Scene 2 · MS4 Assessment

Cedar Creek - Main Branch

City of Lebanon TN

36.19195, -86.45048 · Generated November 22, 2026

OVERALL SCORE

8.0

Good



Front | Right | Back | Left

Front: Looking downstream, the channel is wide and shallow with water flowing over exposed bedrock/limestone substrate. The stream extends into a well-vegetated corridor with mature deciduous trees and dense understory on both banks. A shallow glide/run condition dominates with some slight turbulence in the center channel.

Right: Looking toward the right bank (when facing downstream), there is a tree growing at the water's edge with exposed roots and rocks. Behind this tree, a bare earth path or low-water crossing area is visible ascending the bank. The bank is low with exposed bedrock and a weathered concrete pad. Dense vegetation including shrubs and trees covers the upper bank area.

Back: Looking upstream, the channel extends through a deeply forested corridor with mature trees arching over the water from both banks. The left bank shows a large tree with exposed root system and undercut bank. Water is deeper on this side forming a pool or slow glide. The channel substrate transitions from bedrock near the camera to a deeper pool section upstream.

Left: Looking toward the left bank (when facing downstream), there is a well-vegetated bank with mature trees and dense understory shrubs. A fallen tree or large woody debris with an exposed rootwad is visible along the bank edge. The bank appears low to moderate height with herbaceous vegetation extending to the water's edge. Some minor bank erosion is visible near the rootwad area.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	9		good
Hydrologic Alteration	8		Good
Sediment Deposition	8		Good
Left Bank Stability	7		Good
Right Bank Stability	6		Fair
Left Vegetative Protection	8		Good
Right Vegetative Protection	7		Good
Riparian Canopy Cover	8		Good
Floodplain Vegetation	4		Fair
Water Appearance	8		Good
Nutrient Enrichment	8		Good
Epifaunal Substrate	-		-

Urgency: MONITORING ONLY

Detailed Observations · Scene 2

> Cedar Creek Main Branch at this location (Scene #2 of 964) is in good overall condition with a natural bedrock-controlled channel, intact riparian forest on both banks, and clear water quality. The stream exhibits a natural channel form with no evidence of straightening, armoring, or other human modifications. Key strengths include the dense riparian buffer exceeding TDEC requirements, good water clarity, and absence of stormwater infrastructure impacts. The primary limitations are inherent to the bedrock substrate type, which reduces habitat diversity compared to alluvial channels. No MS4 compliance concerns were identified; no outfalls, illicit discharges, or permit violations were observed.

Primary Stressors

sedimentation, riparian loss

Channel Assessment

Metric	Score	Notes
Channel Condition	**9**	The channel appears entirely natural with no evidence of straightening, armoring, or other modifications. Bedrock substrate provides natural grade control. Only a minor path/access point on the right bank suggests any human interaction. No evidence of downcutting given the bedrock-controlled bed.
Hydrologic Alteration	**8**	The channel appears to have good floodplain connectivity with low banks on both sides. The bedrock substrate limits incision. Some slight bank height on the upstream view suggests minor incision but the overall connection to the floodplain appears functional. The low-flow conditions show the channel is wide relative to current flow, suggesting it handles higher flows across the full width.
Sediment Deposition	**8**	The bedrock substrate dominates with very little sediment deposition visible. The thin biofilm layer on the bedrock indicates relatively clean substrate. No significant point bars or mid-channel deposits are evident. Some minor fine sediment may be present in crevices but overall deposition is minimal.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	**7**	**8**	1_25_percent	Left bank is well-vegetated with a natural riparian forest. A fallen tree/rootwad provides additional habitat complexity. Minor natural erosion processes are occurring but overall bank stability is good.
Right	**6**	**7**	1_25_percent	Right bank has a bare earth path or low-water crossing access that creates a localized area of reduced stability. A weathered concrete pad at the bank toe provides incidental armoring. Dense vegetation above the access point.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	**8**	The upward view shows approximately 50-60% canopy coverage with a significant opening over the main channel. For a warmwater stream, this provides a good mixture of shaded and sunlit conditions. The canopy gap allows some primary production while still providing thermal buffering. The score of 8 reflects the optimal mix of shade conditions for warmwater aquatic life.
Left Buffer Width	over 100ft	Score: 9/10
Right Buffer Width	50 100ft	Score: 8/10
TDEC 30ft Buffer Met?	**L: Yes / R: Yes**	The riparian buffer appears to be well in excess of TDEC minimum requirements on both banks. A minor foot path on the right bank is the only encroachment noted and has minimal impact on buffer function. This section appears to be in excellent compliance with TDEC MS4 permit section 4.2.5.4 buffer requirements.

Water Quality & Infrastructure · Scene 2

Water Quality Indicators

Metric	Score	Notes
Water Appearance	**8**	The water is quite clear with the bedrock substrate fully visible through the water column even in the deeper pool area. In shallow areas, the bottom detail is easily discernible. A slight brownish tint is present which may be natural for this limestone karst area. No oil sheen, film, or unnatural discoloration is observed. The down-facing image shows excellent clarity with the surveyor's feet and bedrock clearly visible.
Nutrient Enrichment	**8**	Algae: minor
Manure/Waste	**10**	No evidence of manure, livestock access, or waste discharge is visible. The forested riparian corridor shows no signs of agricultural or livestock use. No waste pipes or suspicious discharges are observed.
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 baseline reference condition for Cedar Creek Main Branch in MS4 visual stream survey records	low	annual
Continue periodic dry weather screening at this location to monitor for future outfall installations or discharge changes	low	annual