)*
	
PHOTO POINT 55 UT1C – upstream *(3/28/2022)*	**PHOTO POINT 55** UT1C – downstream *(3/28/2022)*

	
PHOTO POINT 56 UT1C – upstream *(3/28/2022)*	**PHOTO POINT 56** UT1C – downstream *(3/28/2022)*
	
PHOTO POINT 57 UT1D – upstream *(3/28/2022)*	**PHOTO POINT 57** UT1D – downstream *(3/28/2022)*
	
PHOTO POINT 58 UT2 R1 – upstream *(3/28/2022)*	**PHOTO POINT 58** UT2 R1 – downstream *(3/28/2022)*

	
PHOTO POINT 59 UT2 R1 – upstream *(3/28/2022)*	**PHOTO POINT 59** UT2 R1 – downstream *(3/28/2022)*
	
PHOTO POINT 60 UT2 R1 – upstream *(3/28/2022)*	**PHOTO POINT 60** UT2 R1 – downstream *(3/28/2022)*
	
PHOTO POINT 61 UT2 R1 – upstream *(3/28/2022)*	**PHOTO POINT 61** UT2 R1 – downstream *(3/28/2022)*

	
PHOTO POINT 62 UT2 R1 – upstream *(3/28/2022)*	**PHOTO POINT 62** UT2 R1 – downstream *(3/28/2022)*
	
PHOTO POINT 63 UT2 R1 – upstream *(3/28/2022)*	**PHOTO POINT 63** UT2 R1 – downstream *(3/28/2022)*
	
PHOTO POINT 64 UT2 R1 – upstream *(3/28/2022)*	**PHOTO POINT 64** UT2 R1 – downstream *(3/28/2022)*

	
PHOTO POINT 65 UT2 R1 – upstream *(3/28/2022)*	**PHOTO POINT 65** UT2 R1 – downstream *(3/28/2022)*
	
PHOTO POINT 66 UT2 R2 – upstream *(3/28/2022)*	**PHOTO POINT 66** UT2 R2 – downstream *(3/28/2022)*
	
PHOTO POINT 67 UT2 R2 – upstream *(3/28/2022)*	**PHOTO POINT 67** UT2 R2 – downstream *(3/28/2022)*

	
PHOTO POINT 68 UT2 R2 – upstream *(3/28/2022)*	**PHOTO POINT 68** UT2 R2 – downstream *(3/28/2022)*
	
PHOTO POINT 69 UT2A – upstream *(3/28/2022)*	**PHOTO POINT 69** UT2A – downstream *(3/28/2022)*
	
PHOTO POINT 70 UT2A – upstream *(3/28/2022)*	**PHOTO POINT 70** UT2A – downstream *(3/28/2022)*

	
PHOTO POINT 71 UT2B – upstream *(3/28/2022)*	**PHOTO POINT 71** UT2B – downstream *(3/28/2022)*
	
PHOTO POINT 72 UT2B – upstream *(3/28/2022)*	**PHOTO POINT 72** UT2B – downstream *(3/28/2022)*
	
PHOTO POINT 73 UT2B – upstream *(3/28/2022)*	**PHOTO POINT 73** UT2B – downstream *(3/28/2022)*

	
PHOTO POINT 74 UT3 – upstream *(3/29/2022)*	**PHOTO POINT 74** UT3 – downstream *(3/29/2022)*
	
PHOTO POINT 75 UT3 – upstream *(3/29/2022)*	**PHOTO POINT 75** UT3 – downstream *(3/29/2022)*
	
PHOTO POINT 76 UT4 – upstream *(3/29/2022)*	**PHOTO POINT 76** UT4 – downstream *(3/29/2022)*

	
PHOTO POINT 77 UT4 – upstream *(3/29/2022)*	**PHOTO POINT 77** UT4 – downstream *(3/29/2022)*
	
PHOTO POINT 78 UT4 – upstream *(3/29/2022)*	**PHOTO POINT 78** UT4 – downstream *(3/29/2022)*
	
PHOTO POINT 79 UT4 – upstream *(3/29/2022)*	**PHOTO POINT 79** UT4 – downstream *(3/29/2022)*

	
PHOTO POINT 80 UT4 – upstream *(3/29/2022)*	**PHOTO POINT 80** UT4 – downstream *(3/29/2022)*
	
PHOTO POINT 81 UT5 – upstream *(3/29/2022)*	**PHOTO POINT 81** UT5 – downstream *(3/29/2022)*
	
PHOTO POINT 82 UT5 – upstream *(3/29/2022)*	**PHOTO POINT 82** UT5 – downstream *(3/29/2022)*

	
PHOTO POINT 83 UT5 – upstream *(3/29/2022)*	**PHOTO POINT 83** UT5 – downstream *(3/29/2022)*
	
PHOTO POINT 84 UT5 – upstream *(3/29/2022)*	**PHOTO POINT 84** UT5 – downstream *(3/29/2022)*
	
PHOTO POINT 85 UT5 **–** upstream *(3/29/2022)*	**PHOTO POINT 85** UT5 **–** downstream *(3/29/2022)*

VEGETATION PHOTOGRAPHS

Monitoring Year 6



Vegetation Plot 1 *(10/20/2022)*



Vegetation Plot 2 *(10/20/2022)*



Vegetation Plot 3 *(10/20/2022)*



Vegetation Plot 4 *(10/20/2022)*



Vegetation Plot 5 *(10/20/2022)*



Vegetation Plot 6 *(10/20/2022)*



Vegetation Plot 7 *(10/20/2022)*



Vegetation Plot 8 *(10/20/2022)*



Vegetation Plot 9 *(10/20/2022)*



Vegetation Plot 10 *(10/18/2022)*



Vegetation Plot 11 *(10/18/2022)*



Vegetation Plot 12 *(10/20/2022)*

	
Vegetation Plot 13 *(10/20/2022)*	**Vegetation Plot 14** *(10/18/2022)*
	
Vegetation Plot 15 *(10/18/2022)*	**Vegetation Plot 16** *(10/18/2022)*
	
Vegetation Plot 17 *(10/18/2022)*	**Vegetation Plot 18** *(10/20/2022)*



Vegetation Plot 19 *(10/18/2022)*



Vegetation Plot 20 *(10/18/2022)*



Vegetation Plot 21 *(10/20/2022)*



Vegetation Plot 22 *(10/18/2022)*



Vegetation Plot 23 *(10/20/2022)*



Vegetation Plot 24 *(10/20/2022)*



Vegetation Plot 25 *(10/18/2022)*



Vegetation Plot 26 *(10/20/2022)*



Vegetation Plot 27 *(10/18/2022)*



Vegetation Plot 28 *(10/18/2022)*



Vegetation Plot 29 *(10/20/2022)*



Vegetation Plot 30 *(10/20/2022)*



Vegetation Plot 31 *(10/20/2022)*



Vegetation Plot 32 *(10/20/2022)*



Vegetation Plot 33 *(10/18/2022)*



Vegetation Plot 34 *(10/18/2022)*



Vegetation Plot 35 *(10/18/2022)*



Vegetation Plot 36 *(10/18/2022)*



Vegetation Plot 37 *(10/20/2022)*



Vegetation Plot 38 *(10/20/2022)*



Vegetation Plot 39 *(10/20/2022)*



Vegetation Plot 40 *(10/20/2022)*

AREAS OF CONCERN PHOTOGRAPHS

Monitoring Year 6

	
Candy Creek Reach 4 - Kudzu (Sta. 201+50) (10/18/2022)	UT1C - Structure issue, piping (Sta. 206+04) (10/21/2022)
	
UT1D - Structure issue, piping (Sta.253+00) (10/21/2022)	UT5 - Aggradation (Sta. 600+75) (03/30/2022)

IMPROVED AREAS OF CONCERN PHOTOGRAPHS

Monitoring Year 6



Candy Creek Reach 1 - Easement encroachment replanting (Sta. 100+00) (03/31/2022)



Candy Creek Reach 1 - Easement encroachment replanting, RB (Sta. 111+00-113+00) (10/21/2022)



Candy Creek Reach 3 - Easement encroachment replanting at Hopkins Road, LB (Sta. 149+00-150+00) (10/19/2021)



Candy Creek Reach 3 - Bank repair, RB (Sta. 151+70-152+00) (10/21/2022)



UT1C - Repaired structure (Sta. 207+25) (10/21/2022)



UT1D - Repaired structures (Sta. 252+90) (10/21/2022)

	
Candy Creek Reach 1 - Repaired bridge crossing (Sta. 117+25) (10/21/2022)	Candy Creek Reach 2 - Removed beaver dams (Sta. 128+40) (10/21/2022)

APPENDIX 3. Vegetation Plot Data

Vegetation assessment and analysis not required in Monitoring Year 6

APPENDIX 4. Morphological Summary Data and Plots

Morphological assessment and analysis not required in Monitoring Year 6

APPENDIX 5. Hydrology Summary Data and Plot

Table 13a. Verification of Bankfull Events

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022

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	
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	
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	
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	
	MY4	2/6/2020	
		5/21/2020	
	MY5	7/24/2021	
		8/14/2021	
	MY6	None	

Table 13b. Verification of Bankfull Events

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022

Reach	Monitoring Year	Date of Occurrence	Method
UT2A (XS36)	MY1	None	Automated Crest Gage
	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	
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
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	

Table 13c. Verification of Bankfull Events

Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022

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	

Table 14. Recorded In-Stream Flow Events Summary

Candy Creek Mitigation Site

DMS Project No. 96315

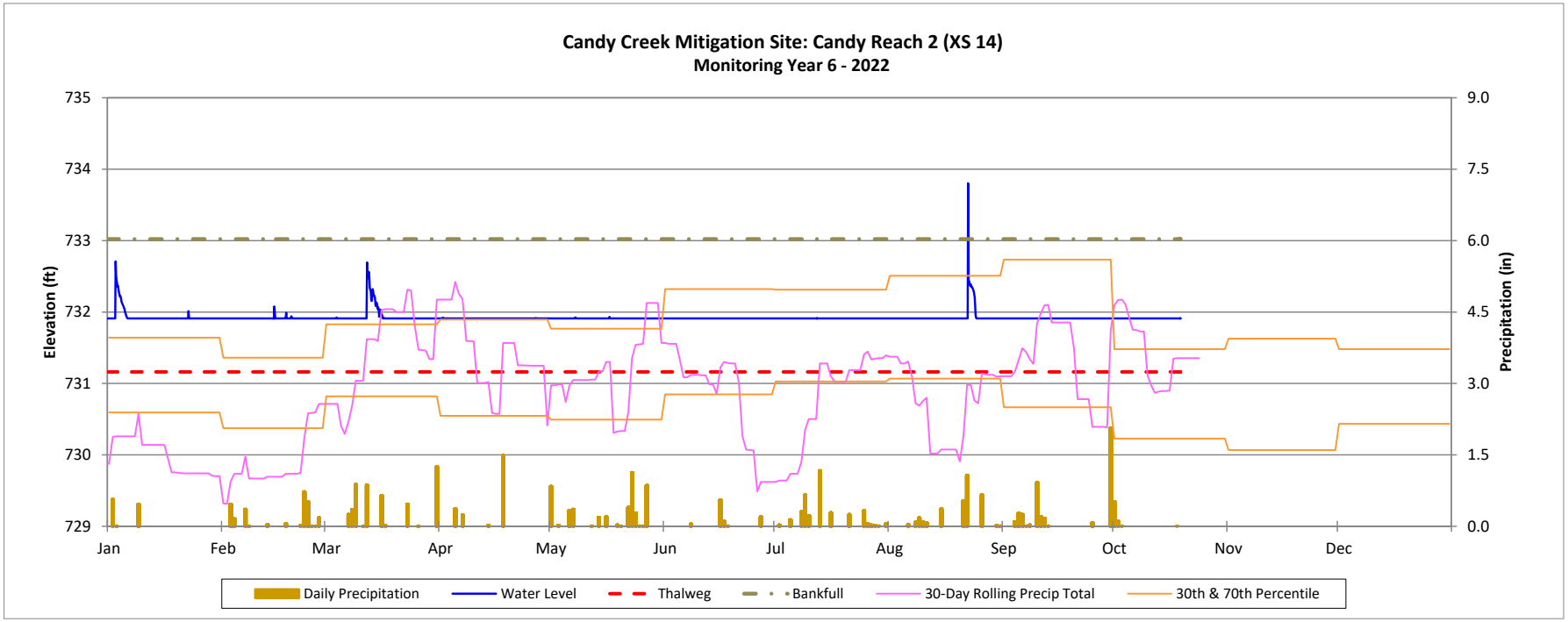
Monitoring Year 6 - 2022

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	

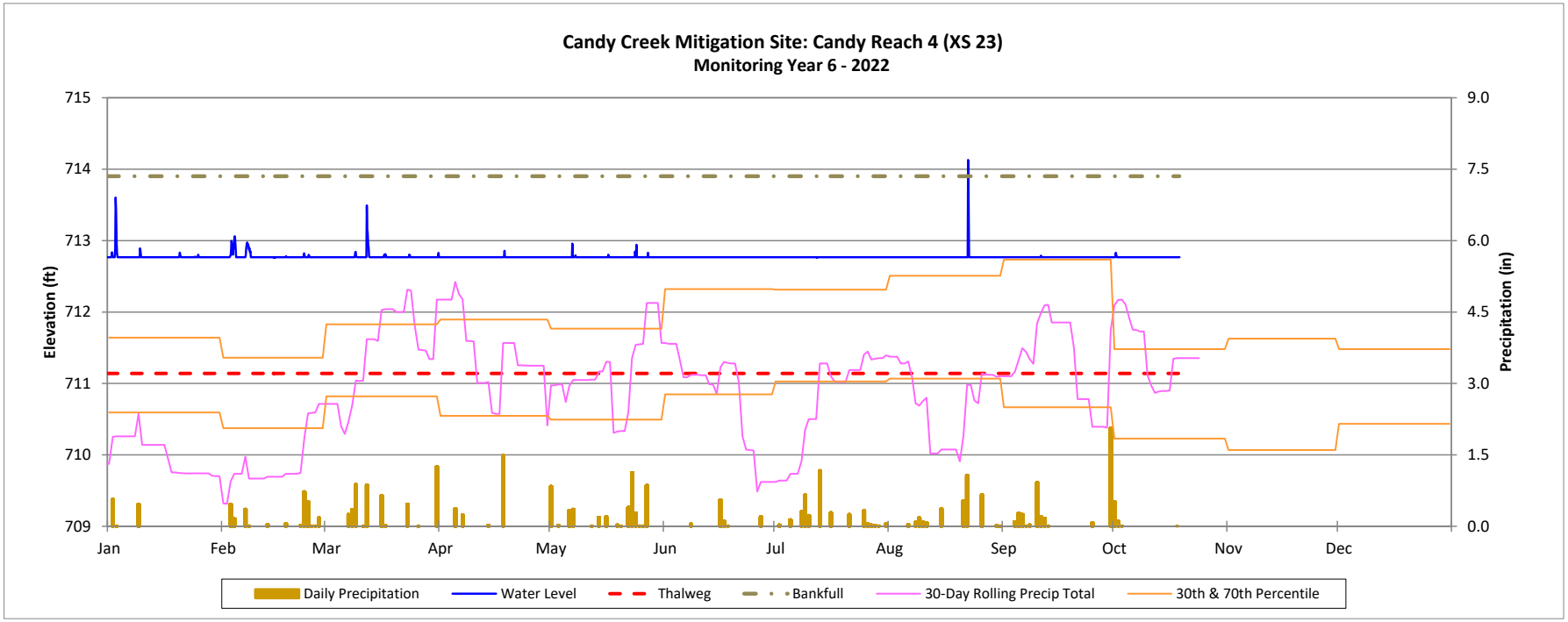
1 - Success criteria is 30 consecutive days of flow.

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

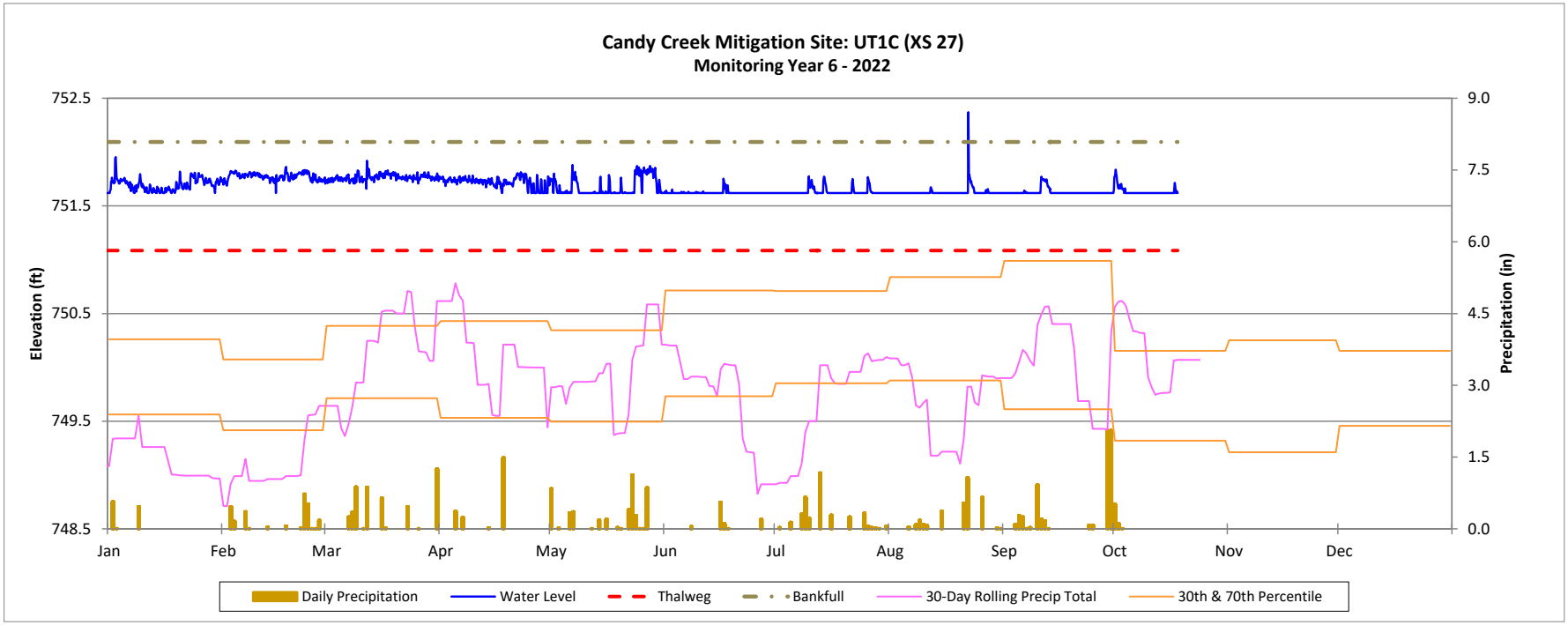
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022



Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022

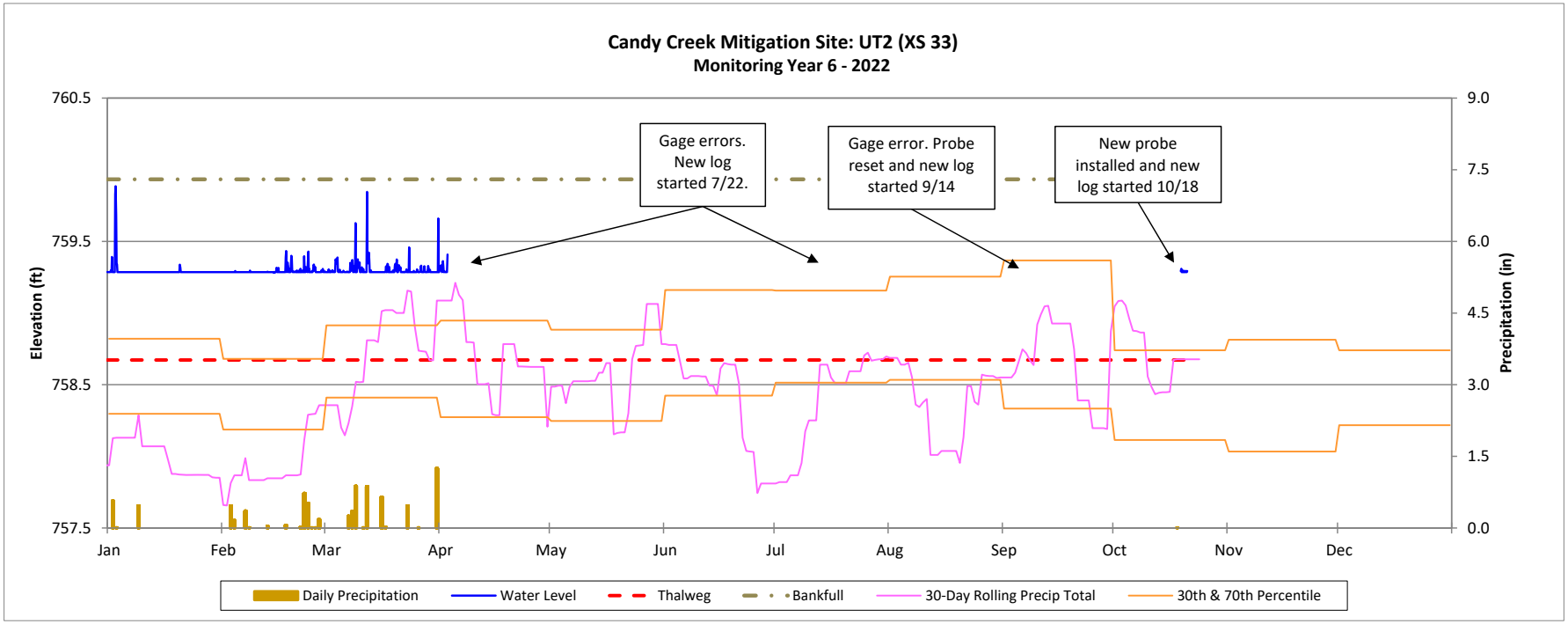


Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022

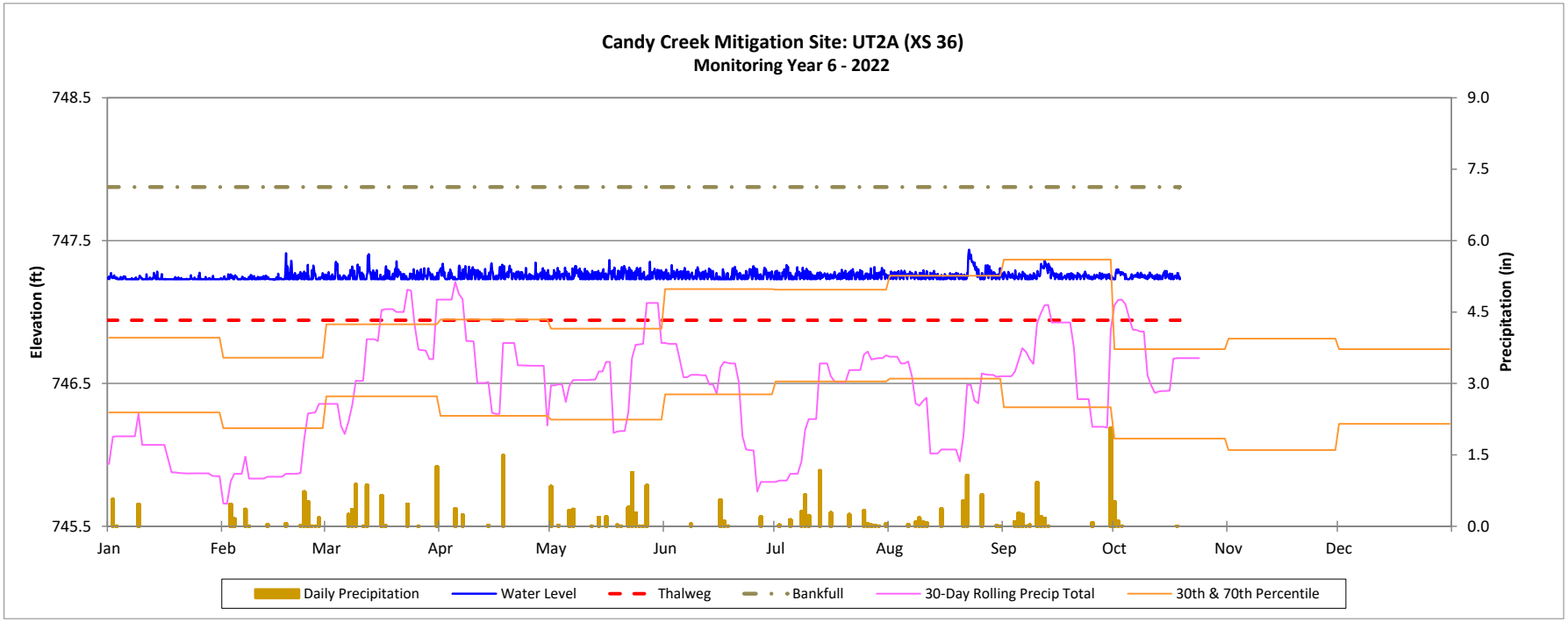


Recorded Bankfull Events Plot

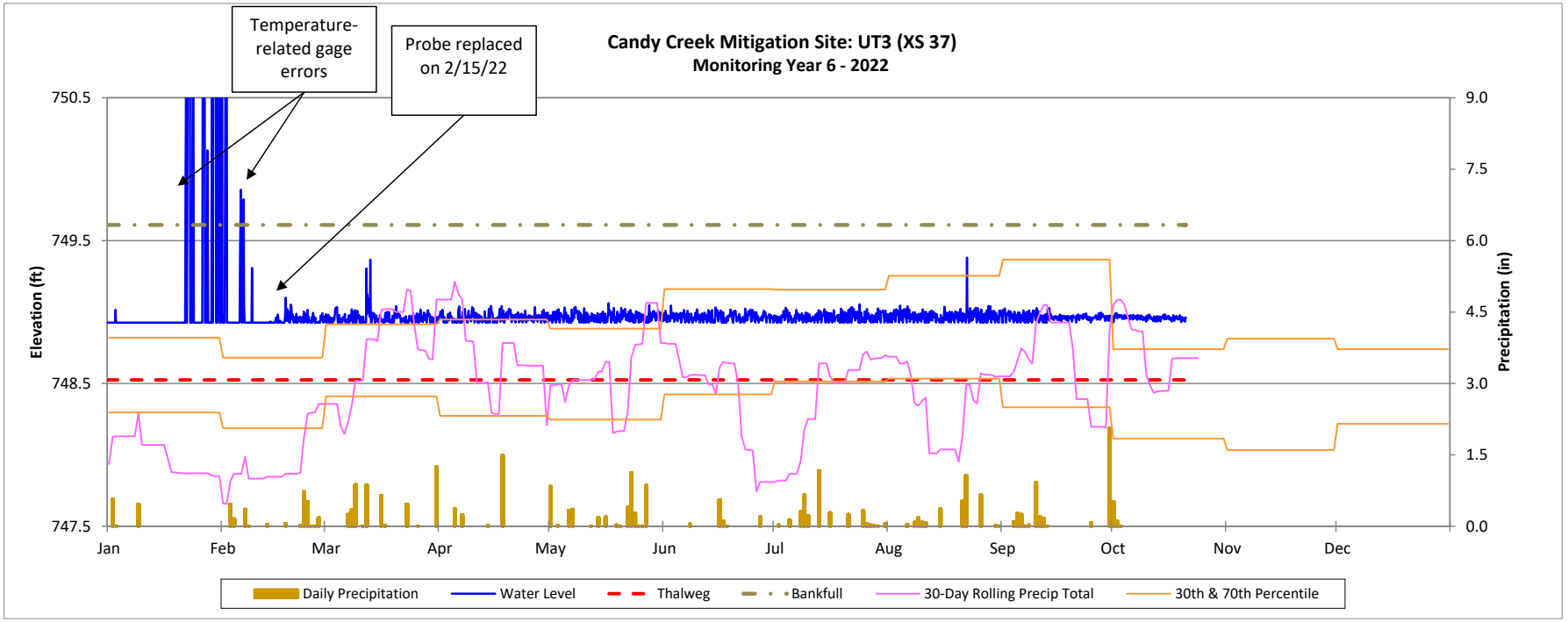
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022



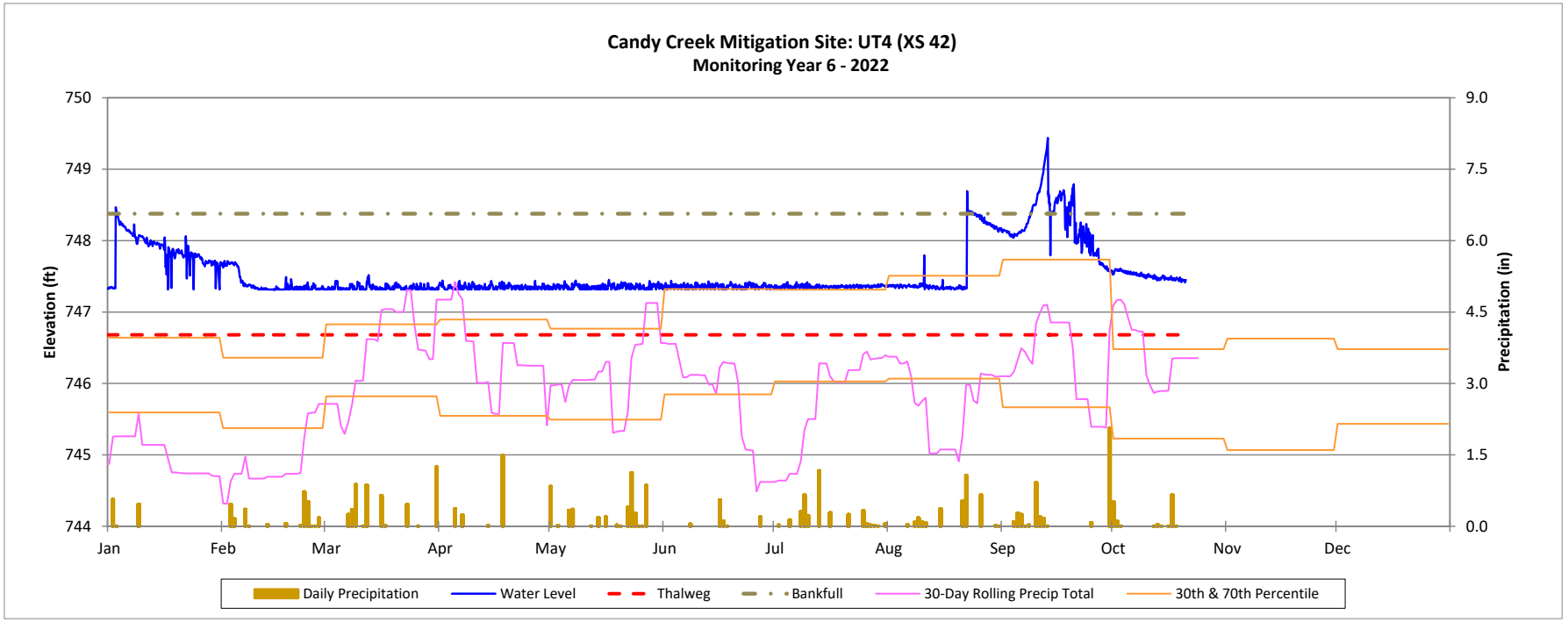
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022



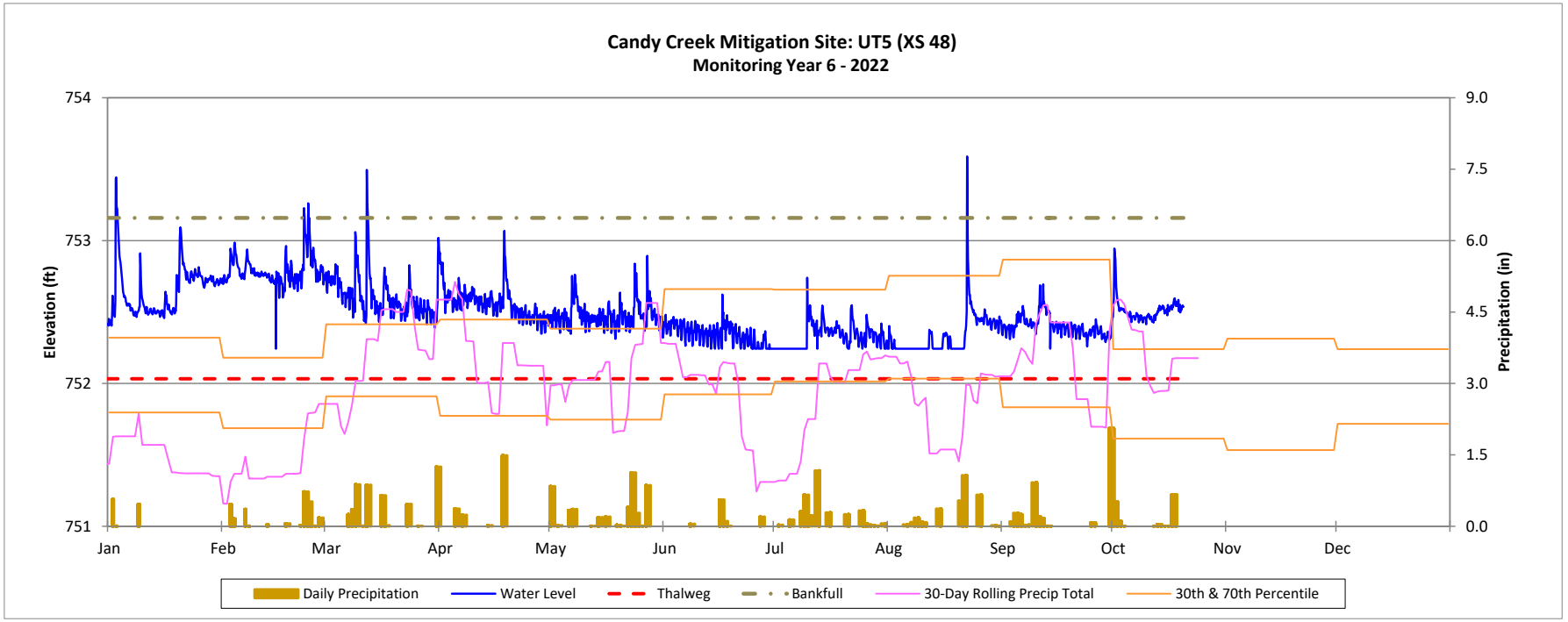
Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022



Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022



Recorded Bankfull Events Plot
Candy Creek Mitigation Site
DMS Project No. 96315
Monitoring Year 6 - 2022



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: Andrew Radecki
Subject: Candy Creek Site Visit MY6 Comments
Date: Friday, January 20, 2023 11:20:59 AM
Attachments: image001.png

Hello Kristi,

After touring the Candy Creek Site, I have a few additional comments that need to be included in your comment response letter and the Final Report.

1. As discussed in the field, failing structures on EII reaches that meet the reporting threshold need to be discussed and included in the report/CCPV/tables.
2. Section 1.2.2: Repairs on UT1C have not been completed, please update the narrative and include future repair plan.

This doesn't need to be addressed in a comment, but DMS strongly encourages planting a row or 2 of trees in the area disturbed by machinery for repairs in 2022.

Let me know if you have any questions.

Thank you,



Emily Dunnigan
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