Scene 1 · MS4 Assessment

Cedar Creek - Main Branch

City of Lebanon TN

36.19194, -86.45050 · Generated November 22, 2026

OVERALL SCORE

7.8

Good



Front | Right | Back | Left

Front: Looking downstream, the channel extends through a well-forested corridor with dense deciduous canopy on both sides. Water is very shallow, flowing over exposed bedrock and limestone substrate with a slight greenish-brown tint. A shallow pool area is visible in the mid-distance where water deepens slightly before the channel bends.

Right: The right bank (left bank when facing downstream) shows a well-vegetated, densely forested bank with mature deciduous trees and a thick understory of shrubs and herbaceous plants. A dirt trail or path is visible running along or near the right bank, with a weathered concrete pad visible at the bank edge where the trail meets the water. The bank appears relatively low with good vegetative cover.

Back: Looking upstream, the channel extends through a forested corridor with mature deciduous trees overhanging both banks. Water is flowing gently over bedrock with slightly deeper water visible in this direction creating a glide/pool condition. The left bank shows some root exposure from large trees, and woody debris is visible in the channel. The overall reach is well-shaded with dense riparian vegetation.

Left: The left bank (right bank when facing downstream) is densely forested with mature deciduous trees and a lush understory of shrubs and herbaceous vegetation. The bank is low to moderate with good vegetative cover. Some woody debris including fallen branches is visible at the bank edge. The water extends to the base of the vegetated bank, and the riparian zone appears continuous and well-established with no gaps or disturbance evident.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	9		good
Hydrologic Alteration	8		Good
Sediment Deposition	8		Good
Left Bank Stability	8		Good
Right Bank Stability	8		Good
Left Vegetative Protection	8		Good
Right Vegetative Protection	9		Good
Riparian Canopy Cover	9		Good
Floodplain Vegetation	4		Fair
Water Appearance	7		Good
Nutrient Enrichment	7		Good
Epifaunal Substrate	-		-

Urgency: MONITORING ONLY

Detailed Observations · Scene 1

> Cedar Creek Main Branch at this location is in good overall condition with a natural, bedrock-controlled channel flowing through a dense, continuous forested riparian corridor. Banks are stable and well-vegetated on both sides, with no stormwater infrastructure, outfalls, or engineered features visible. The primary limitations are related to the bedrock-dominated substrate, which limits instream habitat diversity, and current low flow conditions that reduce pool habitat availability. Water quality appears good with clear water and only moderate algal biofilm growth. This reach could serve as a reference condition for riparian buffer assessment in the watershed, though instream habitat enhancement (LWD placement) could improve ecological function.

Primary Stressors

sedimentation, riparian loss

Channel Assessment

Metric	Score	Notes
Channel Condition	**9**	Channel appears entirely natural with no visible alteration, straightening, or armoring. Bedrock substrate provides natural grade control. No evidence of downcutting beyond natural bedrock weathering. Minor trail access point noted but does not affect channel. Score of 9 rather than 10 due to some potential minor widening at the shallow bedrock run area.
Hydrologic Alteration	**8**	Channel appears well-connected to floodplain with low banks. Bedrock-controlled channel limits incision. Active floodplain vegetation and low bank heights suggest regular flooding. Some potential upstream watershed urbanization (not visible) may slightly alter hydrology, but this location shows no evidence of significant hydrologic alteration. Score of 8 reflects minor uncertainty about upstream land use impacts.
Sediment Deposition	**8**	Bedrock-dominated substrate shows minimal sediment deposition. Very little loose sediment visible on the bedrock surface. Some thin algal/sediment film on bedrock but this is natural. No point bars or mid-channel bars observed. Score of 8 as bedrock channels inherently resist deposition but some fine sediment film is present.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	**8**	**8**	0_percent	Left bank is well-stabilized by natural vegetation. A dirt trail provides stream access and runs near the bank edge. Some placed natural rocks visible at the bank-trail interface.
Right	**8**	**9**	1_25_percent	Right bank is well-vegetated and stable. Minor undercutting observed at one location in the upstream view where large tree roots are exposed, but this appears to be natural bank process and is well-stabilized by the root system.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	**9**	Canopy provides approximately 60-70% shade over the channel as visible in the upward face image. A good mixture of shaded and open areas exists, which is optimal for warmwater stream productivity. The canopy gap over the center of the channel allows some sunlight penetration while banks are well-shaded. Score of 9 for near-optimal warmwater shade conditions.
Left Buffer Width	50 100ft	Score: 8/10
Right Buffer Width	over 100ft	Score: 9/10
TDEC 30ft Buffer Met?	**L: Yes / R: Yes**	Riparian buffers on both banks are in excellent condition and far exceed TDEC MS4 permit minimum requirements. The trail on the left bank is a minor linear feature that does not significantly compromise buffer function. No restoration needed - this reach could serve as a reference condition for riparian buffer assessment.

Water Quality & Infrastructure · Scene 1

Water Quality Indicators

Metric	Score	Notes
Water Appearance	**7**	Water has a slight greenish tint but bed is clearly visible through the shallow water column. At the deeper pool areas, visibility extends 1.5-2 feet. No oil sheen, foam, or film observed. The slight green color may indicate minor algal activity or be due to the bedrock/algal film reflection. No odor apparent. Score of 7 for good water clarity with slight green tint.
Nutrient Enrichment	**7**	Algae: moderate
Manure/Waste	**10**	No evidence of manure, livestock access, or waste of any kind. The dense forested riparian zone precludes livestock access. No waste discharge pipes or facilities visible. Score of 10 for no waste evidence.
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 for MS4 permit compliance	medium	annual
Continue monitoring for outfall development as upstream watershed may develop over time	low	annual