

Scene 26 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.17011, -86.27011 · Generated October 22, 2026

OVERALL SCORE

5.8

Marginal



Front: Looking downstream (direction of travel), a large red metal agricultural building/barn is visible on the left bank very close to the stream corridor. Bare deciduous trees line the bank with leaf litter on the ground. Beyond the barn, open agricultural fields are visible in the background with another small red structure in the distance. The bank slopes up from the stream toward the barn.

Right: Looking to the right bank (when facing downstream), the stream is visible in the lower portion of the frame as a narrow channel with shallow water. The right bank has a grassy area transitioning to scattered deciduous trees (all bare). There are brush piles and woody debris on the floodplain. The landscape opens to a mowed/maintained grassy area with scattered trees suggesting rural residential or agricultural use. Fallen logs span across the channel.

Back: Looking upstream, the view shows a densely vegetated hillside rising steeply from the stream corridor. The bank and slope are covered with dormant deciduous shrubs, vines, and trees (all bare). Some green early spring growth is emerging in the understory. A small wet area or tributary seep is visible at the base of the slope. The vegetation is thick but mostly dormant woody material with tangled vines.

Left: Looking at the left bank, the stream channel is visible flowing alongside the bank with shallow water and exposed substrate. The red metal barn/building is visible again on the upper right portion of the frame, positioned very close to the stream corridor. Bare deciduous trees grow between the stream and the barn. Rock material is visible along the bank toe and in the channel - this appears to be natural limestone/bedrock outcrop consistent with the geology of the Nashville Basin area, though some angular fragments may include placed material near the barn foundation.

Assessment Scores

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

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 26

Black Branch at position 26 is a small headwater perennial stream flowing through an agricultural landscape in the Nashville Basin near coordinates 36.17, -86.27. The stream is marginally impaired, primarily limited by a severely compromised riparian buffer on the left bank where a red metal agricultural building sits within 20-30 feet of the channel, moderate bank erosion on both banks, and poor habitat diversity with the channel dominated by slow shallow pools lacking riffle features. Water quality appears acceptable with no evidence of illicit discharge, nutrient enrichment, or contamination. No stormwater outfalls or engineered infrastructure are present at this location. The most impactful management actions would be riparian buffer enhancement on the right bank and addressing sediment sources.

Primary Stressors

riparian loss, bank erosion, sedimentation

Channel Assessment

Metric	Score	Notes
Channel Condition	7	Channel appears largely natural with no visible direct channel modifications. The agricultural building proximity suggests historical land use impacts, but the channel itself shows natural morphology. Some incision may be present based on bank heights, but the channel retains natural features. Score of 7 reflects mostly natural condition with minor land use influence.
Hydrologic Alteration	6	Stream shows slight incision with moderate bank heights of 3-6 feet in some areas. The floodplain appears to be connected on at least one side (right bank has green grass area at similar elevation). Agricultural land use and the proximity of the barn suggest some watershed impervious area. Score of 6 reflects mild hydrologic alteration consistent with agricultural land use.
Sediment Deposition	6	Some fine sediment visible in pools and on channel bed. The slightly turbid water suggests sediment transport. Not excessive deposition but noticeable fine sediment accumulation. Estimated 10-20% of bottom affected. Score of 6.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	5	4	26_50_percent	Left bank is adjacent to a red metal agricultural building. Narrow riparian buffer between barn and stream. Moderate erosion with some undercutting. Angular limestone fragments at bank toe may provide some natural armoring.
Right	5	5	26_50_percent	Right bank has grassy floodplain area with scattered trees. Bank toe erosion is evident with exposed roots and soil. Fallen logs cross the channel from this bank, providing some habitat but indicating bank retreat.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	4	In winter/early spring with bare deciduous trees, canopy cover provides less than 25% shade. Even in full leaf season, the sparse tree density and gaps from the barn structure would limit coverage to approximately 25-50%. For warmwater streams, some open conditions are acceptable, but the overall shade is below optimal. Score of 4 reflecting the winter conditions and sparse canopy.
Left Buffer Width	10 25ft	Score: 3/10
Right Buffer Width	25 50ft	Score: 5/10
TDEC 30ft Buffer Met?	L: No / R: Yes	The red metal agricultural building on the left bank represents a significant encroachment into the riparian buffer zone, likely within 20-30 feet of the stream. This pre-existing structure limits buffer restoration potential on the left side. The right bank has moderate restoration potential through reduced mowing and native planting. Per TDEC MS4 permit section 4.2.5.4, a minimum 30-foot riparian buffer is required.

Water Quality & Infrastructure · Scene 26

Water Quality Indicators

Metric	Score	Notes
Water Appearance	6	Water is slightly turbid with a brown coloration. Substrate is visible through the water in shallow areas (under 1 foot), suggesting clarity of 1-3 feet. No oil sheen, algal mats, or heavy sediment loading visible. The brown color may reflect natural tannin leaching from leaf litter or recent precipitation. Score of 6.
Nutrient Enrichment	8	Algae: none
Manure/Waste	7	No livestock, manure, or waste evidence visible in the stream or riparian area. The agricultural setting with pasture and barns suggests potential livestock use in the area, but no direct evidence of livestock access to the stream is visible in this panorama. Score of 7 reflecting agricultural land use proximity.
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 the agricultural building encroachment within the 30-foot riparian buffer zone on the left bank for compliance records	medium	90_days
Continue visual stream survey documentation along the reach to identify any outfalls or illicit discharges upstream and downstream of this position	medium	annual

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