

Scene 27 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.17005, -86.27018 · Generated October 23, 2026

OVERALL SCORE

6.2

Marginal



Front: Looking downstream, the view shows a very small stream channel winding through a rural landscape. A large mature tree with deeply furrowed bark dominates the left foreground. The stream is narrow with shallow, slow-moving water. Beyond the riparian fringe, open agricultural pasture or hayfield extends to the distance. Some red agricultural equipment or a structure is faintly visible in the far background.

Right: Looking right (left bank when facing downstream), the view shows a mowed or grazed grassy area sloping gently up from the stream bank. The stream channel is visible at the left edge with exposed bedrock/limestone substrate. Several mature deciduous trees are scattered in the background, all bare of leaves. A structure (possibly a gazebo or small building) is faintly visible in the distance. Woody debris from fallen branches is scattered on the ground. The grass is green, suggesting mild winter or early spring conditions.

Back: Looking upstream, a small pool is visible with a large fallen log spanning the channel. The water is shallow and slightly turbid with a brownish tint. Exposed limestone bedrock forms the bed. The right bank (looking upstream) has bare deciduous forest with moderate understory. A person wearing a black helmet (Petzl brand) and high-visibility vest is visible at the right edge - this is the field survey crew member. The channel is very small, perhaps 4-6 feet wide. Scattered rocks and cobble are visible in and around the channel.

Left: Looking left (right bank when facing downstream), a red agricultural barn or shed is prominently visible approximately 30-50 feet from the stream. A survey crew member wearing a yellow Petzl helmet and high-visibility safety vest is visible in the foreground. The area between the stream and barn is vegetated with dormant shrubs and vines, with some grass. Agricultural pasture/hayfield extends beyond the barn into the distance. A large mature tree with spreading limbs dominates the near view. The riparian buffer on this side is very narrow, with the barn and agricultural use encroaching close to the stream.

Assessment Scores

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

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 27

Black Branch at this location (#27 of 53) is a small headwater stream with a natural bedrock-controlled channel in a rural agricultural setting. The stream receives a marginal overall rating (6.2/10), primarily limited by severely inadequate riparian buffers on both banks due to agricultural land use encroachment. The channel itself is relatively natural with no engineered modifications, and floodplain connectivity is maintained. Water quality appears fair to good with no evidence of illicit discharge or contamination. The most significant management need is riparian buffer restoration, particularly on the left bank where grass is mowed to the stream edge, and on the right bank where an agricultural barn encroaches within 30-50 feet.

Primary Stressors

riparian loss, sedimentation, bank erosion

Channel Assessment

Metric	Score	Notes
Channel Condition	7	Channel appears largely natural with no visible engineered alterations. Some minor bank erosion and undercutting observed upstream but no evidence of straightening, riprapping, or channelization. The channel is connected to its floodplain. Slight reduction from 10 due to some bank instability and land use pressures from adjacent agriculture.
Hydrologic Alteration	7	Stream appears to have a connected floodplain, particularly on the left bank side where the grassy area appears to be at a level that would flood periodically. Low banks suggest limited incision. The agricultural land use in the watershed may have altered hydrology somewhat through drainage and land clearing, but overall the channel appears to flood its banks regularly.
Sediment Deposition	7	The bedrock-dominated substrate limits visible sediment deposition. Some fine sediment visible in pools but overall the bedrock channel appears relatively clean. Minor silt accumulation in low-velocity areas. Less than 30% of visible bottom affected.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	6	5	1_25_percent	Left bank is low with grass cover transitioning to mowed/grazed area. Minimal woody riparian vegetation. Some natural bedrock exposure at bank toe provides some stability.
Right	5	5	1_25_percent	Right bank has narrow riparian buffer with agricultural barn approximately 30-50 feet from stream. Some undercutting visible upstream. Dormant vegetation in winter makes coverage assessment partially limited.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	3	Currently in winter with bare deciduous canopy, providing minimal shade. Even during the growing season, the scattered trees would provide limited coverage, estimated at 25-40% shade in summer. The left bank with mowed grass contributes essentially no shade. The right bank's scattered trees would provide partial shade. Score reflects the inadequate shade coverage even during peak growing season.
Left Buffer Width	under 10ft	Score: 3/10
Right Buffer Width	10-25ft	Score: 3/10
TDEC 30ft Buffer Met?	L: No / R: No	Both banks have inadequate riparian buffers. The left bank has virtually no woody riparian buffer with grass mowed to the bank edge. The right bank has a narrow buffer encroached by an agricultural barn within approximately 30-50 feet. High potential for buffer restoration through planting programs, especially on the left bank where the flat terrain would support establishment of native riparian species.

Water Quality & Infrastructure · Scene 27

Water Quality Indicators

Metric	Score	Notes
Water Appearance	7	Water appears slightly turbid with a brownish tint, which is somewhat typical for low-flow conditions in limestone streams. The bedrock bottom is visible in shallow areas suggesting clarity of 1-3 feet. No oil sheen, foam, or surface films visible. The brown color may reflect tannins from leaf litter or minor suspended sediment. No indication of significant water quality problems.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	8	No direct evidence of manure or waste in or near the stream. No livestock visible. However, the adjacent agricultural land could be used for livestock based on the barn and pasture-like fields. No fencing preventing potential livestock access observed. No visible manure in the stream or on banks. Score of 8 rather than 10 due to agricultural setting and potential for occasional livestock access.
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 this reach as part of visual stream assessment inventory. No outfalls present at this location.	medium	annual
Verify whether this agricultural area falls within the MS4 permitted boundary. If so, coordinate with agricultural operators regarding riparian buffer preservation.	low	90_days

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