

Scene 46 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.16903, -86.27187 · Generated October 23, 2026

OVERALL SCORE

5.2

Marginal



Front: Looking downstream, a very narrow stream channel (approximately 2-4 feet wide) winds through a rural landscape with dormant deciduous trees. The channel has shallow, brownish water with exposed limestone/rock substrate visible. Banks are low and vegetated with dormant grass and herbaceous material. Some woody debris (fallen branches) crosses the channel. A green shrub (possibly evergreen or early-leaving invasive) is visible on the right bank.

Right: Looking toward the right bank (left bank when facing downstream), a mowed lawn slopes upward toward a residential property with a garage/outbuilding, parked vehicles including a boat, and a utility pole. The riparian buffer is minimal — just a few scattered trees at the bank edge with the lawn extending nearly to the stream. The bank drops off steeply from the mowed yard to the channel.

Back: Looking upstream, the narrow stream channel continues through a rural/pastoral landscape. The channel is very narrow (2-3 feet wide) with shallow brown water flowing over what appears to be natural limestone bedrock and gravel. Banks are low with dormant grass and sparse deciduous trees. The left side shows mowed grass extending toward a residential area, while the right side has more natural herbaceous vegetation. The stream has low sinuosity in this section.

Left: Looking toward the left bank (right bank when facing downstream), a wide open pastoral/agricultural field extends to the distance with a red barn visible in the background. The field is dominated by dormant tall grass and herbaceous vegetation (likely old-field or hay field). A few scattered deciduous trees are present along the stream corridor but the riparian buffer is extremely thin, transitioning quickly to open pasture. The landscape is gently rolling.

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	6		Fair
Left Vegetative Protection	4		Fair
Right Vegetative Protection	5		Fair
Riparian Canopy Cover	3		Poor
Floodplain Vegetation	2		Poor
Water Appearance	6		Fair
Nutrient Enrichment	7		Good
Epifaunal Substrate	-		-

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 46

Black Branch at position 46 is a small headwater stream (1st-2nd order) in marginal condition, flowing through a rural residential and agricultural landscape near Nashville, TN. The most significant issue is the severely inadequate riparian buffer on both banks — residential lawn mowing extends to within 5-10 feet of the left bank and pasture/agricultural use encroaches on the right bank, both failing to meet TDEC 30ft minimum buffer standards. Instream habitat is limited by the small channel size and lack of diverse features including pools, woody debris, and substrate complexity. Water quality appears acceptable during this dry weather assessment with no evidence of illicit discharge or acute contamination, though the adjacent land uses pose chronic risks for sediment and nutrient inputs. No stormwater infrastructure or outfalls were observed at this location.

Primary Stressors

riparian loss, sedimentation, bank erosion

Channel Assessment

Metric	Score	Notes
Channel Condition	7	Channel appears largely natural with no visible structural modifications. However, the adjacent mowed lawn and agricultural land use suggest the surrounding landscape has been altered, potentially affecting channel form historically. The channel shows minor incision but is generally well-connected to its floodplain. No straightening, riprap, or concrete visible.
Hydrologic Alteration	6	The stream shows slight incision with banks approximately 2-3 feet above baseflow. The channel appears to have some floodplain connection but the low banks and surrounding flat terrain suggest periodic overbank flooding is still possible. Adjacent land use (mowed lawn, pasture) may contribute to altered hydrology through increased runoff.
Sediment Deposition	6	Minor sediment deposition visible with silt and mud along channel margins. The bed shows a mix of limestone fragments and fine sediment. Some fine sediment infilling around coarser substrate is evident but not excessive. Approximately 10-20% of the bed appears to be affected by fine sediment deposition.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	5	4	1_25_percent	Left bank (residential side) has minimal riparian buffer with mowed lawn extending nearly to stream edge. Bank is steeper here due to slight incision. Scattered trees provide some root stabilization but coverage is inadequate.
Right	6	5	1_25_percent	Right bank (pasture side) has more natural herbaceous cover but still lacks adequate woody riparian vegetation. Bank is lower and more gradually sloped than left bank. Dormant grass and tall herbaceous vegetation provide seasonal protection.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	3	Even during leaf-on season, the sparse scattered trees would provide minimal canopy coverage over this narrow stream. Current winter conditions show essentially no shade. During growing season, estimated shade would be under 25% based on the widely spaced, small-diameter trees present. This is a warmwater stream so some sunlight is beneficial, but the lack of any meaningful canopy is below desired conditions.
Left Buffer Width	under 10ft	Score: 2/10
Right Buffer Width	10 25ft	Score: 3/10
TDEC 30ft Buffer Met?	L: No / R: No	Both banks fail to meet TDEC MS4 permit section 4.2.5.4 minimum buffer requirements. The left bank has severe encroachment from residential lawn maintenance extending to within feet of the channel. The right bank has moderate encroachment from pasture/agricultural use. Both sides have high restoration potential if willing landowners can be engaged for buffer planting programs.

Water Quality & Infrastructure · Scene 46

Water Quality Indicators

Metric	Score	Notes
Water Appearance	6	Water appears slightly turbid with a brownish tint. The shallow depth makes clarity assessment challenging but the bottom is visible through the water. The brown color may be from natural tannins and suspended fine sediment. No algal growth, oil sheen, or unusual discoloration observed. Water quality appears acceptable for dry weather conditions in a rural headwater stream.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	7	No direct evidence of manure or animal waste in the stream or on banks. However, the adjacent pasture/agricultural land with a barn visible in the distance suggests potential for livestock access. No livestock are currently visible and no manure, hoof prints, or bank trampling damage is evident at this location. Fencing status is unclear.
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 buffer conditions for MS4 watershed planning purposes	medium	90_days
Complete dry weather screening documentation for this reach segment — no outfalls observed but adjacent residential property should be noted for potential non-point source contributions	low	annual

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