

Scene 52 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.16870, -86.27231 - Generated October 22, 2026

OVERALL SCORE

4.2

Poor



Front: Looking downstream, the view shows dense multi-stemmed shrubby vegetation (likely bush honeysuckle) dominating the center of the frame. A narrow shallow stream channel is visible on the right side flowing through a small incised channel. To the left, a mowed grass area and what appears to be a commercial/institutional area with a building and light pole visible in the background. Some litter is visible on the ground.

Right: Looking to the right bank (when facing downstream), the view shows sparse deciduous trees and shrubs mostly in bare or early-leaf condition. The ground is covered with gravel, small rocks, and some green herbaceous growth. Residential structures are faintly visible in the background through the bare trees. The terrain appears relatively flat with scattered volunteer woody vegetation.

Back: Looking upstream (back), a concrete box culvert is clearly visible carrying the stream under what appears to be a road embankment. The culvert has concrete headwalls and wingwalls. The stream flows from the culvert opening with shallow water over a gravel/cobble bed. The road embankment above is grassed. Bare deciduous trees line the left side of the channel. Overhead utility lines are visible. Some angular rock fragments near the culvert apron may be concrete debris or placed stone.

Left: Looking at the left bank (when facing downstream), a concrete wingwall or headwall structure is visible on the left side, part of the culvert system seen in the back view. Dense multi-stemmed shrubs (likely bush honeysuckle) fill the area between the concrete structure and the bank. The road embankment rises steeply behind with mowed grass. A grassy hillslope extends upward. Overhead utility lines are visible. Some litter including what appears to be a white PVC pipe fragment is on the ground. Gravel and rubble are scattered at the base.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	4		marginal
Hydrologic Alteration	4		Fair
Sediment Deposition	5		Fair
Left Bank Stability	5		Fair
Right Bank Stability	5		Fair
Left Vegetative Protection	5		Fair
Right Vegetative Protection	4		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 52

Black Branch 252 at this end-of-reach location (Scene 52 of 53) is a severely impaired small headwater stream flowing through a suburban/commercial landscape in middle Tennessee. The stream emerges from a concrete box culvert under a road and flows through a corridor dominated by invasive bush honeysuckle with minimal native riparian vegetation. Instream habitat is poor with uniform shallow flow, limited substrate diversity, no pools, and virtually no large woody debris. The channel is moderately entrenched and disconnected from its floodplain. Water quality appears adequate based on visual indicators but the physical habitat cannot support healthy aquatic communities. Priority management actions include invasive species control, native riparian buffer restoration, and potential instream habitat enhancement.

Primary Stressors

riparian loss, stormwater, channelization, barriers

Channel Assessment

Metric	Score	Notes
Channel Condition	4	Channel shows evidence of alteration with the concrete box culvert immediately upstream. Some concrete debris in the bed. Channel appears somewhat incised but not actively downcutting. Less than 50% channelized but significant infrastructure influence at this end-of-reach location.
Hydrologic Alteration	4	The stream appears moderately incised with banks 2-3ft above the water surface. The culvert and road crossing constrain floodplain access. Commercial development in the surrounding area likely contributes to flashy hydrology. The channel does not appear to regularly access its floodplain.
Sediment Deposition	5	Gravel deposition is present in the streambed with some accumulation near the culvert outlet. Approximately 10-30% of the bed affected. Some sediment sorting evident but not severe aggradation.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	5	5	1_25_percent	Left bank transitions from concrete culvert structure to natural bank with invasive shrubs. Road embankment provides elevated bank above. Grassed slope above.
Right	5	4	1_25_percent	Right bank is lower than left, with sparse deciduous trees and shrubs. Ground surface is gravelly with scattered rocks. Residential structures visible in background suggesting nearby development.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	3	Canopy cover is very limited due to early spring bare conditions and dominance of shrubs rather than mature trees. Even in full leaf, the shrub-dominated vegetation would provide only moderate shade. Currently less than 25% shading of the channel.
Left Buffer Width	10 25ft	Score: 3/10
Right Buffer Width	25 50ft	Score: 4/10
TDEC 30ft Buffer Met?	L: No / R: No	Both banks have inadequate riparian buffers for TDEC MS4 compliance. The left bank is constrained by the road but could benefit from invasive removal and native plantings in the available space. The right bank has more room for buffer restoration but would require invasive species management first.

Water Quality & Infrastructure · Scene 52

Water Quality Indicators

Metric	Score	Notes
Water Appearance	6	Water appears slightly turbid with a brownish tint but the streambed is clearly visible through the shallow water. Clarity appears adequate for the shallow depth. No sheen, foam, or unusual coloring observed. Light brown color likely from natural sediment and substrate interaction.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	9	No evidence of manure, livestock access, or waste discharge visible. The surrounding area is commercial/residential with no agricultural activity apparent.
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
Complete outfall mapping for upstream storm system feeding the box culvert	medium	90_days
Conduct dry weather screening of the culvert system and any connected storm system inputs upstream	medium	90_days
Document culvert condition and fish passage status for infrastructure inventory	medium	annual

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