

Scene 43 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.16911, -86.27156 · Generated October 23, 2026

OVERALL SCORE

4.3

Poor



Front: Looking downstream along a very small, narrow stream channel cutting through a narrow riparian corridor of eastern red cedar and bare deciduous trees. The channel bed is exposed limestone/rock substrate with very little water. Beyond the narrow tree line on the left, open agricultural pasture/field is visible with structures in the far distance.

Right: Looking to the right bank (right when facing downstream), an open mowed grass field extends to residential/agricultural structures including a carport with a vehicle, outbuildings, and scattered deciduous trees. The mowed lawn extends nearly to the stream bank edge with only a very thin strip of unmowed vegetation as a buffer. Power lines are visible in the distance.

Back: Looking upstream, the narrow stream channel is visible with shallow water flowing over a rocky limestone bed. Eastern red cedar trees dominate the narrow riparian strip on the right (left bank when facing downstream). A mowed green lawn extends from the left side (right bank) nearly to the channel edge. A barn or rural structure with a metal roof is visible in the distance beyond the mowed field. The channel has exposed rock substrate with some pooled water.

Left: Looking to the left bank (left when facing downstream), eastern red cedar trees and bare deciduous trees form a narrow riparian fringe. Beyond this thin tree line, open agricultural pasture extends to a large red barn/agricultural building in the distance. Dense vine growth and shrubs are visible in the understory of the narrow tree corridor. The pasture appears dormant with brown grass.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	6		marginal
Hydrologic Alteration	4		Fair
Sediment Deposition	6		Fair
Left Bank Stability	5		Fair
Right Bank Stability	3		Poor
Left Vegetative Protection	5		Fair
Right Vegetative Protection	2		Poor
Riparian Canopy Cover	5		Fair
Floodplain Vegetation	2		Poor
Water Appearance	6		Fair
Nutrient Enrichment	7		Good
Epifaunal Substrate	-		-

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 43

Black Branch at this location (Scene 43 of 53) is a small, intermittent headwater stream in poor overall condition, flowing through a rural agricultural landscape. The most significant impairment is the near-complete absence of riparian buffer on the right bank where mowed residential lawn extends to the channel edge, and a very narrow cedar-dominated buffer on the left bank with agricultural pasture beyond. The channel is moderately incised with 3-6 foot steep banks, disconnected from its floodplain. Instream habitat is severely limited by the narrow channel, very low flow, and absence of large woody debris. No stormwater infrastructure or outfalls were detected, consistent with the rural setting. Riparian buffer restoration represents the highest-priority management action for this reach.

Primary Stressors

riparian loss, bank erosion, sedimentation, stormwater

Channel Assessment

Metric	Score	Notes
Channel Condition	6	Channel appears to be in a natural form but shows moderate incision. No direct channelization or structural modifications are visible. However, the steep banks and incised condition suggest the channel has adjusted to altered hydrology from surrounding agricultural land use. Some downcutting evidence is present with exposed rock substrate and steep bank angles.
Hydrologic Alteration	4	Channel is moderately incised with banks 3-6 feet high relative to a very narrow channel. The stream appears disconnected from its floodplain. Agricultural land use likely contributes to flashy hydrology with altered runoff patterns. The mowed lawn on the right bank extends to the channel edge, removing natural buffer and increasing runoff velocity.
Sediment Deposition	6	Limited sediment deposition observed. The channel bed is dominated by exposed limestone/gravel substrate suggesting the stream is transport-limited rather than deposition-dominated. Low flow conditions may mask some deposition. The rocky substrate appears relatively clean.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	5	5	1_25_percent	Left bank has a narrow riparian corridor dominated by eastern red cedar with invasive vine growth. Agricultural pasture begins immediately beyond the tree line. The narrow buffer provides partial bank stabilization but is insufficient for full protection. Bank height is moderate with steep angles.
Right	3	2	1_25_percent	Right bank is severely lacking in riparian vegetation. Mowed lawn extends to the channel edge with minimal woody buffer. This represents a significant riparian buffer deficiency. The bank is vulnerable to erosion during high flow events. Residential/agricultural structures are within close proximity.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	5	Canopy cover is estimated at 25-50% overall, primarily from the cedar trees on the left bank. During winter with bare deciduous trees, shade is reduced. The right bank contributes very little canopy. For a warmwater stream, this provides some shading but is asymmetric and incomplete.
Left Buffer Width	10 25ft	Score: 3/10
Right Buffer Width	under 10ft	Score: 1/10
TDEC 30ft Buffer Met?	L: No / R: No	Both banks fail to meet TDEC minimum 30-foot riparian buffer requirements. The right bank is most critically deficient with mowed lawn to the channel edge. The left bank has a narrow but present tree line that could be expanded. Buffer restoration on both sides would significantly improve stream health and MS4 compliance. High restoration potential exists given the agricultural/rural land use context.

Water Quality & Infrastructure · Scene 43

Water Quality Indicators

Metric	Score	Notes
Water Appearance	6	Water appears slightly turbid with a brownish tint but the bed is visible through the shallow water. No oil sheen, algal mats, or scum observed. The brown coloration may be from contact with soil and leaf tannins. Overall clarity is fair to moderate given the shallow conditions and natural substrate color.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	8	No direct evidence of manure or waste observed in the stream. No livestock visible in adjacent fields. The agricultural land appears to be pasture/hay without active grazing at the channel. No waste pipes or discharge points visible. However, the close proximity of agricultural operations means some potential for non-point source contamination exists.
Surface Contamination	-	Sheen: No · Foam: No · Odor: none

Stormwater Infrastructure

No outfall detected at this location.

Instream Habitat

Metric	Score	Notes
Epifaunal Substrate	-	

Stream Characteristics

Field	Value
Stream Type	intermittent
Gradient	moderate

Management Recommendations

Action	Priority	Timeline
Document riparian buffer deficiency in MS4 visual stream survey database. Both banks fail to meet TDEC 30-foot minimum buffer standard.	medium	90_days
Conduct dry weather screening at this reach to verify observed low flow is baseflow and not from illicit sources. The trickle of brown water should be confirmed as natural.	low	annual

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