

Scene 25 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.17013, -86.27005 · Generated October 22, 2026

OVERALL SCORE

6.4

Marginal



Front: Looking downstream, a very narrow, low-flow stream channel winds through a wooded corridor. The channel bed is exposed limestone/bedrock with thin water flow. A large sycamore tree stands on the left bank, and a fallen tree spans across the channel in the mid-distance. Beyond the riparian zone, an open green pasture/field is visible.

Right: Looking toward the right bank (left bank when facing downstream), a steep wooded hillside rises from the channel. Dense deciduous trees are bare with some early green leaves visible on what appears to be an evergreen shrub (possibly privet). The understory is thick with dormant vegetation and leaf litter covers the slope. Some rock visible at base of slope near channel margin.

Back: Looking upstream, the narrow channel continues with exposed flat limestone bedrock substrate dominating the bed. The channel appears very shallow with water barely covering the rock. Large mature sycamore trees line the left bank with significant exposed root systems. Flat rock slabs in the channel show natural geological layering and weathering patterns. Some structures may be partially visible in the far right background through the vegetation.

Left: Looking toward the left bank (right bank when facing downstream), a large red metal agricultural building/barn is visible approximately 50-75 feet from the stream channel. Beyond the structure, an open pasture/agricultural field extends into the distance. The riparian buffer between the stream and the structure is narrow, consisting of a thin strip of dormant deciduous trees and shrubs. Some litter is visible near the structure. The ground is trampled and shows root exposure near the channel margin.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	8		fair
Hydrologic Alteration	7		Good
Sediment Deposition	7		Good
Left Bank Stability	6		Fair
Right Bank Stability	7		Good
Left Vegetative Protection	5		Fair
Right Vegetative Protection	7		Good
Riparian Canopy Cover	6		Fair
Floodplain Vegetation	3		Poor
Water Appearance	8		Good
Nutrient Enrichment	8		Good
Epifaunal Substrate	-		-

Urgency: LONG TERM

Detailed Observations · Scene 25

Black Branch at scene #25 is a small headwater stream with a natural bedrock-controlled channel flowing through an asymmetric corridor with forested hillside on the right bank and narrow agricultural buffer on the left bank. Water quality appears good with clear water and no evidence of contamination, but instream habitat is limited by bedrock substrate dominance and very low flow conditions. The primary management concerns are the narrow riparian buffer on the left bank where an agricultural building sits approximately 50-75 feet from the channel, limited aquatic habitat diversity, and potential invasive species in the understory. No stormwater infrastructure or outfalls were observed at this location.

Primary Stressors

riparian loss, sedimentation, stormwater

Channel Assessment

Metric	Score	Notes
Channel Condition	8	The channel appears largely natural with bedrock substrate controlling the bed elevation. No evidence of channelization, riprap, or engineered modifications. The bedrock bed prevents significant downcutting. Some minor bank erosion and root exposure observed but consistent with natural processes in a bedrock-controlled channel.
Hydrologic Alteration	7	The channel shows slight incision into the bedrock substrate. The left bank (facing downstream) with the adjacent agricultural building/pasture appears to have a relatively low bank that could be overtopped during moderate flood events. The right bank is steeper and higher. Overall, the channel appears to maintain reasonable floodplain connection, particularly on the pasture side.
Sediment Deposition	7	The bedrock substrate dominates the channel bed with minimal fine sediment deposition visible. Some gravel and fines are present in interstices between bedrock slabs, but the bedrock-controlled nature of the channel limits sediment accumulation. Estimated less than 20% of the bed shows significant deposition.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	6	5	1_25_percent	Left bank is lower than right bank with a narrow riparian buffer. Agricultural building approximately 50-75 feet from channel edge. Pasture extends beyond the structure. Buffer is thin but trees are present.
Right	7	7	0_percent	Right bank is a forested hillside with dense deciduous trees and understory. Bank is higher and steeper than left bank but well-vegetated. Some possible invasive shrubs noted (privet-like evergreen foliage in dormant season).

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	6	During the current dormant season, canopy cover is estimated at 25-50% due to bare deciduous trees. During leaf-on season, the canopy would likely provide 50-75% shade. The right bank forest provides most of the canopy, while the left bank has less coverage due to the narrow buffer. Score reflects expected leaf-on conditions.
Left Buffer Width	10 25ft	Score: 3/10
Right Buffer Width	over 100ft	Score: 8/10
TDEC 30ft Buffer Met?	L: No / R: Yes	The agricultural building on the left bank is approximately 50-75 feet from the channel, but the effective woody vegetative buffer is only 10-25 feet. The building appears to be an existing agricultural structure. Buffer restoration potential is moderate - the area between the building and the stream could support additional woody plantings if landowner cooperation is obtained.

Water Quality & Infrastructure · Scene 25

Water Quality Indicators

Metric	Score	Notes
Water Appearance	8	The water appears very clear where present. The entire bedrock bed is easily visible through the water column. No discoloration, sheen, or film observed. The water is shallow enough that clarity assessment is limited by depth rather than turbidity. Score of 8 rather than 10 due to inability to fully assess at depth.
Nutrient Enrichment	8	Algae: minor
Manure/Waste	8	No direct evidence of manure or waste in the stream or on the banks. The adjacent pasture field suggests livestock may be present in the area, but no livestock access to the stream is visible. The agricultural building could be livestock-related but no manure or waste is observed at this location. Fencing may be present but is not clearly visible.
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	moderate

Management Recommendations

Action	Priority	Timeline
Document narrow riparian buffer on left bank for buffer compliance tracking	medium	90_days
Assess agricultural building for potential runoff impacts to stream during wet weather	low	annual

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