

Scene 29 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.16995, -86.27036 · Generated October 22, 2026

OVERALL SCORE

5.6

Marginal



Front: Looking downstream, a small stream channel winds through a pastoral landscape with scattered deciduous trees in bare winter/early spring condition. The water surface is calm and reflective in a pool area. A structure or outbuilding is visible in the background through the trees. The banks are low with grass and dormant vegetation.

Right: Looking toward the right bank, an open mowed or grazed grassy field extends away from the stream. Scattered deciduous trees in bare condition line the area. Some fallen trees and brush piles are visible at the edge of the field. The land is relatively flat with short grass suggesting regular mowing or grazing.

Back: Looking upstream, the stream channel narrows significantly with exposed rock/substrate visible in the bed. A red barn or agricultural building is visible through the bare trees on the left bank side. The channel has flat angular rock pieces exposed along the banks and bed. Fallen trees span parts of the channel area. The substrate appears to be flat limestone or possibly broken concrete fragments requiring closer inspection.

Left: Looking toward the left bank, a brushy area with dormant shrubs and small trees extends along the bank and into the floodplain. The terrain is gently sloping with dry grass and leaf litter. A person's hand and equipment are visible at the bottom of frame confirming this is a backpack-mounted camera on a walking survey. Beyond the brush, open fields and distant hills/ridgelines are visible.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	7		fair
Hydrologic Alteration	7		Good
Sediment Deposition	6		Fair
Left Bank Stability	6		Fair
Right Bank Stability	5		Fair
Left Vegetative Protection	5		Fair
Right Vegetative Protection	4		Fair
Riparian Canopy Cover	5		Fair
Floodplain Vegetation	2		Poor
Water Appearance	7		Good
Nutrient Enrichment	8		Good
Epifaunal Substrate	-		-

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 29

Black Branch at this location is a small, low-gradient, sinuous headwater stream flowing through a pastoral/agricultural landscape near Lebanon, TN. The stream maintains reasonable channel form and floodplain connectivity but is limited by inadequate riparian buffers on both banks, particularly the right bank where mowed grass extends close to the channel edge. Fine sediment deposition is affecting substrate quality and pool depth. Water quality appears fair with no evidence of point source pollution or illicit discharge. The primary management need is riparian buffer restoration, which would address multiple limiting factors including bank stability, shade, habitat complexity, and sediment filtration.

Primary Stressors

riparian loss, sedimentation, bank erosion

Channel Assessment

Metric	Score	Notes
Channel Condition	7	Channel appears largely natural with no visible structural alterations, dikes, or channelization. The channel maintains connection to its floodplain. Minor evidence of lateral instability but the channel form is generally intact. Scoring 7 rather than 10 due to some bank scour and the influence of adjacent pastoral land use that may have historically affected channel form.
Hydrologic Alteration	7	Channel shows slight incision with low banks that appear to overtop during moderate storm events. Floodplain connection appears functional based on debris lines and flood deposits visible. No dams or withdrawals apparent. The low bank heights and connected floodplain suggest reasonable flood frequency.
Sediment Deposition	6	Silt deposition is visible in pool areas as seen in the front and down views. The pool downstream appears to have some fine sediment accumulation on the bottom. Estimated 15-25% of the visible bed is affected by fine sediment deposition, which is moderate for this stream type.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	6	5	1_25_percent	Left bank has a brushy riparian zone with dormant shrubs and small trees. Bank heights are low (under 3 ft). Beyond the immediate riparian zone, open field/pasture extends to the south. The buffer appears relatively thin but continuous along this section.
Right	5	4	1_25_percent	Right bank is dominated by grass/turf with sparse tree cover. Open field begins within approximately 20-30 feet of the channel. Bank stability is compromised by lack of deep-rooted woody vegetation along the bank face. The mowing/grazing pattern extends relatively close to the stream edge.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	5	Currently with bare deciduous trees, shade is minimal. When in full leaf, the scattered trees along the channel would provide approximately 25-50% shade cover. The right bank has less canopy contribution than the left. For a warmwater stream, this provides a moderate mixture of sun and shade conditions, scoring near the middle of the range.
Left Buffer Width	10 25ft	Score: 5/10
Right Buffer Width	under 10ft	Score: 3/10
TDEC 30ft Buffer Met?	L: No / R: No	Both banks show inadequate riparian buffers relative to TDEC MS4 30-foot minimum standard. The right bank is more severely compromised with mowed grass extending nearly to the channel edge. Buffer restoration potential is high given the flat terrain and existing scattered trees that could serve as seed sources. This is a priority area for riparian planting and buffer expansion.

Water Quality & Infrastructure · Scene 29

Water Quality Indicators

Metric	Score	Notes
Water Appearance	7	Water appears slightly turbid with a brown/tea color, which is typical for streams in this region during early spring. The pool in the front view shows reflections but the bed is partially visible, suggesting clarity of approximately 1-2 feet. No oil sheen, foam, or surface contamination visible. The color appears to be natural tannin/sediment rather than pollution-related.
Nutrient Enrichment	8	Algae: minor
Manure/Waste	8	No direct evidence of manure, waste, or livestock access to the stream is visible. The adjacent fields could be used for grazing but no livestock, fencing for livestock exclusion, or manure deposits are visible in the current images. The open pastoral setting suggests potential for livestock access but no current evidence. Scoring 8 rather than 10 due to the pastoral land use context.
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 inadequate riparian buffers for MS4 watershed management planning	medium	90_days
Complete outfall inventory for upstream drainage area - no outfalls observed at this point but surrounding development should be mapped	low	annual

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