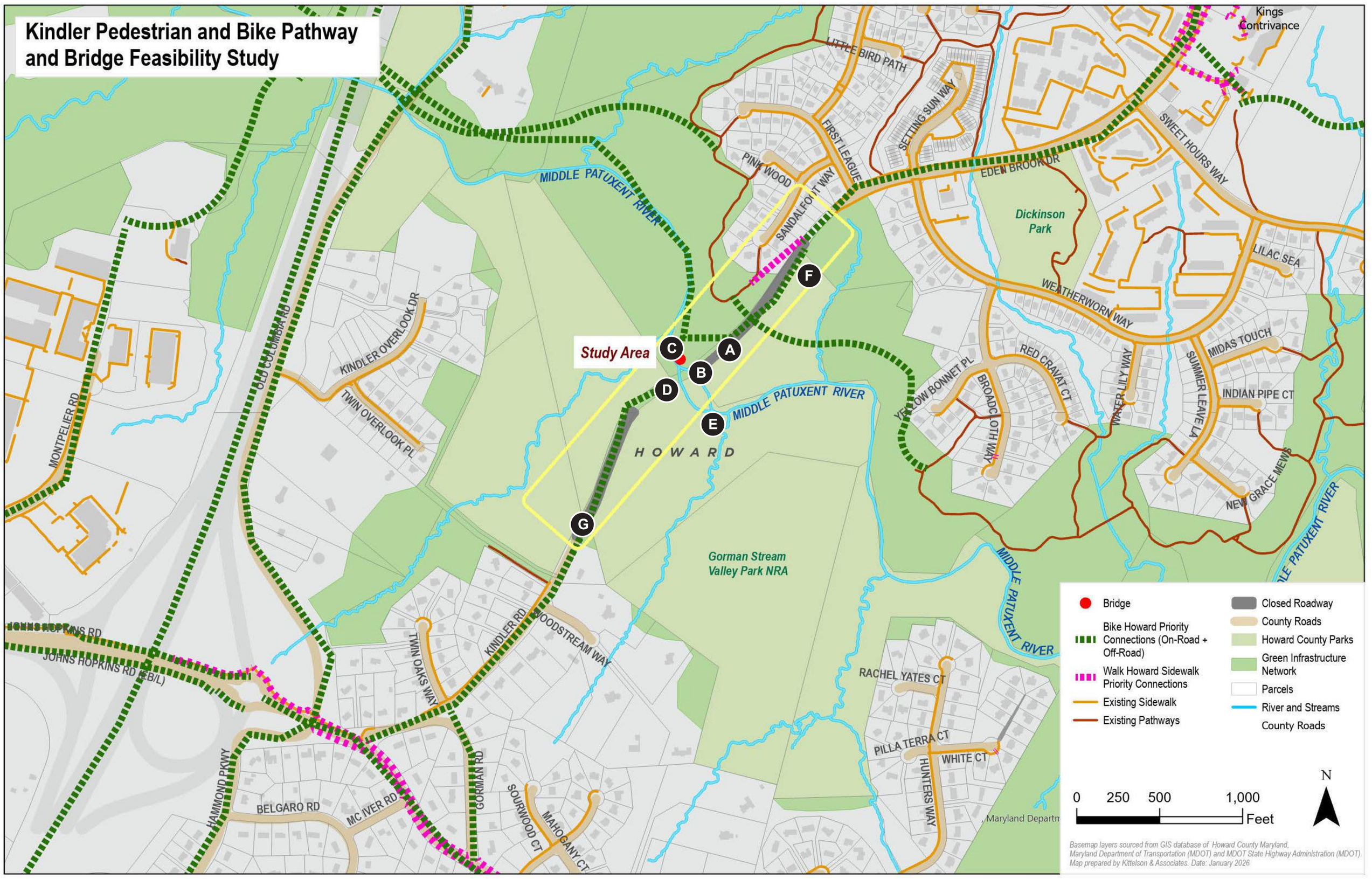
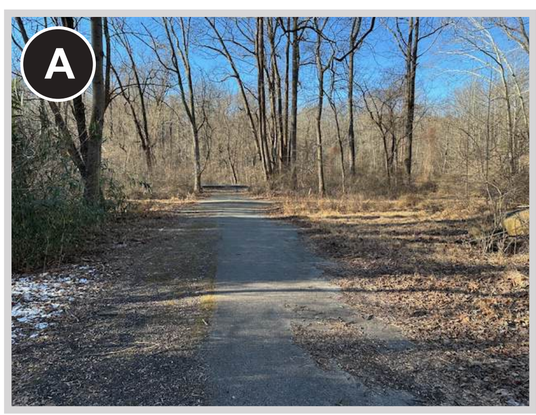
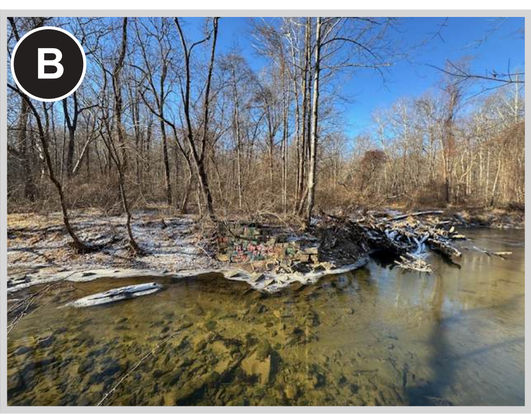
Kindler Pedestrian & Bicycle Bridge Feasibility

STUDY LOCATION

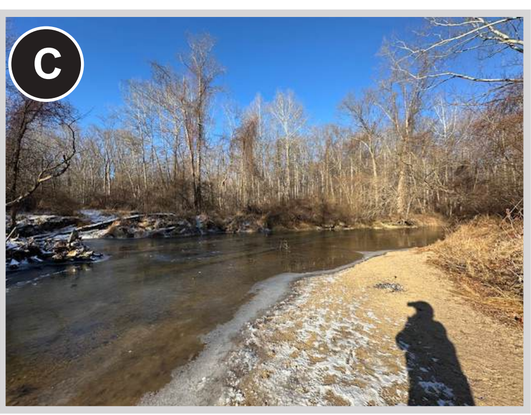




Looking South to Barrier on Eden Brook side of river.



Looking south to former bridge abutment on Eden Brook side of river. Crossing Location B.



Looking north to crossing location A from Eden Brook side of river bank.

Looking north to former bridge abutment from Kindler Road side of river.

Looking north to crossing location C from Kindler side of river.

Looking north at existing path on Eden Brook side of river

Looking north at existing path from terminus of Kindler Road

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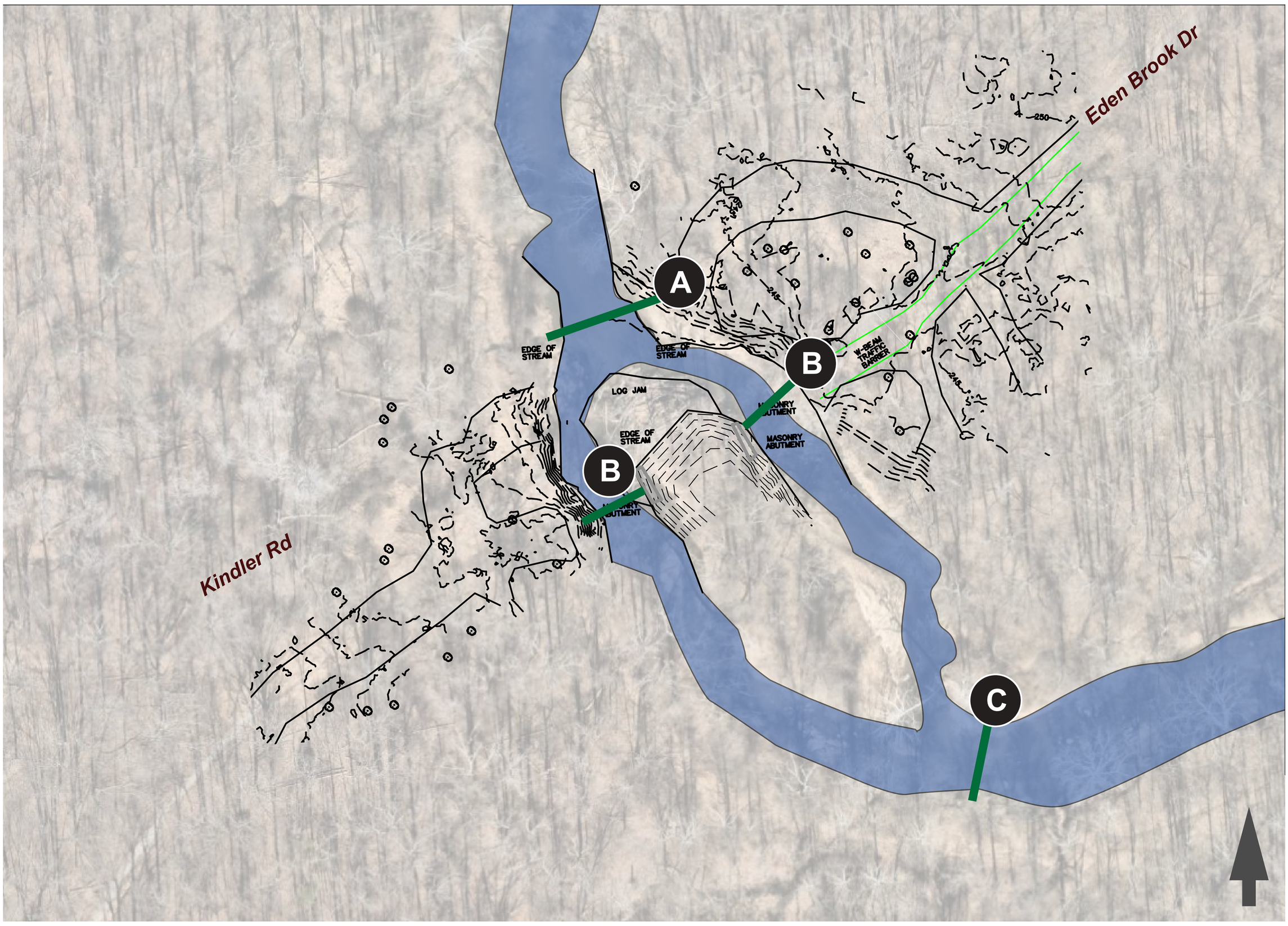
COMPARISON OF POTENTIAL BRIDGE CROSSING LOCATIONS



Sr. No.	Criteria	Description
1	**Approach and Accessibility**	This measures seamlessness of approach and connection to the edge of the river.
2	**Scour and Debris Risk**	Scour is the erosion of soil around bridge foundations caused by moving water from which abutments must be protected against. Debris risk is the potential for trees or sediment to become trapped under the bridge during high-flow events, which can cause structural pressure or upstream flooding.
3	**Structural Span Efficiency**	This evaluates the performance-to-material ratio. It seeks the shortest possible bridge length that can safely clear the stream and its "top-of-bank" . For stream crossings under 80 feet, Maryland regulations strongly prefer a single span. Efficiency is measured by the bridge's ability to span this distance with minimal structural depth to keep thev path profile low (MDOT Bridge Policy Manual).
5	**Environmental Impacts**	This qualitatively measures the bridge location's footprint on the ecosystem, specifically "Stream Buffers," wetlands, and fish habitats. It also accounts for the "Forest Conservation" requirements regarding tree removal during construction.
6	**Historical Impacts**	This criteria evaluates if the bridge affects the "visual or physical integrity" of historical sites. It ensures new infrastructure doesn't clash with the aesthetic of protected areas or disturb underground archaeological remains.
7	**Initial Construction Cost**	This refers to the upfront capital required for the project. This includes mobilization of equipment, material costs (steel vs. concrete), and the cost of utility relocation if power or water lines are in the way. Staging Areas for cranes and trucks can be limited, which often increases cost,
8	**Maintenance and Life Cycle Cost**	This qualitatively evaluates the total cost of ownership over 50-75 years. It broadly factors how often the bridge will need painting, debris removal, or structural repairs, accessibility for repairs, and how easy it is for County crews to access it for inspections.

ALTERNATIVE	Access- Approach feasibility / landing	Scour & Debris Risk	Structural Span efficiency	Structural Foundation suitability	Environmental: Impact to trees and natural environment	Historical impacts	Initial cost (Construction)	Maintenance and lifecycle cost	Total Score
ALT A: WESTERN LOCATION	4	4	3	4	4	4	3	4	**30**
ALT B: OVER THE ISLAND	4	2	4	1	4	1	4	1	**21**
ALT C: EASTERN LOCATION	2	1	3	4	2	4	2	3	**21**

SCORE

1. Significant constraints; likely infeasible
2. Multiple challenges/issues to mitigate
3. Feasible with moderate mitigation
4. Generally feasible / preferred

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BRIDGE CONCEPT OPTIONS

What Both Options Have in Common:

- 128’-0” span length measured from centerline-to-centerline bearings with a 10’-0” wide clear walkway.
- Constructed in three segments, with two field splices in the superstructure.
- Staged on the Northetrn bank and lifted with a crane to the final location.
- Temporary timber piers would need to be placed in the stream for setting the truss while the three segments are bolted together, or a larger staging area cleared for a larger crane and single lift.
- Metal members recommended to be galvanized and painted

Concept 1: Prefabricated Truss

- Prefabricated steel truss superstructure fiber reinforced polymer (FRP) deck planks.
- Provides a larger hydraulic area below the bridge, which would help convey larger flood events and have a smaller potential to trap debris since truss structure is above the walkway surface
- Slightly more expensive initial construction
- Conceptual Planning Level Estimated Cost (2026 Price) – BRIDGE ONLY - $869,000

Concept 2: Steel Girder Bridge

- Rolled steel 3-girder superstructure with a 5” reinforced cast-in-place concrete deck.
- 128’-0” span length measured from centerline-to-centerline bearings with a 10’-0” wide clear walkway.
- Faster assembly and erection onto the abutments, and less maintenance throughout the life cycle due to lack of complex bridge elements.
- The girders extend below the top of the walkway surface. This provides a smaller hydraulic area below the bridge and have a higher potential to trap debris, compared to Concept 1.
- Slightly less expensive initial construction
- Conceptual Planning Level Estimated Cost (2026 Price) – BRIDGE ONLY - $644,000

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