

Scene 33 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.16977, -86.27060 · Generated October 23, 2026

OVERALL SCORE

5.4

Marginal



Front: Looking downstream, a very narrow channel (approximately 3-5 feet wide) winds through a mixed riparian corridor. The left bank has dense shrubby vegetation and some mature trees, while the right bank transitions quickly to mowed grass/pasture. Water is shallow with visible substrate and a small pool area visible in the mid-distance.

Right: The right bank (when facing downstream) opens to a broad, mowed grass area with scattered young deciduous trees in a parkland or pasture setting. Trees are bare, indicating early spring. A debris pile or brush pile is visible at the far right near the stream bank edge. The grass area extends well back from the channel with no significant riparian buffer.

Back: Looking upstream, the narrow channel continues with shallow flowing water over a rocky/silty substrate. The left bank (right side of image looking upstream) shows grassy pasture with minimal buffer, while the right bank (left side looking upstream) has some woody vegetation and a large mature tree with extensive root exposure at the bank edge. Flat angular rock fragments are visible in the streambed.

Left: The left bank when facing downstream shows dense shrubby understory and bare deciduous trees. Beyond the immediate riparian zone, open pasture or agricultural land is visible through the vegetation. The shrub layer includes some green-leaved vines that appear to be evergreen invasives (possibly Japanese honeysuckle). The ground is covered with leaf litter and bare soil.

Assessment Scores

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

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 33

Black Branch at scene #33 is a small headwater stream (1st-2nd order, ~3-4 ft wide) in marginal condition flowing through a mixed rural/pastoral landscape near Nashville, TN. The most significant impairment is the severely deficient riparian buffer on the right bank where mowing extends to the bank edge, resulting in bank instability, reduced shade, and limited habitat. The left bank retains a moderate woody buffer but is colonized by invasive Japanese honeysuckle. Instream habitat is poor with fine sediment dominating the substrate and very limited large woody debris. No stormwater infrastructure or outfalls are present at this rural location, but the adjacent land use contributes sediment and limits stream corridor function.

Primary Stressors

riparian loss, sedimentation, bank erosion

Channel Assessment

Metric	Score	Notes
Channel Condition	6	Channel appears natural with no direct engineering modifications, but shows evidence of incision likely from upstream watershed changes and adjacent land use. The channel is moderately incised with steep banks relative to its small width, suggesting some downcutting has occurred. No riprap, concrete, or channelization present.
Hydrologic Alteration	5	The channel appears moderately incised with banks 3-6 feet high relative to the narrow 3-4 foot wide channel, suggesting the stream rarely accesses its floodplain. Adjacent mowed pasture/grass comes close to the bank edge on the right side, and the channel sits well below the surrounding land surface. Flood frequency is estimated at 5-10 years based on incision ratio.
Sediment Deposition	5	Some fine sediment (silt/mud) deposition is evident in the channel, particularly in the pool areas visible in the front view. The streambed shows a mix of natural rock fragments and fine sediment accumulation. Approximately 20-30% of the visible bottom appears affected by fine sediment deposition, consistent with agricultural runoff from adjacent pasture.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	5	6	1_25_percent	Left bank has better vegetative cover than right bank due to dense shrub layer and mature trees. Some invasive vine presence (suspected Japanese honeysuckle). Root exposure is moderate in places. The riparian buffer on this side extends at least 25-50 feet before transitioning to agricultural land visible through the bare trees.
Right	3	3	26_50_percent	Right bank is the weaker of the two banks with inadequate riparian buffer. Mowed grass/pasture extends to near the bank edge with only scattered young deciduous trees providing minimal root protection. Active erosion is evident with bare soil exposure on the bank face. This bank would benefit significantly from riparian buffer establishment.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	3	Currently in early spring with bare deciduous trees, shade is very limited (<25%). Even during full leaf-out, the canopy would provide moderate shade at best, as the right bank has only scattered young trees. The left bank would provide some overhang but the narrow corridor on the right would remain mostly open. Estimated summer shade would be 25-50% at best.
Left Buffer Width	25 50ft	Score: 5/10
Right Buffer Width	under 10ft	Score: 2/10
TDEC 30ft Buffer Met?	L: Yes / R: No	Right bank riparian buffer is severely deficient relative to TDEC 30ft minimum standard. Mowing extends to the bank edge. This is a high priority area for riparian buffer restoration. Left bank buffer is marginal but meets minimum standards. Invasive species management on the left bank would improve buffer quality.

Water Quality & Infrastructure · Scene 33

Water Quality Indicators

Metric	Score	Notes
Water Appearance	5	Water has a slight brownish tint and is slightly turbid but the streambed is visible through the shallow water. In the pool area, clarity appears to be 1-2 feet. No oil sheen, algal mats, or unusual coloration observed. The brown color may be natural tannins from leaf litter or minor sediment suspension.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	7	No direct evidence of manure or livestock waste in the stream or on the banks. The mowed grass area on the right bank suggests managed pasture/parkland rather than active livestock grazing. No livestock, fencing, paths to water, or waste storage visible. However, the pastoral setting suggests livestock may use the area periodically.
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 right bank in MS4 stream survey database	medium	90_days
Coordinate with landowner regarding riparian buffer establishment on right bank	medium	90_days

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