Scene 0 · MS4 Assessment

Cedar Creek - Main Branch

City of Lebanon TN

36.19194, -86.45051 · Generated November 22, 2026

OVERALL SCORE

7.5

Fair



Front | Right | Back | Left

Front: Looking downstream, the channel opens into a broad shallow run over exposed bedrock/limestone substrate. Water is very shallow across the full channel width with some slightly deeper pools visible in mid-channel. Dense deciduous riparian forest lines both banks with full leaf canopy providing partial shade. A few scattered rocks and some minor debris visible in the channel.

Right: The right bank (facing downstream) shows a rocky bank edge with a visible dirt trail or path running along the bank top. A weathered concrete pad is visible near the bank edge where the trail meets the water. A small tree grows at the bank edge with exposed roots. Dense understory vegetation and canopy cover the bank beyond the trail. The rocks near the trail appear to be a mix of weathered concrete — a remnant pad or slab from prior development or infrastructure.

Back: Looking upstream, the channel shows a pool with slightly deeper water reflecting the dense overhead canopy. Large mature deciduous trees line the left bank with significant root exposure and some leaning trunks. The channel appears to meander gently upstream with good canopy coverage from both sides. Water clarity is moderate with a brown/tea tint and the bed is visible through the shallow water.

Left: The left bank (facing downstream) shows dense riparian vegetation with mature deciduous trees and a thick understory of shrubs and herbaceous plants. A fallen tree with exposed root wad is visible along the bank. The bank transitions from exposed bedrock at the water line to a low vegetated bank with lush green growth. Herbaceous ground cover appears to include some potential invasive vines along the bank edge. No infrastructure is visible on this bank.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	8		good
Hydrologic Alteration	7		Good
Sediment Deposition	8		Good
Left Bank Stability	7		Good
Right Bank Stability	6		Fair
Left Vegetative Protection	8		Good
Right Vegetative Protection	6		Fair
Riparian Canopy Cover	8		Good
Floodplain Vegetation	4		Fair
Water Appearance	7		Good
Nutrient Enrichment	7		Good
Epifaunal Substrate	-		-

Urgency: MONITORING ONLY

Detailed Observations · Scene 0

> Cedar Creek Main Branch at this location is a bedrock-controlled, low-gradient perennial stream in fair to good condition. The channel is largely natural with dense forested riparian buffers on both banks, good water quality, and connected floodplain. The primary habitat limitation is the bedrock-dominated substrate which limits substrate diversity, pool depth, and epifaunal colonization. A recreational trail along the right bank represents the only significant human impact in the immediate reach. No stormwater infrastructure, outfalls, or illicit discharge indicators were observed. The reach generally meets TDEC buffer requirements and supports fish and aquatic life designated uses.

Primary Stressors

sedimentation, riparian loss

Channel Assessment

Metric	Score	Notes
Channel Condition	**8**	Channel appears largely natural with no visible alterations, straightening, or bank armoring. The bedrock substrate controls channel grade, preventing downcutting. Some minor bank erosion on the upstream left bank is visible but appears to be natural meander processes. A trail on the right bank with some placed rock is the only sign of human influence. Score of 8 reflects near-natural conditions with only very minor human influence.
Hydrologic Alteration	**7**	The channel shows slight incision with banks 3-6 feet in places upstream, but the bedrock substrate limits further downcutting. Floodplain appears accessible on both sides, especially the left bank where gradual slopes allow overbank flow. The low banks in the front view suggest flood connection. Score of 7 reflects mostly natural hydrology with minor potential watershed-scale impacts from upstream land use.
Sediment Deposition	**8**	Very little sediment deposition is visible. The bedrock-dominated substrate is largely clean with only a thin biofilm layer. No significant point bar development or mid-channel bar formation. Some fine sediment in the upstream pool area but overall less than 5% of visible bottom is affected by deposition. The bedrock substrate naturally resists aggradation.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	**7**	**8**	1_25_percent	Left bank is primarily natural with dense riparian vegetation. Low gradient bank with bedrock toe. One fallen tree with root wad exposure. Some possible invasive vine growth at bank edge. Overall good condition.
Right	**6**	**6**	1_25_percent	Right bank has a trail/path running along the top. Weathered concrete pad at bank edge near trail access. Minor scour at bank toe. Root exposure on a small tree. Trail use creates some bank disturbance. Dense vegetation beyond trail provides good buffer.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	**8**	Canopy coverage is approximately 50-60% directly overhead based on the UP face image, with a stream corridor gap allowing sunlight. Both banks provide dense canopy that extends over the channel. For a warmwater stream, this provides an excellent mixture of shaded and open conditions promoting both aquatic plant growth and thermal protection. Score of 8 reflects the optimal 25-90% range for warmwater streams.
Left Buffer Width	over 100ft	Score: 8/10
Right Buffer Width	50 100ft	Score: 7/10
TDEC 30ft Buffer Met?	**L: Yes / R: Yes**	Both banks meet minimum buffer requirements. The right bank has a recreational trail within the buffer zone which represents minor encroachment. No other development or clearing visible within the buffer on either side. Buffer function appears largely intact with only the trail representing a minor impact to the right bank buffer.

Water Quality & Infrastructure · Scene 0

Water Quality Indicators

Metric	Score	Notes
Water Appearance	**7**	Water shows good clarity with the bedrock substrate visible through 1-2+ feet of water depth. Color is slightly brown/tea-colored which is typical for streams with forested watersheds and is generally natural. No oil sheen, foam, or surface contamination visible. The biofilm on bedrock surfaces appears natural. Overall good water appearance for a Middle Tennessee stream at summer baseflow.
Nutrient Enrichment	**7**	Algae: minor
Manure/Waste	**10**	No evidence of manure, waste, or livestock access. The dense forested riparian buffer on both sides indicates no agricultural/livestock use in the immediate area. No waste discharge pipes or waste storage 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	low_flat

Management Recommendations

Action	Priority	Timeline
Document this reach as part of routine visual stream survey. No immediate MS4 compliance issues identified.	low	annual
Verify placed rock on right bank near trail access is not associated with an undocumented outfall or crossing	low	90_days