

POLICY BRIEF

# The Eastern Loggerhead Shrike and ALTO's Southern Corridor

*Environmental Risks and Regulatory Conflicts if the Southern Route is Selected*

ALTO HSR Citizen Research Initiative | [altohsrcitizenresearch.ca](http://altohsrcitizenresearch.ca) | March 2026

## AT A GLANCE

<b>Species</b>	Eastern Loggerhead Shrike ( <i>Lanius ludovicianus migrans</i> )
<b>Federal SARA Status</b>	Endangered, listed 2003; COSEWIC assessment 2000
<b>Ontario Breeding Pairs (2022)</b>	22 confirmed province-wide; total wild Canadian population estimated at approximately 40 individuals (WPC, 2023)
<b>Napanee Plain</b>	One of only two core breeding areas remaining in Canada
<b>Federal Recovery Targets</b>	Napanee-specific: 10 pairs short-term, 20 pairs medium-term. Ontario-wide short-term: 35 pairs. Only 22 confirmed in 2022, below even the province-wide minimum.
<b>Corridor at Issue</b>	ALTO southern corridor, traverses/adjacent to the Napanee Limestone Plain
<b>Nest Disturbance Buffer</b>	Sensitive to disturbance within 400 m of nest sites (April–August)
<b>Provincial Protection Status</b>	ESA, 2007 as amended by Bill 5 (June 2025); Species Conservation Act, 2025 pending, will remove provincial protections for SARA-listed migratory birds including ELOSH

## Executive Summary

The Eastern Loggerhead Shrike (*Lanius ludovicianus migrans*) is Canada's most endangered songbird. The total wild Canadian population is estimated at approximately 40 individuals (Wildlife Preservation Canada, 2023), all in Ontario, concentrated in two limestone plain habitats. The Napanee Limestone Plain, one of these two remaining breeding areas, lies directly within or immediately adjacent to the study footprint for ALTO's proposed southern corridor through Eastern Ontario.

This brief identifies the environmental risks and the legal and regulatory problems that would arise if the southern corridor is selected. It is prepared as a submission to the ALTO public consultation process, the deadline for which is April 24, 2026.

The analysis identifies six categories of direct environmental harm, and a particularly serious governance problem: at exactly the moment that ALTO is advancing corridor selection, the Province of Ontario has materially weakened its species-at-risk framework through Bill 5 (Protect Ontario by Unleashing our Economy Act, 2025). When the pending Species Conservation Act, 2025 comes into force, the ELOSH, as a SARA-listed migratory bird, will be removed from provincial statutory protection entirely, leaving federal SARA as the sole remaining legal backstop for this species. This concentrates all legal responsibility on the federal government at exactly the moment a federal Crown corporation is proposing to build infrastructure through the species' critical habitat.

# 1. Species Profile: Eastern Loggerhead Shrike

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## 1.1 Status and Distribution

The Eastern Loggerhead Shrike (hereafter ELOSH) has been designated Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) since 2000, and has been listed under Schedule 1 of the federal Species at Risk Act (SARA) since 2003 [1]. The Canadian population has declined catastrophically over the past 50 years, driven by habitat loss, changes in agricultural land use, pesticide bioaccumulation, vehicle collisions, and poorly understood mortality events on migration and wintering grounds [2]. As of 2022, Wildlife Preservation Canada confirmed 22 breeding pairs province-wide, representing the entire national breeding population of this subspecies. The total wild Canadian population is estimated at approximately 40 individuals (Wildlife Preservation Canada, 2023) [4a]. This figure falls below the federal Recovery Strategy's own short-term target of 35 pairs across all Ontario core areas combined, meaning the species has not achieved its minimum population objective after more than two decades of active recovery effort [1].

Breeding records are concentrated in two core areas:

- Carden Plain (central Ontario), approximately 12–18 pairs in peak years
- Napanee Limestone Plain (southeastern Ontario), approximately 9–15 pairs in recent years

Over 70% of Ontario breeding records originate from these two areas [3]. A captive breeding and release program, led by Wildlife Preservation Canada since 2003, has released over 1,300 young birds into the wild; captive-released individuals represent approximately 20–30% of the wild population in recent years [4]. Despite sustained recovery effort now in its third decade, the wild population remains critically small. The federal Recovery Strategy sets a short-term target of at least 10 pairs on the Napanee Plain specifically, and at least 35 pairs across all Ontario core areas combined. The 2022 confirmed total of 22 pairs falls below both the Ontario-wide minimum and, given historical Napanee counts, underscores the fragility of this particular breeding population [1].

## 1.2 Habitat Requirements

The ELOSH has highly specific habitat requirements that make it acutely vulnerable to large-scale linear infrastructure [5]:

- Open, short-grass alvar or limestone plain habitat with scattered trees and shrubs for nesting and hunting perches
- Eastern Red Cedar (*Juniperus virginiana*) and hawthorn (*Crataegus* spp.) as preferred nest trees on the Napanee Plain
- Territory sizes of 2.9–11.7 hectares per pair on the Napanee Plain (2009 survey data)
- Sensitivity to disturbance within 400 m of active nest sites during the breeding season (April to August)
- Dependence on unbroken pasture, alvar, and hedgerow connectivity for foraging and dispersal between territories

The Napanee Limestone Plain, characterized by shallow soils over Ordovician limestone bedrock, alvar communities, Eastern Red Cedar woodlands, and open cattle pasture, provides some of the highest-quality remaining ELOSH habitat in Canada. There is no substitute for this habitat elsewhere in the country at a scale that could sustain a breeding population.

The ELOSH does not inhabit this landscape alone. The same alvar grassland system supports Bobolink and Eastern Meadowlark (both Threatened under SARA), Grasshopper Sparrow and Short-

eared Owl (both Special Concern), and historically the Henslow's Sparrow (Endangered). The Salmon River Alvar, a key site within this complex, is also home to the sole Canadian population of Juniper Sedge (*Carex juniperorum*), an internationally rare plant. Destruction of this habitat through corridor construction would therefore simultaneously trigger SARA obligations for multiple listed species, and would constitute the national extirpation of Juniper Sedge from Canada. A companion assessment by the ALTO HSR Citizen Research Initiative documents these co-occurring species and habitat values in full [7, 19].

### **COSEWIC 2014 — Critical Population Context**

*The Canadian population numbers fewer than 110 mature individuals. Ontario recorded a 26% reduction in mature individuals over the ten years prior to the 2014 assessment. Pastureland in Ontario dropped from approximately 2.7 million hectares in 1921 to 660,000 hectares by 2011, a 75% decline. Further habitat loss cannot be compensated at any timescale relevant to species recovery planning. [2]*

## **2. The Southern Corridor and the Napanee Plain**

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### **2.1 Corridor Geography and Footprint**

ALTO's southern corridor option, as mapped in public consultation documents, runs from the Ottawa region southwestward through Lanark and Lennox & Addington Counties toward Peterborough, passing through or immediately adjacent to the geographic extent of the Napanee Limestone Plain. The alignment also passes through or borders the Frontenac Arch UNESCO Biosphere Reserve, one of only 19 UNESCO Biosphere Reserves in Canada, which encompasses the broader landscape in which ELOSH critical habitat sits [20]. The corridor crosses the alvar and agricultural terrain that constitutes designated and candidate critical habitat under the federal Recovery Strategy for the ELOSH [6, 7].

The fenced rail right-of-way is approximately 30 metres wide, but the construction footprint, drainage catchment modifications, access roads, laydown areas, and operational noise envelope are substantially broader. For a species requiring contiguous open grassland with a 400-metre disturbance buffer around active nest sites, a fully fenced, electrified, 300 km/h rail corridor presents a qualitatively different and more severe form of habitat destruction than existing highway or secondary road infrastructure in the same landscape.

### **2.2 Critical Habitat Designation**

The 2015 SARA Recovery Strategy for the ELOSH identifies critical habitat on the Napanee Limestone Plain based on a decade of occupancy data. Section 58 of SARA prohibits any person, including federal Crown corporations and their private partners, from destroying any part of that designated critical habitat. The federal Crown is bound by this prohibition equally with private actors. The ALTO Crown corporation, and the Cadence consortium acting under its framework, cannot proceed through designated critical habitat without first either demonstrating that the footprint avoids that habitat, or formally engaging the permitting mechanism under SARA, a process that itself requires demonstration of 'no feasible alternative' [1].

SARA also contains a 'safety net' provision with direct relevance to the current provincial regulatory transition. If the competent minister forms the opinion that critical habitat on non-federal lands is not effectively protected under provincial law, SARA requires the minister to recommend that the Governor in Council make an order prohibiting its destruction. As Ontario's Bill 5 and the pending Species Conservation Act progressively strip provincial protection from SARA-listed migratory birds including the ELOSH, this safety net provision becomes increasingly applicable. The federal government cannot simultaneously withdraw provincial protection via inaction on the safety net and advance federal infrastructure through the critical habitat that protection was meant to secure [1].

## 3. Environmental Risks: Six Categories of Harm

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### 3.1 Direct and Permanent Habitat Destruction

Construction of the rail embankment, drainage channels, access roads, and service infrastructure will permanently convert alvar, pasture, and hedgerow habitat. Even a 30-metre cleared corridor bisecting a shrike territory eliminates the habitat contiguity that the species depends on. Given that Napanee Plain territory sizes reach as small as 2.9 hectares, a single rail corridor could sever multiple territories and render them functionally uninhabitable [5].

Alvar is a globally rare ecosystem type. The Napanee Limestone Plain represents one of the largest concentrations of alvar habitat in North America. Unlike agricultural or grassland habitat that may be restored or re-established over decades, alvar habitat is formed by geological and pedological processes operating over millennia. Once destroyed, it cannot be recreated. No habitat offset or compensation payment has ever successfully replaced alvar habitat.

### 3.2 The Linear Corridor Predation Effect

Federal ELOSH recovery documents identify a documented and counterintuitive hazard specific to linear infrastructure: shrikes nesting in or adjacent to linear habitats, fence lines, road edges, hedgerows, face elevated predation risk because predators (raccoons, crows, feral cats, raptors) actively use linear features as travel and foraging corridors [1, 8]. Research by Yosef (1994) and DeGeus (1990), both cited in the federal recovery strategies, establishes this as a documented threat, not a speculative one. Nest predation rates are reduced in larger, more contiguous grassland fragments, the inverse of what a rail corridor creates [1].

A fully fenced, continuously maintained high-speed rail embankment, with cleared sight lines and mowed verges on both sides, creates an optimal linear predator corridor through the heart of the Napanee Plain. It would function as a permanent, maintained predation highway bisecting critical habitat.

### 3.3 Vehicle Strike Mortality

Vehicle collision is already identified as a significant cause of ELOSH mortality in Ontario [2]. Shrikes habitually perch on fence lines and utility structures adjacent to roads, placing them in the path of passing traffic. A 300 km/h rail service operating multiple times per hour represents a vastly higher-velocity, higher-frequency collision risk than existing roadway traffic in the same landscape.

The ELOSH is a species for which any in-territory mortality is disproportionately consequential. With a Napanee Plain population that has not yet achieved the recovery strategy's short-term minimum target of 10 pairs, the loss of even one or two breeding adults to rail strike could materially delay recovery by years.

### 3.4 Acoustic and Vibration Disturbance During Breeding Season

The ELOSH breeding season runs from April through August, overlapping entirely with the period of maximum sensitivity to disturbance. The species is documented as sensitive to disturbance as far as 400 m from active nest sites [9]. High-speed rail operations at 300 km/h generate substantial acoustic and vibration disturbance extending well beyond the physical right-of-way. Research on grassland birds consistently finds that noise at infrastructure edges degrades foraging habitat quality and reduces breeding success even where physical habitat remains structurally intact.

Construction activities, blasting, grading, pile-driving, heavy equipment operations, would occur across multiple breeding seasons. The cumulative disturbance over a multi-year construction window on a population of fewer than 15 pairs represents an existential risk to the Napanee Plain population.

### 3.5 De-icing Chemicals and Pesticide Bioaccumulation

Electrified high-speed rail requires de-icing of overhead catenary systems and track infrastructure during winter operations. De-icing compounds, including glycol-based formulations, enter drainage systems and accumulate in adjacent soils and surface water. The ELOSH, as a top predator of large insects, small mammals, and lizards, is acutely vulnerable to bioaccumulation of environmental contaminants [5]. DDE, a persistent DDT metabolite, was still detectable in ELOSH eggs collected in Ontario in 2010 [5]. Introducing novel chemical inputs into the Napanee Plain alvar ecosystem, which has extremely shallow soils over impermeable limestone and limited drainage capacity, carries a high risk of concentrated chemical deposition in precisely the foraging habitat the species depends on.

### 3.6 Invasive Species Introduction and Spread

Rail corridors are established vectors for the introduction and spread of invasive plant species. The Napanee Limestone Plain supports an alvar community that is exceptionally sensitive to disturbance and invasive colonization. Invasive species that alter vegetation height, density, or structure, replacing open short-grass cover with dense shrub or tall herb communities, directly degrade ELOSH foraging and nesting habitat. Construction traffic, ballast material sourcing, and the linear maintenance corridor itself each represent ongoing invasion vectors [10].

#### The Allee Effect — A Population Collapse Risk

*Federal recovery documents explicitly identify the Allee effect as a risk for the ELOSH: populations that fall below a minimum threshold lose the density-dependent benefits of mate-finding and social cohesion, accelerating decline even when habitat conditions appear adequate. With only approximately 9–15 breeding pairs on the Napanee Plain — a population that has not yet achieved the recovery strategy's short-term minimum target — any additional mortality, displacement, or territory loss risks triggering a population collapse that no captive breeding program can reverse at a meaningful timescale. [1]*

## 4. Regulatory and Legal Problems

### 4.1 Federal Species at Risk Act (SARA) — Non-Negotiable Obligations

The following provisions of SARA apply directly to any infrastructure development within or adjacent to the Napanee Limestone Plain, and cannot be waived or avoided by the federal proponent:

- **Section 32:** Prohibits killing, harming, harassing, capturing, or taking an individual of a listed endangered species. Construction activity and operational rail traffic in active ELOSH habitat directly engages this prohibition.
- **Section 33:** Prohibits damaging or destroying the residence of an individual of a listed endangered species. Active nest sites and nest trees within the corridor footprint or disturbance buffer are specifically protected.
- **Section 58:** Prohibits any person, including federal Crown corporations, from destroying any part of designated critical habitat for a listed endangered species. The Napanee Limestone Plain holds designated ELOSH critical habitat. There is no administrative exemption available for infrastructure projects at this stage.
- **Section 79:** Requires any federal authority that funds, permits, or carries out a project that may affect a listed species to apply the precautionary principle and to notify the competent minister if the project is likely to result in the species being further endangered. This obligation is mandatory, not discretionary.

Any activity that would otherwise contravene these prohibitions requires a permit from the competent minister. The minister may only issue such a permit if three conditions are all met: (1) all reasonable alternatives to the activity that would reduce the impact on the species have been considered; (2) all feasible measures will be taken to minimize the impact on the species, its critical habitat, or residences; and (3) the activity will not jeopardize the survival or recovery of the species, the 'no jeopardy' test. For a species whose total wild Canadian population is estimated at approximately 40 individuals and whose Napanee Plain breeding population has not yet achieved its short-term recovery target, demonstrating that a permanently fenced, high-speed rail corridor through its critical habitat would not jeopardize its survival would be an extraordinarily high evidentiary burden [1, 19].

The fact that the federal government is simultaneously the proponent (through ALTO and the Cadence consortium) and the administrator of SARA (through Environment and Climate Change Canada) creates a structural conflict of interest. This is precisely the governance configuration in which the protections of Section 79, requiring notification and independent assessment, are most critical, and most susceptible to internal pressure to minimize.

#### **4.2 Impact Assessment Act (IAA) — Cumulative Effects and Alternatives**

The ALTO project is subject to the federal Impact Assessment Act. An IAA review must assess effects on listed species at risk and their critical habitat, and must consider a range of alternatives, including route alternatives, before the most impact-intensive option can be justified. Any IAA process for the southern corridor would need to account for:

- Direct destruction of alvar and pasture within the ELOSH critical habitat boundary
- Cumulative effects on a population operating at the margin of Allee-effect collapse
- Multi-season construction disturbance across multiple breeding years
- Permanent operational disturbance (noise, vibration, strike risk, predator corridor effects) over a project lifetime of 60+ years
- Interactions with other stressors already documented in the Napanee Plain, including solar farm expansion and agricultural land use change [2]

Each of these elements must be assessed independently, and their combined effect evaluated against the recovery strategy's population targets. An IAA conclusion that is favourable to the southern corridor while the Napanee population remains below its minimum recovery target would require extraordinary and well-documented justification.

#### **4.3 Migratory Birds Convention Act, 1994 (MBCA)**

The ELOSH is a migratory songbird protected under the Migratory Birds Convention Act, 1994. The MBCA prohibits the killing, injuring, taking, or disturbing of migratory birds, their nests, and their eggs, except under permit. Shrikes are explicitly listed among the songbirds covered by the MBCA [11]. Construction or operational activity that disturbs or destroys active shrike nests during the breeding season is a prohibited activity under the MBCA regardless of whether SARA compliance is separately addressed. Both prohibitions apply concurrently.

#### **4.4 Provincial Framework: A Deteriorating Regulatory Backstop**

Until recently, the Ontario Endangered Species Act, 2007 (ESA) provided an additional and independent layer of legal protection for the ELOSH, requiring proponents to obtain separate provincial authorizations for activities that would harm the species or destroy its habitat. This provincial backstop has been materially weakened and is now in the process of being eliminated entirely. Decision-makers considering the southern corridor must understand the current and anticipated state of Ontario's species-at-risk regulatory framework.

The framework has undergone three significant phases of change:

**Phase 1 — 2019 Amendments (Bill 108 — More Homes, More Choice Act):** The More Homes, More Choice Act introduced the first significant regulatory weakening of the ESA. Changes included expanded use of conditional exemptions, delayed timelines for recovery strategy development, and broadened application of the Species at Risk Conservation Fund as a substitute for direct habitat protection obligations [12].

**Phase 2 — Bill 5 (Protect Ontario by Unleashing our Economy Act, 2025) — In Force Since June 5, 2025:** Schedule 2 of Bill 5 made immediate amendments to the ESA, now in effect. Key changes include:

- Purpose of the ESA revised to expressly incorporate social and economic considerations alongside species protection, creating a balancing framework where pure species protection no longer automatically prevails
- "Harass" removed from the list of prohibited activities, narrowing the scope of conduct that requires authorization
- Habitat definition narrowed to focus on core protections, in practice, the area around dwelling places and immediately essential habitat, reducing the extent of legally protected habitat
- Mandatory requirement to develop and publish recovery strategies for listed species removed from legislation, replaced by a more flexible (and less enforceable) Species Conservation Program
- Species at Risk Conservation Fund closed to new contributions; Species Conservation Action Agency being wound down, eliminating the primary offsetting mechanism previously available to proponents under the ESA

**Phase 3 — Species Conservation Act, 2025 (SCA) — Enacted, Not Yet in Force:** Schedule 10 of Bill 5 enacted the Species Conservation Act, 2025, which will repeal the ESA when proclaimed. The SCA introduces the most consequential change for the ELOSH specifically:

**⚠ Critical — Loss of Provincial Protection for the Eastern Loggerhead Shrike**

Under the proposed SCA, species protections will not apply to SARA-protected aquatic species and migratory birds. The Eastern Loggerhead Shrike is a SARA-listed Endangered migratory bird. When the SCA comes into force, the ELOSH will be removed from provincial species-at-risk protection entirely. Federal SARA will become the sole statutory protection for this species at any level of government in Ontario. [13, 14]

The provincial government's stated rationale for this change is elimination of regulatory duplication, since the ELOSH is already protected under SARA and the MBCA, proponents will no longer need separate provincial authorization. However, conservation advocates, Birds Canada, and Ecojustice have documented that the federal SARA framework was never designed as a complete substitute for provincial protection, and that Ottawa rarely exercises its power to order provinces to protect species' critical habitat [14, 15]. The removal of the provincial backstop concentrates all legal protection for the ELOSH in a federal framework that has its own well-documented enforcement limitations.

The collision of these dynamics, a federal Crown corporation proposing to build through ELOSH critical habitat at the exact moment provincial protection is being stripped, creates a regulatory gap of significant concern.

#### 4.5 Bill C-15 and the Fast-Tracking Legal Tension

Bill C-15 (Fall Economic Statement Implementation Act, 2025) grants the Minister of Transport authority to exempt ALTO from certain environmental review requirements and provides enhanced expropriation powers. This creates a direct and serious legal tension: SARA's prohibitions under Sections 32, 33, and 58, and its Section 79 impact assessment obligations, are standalone federal offences and obligations that operate independently of the Impact Assessment Act. They cannot be waived or overridden by the Minister of Transport. Even if Bill C-15 is used to fast-track the project through the southern corridor, the SARA prohibitions remain fully in force [19, 21].

Environmental organizations have standing to bring SARA-related judicial review applications against federal projects, and precedent exists for courts halting or modifying federal infrastructure that fails to comply with SARA requirements. A project that proceeds through designated ELOSH critical habitat without satisfying the three-part permit test, including the 'no jeopardy' condition, is directly exposed to such challenge. The legal risk is not diminished by project scale or political designation as a 'nation-building' initiative. SARA's offence provisions do not contain such exceptions [1].

#### 4.6 The Proponent-Regulator Conflict

ALTO is a federal Crown corporation. Its private development partner, the Cadence consortium, operates under a federal government contract. The federal government administers SARA, the IAA, and the MBCA. When the same level of government is simultaneously the infrastructure proponent and the statutory regulator of the species-at-risk consequences, the independence of the regulatory process is structurally compromised.

This conflict is compounded by the fact that the provincial regulatory backstop is being removed through legislation introduced by a separate level of government that is not the proponent. The result is that no independent government authority, at any level, currently stands between the southern corridor project and the potential destruction of designated ELOSH critical habitat.

### 5. Information Gaps That Must Be Resolved Before Route Selection

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The following information has not been publicly disclosed by ALTO, and is essential for the public and decision-makers to properly assess the southern corridor's consequences for the Eastern Loggerhead Shrike. These gaps represent a deficiency in the consultation process as it stands:

- Has ALTO conducted ELOSH-specific habitat mapping overlaid on the southern corridor footprint? If so, the results must be publicly released as part of the consultation record.
- Has designated ELOSH critical habitat under the 2015 Recovery Strategy been mapped against the southern corridor boundaries and made publicly available in consultation materials?
- Has the Section 79 (SARA) notification to the competent minister been filed? If not, when will it be?
- What is the current (2025–2026) confirmed breeding pair count on the Napanee Plain, and how does it compare to the recovery strategy's minimum target?
- Has Wildlife Preservation Canada's Eastern Loggerhead Shrike Recovery Team been formally consulted on the southern corridor route? Have they submitted comments, and will those comments be publicly released?
- What is ALTO's proposed approach to SARA Section 58 compliance if the southern corridor is selected? Specifically, what evidence of 'no feasible alternative' will be produced?
- What is ALTO's position on MBCA compliance during the breeding season (April–August) for a multi-year construction project on the Napanee Plain?

## 6. Conclusions

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If the southern corridor is selected for the ALTO high-speed rail project, the following environmental and regulatory consequences are foreseeable and, in several cases, unavoidable:

- **Permanent destruction of irreplaceable alvar habitat** on the Napanee Limestone Plain, one of only two remaining breeding locations in Canada for the species.
- **Six concurrent categories of environmental harm**, direct habitat loss, predator corridor creation, vehicle strike mortality, acoustic disturbance during breeding season, chemical contamination, and invasive species introduction, acting on a population already below its minimum recovery target.
- **Automatic triggering of SARA Sections 32, 33, 58, and 79**, the full suite of federal statutory protections for an Endangered species, creating legal exposure for the proponent that cannot be resolved through routine environmental mitigation.
- **A structural proponent-regulator conflict** in which the federal government administers the very laws protecting the species whose critical habitat its own Crown corporation is proposing to develop, compounded by Bill C-15 fast-tracking provisions that do not and cannot override SARA's standalone offence provisions.
- **Imminent loss of provincial regulatory backstop**, when Ontario's Species Conservation Act, 2025 comes into force, the ELOSH will lose all provincial statutory protection, leaving SARA as the only remaining legal constraint, concentrated in the same federal jurisdiction that is driving the project.

These are not contingent risks. They are predictable consequences of a corridor selection process that has not yet publicly grappled with the presence of a federally Endangered species in irreversibly rare habitat. The public consultation record should reflect this assessment before the April 24, 2026 deadline.

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