

Scene 32 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.16977, -86.27051 · Generated October 22, 2026

OVERALL SCORE

5.5

Marginal



Front: Looking downstream, a very narrow channel (approximately 3-5 feet wide) extends with shallow water flowing over a substrate of flat, thin rock fragments. The channel is bordered on the left by dense bare deciduous trees and shrubs, and on the right by a mowed grass area. A large mature tree with sprawling branches overhangs the channel from the left bank.

Right: Looking right (right bank facing downstream), a broad mowed grass area extends from the bank edge. Scattered deciduous trees, mostly bare, stand in the grassy area. A large brush pile or downed tree debris is visible in the mid-ground near where the channel curves. A structure (possibly a barn or outbuilding) is visible in the distance through the bare trees. The mowed grass extends right up to the channel edge with minimal riparian buffer.

Back: Looking upstream, the narrow channel continues with flowing water over rocky substrate. The left bank has exposed rock/stone along the bank edge with tree roots and some vegetation. The right bank shows open pasture or agricultural land beyond a thin fringe of vegetation. A person with survey/assessment equipment is partially visible in the bottom of the frame. The flat rock fragments along the bank edge require careful assessment for concrete vs natural origin.

Left: Looking left (left bank facing downstream), a large mature tree trunk dominates the near view with deeply furrowed bark. Beyond the tree, through bare branches and thin understory, open agricultural or pastoral land is visible extending to distant hills. A wire fence line may be present. The bank drops off behind the tree toward the channel. Exposed roots of the large tree are visible, and the ground surface shows leaf litter and some low green vegetation.

Assessment Scores

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

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 32

Black Branch at this location is a small headwater stream in marginal condition, primarily limited by severely inadequate riparian buffer on the right bank where mowed grass extends to the channel edge, and limited instream habitat diversity. The left bank retains a narrow strip of mature trees providing some bank stability and shade, but this buffer is insufficient to meet TDEC 30-foot minimums. Water quality indicators are fair with slight turbidity and no evidence of illicit discharge. The agricultural/pastoral land use on both sides of the stream is the primary driver of habitat degradation, and riparian buffer restoration represents the highest-priority management action for this reach.

Primary Stressors

riparian loss, sedimentation, bank erosion

Channel Assessment

Metric	Score	Notes
Channel Condition	7	The channel appears largely natural with no visible structural modifications, channelization, or dikes. The channel geometry seems appropriate for this small headwater stream. Some minor bank erosion is present but not indicative of active downcutting. The connection to the adjacent floodplain appears intact. Score of 7 reflects the generally natural condition with minor evidence of lateral instability.
Hydrologic Alteration	7	The channel shows slight incision but the banks are generally low (under 3 feet on the right, 3-6 feet on the left). The floodplain appears accessible during moderate flood events. The adjacent mowed grass area on the right likely floods during larger events. No dams or significant flow diversions visible. Agricultural land use may have altered the runoff regime somewhat.
Sediment Deposition	6	Some fine sediment deposition is visible on the bed, and the slightly turbid water suggests sediment transport. The substrate appears to be a mix of natural limestone gravel and finer sediment. Approximately 10-25% of the bed appears affected by deposition, which is consistent with the agricultural land use setting. Score of 6 reflects moderate sediment influence.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	5	6	1_25_percent	The left bank features a narrow riparian corridor with mature hardwood trees (possible walnut or hackberry). The bank is steeper than the right bank and shows signs of active erosion with exposed rock and root exposure. The riparian buffer is very narrow, transitioning quickly to open agricultural/pastoral land visible in the left face view.
Right	4	4	1_25_percent	The right bank is characterized by mowed grass extending nearly to the stream edge with only scattered trees set back from the bank. This lack of riparian woody vegetation is the most significant deficiency at this location. The bank is low and currently stable but vulnerable to future erosion without improved vegetative protection.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	4	During leaf-on conditions, the large overhanging trees on the left bank would provide moderate shade (estimated 25-50%) over the narrow channel. However, the right bank lacks canopy trees, so shade is one-sided. During winter conditions as captured, minimal shade is provided. Score of 4 reflects the partial but incomplete canopy coverage expected during the growing season.
Left Buffer Width	10 25ft	Score: 3/10
Right Buffer Width	under 10ft	Score: 1/10
TDEC 30ft Buffer Met?	L: No / R: No	This location has significant riparian buffer deficiencies on both banks. The right bank is the most critical need with mowed grass extending to the bank edge. The left bank buffer, while present, is narrow and may not meet TDEC 30-foot minimums. Buffer restoration through native tree and shrub planting would be highly effective given the rural setting and available land area.

Water Quality & Infrastructure · Scene 32

Water Quality Indicators

Metric	Score	Notes
Water Appearance	6	The water has a slight brown tint and mild turbidity but is not heavily clouded. The bed is visible through the shallow water. No oil sheen, foam, or surface films are apparent. The brownish color may be from natural tannins and/or fine sediment. Visibility appears to be approximately 1-2 feet. Score of 6 reflects slightly turbid but generally acceptable water appearance for a rural headwater stream.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	7	No direct evidence of manure or livestock waste is visible in or near the stream. However, the adjacent pastoral/agricultural land and what appears to be a fence line suggest livestock use in the area. No livestock are visible and no manure or waste is apparent. The fence may serve to exclude livestock from the stream. Score of 7 reflects the absence of visible waste with acknowledgment of the agricultural setting.
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	perennial
Gradient	low_flat

Management Recommendations

Action	Priority	Timeline
Document riparian buffer deficiency on both banks as part of visual stream survey records	medium	90_days
Verify no outfalls exist upstream or downstream that may not be visible from this location	low	annual

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