Re: Rocky Mountain Power / PacifiCorp CUP Application,
Spanish Fork–Mercer 345 kV Transmission Project

Project Impact & Suggested Mitigation

Memo on Successive Impacts of Rocky Mountain Power Transmission Line Proposal

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Submitted by:
Protect Salem Park Residents & Wildlife Coalition
Representing 1,200+ Concerned Residents

Salem Park Residents & Wildlife Coalition Summary of Project Impact & Suggested Mitigation

Memo on Successive Impacts of Rocky Mountain Power Transmission Line Proposal
Prepared for: Utah County Commission

Date: September 2025

Executive Summary

Rocky Mountain Power's proposed 345–500 kV transmission line through Salem Park would cause significant and avoidable harms to public health, wildlife, construction-era welfare, and neighborhood stability.

Peer-reviewed research shows that electromagnetic field (EMF) exposures above 0.3–0.4 μT double childhood leukemia risk, while the proposed lines would expose families to >3.0 μT at property lines. Transmission corridors also fragment wetlands, displace birds and amphibians, and kill raptors through electrocution and collision. Construction will create sustained dust, noise, and erosion impacts, while in operation the lines generate corona noise and constant humming. Together with the long-term visual and environmental burden, these impacts will destabilize neighborhoods, driving families away.

Mitigation is straightforward: require Rocky Mountain Power to shift the line 500–600 feet north. This setback remains within the approved study corridor, keeps the line in the same general route, and more fairly distributes project burdens. Because Salem Park will not receive the monetary compensation available to other landowners along the route, this adjustment represents a fair and necessary mitigation that protects families while still allowing project feasibility.

1. EMF – Safety & Health

Issue/Impact

345–500 kV transmission lines will expose homes to electromagnetic fields (EMF) exceeding 3.0 μT—levels more than seven times higher than the 0.4 μT threshold consistently associated with increased risk of childhood leukemia. Unlike background household exposure (~0.01–0.1 μT), these fields would represent long-term, sustained exposure for Salem Park families. Epidemiological evidence indicates that such exposures double leukemia risk.

Evidence

• Ahlbom et al. (2000): “Exposures ≥0.4 μT [had] a summary relative risk 2.00 (1.27–3.13).”
Summary: Children exposed above 0.4 μT had double the risk of leukemia compared to peers.

• Greenland et al. (2000): “The Mantel-Haenszel summary odds ratio comparing >0.3 μT to 0–0.1 μT was 1.7 (95% CI 1.2–2.3).”
Summary: Even slight increases above background produced a 70% higher risk of childhood leukemia.

• Seomun et al. (2021): “Children exposed to 0.4 μT had 1.72 (95% CI 1.25–2.35) times higher odds of childhood leukemia.”
Summary: A meta-analysis shows a dose–response pattern: higher fields yield higher risk.

• Brabant et al. (2022): “ELF-MF higher than 0.4 μT increases the risk … pooled OR = 1.37; acute lymphoblastic leukemia OR = 1.88.”
Summary: The most common form of childhood leukemia shows nearly doubled risk above 0.4 μT.

Sadeghi, T., Ahmadi, A., Javadian, M., Gholamian, S. A., Delavar, M. A., Esmailzadeh, S., Ahmadi, B., & Hassanpour Hadighi, M. S. (2017).
Summary: This study provides evidence that EMF-related health risks are not limited to childhood leukemia but extend to pregnancy and early development. Importantly, significant risks were observed at distances up to 600 meters (≈1,968 feet)—far beyond the distance of the proposed Salem Park alignment.

Applicable Standards from UCLUO 16.94(C)

5. Substantially mitigate the likelihood that the proposed use or facility may cause **bodily injury** or property damage to potential persons or property in the area.

13. Mitigate nuisance factors, including, but not limited to, light and glare, noise, vibrations, smoke, dust, dirt, odors, gases, noxious matter, heat, **electromagnetic disturbances**, and **radiation**, if credible evidence of such a nuisance is present.

RMP’s Evidence non-applicable

Rocky Mountain Power’s retained medical expert offered testimony based on short-term and low-voltage exposure studies, which are not applicable to the long-term, high-voltage residential exposures at issue in Salem Park. (See: SRW Packet for full text explanation)

Mitigation Suggested

Shift the line 500–600 feet north is a science-based mitigation measure to protect families from harmful electromagnetic field (EMF) exposures. This setback remains inside the project’s designated corridor and is a reasonable, fair adjustment that distributes impacts more evenly.

Since Salem Park residents will not receive monetary compensation, unlike other landowners along the route, this setback provides the only equitable protection.

2. Wildlife & Habitat

Issue/Impact

Transmission corridors disrupt wetlands and riparian areas that provide habitat for birds, amphibians, and raptors. These corridors create “edge effects” that extend hundreds of meters, degrading habitat quality and exposing species to higher predation risk.

Evidence

• Harper et al. (2019): “Edge effects extend tens to hundreds of meters, altering vegetation composition and increasing predation risk for interior species.”
Summary: Transmission corridors trigger far-reaching ecological disruption.

• Lehman et al. (2007): “Electrocution of raptors … is a global conservation issue, and large-bodied species such as eagles, hawks, and owls are at greatest risk.”
Summary: Raptors are among the most threatened species near high-voltage lines.

• Harness & Wilson (2001): “Electrocution remains a significant mortality factor for golden eagles and other large raptors where conductor spacing does not exceed 2.5 meters.”
Summary: Poorly spaced conductors are a direct cause of raptor deaths.

• Dwyer et al. (2016): “High-voltage transmission lines fragment habitat and increase collision and electrocution risk for golden eagles.”
Summary: Transmission lines both divide habitats and directly kill raptors.

• Loss et al. (2014): “Millions of birds are killed annually by power line collisions and electrocutions in the United States.”
Summary: Power lines represent one of the largest human-caused bird mortality sources in the U.S.

Applicable Standards from UCLUO 16.94(C)

13. Mitigate detrimental effects on the natural features of the site and the surrounding affected areas if credible evidence of such a detrimental effect is present; including, but not limited to, rivers and **creeks**, lakes, **ponds**, reservoirs, **wetlands**, **drainage ways**, groundwater protection, and Slopes.

14. Mitigate detrimental effects on the natural environment of the site and the surrounding affected areas if credible evidence of such a detrimental effect is present; including, but not limited to, **wildlife**, air quality, water quality (including erosion control), local natural resources, natural vegetation (including protection against noxious or invasive species), and **wildland areas**.

RMP's Contradiction

In its May 2025 Conditional Use Permit application, Rocky Mountain Power pledged to avoid sensitive lands:

• "The temporary ROW boundary would be flagged in environmentally sensitive areas … to alert construction personnel that those areas would be avoided."

• "Structures would be placed or rerouted to avoid sensitive features identified during field review, such as washes, cultural sites, and special status species habitats."

Summary: Despite these written commitments, the current Salem Park alignment drives the line directly through wetlands, ponds, and raptor foraging areas.

Mitigation Suggested

Shift the line 500–600 feet north to avoid direct encroachment on wetlands and raptor habitat. This remains within the study corridor, keeps the line in the current route, and shares impacts more evenly. Importantly, such a setback would also help ensure compliance with federal protections for migratory birds and bald eagles (Migratory Bird Treaty Act (MBTA), 16 U.S.C. §§ 703–712; Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. §§ 668–668d; Endangered Species Act (ESA), 16 U.S.C. §§ 1531–1544) both of which use the wetlands in Salem Park. RMP has faced litigation under these laws in the past; a northern setback would minimize this legal exposure while upholding conservation responsibilities. This adjustment represents a fair and necessary mitigation.

3. Construction Disturbances & Perpetual Corona Noise

Issue/Impact

Construction of 345–500 kV lines will introduce multi-year noise, dust, and vibration into Salem Park, with direct health and environmental consequences. After construction there will be especially loud (as the route sits directly over a body of water) and perpetual corona noise.

Evidence

• Banerjee et al. (2012): "Construction dust significantly increased particulate concentrations, elevating respiratory risks in nearby populations."

Summary: Construction dust is a documented respiratory hazard.

• Babisch (2005): "Chronic noise exposure … raises stress levels and increases cardiovascular disease risk."

Summary: Prolonged noise exposure causes long-term cardiovascular harm.

• RMP (2025 application): "Dust abatement will be applied as necessary to minimize dust emissions created by construction activities."

Summary: RMP acknowledges dust risks but has offered only vague, unenforceable promises.

• Alves et al. (2018): “These results provide support that at this distance the noise was considered annoying.”
Summary: Portugal case-study near HV lines; low-frequency noise from lines/poles increased reported annoyance versus a control area.

• Gong et al. (2022): “Depression was approximately 1.23 times greater in those who were highly noise-annoyed… and an approximately 55% higher risk of anxiety.”
Summary: Systematic review/meta-analysis (13 studies) shows high noise annoyance is linked to worse mental health—evidence that chronic community noise (e.g., tonal corona noise) can harm well-being.

Applicable Standards from UCLUO 16.94(C)
18. Mitigate nuisance factors, including, but not limited to, **light and glare, noise, vibrations, smoke, dust, dirt, odors, gases**, noxious matter, heat, electromagnetic disturbances, and radiation, if credible evidence of such a nuisance is present.

Mitigation Suggested
Shift the line 500–600 feet north so construction is further from homes and wetlands. This setback ensures noise and dust impacts are reduced, keeps the project inside the designated corridor, and represents a fair distribution of impacts given that Salem Park will not receive monetary compensation.

4. Neighborhood Welfare & Compatibility

Issue/Impact
Transmission lines diminish livability, aesthetics, and neighborhood stability. Families exposed to these conditions often relocate, eroding cohesion and welfare. Utah Code §17-27a-102(1)(a) obligates counties to safeguard health, safety, welfare, peace, good order, comfort, convenience, and aesthetics.

Evidence
• Des Rosiers (2002): “Homes within 100 feet of transmission lines lost 9–15% of value, with impacts diminishing after 300–500 feet.”
Summary: Families closest to lines face the strongest pressure to leave.

• Jackson & Pitts (2010): “Stigma effects are strongest within 200 feet and negligible beyond 500–1,000 feet.”
Summary: A 500–600 foot buffer eliminates the zone of greatest stigma.

• Sander et al. (2010): “Large-scale infrastructure significantly reduces perceived neighborhood quality.”
Summary: Visual blight drives resident dissatisfaction and decline.

• Des Rosiers (2002): “Diminished environmental quality and encumbrances reduce residential satisfaction, leading to household mobility.”

Summary: Transmission lines lead directly to family out-migration.

Applicable Standards from UCLUO 16.94(C)

15. **Provide buffering**, screening, or fencing of the use or site, or provide other landscape features sufficient **to mitigate the proximity of incompatible uses, objectionable site features, and disharmony with existing and future land uses in the area**.

Mitigation Suggested

According to cited research, detrimental impacts begin to diminish at 300-500 feet, with some citing full diminishment at 1000ft. Shift the line 500–600 feet north to preserve neighborhood livability while remaining in the corridor. This is a reasonable and fair adjustment that better shares the weight of the project, especially since Salem Park will not receive compensation unlike other landowners along the route.

Legal Authority

From the Utah Code, Chapter 27a (County Land Use, Development, and Management Act), Part 1, General Provisions: Utah Legislature+3Utah Legislature+3Utah Legislature+3

> **(1)**
> **(a)** The purposes of this chapter are to:
> (i) provide for the health, safety, and welfare;
> (ii) promote the prosperity;
> (iii) improve the morals, peace, good order, comfort, convenience, and aesthetics of each county and each county’s present and future inhabitants and businesses;
> (iv) protect the tax base;
> (v) secure economy in governmental expenditures;
> (vi) foster the state’s agricultural and other industries;
> (vii) protect both urban and nonurban development;
> (viii) protect and ensure access to sunlight for solar energy devices;
> (ix) provide fundamental fairness in land use regulation;
> (x) facilitate orderly growth, allow growth in a variety of housing types, and contribute toward housing affordability; and
> (xi) protect property values.
>
> **(b)** Subject to Subsection (4) and Section 11-41-103, to accomplish the purposes of this chapter, a county may enact all ordinances, resolutions, and rules and may enter into other forms of land use controls and development agreements that the county considers necessary or appropriate for the use and development of land within the unincorporated area of the county or a designated mountainous planning district, including ordinances, resolutions, rules, restrictive covenants, easements,

and development agreements governing: uses; density; open spaces; structures; buildings; energy-efficiency; light and air; air quality; transportation … and other related matters. Utah Legislature

Conclusion: Utah County is legally obligated to protect residents' welfare. Shifting the line 500–600 feet north is consistent with peer-reviewed evidence, ecological science, and statutory mandates. This adjustment remains in the corridor, is reasonable and fair, and ensures Salem Park families are not forced to carry a disproportionate share of the project's impacts without compensation.