THESIS

WILDLIFE CROSSINGS GOVERNANCE: BARRIERS AND ENABLERS TO IMPLEMENTATION

Submitted by

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ABSTRACT

WILDLIFE CROSSINGS GOVERNANCE: BARRIERS AND ENABLERS TO IMPLEMENTATION

Despite the increased construction of wildlife crossings for mitigating the deleterious effects of roads, most conservation science research has focused on their biophysical dimensions with scant research from a social science standpoint. Roads are an omnipresent human footprint in landscapes globally, driving wildlife mortality and habitat fragmentation and resulting in isolated populations as well as disruptions to wildlife life cycles. Wildlife crossings, including overpasses and underpasses, have emerged as conservation interventions to mitigate the detrimental effects of roads on wildlife populations and improve road safety for motorists. The deployment of wildlife crossings requires governance, as it requires cooperation across sectors of society. Wildlife crossings face barriers for implementation as they are incredibly expensive, require extensive ecological monitoring, and need cooperation from multiple governance actors over long periods of time. While all have been enabled by the 'invisible hand' of governance practice, little research has been focused on them from a governance scholarship perspective. This research asks the question: what are the barriers and enablers from a governance perspective to implementation of new wildlife crossing infrastructure across roadways? Empirically, this research focuses on Summit County Safe Passages (SCSP hereafter) in Colorado. Theoretically, I use the Integrative Collaborative Governance Framework (ICGF), which emerged from public

administration to theorize governance processes at the meso-level and has been applied empirically to a wide range of governance cases. Importantly, the ICGF allows us to disentangle exogenous (i.e., system context) from endogenous (i.e., collaboration dynamics) governance factors. For this single case study, I conducted semi-structured interviews with 20 actors and stakeholders from SCSP to understand their perspectives on the governance structures, processes, and attributes present in the governance system as per the ICGF. Our analytical approach was deductive, using the ICGF to deconstruct wildlife crossing implementation processes into distinct components which can be analyzed individually. I developed the codebook based on the ICGF components, which was subsequently applied to all transcripts from interviews. I then classified each excerpt, and eventually each subtheme, into barriers, enablers, or neutral items based on whether the described attribute of the system hinders, facilitates, or does not affect the process of wildlife crossings implementation. I discovered that most of the barriers to implementation fall within the system context of the ICGF rather than within the collaboration dynamics of the SCSP itself. Specifically, components such as levels of conflict and trust, resource conditions, political dynamics and power relations, and institutional and procedural arrangements from the ICGF seem to obstruct the ability of SCSP to move forward. Conversely, enabling factors fell under collaboration dynamics, including those nested within principled engagement and shared motivation themes. My analysis also revealed that consequential incentives for non-wildlife interested actors are weak when human safety is “low-priority”, whereby habitat fragmentation is high but wildlife-vehicle collisions are low. Despite wildlife crossings being perceived as largely apolitical, I discovered that recent wolf reintroduction in

Colorado may play a role in polarization as they are likely to use wildlife crossings. Lastly, our study has shown that collective action potential toward wildlife crossing infrastructure is compromised by free riding, as some powerful actors contributing to the problem can neither be held accountable nor excluded from potential benefits from wildlife crossings. This study has uncovered how contextual factors must be carefully considered when implementing wildlife crossings.

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INTRODUCTION

Habitat fragmentation driven by roads remains a threat to biodiversity, including large mammals, yet the governance dimensions of mitigation interventions remain scantly understood. Fragmentation of habitat by anthropogenic pressures has led to a plethora of issues for wildlife, such as shrinking populations, decreasing genetic diversity, and increasing numbers of obstacles between habitat patches necessary for completing their life cycle (Lino et. al., 2019). A large contributor to fragmentation is the presence of roads, which both create barriers to wildlife movement and cause direct mortality through wildlife-vehicle collisions (*hereafter* WVCs; Bíl et. al., 2019). Solutions to this problem vary by species in terms of effectiveness in reducing WVCs and increasing habitat connectivity (van der Grift et. al., 2012). For large mammals, overpasses and underpasses, depending on the species, are the most effective structures for facilitating movement (Simpson et. al., 2016). However, the scale of funding needed to implement these large structures is high, as they necessitate building physical infrastructure requiring attached funding for ongoing maintenance (Hack, 2016). Implementation is also complicated by the cross-boundary and multi-sector nature of wildlife crossings, as they usually require involvement and approval by several actors (Maya, 2021). Wildlife crossing implementation practice can be examined through the lens of collaborative governance scholarship, which involves studying the processes through which relevant stakeholders convene, deliberate, and make management decisions.

There is a need to advance our scholarly understanding of conservation practice in mitigating habitat fragmentation for large mammals by roads, which is a nearly ubiquitous issue globally (Lino et. al., 2019). This problem, at its core, is one of resource distribution – the sum of necessary habitat attributes for any given mammal individual or species to feed, rest, reproduce, and disperse often exists across anthropogenic barriers and management systems (Cosgrove, McWhorter, and Maron, 2017). Hence, habitat fragmentation greatly increases the probability of a species' extinction risk (Crooks et. al., 2017) by disrupting the connectivity of resources and increasing the difficulty of meeting survival needs (Martínez-Richart et. al., 2024). Fragmentation also reduces habitat quality and availability via related habitat loss, patch isolation, and edge effects (Wilson et. al., 2013). Subsequently, many populations of mammals, especially large-bodied, terrestrial herbivores, experience several indicators of genetic diversity loss when their habitat is fragmented (Lino et. al., 2018). Wildlife populations occurring in fragmented habitats also become less resilient to climate change as human-caused barriers prevent movement with their functional niches over time (Robillard et. al., 2015). Habitat connectivity is particularly important for large mammal survival, considering they tend to be very mobile with large home ranges, and some undertaking seasonal migrations (Harris et al., 2009; Hilty et. al., 2020). However, a mosaic of landownership and increasing human population lead to physical barriers that make movement more difficult for wildlife, such as fences, resource extraction, and development (Jakes et. al., 2018). They also create the need for roads to facilitate human transportation between constantly growing land developments.

Roads, especially highways with substantial volumes of traffic, are one of the most impactful obstacles that terrestrial mammals face when completing their life cycle (Seidler et. al., 2014). Direct mortality through WVCs on roadways reduces large mammal populations and limits dispersal (Bíl et. al., 2021). As a case in point, 45% of the 80 ocelots (*Leopardus pardalis*) which died while wearing a research collar in southern Texas from 1993-2002 were killed by WVCs (Haines, Tewes, and Laack, 2005). WVCs also cause great economic and social harm to humans. The WVC insurance claims data report for July 2024 through June 2025, which is compiled and released annually by State Farm, shows that 1.7 million WVC-related claims were submitted in the United States this past year (State Farm, 2025). Even this figure is likely an underestimate, as many collisions go unreported. As of 2008, almost $9 billion in property damage is caused by WVCs in the U.S. annually (Huijser et. al.). Besides mortality, many large mammal species avoid roads, especially busy highways, due to the chemical pollution, fast vehicle movement, and loud noises that accompany them (Schmidt et. al., 2021). Notably, females of many species, especially ungulates, do not cross roads and highways as often as males, leading to unbalanced sex ratios between habitat fragments and decreased genetic diversity within new generations (Cosgrove, McWhorter, and Maron, 2017). Migration and movement have become more energy-intensive for wildlife as more roads are built, and engineering of those roads is central to the type and scale of disruption to populations and habitats (Soanes et. al., 2024).

Wildlife crossing structures can be a highly effective solution to unsuccessful road crossings – both collisions and retractions, which are road approaches where the individual turns around without attempting to cross (Sawyer, Lebeau & Hart, 2012). These structures

can include culverts, multi-use bridges, viaducts, underpasses, overpasses, and others. Depending on the target species, project goals, and design specifications of the structure, effectiveness differs greatly between wildlife crossings (Rytwinski et. al., 2016). However, meta-analyses of these structure types show that appropriately sized wildlife crossing structures combined with exclusion fencing usually reduce collisions between vehicles and large mammals by >80% (Huijser et. al., 2016). To be so effective, though, wildlife crossings must meet certain standards tailored to species' needs and context (van der Ree et. al., 2016). Before any design or implementation efforts are put forth, different deployment locations must be evaluated by all interested stakeholders for suitability, prioritization, and feasibility (Young et. al., 2023). This is often based on factors such as potential to improve human safety, importance to species of interest, ownership and habitat quality of adjacent land, topography, and other engineering considerations (Mimet, Clauzel, and Foltête, 2016). Wildlife crossings must also be deployed alongside jump-out escape ramps and at least five kilometers of exclusion fencing that precludes wildlife from entering the roadway and funnels them toward the crossing to effectively mitigate collisions and encourage movement (Huijser et. al., 2016). Wildlife crossing infrastructure can come in many different sizes and designs. Which type to deploy depends on the species of interest, engineering constraints, and project goals (Smith, van der Ree, and Rosell, 2015). Large mammals, especially ungulates, require purpose-built structures larger in height and width than culverts to cross, specifically under- and overpasses (Simpson et. al., 2016).

Despite the importance of wildlife crossings, deploying a project of this size requires substantial amounts of funding, technical expertise across various domains, and engineering

equipment, typically beyond the purview of individual actors. This reality, and the fact that a broad range of actors across scales and physical and political boundaries must collaborate and sign off on each step in the process, make wildlife crossing implementation difficult and slow moving. Even when the ecological science supports building a crossing, projects often stall or fail due to insufficient funding, multi-agency misalignment, or policy hurdles. While much research has been conducted on the biophysical and ecological dimensions of wildlife crossings (Huijser et. al., 2016; Sawyer et. al., 2012), the human dimensions remain understudied. Importantly, social science research has been undertaken in fish passages systems (Ebel and Ortman, 2024; Burch et. al., 2024), which share many traits of wildlife crossings, such as the intersection of human-built infrastructure (e.g., dams and roads) and fish habitat (i.e., rivers; (Mimet et. al., 2016). However, fish passages are governed by different actors and interact with different human needs, meaning the values and systems involved are unique to each problem (Hoffman, Dunham & Hansen, 2012). Hence, while this literature strand provides some foundations and reference for comparison, improving wildlife crossing implementation practice, research on the barriers that stand in its way is needed.

Collaborative governance, or the way stakeholders collaborate to solve collective action problems, make decisions, and jointly manage natural resources (Bodin, 2017), is an appropriate lens through which to examine wildlife crossing implementation processes, including scoping, collaboration, fundraising, and building. These processes contain the major elements of collaborative governance regimes: stakeholders with different perspectives and values, participation from state, market, and civil society actors, shared decision-

making, and collective goals for joint action (Emerson et. al., 2012). The invested and interdependent actors span boundaries, both physical and epistemic, and scales due to the nature of roads and large mammal populations. Wildlife crossing efforts must generally engage actors at various levels of influence (e.g., local vs. regional), with different responsibilities, institutional structures, and expertise (Maya, 2021). The collaboration dynamics that comprise the governance regime influence the outcomes of the collaboration along with the system context and collaborative drivers (Emerson et. al., 2012), in this case whether a wildlife crossing is built and how long it takes to do so. Against this backdrop, I aim to reveal both barriers, or governance factors which inhibit progress toward building a wildlife crossing structure, and conversely opportunities, or governance factors which serve to catalyze progress toward building a wildlife crossing structure. I am only aware of a few other studies that analyze wildlife crossing governance empirically beyond description (Beckmann et. al., 2010; Maya, 2021, Ribiero et. al., 2026).

The aim of this study is to identify and analyze opportunities and barriers within the governance of wildlife crossing infrastructure implementation. I hope to contribute to governance practice of wildlife crossings, while using wildlife crossings as a fertile ground to advance environmental governance scholarship. I accomplish this through conducting interviews with stakeholders who are currently or have been previously engaged in a wildlife crossing implementation collaborative in Colorado, USA. I then deductively analyze the interview transcriptions using a theoretical framework, coding each idea into a subtheme and classifying each excerpt and subtheme as a barrier or opportunity to wildlife crossing implementation. I aim to contribute a rigorous qualitative data inquiry delineating which collaborative

governance attributes serve to facilitate and hinder wildlife crossing implementation. This analysis will fill a gap in the academic conservation literature on wildlife crossings practice.

THEORETICAL FRAMEWORK

The study of collaborative governance theory emerged at the meso-level between the local community and international community in response to increasingly complex governance issues that required multi-sectoral and cross-boundary agreements (Ansell, 2007). Collaborative governance grew from the field of public administration and network governance but moves away from government and market-exclusive settings into joint decision-making between a wide variety of actors (Voets et. al., 2021). As separate actors become more interdependent, they must share power and knowledge if they are to collectively address "wicked" problems (Calton and Lad, 1995; Peters, 2017). Collaborative governance specifically refers to collective action arrangements where actors from different sectors of society cooperatively generate public policy to supply public goods by non-hierarchically pooling authority and deliberatively coming to consensus (Ansell and Gash, 2007; Emerson, Nabatchi & Balogh, 2012; Bodin, 2017). Many theoretical frameworks have been put forth to describe these processes since the inception of the field, and several of these were synthesized to form the Integrative Collaborative Governance Framework (Emerson, Nabatchi & Balogh, 2012).

The Integrative Collaborative Governance Framework is especially useful for answering my research question about the barriers and enablers of wildlife crossings implementation within governance because it breaks down the structure of a collaborative effort into discrete and observable traits and processes. This framework conceptualizes a collaborative governance regime (hereafter CGR) as a setting surrounded by overall system context

(Figure 1). The system context is composed of the subthemes resource conditions, network connectedness, political dynamics and power relationships, socioeconomic and cultural health and diversity, prior failure to address issues, levels of conflict and trust, and policy and legal frameworks. More detailed operational definitions of each subtheme within the Integrative Collaborative Governance Framework are displayed in Table 1. A CGR is a system wherein joint decision-making across boundaries is the primary mode of action and behavior (Emerson, Nabatchi & Balogh, 2012). The CGR is composed of the actions taken by the collaborative and the collaboration dynamics from which those actions emerge (Emerson, Nabatchi & Balogh, 2012).

The pieces of the Integrative Collaborative Governance Framework that are most relevant to this research besides system context are those that feed into the collaborative's actions, or the "process" pieces, because the actions required to build a wildlife crossing are relatively prescriptive. This includes drivers, which are what cause CGRs to form, and collaboration dynamics, which describe the relationships, processes, and interactions that form between people who intentionally unite to create shared solutions (Emerson, Nabatchi & Balogh, 2012). The possible drivers of the emergence of CGRs include leadership, consequential incentives, interdependence, and uncertainty. Often, a combination of these factors sparks or "drives" the formation of a collaborative group through reduction or overcoming of formation costs, and they influence the resulting interactions and outcomes of the CGR. In turn, collaboration dynamics begin when key informants start convening to define their collective mission (Emerson, Nabatchi & Balogh, 2012), and these detailed dynamics are where the Integrative Collaborative Governance Framework is most specific. The first

component of collaboration dynamics, principled engagement, includes the discovery, definition, deliberation, and determination processes to establish a shared purpose and action plan (Emerson, Nabatchi & Balogh, 2012). The second component, shared motivation, includes mutual trust, mutual understanding, internal legitimacy, and shared commitment, and refers to the building of social capital and agreements between stakeholders. The third and final component, capacity for joint action, describes the increased power that people have to act as a result of collaboration, and is composed of procedural and institutional arrangements, leadership, knowledge, and resources (Emerson, Nabatchi & Balogh, 2012). These three broad components of collaboration dynamics ideally work together as an adaptive cycle to enable the actions produced from collaboration.

In this study, I ask specifically the following research question: What are the barriers and enablers among governance dimensions to implementation of new wildlife crossing infrastructure across roadways? The Integrative Collaborative Governance Theory serves as a basis for classification of ideas into distinguishable traits and processes, and each of these discrete themes is either a barrier, enabler, or neutral item in the process of implementing wildlife crossings in Summit County.

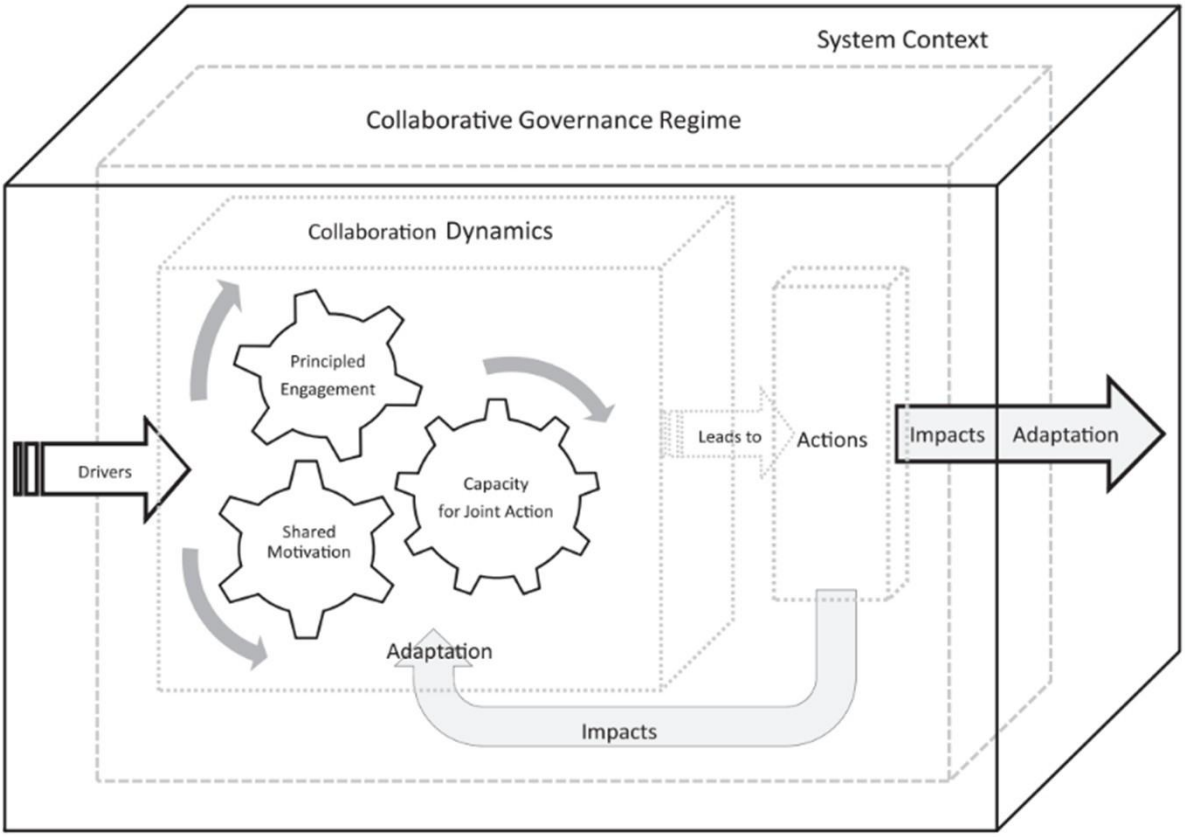

Figure 1. Integrative Collaborative Governance Framework, adapted from Emerson, Nabatchi, and Balogh (2012). This framework serves as the theoretical basis for the interview design of this study.

STUDY SYSTEM

This is a single case study based in Summit County, Colorado, USA (Figure 2), which is home to four ski areas, large swaths of U.S. Forest Service land and approximately thirty thousand residents. The economy is primarily tourism-driven, and outdoor recreation employs many of the county's full-time residents. The region, which contains montane forest, subalpine forest, and alpine tundra, boasts populations of many large mammals such as moose (*Alces alces*), Rocky Mountain elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), Canada lynx (*Lynx canadensis*), black bear (*Ursus americanus*), bobcat (*Lynx rufus*), mountain lion (*Puma concolor*), coyote (*Canis latrans*), and the grey wolf (*Canis lupus*), which was recently reintroduced to Colorado in Summit and Grand counties (Gonzalez, Heid & Niemec, 2024). Three major roads run through the county, including I-70, which is the main east-west commerce and transportation route through Colorado. I-70 is a nationally important commerce route, connecting the Front Range to the West Slope of Colorado. State Highway 9 bisects the entire county in a north-south direction, and State Highway 6 forms a small loop with I-70 in the eastern third of the county (Figure 3).

The CGR analyzed in this research is Summit County Safe Passages (hereafter SCSP), a collaborative with 501c3 status that convenes land managers, agencies at the local, state, and federal levels, county and town planners, land-based business operators, recreation groups, conservation non-governmental organizations (NGOs), and community members. SCSP aims to mitigate wildlife-vehicle conflict and habitat fragmentation on roadways in the county by planning, developing, educating about, and implementing wildlife crossings.

SCSP was formed in 2017 after completion of a stakeholder engagement process, which integrated relevant interests into a county-wide crossing structure location prioritization. The resulting plan, the SCSP plan, identified East Vail Pass as the highest priority due to both its importance to the habitat connectivity of large mammals and its proximity to large swaths of conserved land, with a secondary goal of increasing motorist safety (Kintsch et. al., 2017).

This study system is ideal for researching the opportunities and barriers in implementing wildlife crossings because SCSP is currently immersed in fundraising for crossing design at East Vail Pass, providing an intimate look at these processes after the necessary scoping and before construction begins. Hence, this study focuses primarily on the implementation of wildlife crossing infrastructure at East Vail Pass. This point in the process is when collaboration dynamics between actors in the core group governing the CGR are most easily observable. The stakeholders with vested interest have already expressed their interests for the prioritization plan, and the involvement of low-power stakeholders such as construction contractors and members of the public has not yet complicated the process.

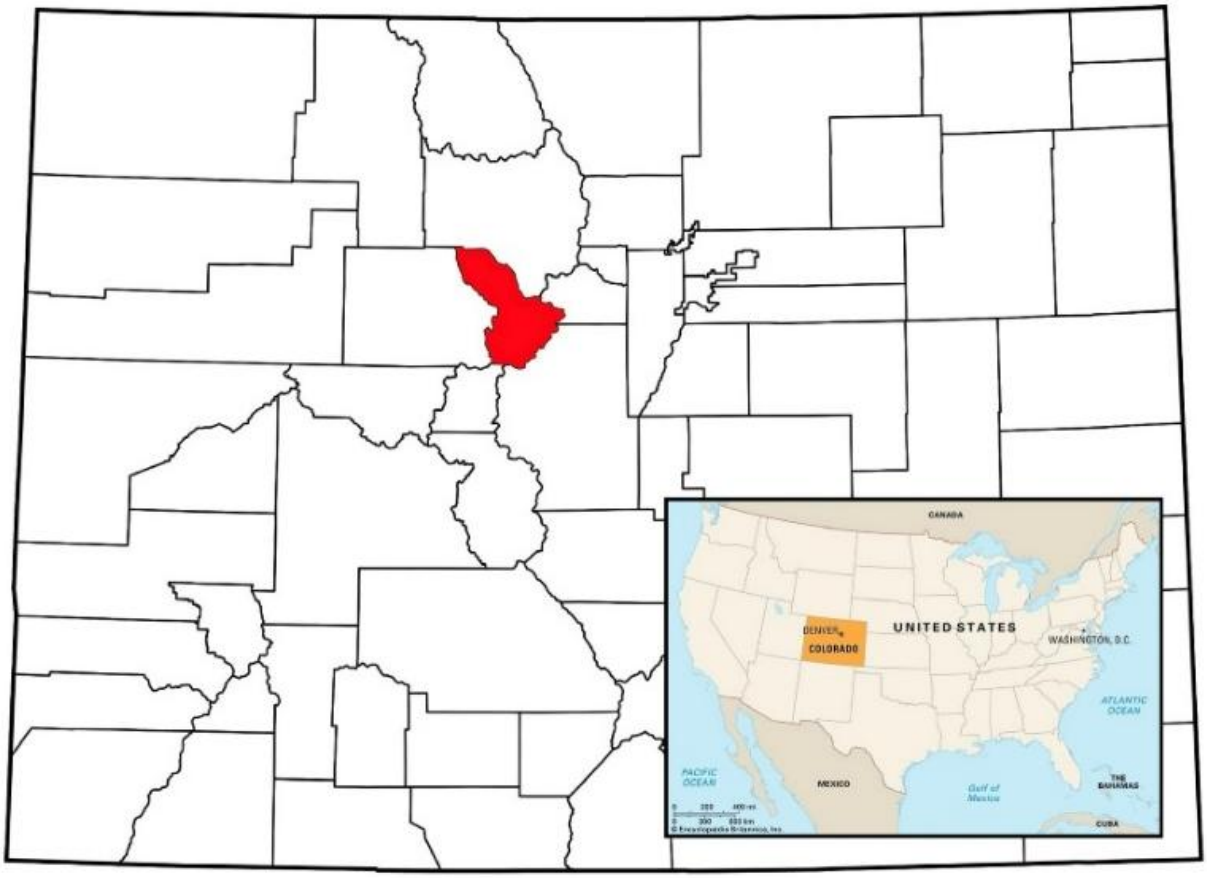

Figure 2. Summit County is shown in red within the context of the state of Colorado. Colorado is shown in orange in the context of the United States of America. From Uncover Colorado and Encyclopedia Britannica (2026).

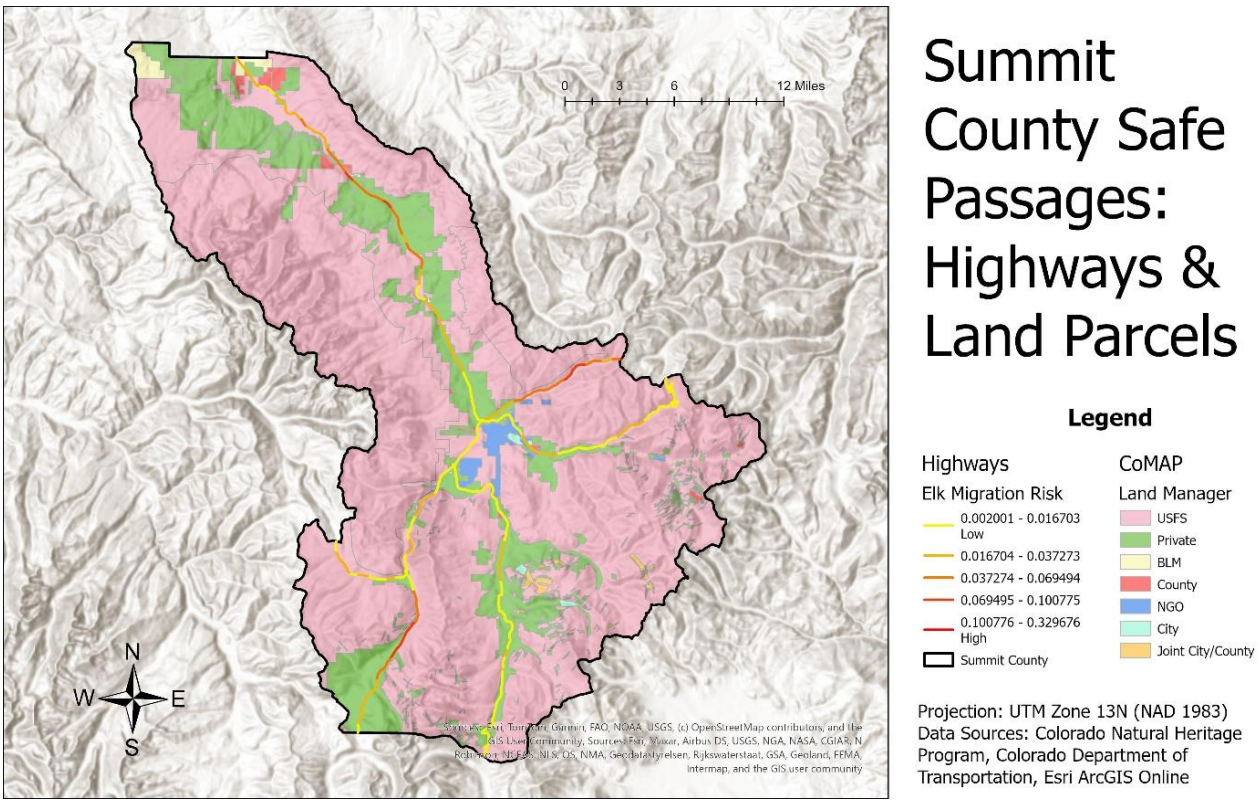

Figure 3. Summit County is outlined by a black border, and important highways are displayed on a yellow-to-red spectrum representing low to high elk migration risk. Land ownership and management within the county is represented by polygons of different colors as represented in the legend. Synthesized from Colorado Natural Heritage Program, Colorado Department of Transportation, and Esri ArcGIS Online (2026).

METHODS

Study Design and Data Collection

To address my research question, I employed qualitative research methods to conduct a single case study and collect data from July through October of 2025. This study was approved by the Institutional Review Board (IRB) at Colorado State University (protocol #: IRB-FY2025-6827) prior to participant contact and data collection. I conducted semi-structured interviews with governance actors and other salient stakeholders of SCSP who were identified using a contact list provided by a member of the collaborative, which functioned as a seed sample (Taherdoost, 2022). The seed sample included government, market, and civil society actors who are or have been involved with SCSP. Because the group has dwindled in size since the prioritization plan, it is representative of a good portion of the governmental and NGO participants at the metaphorical table but is not fully effective in terms of representing the broader stakeholder population of Summit County. The contact list still proved very useful in reaching most of the governance actors and other stakeholders to be key informants who would provide interviews for the study.

I started by inviting each of the 22 individuals on the list, via email, to participate in an online all-stakeholders meeting. There, I shared information about my research question and time commitments required to participate in the study. The session was recorded and sent to all attendees, after which I followed up via email to ask if they would be interested in being interviewed. 16 of the original 21 invitees agreed to give an interview. Additional key informants were identified through snowball sampling (Parker, Scott & Geddes, 2020);

several key informants suggested reaching out to others who had more information relevant to my research question. I reached out to five additional potential key informants, and four agreed to interview, for a total of 20 key informants. They were fairly reflective of the sector makeup of the Summit County Safe Passages board, containing about 40% government, 30% market, and 30% NGO representatives.

Semi-structured interviews were conducted mostly in-person at a convenient location for the key informant and were recorded using a handheld voice recording device. Travel distance and scheduling conflicts prevented face-to-face interviews with a few key informants, who were instead interviewed and recorded via online video conference. Each interview lasted approximately one hour, resulting in about 25 hours of recordings. I also collected field notes about key informant relationships, collaborative roles, conversations, and context during the all-stakeholders meeting and unrecorded conversations outside of the formal interviews.

I developed an interview guide (see Appendix 1) to ensure content consistency across interviews (Kallio et. al., 2016). The open-ended questions included in the guide (Appendix 1) were developed with guidance from the Integrative Collaborative Governance Framework (Emerson, Nabatchi, and Balogh, 2012). Each question or set of questions correlated to a specific subtheme or minor subtheme within the framework. I developed these independently after a literature search of other work using the same framework and similar methods was unsuccessful in finding any interview guides or sample questions.

Questions were divided into three sections corresponding to key high-level concepts in the framework: system context, drivers, and collaboration dynamics. Each question or set of questions was derived directly from a subtheme in the Integrative Collaborative Governance Framework, such as interdependence, shared commitment, and procedural/institutional arrangements (Emerson, Nabatchi, and Balogh, 2012). Interview questions were designed to be open-ended, with key informants choosing what dimensions of each subtheme to address in their answers. I developed the interview questions by building on previous case study literature using the same theoretical framework to inform best practices and neutral phrasing (Grootjans et. al., 2023; Richter Sundberg et al., 2024; Jones and White, 2021; Aguilar et. al., 2021). I began by interviewing key informants who were present for the inception of the SCSP collaborative, focusing on clarifying the system context, drivers, and governance roles of key actors. As interviews progressed, I was able to choose relevant questions from the interview guide in advance based on the governance roles, system knowledge, and institutional knowledge levels of each key informant to create a full picture of the CGR.

I transcribed each interview using Otter AI (Otter.ai v3.8.2, 2026) and checked accuracy by comparing the transcriptions to their respective audio recordings. Key informants were each assigned a number based on the order in which they were interviewed. I replaced both the names of the files and the key informant names in transcripts with the assigned numbers to ensure key informant confidentiality. Assigned key informant numbers were stored in a separate spreadsheet with a password. After collecting and transcribing all necessary interview data, I wrote down everything I know about the power dynamics between

relevant stakeholders and governance actors for the stakeholder analyses. I also recorded what I know about how much control each governance actor has over the political, economic, social, and cultural dimensions of the CGR. I compared these lists to field notes and observations about the way each actor shows up in collaborative conversations and the CGR. Searches of governance actors' websites and local news websites supplemented this information.

For the purposes of this manuscript, all nested dimensions that were classified as barriers and enablers are included in my results. Neutral items that do not appear to have greatly enabled or blocked the implementation of wildlife crossings are excluded except in visual results. Specific observations about each dimension that emerged from interviews are included if three or more key informants mention them or if they substantially hinder or facilitate implementation processes. The meeting of the first qualification would indicate that enough group members are thinking about a dimension for it to be important, and the meeting of the second qualification is an indication that I identified it as a significant barrier or enabler of necessary processes.

Data Analysis

For my stakeholder analysis, I first used the Radargram stakeholder analysis tool (Lichtenfield, Naro & Snowden, 2019) to visualize power dynamics within the CGR on a 1 to 5 qualitative scale. Then I used the Community Champion stakeholder analysis tool (Lichtenfield, Naro & Snowden, 2019) to rate each actor on a 1 to 5 scale of interest in wildlife crossings and activity level in the wildlife crossings space. All ratings were generated by examining

interview data, organization or agency websites, local news, SCSP documents, and field notes to understand how each stakeholder can and likely will influence the system to affect outcomes. I plotted the Community Champion ratings on a graph with the x-axis representing interest and the y-axis representing activity. These analyses allowed me to interpret and analyze interview data in the context of the power relationships and ideological understandings that are shaping key informants' perspectives.

I used a hermeneutic phenomenology approach to interview analysis (Alsaigh and Coyne, 2021), relying on key informants' lived experiences and feelings about the CGR and system to interpret interactions in the context of their perspectives. I used NVivo software (Lumivero v25; 2024) to conduct deductive qualitative content analysis (Kibiswa, 2019) using the Integrative Collaborative Governance Framework (Emerson, Nabatchi & Balogh, 2012), and inductive qualitative content analysis to code data that did not fit the framework. The three umbrella concepts (System Context, Drivers, and Collaboration Dynamics) are the "themes," while the smaller concepts under each of these are the "subthemes," and the concepts that are smaller still under subthemes are referred to as "minor subthemes." I used a simultaneous coding strategy, which allows an excerpt to be coded to multiple categories (Witt, 2013).

My qualitative analysis methods entailed first reading through all the data once to ensure I know it well. Next, I read the Integrative Collaborative Governance Framework paper by Emerson, Nabatchi, and Balogh (2012) and wrote an operational definition for each of the 23 subthemes in the framework in the context of the Summit County wildlife crossings CGR (Table 1). Then, applying those definitions to the interview data, I coded each complete

thought from a key informant into one or more subthemes or minor subthemes of the framework. Many of these excerpts were coded into the subtheme which correlated to the question being asked at the time, and many thoughts given by key informants as context for that answer were coded into subthemes that were not targeted by that question. Once all interview data had been sorted by subtheme, I read the entirety of the code log for each subtheme. Each excerpt was classified as either describing a barrier factor, an enabling factor, or a neutral factor based on if what the respondent referred to helps, hinders, or does not affect the implementation process for proposed wildlife crossings in Summit County, especially at East Vail Pass. Some excerpts could not be coded to a framework subtheme and were iteratively inductively and deductively coded using other governance theories as reference. I allowed themes to emerge from the data through abstraction, then compared them to existing theory and sorted the ideas into these new categories, giving me the final product. This process helped discern where the excerpts might fit into the Integrative Collaborative Governance Framework's themes and what new subtheme could represent them.

Frequency of barrier, enabler, and neutral classification within subthemes is summarized in Table 1 with select quotes to demonstrate empirical examples of each subtheme. I used the frequency of barrier, enabler, and neutral excerpt data for each subtheme of the framework (Table 2) to create an alluvial diagram that visualizes these frequencies with Flourish data visualization software (Figure 5; Kiln Enterprises Ltd., 2026). This alluvial diagram shows how excerpts were divided between barriers and enablers, and how many excerpts from each of these categories fell under each subtheme. Lastly, I qualitatively classified

each subtheme as primarily a barrier, enabler, or neutral item based on the frequency of barrier/enabler/neutral excerpts within a subtheme, the potential of each empirical barrier or enabler to affect the CGR based on my assessment, and the potential of each barrier or enabler to affect the CGR based on actors' interests and perspectives.

Table 1. Operationalized definitions of each of the lowest order subthemes of the Integrative Collaborative Governance Framework for use in qualitative deductive content analysis in this study. Adapted from Emerson, Nabatchi & Balogh (2012).

Theme	Subtheme	Minor Subtheme	Lowest Subtheme Operationalized Definition (adapted from Emerson, Nabatchi & Balogh 2012)	Interview Question Number(s)
System Context	Prior Failure to Address Issues	-	Past failed attempts through conventional channels at solving the problem which a collaborative forms to solve, or past negligence by responsible parties	3, 3.1
System Context	Political/ Power Dynamics	-	Agendas of government officials across levels and space, and the effects of power dynamics in communities, in the market, and among governance actors and stakeholders	4, 9
System Context	Policy/Legal Frameworks	-	Administrative, regulatory, or judicial obligations, constraints, or allowances that affect involved government actors across levels. Examples include federal or state legislation, executive orders, local policies, legal obligations, etc.	11
System Context	Resource Conditions	-	Quality of both the resources the collaborative is attempting to govern (e.g., land, wildlife, roads) and the resources necessary to reach the goals of the collaborative (e.g., funding and capacity).	6, 7, 8
System Context	Levels of Trust/ Conflict	-	Historical conflicts between governance actors and stakeholders, and how these affect trust and ability to work well together	4, 10
System Context	Socio-economic/ Cultural Health	-	Degree to which the burdens of the issue at hand are unequally distributed along socioeconomic or other identity gradients; degree to which people of different socioeconomic and cultural groups can participate in or receive solutions	5
System Context	Network Connectedness	-	Degree to which governance actors are connected, communicative and collaboratively governing resources outside of the context of exclusively the resources and issues at hand	10, 17

Drivers	Consequential Incentives	-	Important rewards or consequences for collaborating to solve a problem, such as crises, threats, opportunities, needs, or interests	11, 15
Drivers	Interdependence	-	Inability for a given stakeholder or actor to accomplish goals or solve problems independently; failure of a specific sector to provide a public or common resource or service alone	12
Drivers	Leadership	-	Presence of an actor or individual that initiates collaborative problem solving through absorbing transaction costs, securing support for a CGR at the beginning, and remaining neutral to solutions.	14
Drivers	Uncertainty	-	Unpredictability of elements that affect the risk and effectiveness of choosing certain solutions to a problem, which creates situations where it is beneficial to share the risk	12, 13
Collaboration Dynamics	Principled Engagement	Discovery	Process of seeking out all relevant actors, stakeholders, and rightsholders in a resource or problem and disclosing interests at the beginning of a collaboration, and identification and analysis of significant information later in the process	16, 17
Collaboration Dynamics	Principled Engagement	Definition	Efforts to articulate common problems, purpose, and objectives in order to establish roles and expectations; building shared criteria to evaluate information and viable solutions	18
Collaboration Dynamics	Principled Engagement	Deliberation	Candid and reasoned communication between actors and stakeholders with different perspectives and interests; ability of facilitator to maintain this dynamic; process of addressing challenging questions and problems by collaboratively weighing solutions; dispute resolution and democracy for common good	19, 20, 24
Collaboration Dynamics	Principled Engagement	Determination	Process of collaboratively making procedural decisions (e.g., meeting agendas) and substantive decisions (e.g., action items and recommendations)	21, 21.1
Collaboration	Shared Motivation	Mutual Trust	Process of CGR actors proving to each other that they are reasonable, predictable, and	22, 22.1, 23, 23.1

Dynamics			dependable partners as they work together and get to know each other	
Collaboration Dynamics	Shared Motivation	Mutual Understanding	Ability of CGR actors to think beyond their own worldviews and perspectives to know and tolerate the interests, needs, values, and constraints of others	23, 23.1, 24
Collaboration Dynamics	Shared Motivation	Internal Legitimacy	Interpersonal validation and that everyone in the collective effort is credible and trustworthy, has compatible interests, and can accomplish the established goals of collaboration	21.1, 25, 26
Collaboration Dynamics	Shared Motivation	Shared Commitment	Bond that creates willingness to cross organizational, sectoral, and/or jurisdictional boundaries that previously separated them to take a shared path	15, 27
Collaboration Dynamics	Capacity for Joint Action	Knowledge	Useful information that can be shared, interpreted, aggregated, managed, and generated by the group to understand context and guide future actions and goals	1, 2, 33, 33.1, 33.2, 33.3
Collaboration Dynamics	Capacity for Joint Action	Leadership	Roles of each actor in taking ownership of the responsibilities and processes that are essential for the functioning and efficacy of the group, for which there are many opportunities in a CGR	31, 31.1, 32
Collaboration Dynamics	Capacity for Joint Action	Procedural/ Institutional Arrangements	Protocols, processes, and structures that manage repeated interactions inside and outside of a CGR; established rules, norms, agreements, roles, which dictate how implementation happens	2, 28, 29, 30, 31
Collaboration Dynamics	Capacity for Joint Action	Resources	Shared assets necessary for completing the goals (e.g., funding, time, administrative capacity, skills, power) that can be redistributed and leveraged to reach common goals of collaboration	27 , 34, 34.1, 35, 36

RESULTS

Stakeholder Analyses

Community Champion Analysis

The community champion analysis, which plots interest and activity of each relevant actor on a graph, showed that governance actors only fell in three quadrants of the graph: active/supportive, passive/supportive, or passive/opposed (Figure 4). There are currently no apparent active and opposed governance actors. All the active/supportive governance actors have been involved with SCSP at some point, although some do not have a current board role. The current board's organizations are all represented in the active/supportive quadrant at the top right, indicating that SCSP has reinforced both positive interest in and support for wildlife crossings implementation. The passive/supportive quadrant is mostly made up of government organizations with low capacity and different priorities than just wildlife conservation. The USFS is represented here because while their staff initiated the collaboration, there has been no consistent staff at the Dillon Ranger District office in the last couple of years to lend a hand or perspective. This quadrant also contains some of the smaller towns in the county, the town of Vail, Summit County residents, and Eagle County. These represent some of the less powerful actors in this CGR who have an interest, but more important short-term goals that prevent much involvement. Lastly, the passive/opposed quadrant includes corporate land-based business operators, which have participated only through donating required mitigation funds to the prioritization process and will likely be inconvenienced by the construction of a wildlife crossing. It also includes large

local landowners and ranchers, who will also be inconvenienced by construction, many of whom currently have low levels of trust in government due to wolf reintroduction issues, and whose land and viewsheds are often considered for implementation sites. This causes many landowners to oppose personally partnering with SCSP or supporting one near their land in any way, but none seem to be actively campaigning against it.

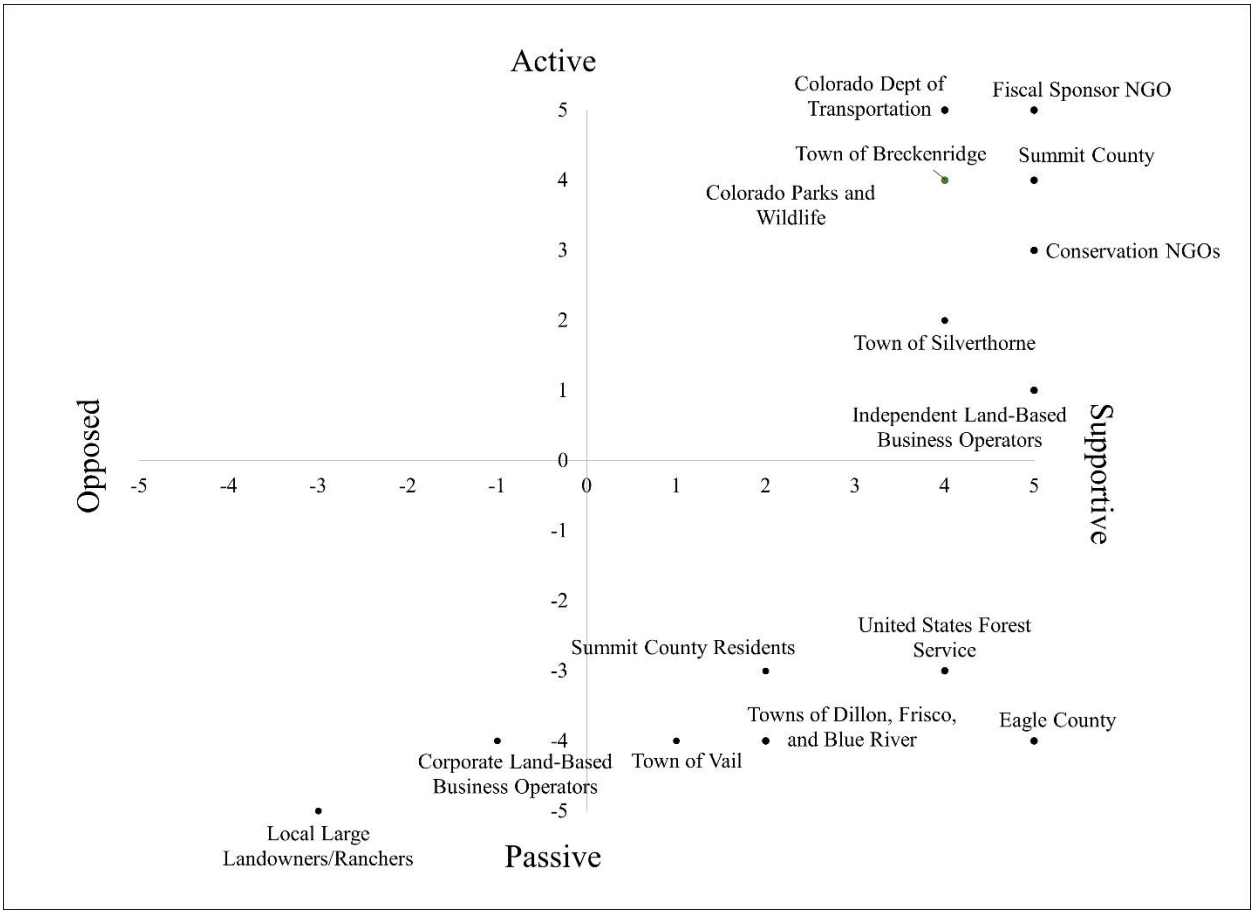

Figure 4. Community champion analysis representing the level of interest and activity of relevant actors in the goals of the CGR to implement wildlife crossings at East Vail Pass. Adapted from Snowden (2019).

Radargram Analysis

The results of a Radargram analysis of the power of governance actors in the CGR in four dimensions depict a wide range of profiles across sectors (Figure 5). The area contained within the four-sided polygon created by each governance actor's point on each power scale represents the total amount of power they have over the CGR. The actors with the most total power included corporate and independent land-based business operators, Summit County residents as a collective, CDOT, and the key towns near potential project sites. The most politically powerful actors include CDOT, land-based business operators, the key towns, and USFS. The most economically powerful actors include the land-based business operator, the fiscal sponsor NGO, the National Forest Foundation, and CDOT. The most powerful social and cultural actors, which are less important to the implementation of wildlife crossings at this scale and thus fairly similar in terms of the most relevant actors, are the independent and land-based business operators, Summit County residents, and key towns. These power discrepancies and the relationships that emerge as a result drive some of the dynamics I observed in interview data. Most of the actors listed as the most politically and economically powerful are not deeply involved in the SCSP collaboration, apart from CDOT, the fiscal sponsor NGO, and a couple of key towns. These results imply that many of the barriers faced by SCSP come from outside of its CGR.

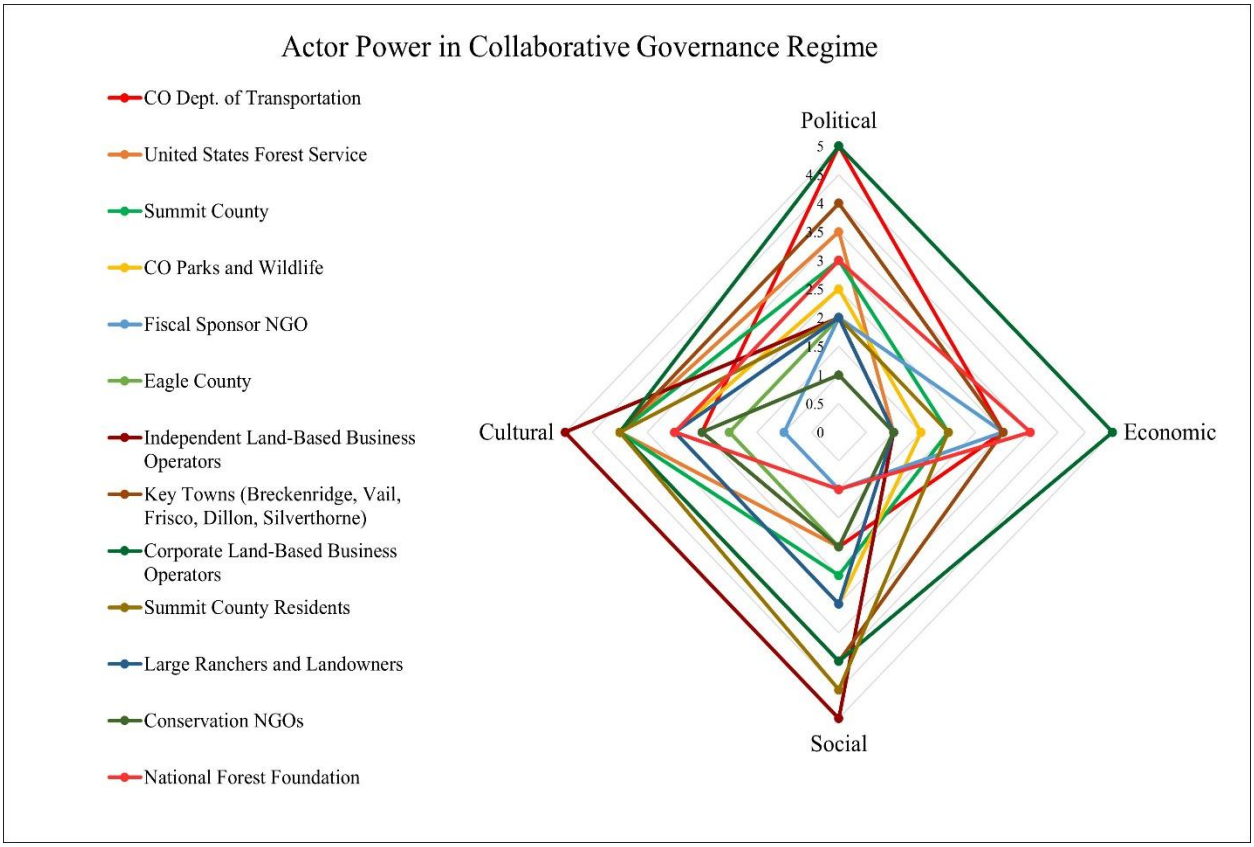

Figure 5. Radargram analysis representing the level of political, economic, social, and cultural power of relevant actors in the CGR to affect the implementation of wildlife crossings at East Vail Pass. Adapted from Snowden (2019).

Barriers

These results show that the majority of important barriers to implementation fall outside of the collaboration dynamics that constitute the CGR (Figure 6). Even when a collaborative has internal control over its collaboration dynamics, wildlife crossings are difficult to implement due to contextual factors beyond control of actors within the CGR. These barriers largely appear to emerge as a function of the large investments of time and funding required, and the inability of small teams to do the work of many more people. Low wildlife mortality and human safety risks at the proposed wildlife crossing implementation site relative to other places in the state create weak consequential incentives for certain actors that do not engage with wildlife issues often. Conflict over wildlife issues that do not have direct ties to wildlife crossings may also affect willingness of certain actors and stakeholders to support or contribute to implementation. Collective action issues such as the presence of the free-rider problem and lack of accountability to the "polluter pays principle" also function as barriers to pro-social behaviors from other governance actors.

System Context

Several barriers to wildlife crossings implementation are clustered in the System Context category of the Integrative Collaborative Governance Framework. Some of the *resource conditions* at East Vail Pass are not conducive to the implementation of a crossing project, for two primary reasons. First, the conditions on I-70 are relatively safe for humans compared to some other nearby roads from a WVC standpoint, which was emphasized by Government Actor 3:

> "East Vail Pass doesn't have the highest wildlife-vehicle collision counts, right? And so the cost benefit from a crash perspective is hard to justify, but her argument is probably right that they're avoiding the highway because there's so much traffic, so they're not attempting to cross, and that's why we have a biological problem, right? Because the populations can't connect."

This presents an issue because projects that have the potential to cause a large decrease in the number of annual WVCs are much more likely to be prioritized in budgets at the federal, state, and municipal levels. While East Vail Pass has multiple reported WVCs per year, there are other areas of the state with many more crashes with animals, and where humans have been killed. Secondly, the *resource conditions* around the state of federal funding picture in the United States also became much more competitive, particularly for environmental NGOs, in January 2025. The current federal administration has deprioritized conservation initiatives and cut grants in many other sectors that affect regional and municipal budgets. Market Actor 2, who is on the SCSP board said:

> "Any other project like ours across the country has no other viable option but private capital today, yeah, because it's a trickle down, the feds have quit funding. They've hammered the states with cutbacks since January [2025]. That rolls down to the counties. They don't have the money, and the feds are intentionally not - they've turned the spigot off."

The funding gaps left from cuts at the federal level also played into another barrier to implementation: *political dynamics and power relationships*. As described by the stakeholder above, lack of adequate funding affects the priorities and budgets of meso-level government actors. The *political dynamics* of the U.S. at a federal scale appear to have created conditions for more conservative fiscal policies to be adopted at smaller spatial scales. Government Actor 1 said of their town council's recent feelings about spending,

> "I wonder if two years ago, that sentiment would have been as strong. I still think, like, of course, the financial ramifications [of donating to wildlife crossing construction] would have been talked

> about, but I wonder if people would have been as passionate about, like, protecting that money and not spending it on initiatives that are too progressive."

That particular town's council voted against allocating money toward the wildlife crossing project at East Vail Pass. Another nearby town nearly allocated money to the project, then rejected the proposal upon the election of a new mayor with different political priorities despite widespread support from residents. *Power relationships* have also come into play when attempting to engage what is arguably the largest and most important stakeholder in Summit County: large corporate land-based business operators. The businesses rely on land in a primarily tourism-driven county economy, and employ a significant percentage of the resident population. NGO Actor 2 contrasted corporate land-based business operators with independently owned land-based business operators in the county:

> "In Summit County, we have [independent land-based business operators] that are not part of [corporate land-based business operators], and they have been super supportive. They care about their environment, and that they're working on and with Forest Service land… And [corporate land-based business operators] are just the complete opposite. They are impossible to get ahold of and very corporate in nature."

Another barrier to implementing wildlife crossings is the *levels of conflict and trust* between certain residents and government agencies that participate in SCSP. The recent reintroduction of wolves in the county has affected the willingness of many cattle ranchers and large private landowners to sign agreements in perpetuity with state agencies. Though wildlife crossings are widely regarded as nonpartisan and uncontroversial (Reed and Kauffman, 2024), the addition of a variable like disagreement over wolf reintroduction, even though the state was mandated to do so by a ballot initiative, can negatively affect relationships

between government agencies and the people whose cooperation are most needed for implementation. Government Actor 4 noted:

> "We caught one of the first wolves on one of the cameras along I-70. And, you know, if some people, if they think we're building [a wildlife crossing], some people would be supportive, and others might not give us money on that principle alone, where they otherwise might. So it is just very polarized and I don't know that that's going to change."

Feelings of *distrust* toward government agencies are not restricted to wolf problems. Government agency members of SCSP have largely stepped back from publicly visible roles in the collaborative, and one reason for this is described by Government Actor 5 who had been present from the start of the planning process:

> "I was there as more of a representative of [agency] rather than leading it, because we know that people don't really love it when the government or big agencies are saying, we're going to create this document that says where it's important to for animals to cross over, and what some management recommendations are in those areas, and thou shalt nots."

Drivers

The *consequential incentives* for some actors to collaborate are not strong enough to motivate them to join the SCSP team. This was expressed by Market Actor 1, who said:

> “If it’s something pretty parallel, or something we think affects us indirectly, we’ll still get involved, but we probably just get a little bit more picky, choosy over how easy you donate. You don’t want to advocate for everything, yeah, you don’t want your voice to get lost. So we prioritize.”

NGO Actor 2 contrasted the incentives for implementation of a recently installed wildlife crossing in nearby Eagle County versus those for the proposed project at East Vail Pass:

> "It wasn't until people were killed [by WVCs] that it really got the attention of everyone, and the money came pouring in… That's what gets people the most involved, even though you'd think you would care about a thousand animals being killed here."

East Vail Pass does not present as much anthropocentric incentive to intervene, as explained by NGO Actor 4:

> "It's an important area for wildlife, but it's such a big highway that you're seeing wildlife-vehicle crashes, but not in the numbers that you see on State Highway 9."

There are also *consequential incentives* to resist collaborating with SCSP, for some stakeholders. While the group was exploring different location options for wildlife crossings in the county, they realized the topography near one private landowner's land was especially favorable for an overpass. However, this would require several miles of fence on either side of the crossing to funnel wildlife into it, and some of the private land would require wildlife exclusion fence. This was unfavorable to the landowner, whereby the aesthetic compromise of the fence would potentially override wildlife conservation gains. Government Actor 3 clarified:

> "We could put an overpass in so easy and fence this and just solve this problem. And we had a meeting with this landowner, and the message was [a clear no*]. So that's a barrier, I think, is visual aesthetic. Some people are really sensitive to that."

Collaboration dynamics: Capacity for joint action

The last two barriers that fall within the framework are contained in the Collaboration Dynamics category, specifically under Capacity for Joint Action. Wildlife crossings are

*the original quote in square brackets has been replaced, conveying the same meaning but changing its form due to sensitivities

extremely expensive, and the amount of *resources* that need to be invested to fund construction are typically only granted by the federal government, as confirmed by Market Actor 3:

> "We're almost done raising the design dollars without any federal funding. But construction is like - conservation grants for $32 million just don't really exist, you know, like, conservation work operates on a different financial scale than transportation projects."

The order of magnitude of the funding required to implement a wildlife crossing without federal dollars is outside the scope of fundraising skills and available capacity of most of the actors at the table. Hiring someone to do the fundraising requires unrestricted organizational funds, of which there is very little in the public sphere. The board members are volunteers with time donated by their organizations. This means activities for members' primary employment that have direct funding attached come first, and activities for SCSP are deprioritized in members' workloads. NGO Actor 3 observed the following:

> "One of the challenges is that, because we're a working board, everybody's volunteering their time, you know? My role at [NGO], it pays the bills, right? Like, my salary and stuff. So this is also, at the end of the day, a secondary priority, in the sense of like, [NGO] pays the bills, not Summit County Safe Passages."

Another barrier to wildlife crossings implementation in Summit County is *procedural and institutional arrangements*. It is much easier and less expensive to implement wildlife-friendly engineering into an existing transportation project, such as when a bridge is rated as unsafe and must be replaced. However, the Statewide Bridge and Tunnel Enterprise*,

*The Colorado Statewide Bridge and Tunnel Enterprise is a government-owned business within the Colorado Department of Transportation whose purpose is to finance, repair, rebuild and replace state-owned bridges and tunnels. It was created by SB09-108 in 2009 and expanded in 2021 under SB21-260, and the Colorado Transportation Commission serves as its board of directors (CDOT, 2026).

which oversees several road areas where topography and/or concurrent projects create ideal locations for wildlife underpasses, is siloed separately from CDOT. It is also governed by strict regulations about why it can replace a bridge or use state funds, which was confirmed by Government Actor 4:

> "I know there's been projects where we've tried to come in and make changes and they've said sorry, yeah, we can't do this because of money or whatever, because the bridge enterprise, I don't think they can get funding to make it better for wildlife, right? They can only get funding to improve the structure for transportation."

The bureaucratic implementation processes that govern transportation projects at the state level also require that a lot of the steps must be initiated from within. This becomes an issue when capacity is low among actors – especially the state actors. The other members of the collaborative want to contribute where they can to move the process forward but often cannot because they are not ingrained in the systems that regulate transportation infrastructure implementation. Government Actor 2 commented:

> "All of us are advocates, but I think you really need to have somebody to help drive that, I guess is what I'm saying. And for making the decisions, I think we're mostly having those champions or the chairs of the committees making those types of decisions, but it's kind of also hard because it's in CDOT's world, like that's the infrastructure."

Past research has also shown that state-level transportation bureaucracies in the Western US de-incentivize changemaking within agencies (Jakes, Ament & Callahan, 2017). The people whose explicit responsibility is to advocate for wildlife considerations within transportation projects do not have much decision-making authority within their agencies. Government Actor 4 recognized this, stating:

> "I'm an environmental unit and I'm down here [in the agency hierarchy]. I'm not up here. So I'm not necessarily in a decision-making role. I can pass that on and, you know, support or advocate for that, but it becomes, you know, a little bit difficult in my role, in my position within the agency."

The final barrier to implementation was not codable to the framework, as verified by the last author of this manuscript. After iterative inductive and deductive coding and comparison to other governance frameworks and theories, the theme of collective action rose to the forefront with *free-riding and "polluter pays principle" accountability* as subthemes (Stevens, 1994). Both free-riding and polluter pays principle accountability functioned as barriers to collective action and wildlife crossings implementation because one specific actor is benefiting from the actions of the others without contributing, and this same actor is perceived as responsible for the habitat connectivity damage at hand without paying to solve the problem. As Government Actor 1 put it:

> "They're the most directly impacted, like anybody that goes… and spends money at [land-based business operator] has to go by this proposed wildlife crossing. So I guess in our minds, it's like, they should be the first ones to kick it off, because they're the ones that will benefit the most from it."

This quote exhibits a perspective that the actor who benefits the most will pay the least if the land-based business operator continues to evade collaboration. Some actors are even waiting to invest any additional funding until the land-based business operator gets involved or invests themselves. Many governance actors in this system believe that the influx of visitors to the corporate land-based business operators' properties is the reason that I-70 has expanded farther into the forest over the past 30 years. The expansion has increased access to Summit County, which has been good for the county's economy, but

also requires both public and private infrastructure to encroach on National Forest land over time. Market Actor 3 said:

> "[Land-based business operators should contribute financially to problem-solving beyond their legal obligation*]. They're impacting the forest by expanding the [land-based business operation]. They should say, this is important work, and we do use the forest. Our business model depends on the forest, and our business increases traffic on the roadway through the forest."

In this way the "polluter pays principle" is skirted by a lack of consequential incentives to pay – the resorts are not required by law to pay mitigation funds for roadways that were constructed by government agencies, despite their contribution to the problems of wildlife habitat fragmentation and mortality. They are also not held accountable by public pressure now. No one seems to individually feel the cost of WVCs and habitat fragmentation, meaning that no one has stepped up to pay. When a wildlife crossing is implemented at East Vail Pass, if the resort has not agreed to pay for a large portion of the costs, they will not only have avoided what many see as a responsibility to fund the project, they will also privately benefit from common pool resources such as healthy wildlife populations and a freer and safer highway corridor.

*the original quote in square brackets has been replaced, conveying the same meaning but changing its form due to sensitivities

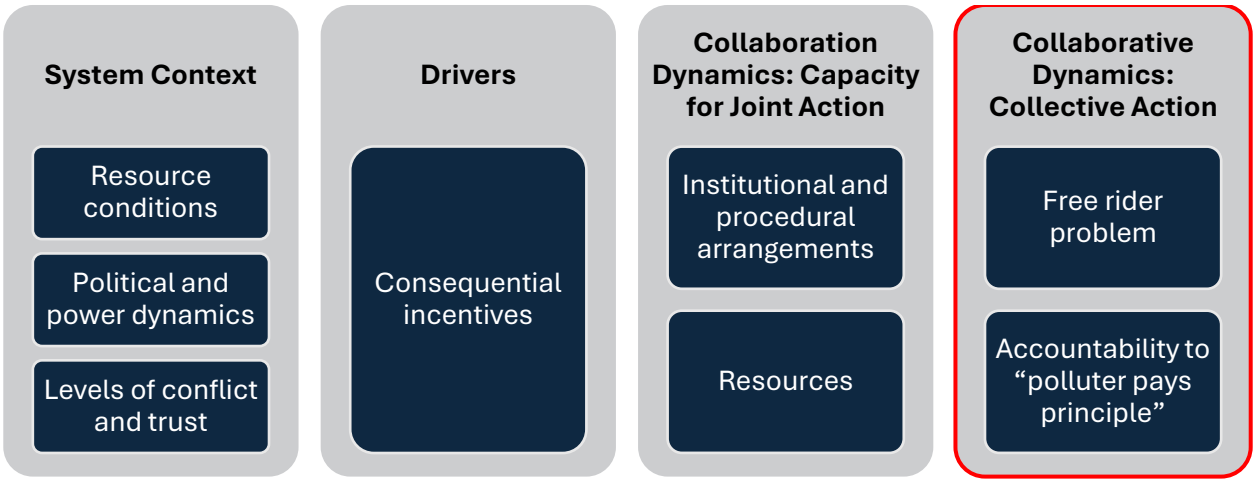

Figure 6. Barriers to implementation of wildlife crossings at East Vail Pass derived from interviews and based on the Integrative Collaborative Governance Framework (Emerson, Nabatchi & Balogh, 2012). Box outlined in red are elements not contained in the Integrative Collaborative Governance Framework, and were derived from other literature to describe data that could not be deductively coded to the theoretical framework.

Enablers

These results show that enablers to implementation are ubiquitous among the five themes of the Integrative Collaborative Governance Framework (Figure 7). At the emergence of the SCSP collaboration, three of four drivers acted as enablers, hence the smooth formation of the collaborative and its ability to be effective from the beginning. The SCSP CGR has a positive internal atmosphere, with all Principled Engagement and Shared Motivation sub-themes represented as enablers. Capacity for Joint Action was also composed of two barriers and two enablers, with the enablers being Knowledge and Leadership, both of which abound within the collaborative of committed practitioners. Actors within the CGR also contribute to initiatives that work to change the generally barrier-laden system context to contain more enablers, such as the participation of many actors in the Colorado Wildlife Transportation Alliance network and the advocacy of both market and NGO actors at the

table for state policy that would enable implementation of wildlife crossings at East Vail Pass. These enablers are largely connected to the willingness and ability of members of the SCSP collaborative to go above and beyond their established roles to create an effective and resilient CGR.

System Context

The CGR described in this study exhibits a high degree of *network connectedness* both within and between the sectors of the governance actors. For example, most of the county and municipal biologists and land specialists meet almost daily to work together on projects, and the land-based business operators are in constant communication about how to improve sustainability. This connectedness was described by Government Actor 4:

> "The biologists in each of the regions do a great job at trying to incorporate as much as we can and we all try to kind of work together to say, hey, you did this on your project. Did this work? Was it effective? Like share with me, you know, like tell me how we could do it. And then also with the Wildlife and Transportation Alliance and having that as a sounding board, you know, helping navigate some of this. I think there's just more communication and more education."

The Colorado Wildlife and Transportation Alliance (CWTA) is made up of mostly state and federal agencies with an interest in the intersection of wildlife and transportation, with some policymakers, NGOs, and businesses involved on the outskirts. It has been integral for knowledge-sharing and building social capital between biologists and engineers and allows for consistent commitment to solving mortality and connectivity issues in the state. The CWTA was formed after the completion of a nearby wildlife crossing in which several SCSP members were involved and previously connected, as explained by Government Actor 3:

> "I was in all the design meetings for Vail Pass. Well, for Iron Springs, where it all started kind of coming to fruition. Like [SCSP member] knew that I understood, because I had a bunch of history with other jobs too, like on Berthoud Pass from way back and then Highway 9 North like 20 years ago. So kind of all my experiences, like, it was like, yeah, let's keep talking."

Another factor that is enabling wildlife crossings implementation is the application of *policy and legal frameworks* that affect actors' roles, responsibilities, and capacity for collaboration (Table 2). SCSP collaborated with a policy writer to create favorable funding conditions for wildlife crossings. As Government Actor 6 noted,

> "When we had the state bill, so like, in 2022 we passed - we had a couple of people that we brought onto the board who were already leading a charge for the state bill to provide state funding for wildlife crossings, which became Senate Bill 151."

The National Environmental Policy Act (National Environmental Policy Act [NEPA], 1970) also required CDOT to do mitigation for a capacity expansion and rerouting of State Highway 9, which included a scoping process to discover how the forest and wildlife, particularly Canadian lynx (Endangered Species Act [ESA], 1973), would be affected by the new highway path. Even this was not enough to get the project out of scoping into planning, but consistent contact between the CWTA and Colorado governor Jared Polis paid off (CO Executive Order D-2019-11), as Government Actor 4 confirmed:

> "The policy to do the mitigation is what led to that. There wasn't anything else at that time, because it was still early on. You know, but now, there's an executive order by the governor from 2020 that like mandates CDOT and CPW to work together on these types of projects. But prior to that, it didn't exist, so it was really that mitigation for disturbance on Forest Service land originally."

Drivers

Before the executive order ensuring partnership between CPW and CDOT to implement wildlife crossings (CO Executive Order D-2019-11), the original impetus for the partnership's formation included a novel application of the NEPA, which Government Actor 3 disclosed occurred due to the *leadership* of a USFS biologist:

> "It was actually a very novel situation because normally CDOT does not direct mitigation funds in that way, but it was something that [wildlife biologist] really pushed for and had support to do that with the forest, and they were able to get that funding for this purpose."

While the facilitators of the SCSP collaborative currently do a lot of the administrative and partnership management work of trying to build wildlife crossings at East Vail Pass, they are incapable of doing it alone. The initiative is a product of the *interdependence* of the governance actors in the system, and Market Actor 4 particularly named CDOT as an imperative partner:

> "You need the roadside because Vail Pass is a state highway. You need CDOT to put it on their project plan, and if it's not part of their plan, then it's never going to happen."

Many of the stakeholders in the county, including collaborative members and desired collaborative members, *depend* on the Forest Service for their own operations – USFS owns approximately 72% of the land in the county (Colorado Natural Heritage Program, 2026), and many businesses use the land for private gain, as described by Government Actor 5:

> "We have several [land-based business operators] permitted here on the Dillon Ranger district, so they essentially have a permit to operate on National Forest lands… so it's a really unique relationship in that they are permitees and, you know, at the end of the day, they're a private business that's making money off of public lands."

Because the SCSP collaborative and the effort to build wildlife crossings at East Vail Pass were initiated by a USFS biologist, many of the organizations who were pulled into the stakeholder engagement processes were those who interact with the White River National Forest. Many of the governance actors whose involvement was required from the beginning of the process also immediately raised concerns that the location of the highway realignment and expansion was not conducive to wildlife crossing because the benefit might not have matched the invested cost. This *uncertainty* among agency practitioners about how to use mitigation funds led to the realization that the habitat fragmentation issue should be governed at a larger scale, as Government Actor 3 explained:

> "I remember being in a meeting with CPW, USFS, and USFWS... they were kind of like, we need a prioritization plan, because some of it came down to, maybe this isn't the best place to do mitigation. We have needs other places in the county."

The actors at the table for the NEPA mitigation process ultimately decided to direct the attached funding toward the Summit County Safe Passages Plan, at which point a wildlife connectivity researcher and a facilitator were hired to manage the process of *discovery*.

Collaboration Dynamics: Principled Engagement

Discovery is the first of four subthemes nested within *principled engagement*, which were all classified as *enablers* of wildlife crossings implementation. The facilitators mapped current crossing locations of wildlife, wildlife-vehicle collisions, and stakeholder interests during the process, pulling in a diverse array of individuals, organizations, and interest groups to understand the values and interests of relevant parties and reflect them in prioritizing future crossing infrastructure locations. Government Actor 5 described it, saying:

> "What I wanted to do was analyze the whole district and beyond for that connectivity piece, where are critical pinch points, where are increased numbers of wildlife-vehicle collisions? What can we do to create this assessment where we pull in all of these stakeholders from the community to start building this vision of what this landscape could look like with connectivity."

The plan, and as a result, the SCSP collaborative, have specific goals and visions it has set out to accomplish. These goals have been developed through clear *definition* of the problem at several points in the collaboration process, including while completing prioritization planning. During these meetings, the goal of locating and implementing county-wide connectivity solutions was established, as confirmed by Market Actor 3:

> "I think everybody was in agreement on those objectives and what the whole purpose of that the project was - really to kind of find those areas in need of some safe passage work, some vehicle collision reduction work."

Both the prioritization process and the lasting collaboration have defined goals, and an important piece of defining those goals is deliberation over possible strategies and outcomes. SCSP members feel as though they can express their feelings freely, and NGO Actor 1 acknowledged the value of doing so:

> "I think you have a better product at the end of the day when people don't always agree. From the get-go, you have a bunch of opinions, and a lot of times you'll come up with a better product, sometimes it defaults to a worse project. But I want to say most of this time, and with this group we have, we are just bringing a lot of different perspectives to the table."

While *deliberation* occurs frequently in SCSP board meetings, everyone feels confident in the knowledge-building processes within committees and trusts their accomplished facilitator's opinions. Government Actor 1 describes the flexibility that trusting each other provides for the group so they do not waste time on over-deliberating:

> "When we have a committee and that committee is doing the deep dive and they come back with a recommendation, we might have a lot of questions or something like that, but we're generally going to go with the recommendation of the committee."

After everyone has expressed their opinions and deliberated about the options, the SCSP board must decide on a plan through the process of group *determination*. A board facilitator reports that this process morphs from consensus-building to voting when folks do not have time to reach full consensus at the time of decision-making. This arrangement allows SCSP to be flexible and not be held up by a lack of ability to meet in-person, as reported by NGO Actor 2:

> "We try to go for a consensus approach, you know, which I think we get most of the time, but we do have formal votes, yeah, that we document. I also think that while consequential for us because we're such a small organization with a minimal budget, our vote margins have been pretty low, you know, like they're not earth shattering or anything."

Collaboration Dynamics: Shared Motivation

The dimensions within the Shared Motivation theme of the Integrative Collaborative Governance Framework all acted as *enablers* to the implementation of wildlife crossings in Summit County. SCSP is made up of experienced agency practitioners, market sector actors, NGOs, and individuals who care deeply about preventing wildlife mortality and conserving wildlife connectivity. Many have been part of the process since the beginning over ten years ago, which increases the *internal legitimacy* of the collaborative, as described Government Actor 2:

> "I think those are some of the folks that have been on the board forever with me and I think that sort of longevity and that commitment, having people in the same roles to bring the history is important, and that's part of why I couldn't let it go and just pass it off, because I feel like I can

> bring that to the table. We've been working at this, and we have some successes. It's a very, very dedicated group."

Internal legitimacy is also upheld by the past successes of the group, both inside and outside of Summit County. As SCSP has gotten closer to achieving its goals, the people involved in the collaboration have been more convinced that implementation can occur, which Market Actor 2 explained:

> "I think people started seeing this as a real thing that could happen, not just a pipe dream. And I think that's what it took."

The collaboration for wildlife crossings implementation efforts in Summit County has been in place for a decade, and therefore the *mutual trust* between all the SCSP members has grown over time, as explained by one of the collaborative's founding members:

> "They had to put their trust in us, and trust the process, and show up to the meetings. And then as we started moving through the process, it definitely became easier."

Everyone leans on each other to get work done, and encourages new members in the process of learning about the system, as described by Government Actor 6, who is one of the SCSP members who has joined most recently:

> "Everybody just kind of steps up where they need to be and it's usually like yay, you got this, type of thing... everybody's really kind and nice and supportive."

Building trust between members has been shown to reduce the transaction costs associated with collaboration (Emerson and Nabatchi, 2015), and this phenomenon is present in the SCSP CGR. Beyond the *mutual trust* that has formed between the core members of SCSP, the members have a *mutual understanding* that their interests are not always aligned

and work together to overcome their differences. Government Actor 1 explained this relationship succinctly:

> "We all understand that everyone wears different hats, and everyone has a job, and everyone is still your neighbor, and, you know, sees the benefits of some projects, and maybe others they don't."

Everyone in the collaborative is working toward the same goal of creating safe passages for wildlife across roads in Summit County, and they have the *shared commitment* of investing capacity in implementing wildlife crossings infrastructure at East Vail Pass to advance conservation and mitigate habitat fragmentation. They are aware of how important it is to build wildlife crossings at East Vail Pass for wildlife connectivity, and how close they are to accomplishing their goals, which has increased their commitment, as described by Market Actor 2:

> "So it's worked out well, yeah, except I'm taking on an enormous amount of time commitment to get this done. But I'm gonna get it done. I'm committed."

This *shared commitment* has extended past core board members of SCSP into its community supporters. One supporter of the implementation of crossings at EVP who already contributed toward the planning process includes a local independent land-based business operator. Market Actor 1 reported on the business's willingness to help reach SCSP's goals, saying:

> "We'll stay involved as much as they need us to in order to see if we can help them achieve their goals. We like the projects. We think they're important to the community. We think they're important to the whole mountain corridor. So as much as one business can, we'd like to help them achieve those goals."

Collaboration Dynamics: Capacity for Joint Action

Leadership is also a key component of SCSP's ability to get any work done in the wildlife crossings space, as explained by Government Actor 6:

> "What I was talking about with champions, [SCSP facilitator] is our main champion right now. She's been working so hard and she's got so many other things going on her own. I mean all of us are volunteering to help kind of make this happen. So she's doing a phenomenal job trying to keep it going."

Leadership is much needed, but implementation outcomes cannot emerge without the *knowledge* required to complete the activities necessary for the accomplishment of SCSP's goals. The expertise of the board is largely that of agency employees in the biology and science space, which has been integral to the research determining that East Vail Pass is the highest priority location to build wildlife crossings. However, SCSP's board has shifted toward recruiting people with experience in the private sector as design nears completion because the largest fundraising effort the group has yet to face is imminent. They have diversified the knowledge base of collaborators, which has been an asset to the group, as NGO Actor 4 explained:

> "I think, like, having the diversity of the group and then having folks with knowledge and expertise to run stakeholder involvement programs… [SCSP member] works on so many conservation types of things and [different SCSP member] has been doing this for eons. So I think just the diversity in that expertise and knowledge and kind of working together with that, everybody kind of brings a different piece to it."

Knowledge-sharing processes are also integral to SCSP's success, and many members' organizations have monitoring systems for understanding resource conditions (e.g., wildlife camera traps along roads) and knowledge of the processes outside of the group's

collaboration that may impact SCSP or its implementation outcomes. This information is shared with the board when relevant and informs its next steps.

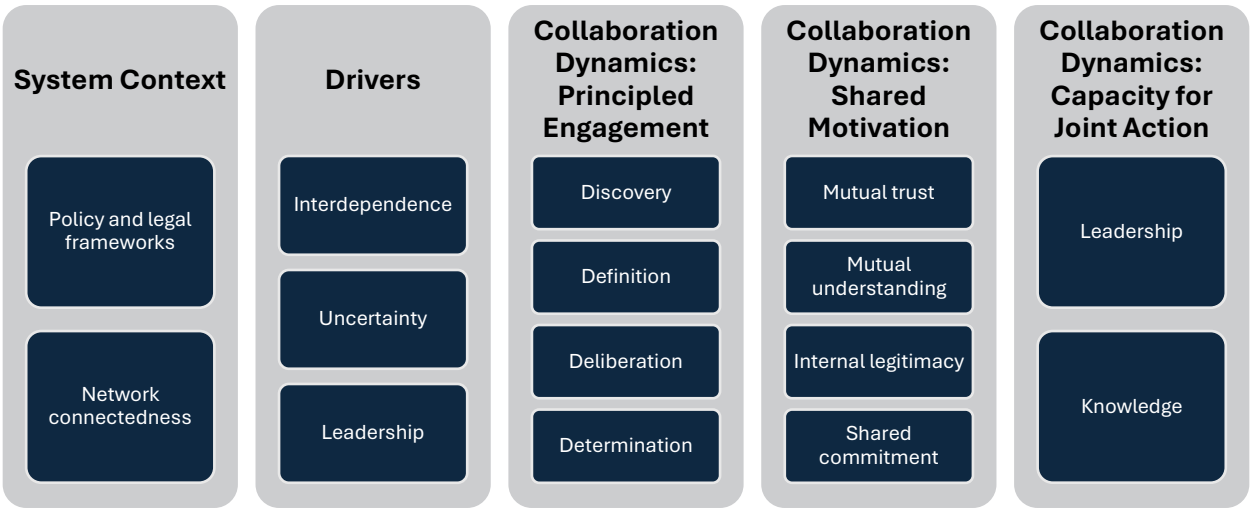

Figure 7. Enablers to implementation of wildlife crossings at East Vail Pass derived from interviews and based on the Integrative Collaborative Governance Framework (Emerson, Nabatchi & Balogh, 2012).

Table 2. United States federal and Colorado state policies that have affected the CGR and implementation of wildlife crossings in Summit County.

Policy	Level	Description	Effect on Summit County Safe Passages CGR
National Environmental Policy Act	Federal	Mandates federal agencies to conduct an environmental review process, consult the public, consider alternatives, and mitigate environmental damage of proposed actions	Required mitigation for expansion of State Highway 9 and the land-based business operator; those funds were used to conduct social and ecological research guiding the SCSP prioritization plan
Wildlife Crossings Pilot Program	Federal	Allocates funds to a competitive grant program which aims to reduce WVCs for improving human safety and wildlife habitat connectivity	Defunding of this program by federal administration has caused SCSP to shift toward a private fundraising plan for the near future
Endangered Species Act	Federal	Lays groundwork for protection of threatened or endangered species through habitat protection and requiring federal agencies to ensure they will not do harm to endangered species	Caused group to place extra emphasis on conserving movement patterns of Canada lynx in prioritization because they are listed as endangered in Colorado
Senate Bill 22-151	State	Created a statewide cash fund to build safe road crossings for wildlife habitat connectivity and reducing WVCs	Allocated funding for East Vail Pass design contracting; bill's author was temporarily on SCSP's board
Executive Order D-2019-011	State	Directed CDOT and the Department of Natural Resources to enter into an MOU agreement to research and implement wildlife crossings together across the state	CDOT took on East Vail Pass as a project, giving SCSP a chance to consistently communicate about processes and opportunities for reducing WVCs and increasing wildlife habitat connectivity

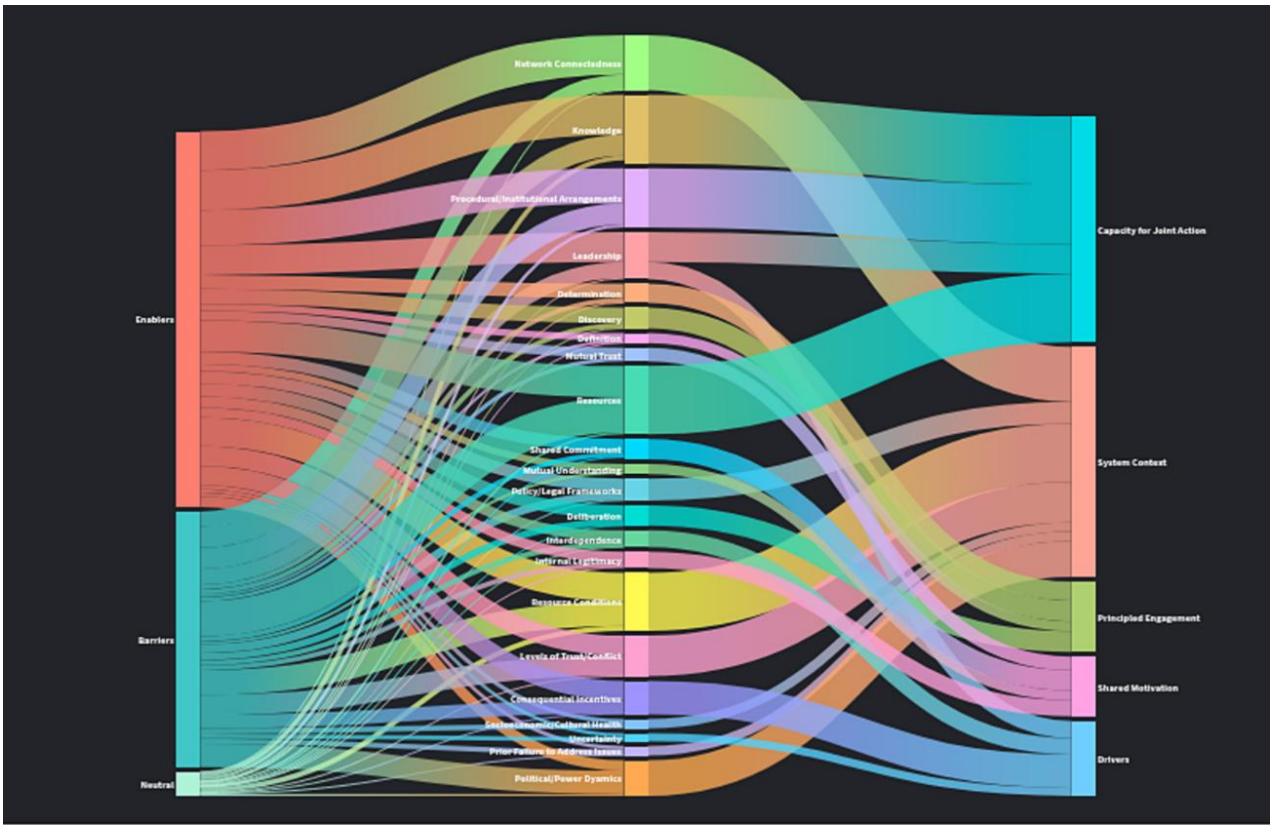

Figure 8. Alluvial diagram representing amounts of barrier, enabler, and neutral excerpts in interview data that were coded to dimensions of the Integrative Collaborative Governance Framework by Emerson, Nabatchi, and Balogh (2012). Represents frequency of relationships between barriers and enablers, subthemes, and finally themes. Excludes data that were not codable to the framework.

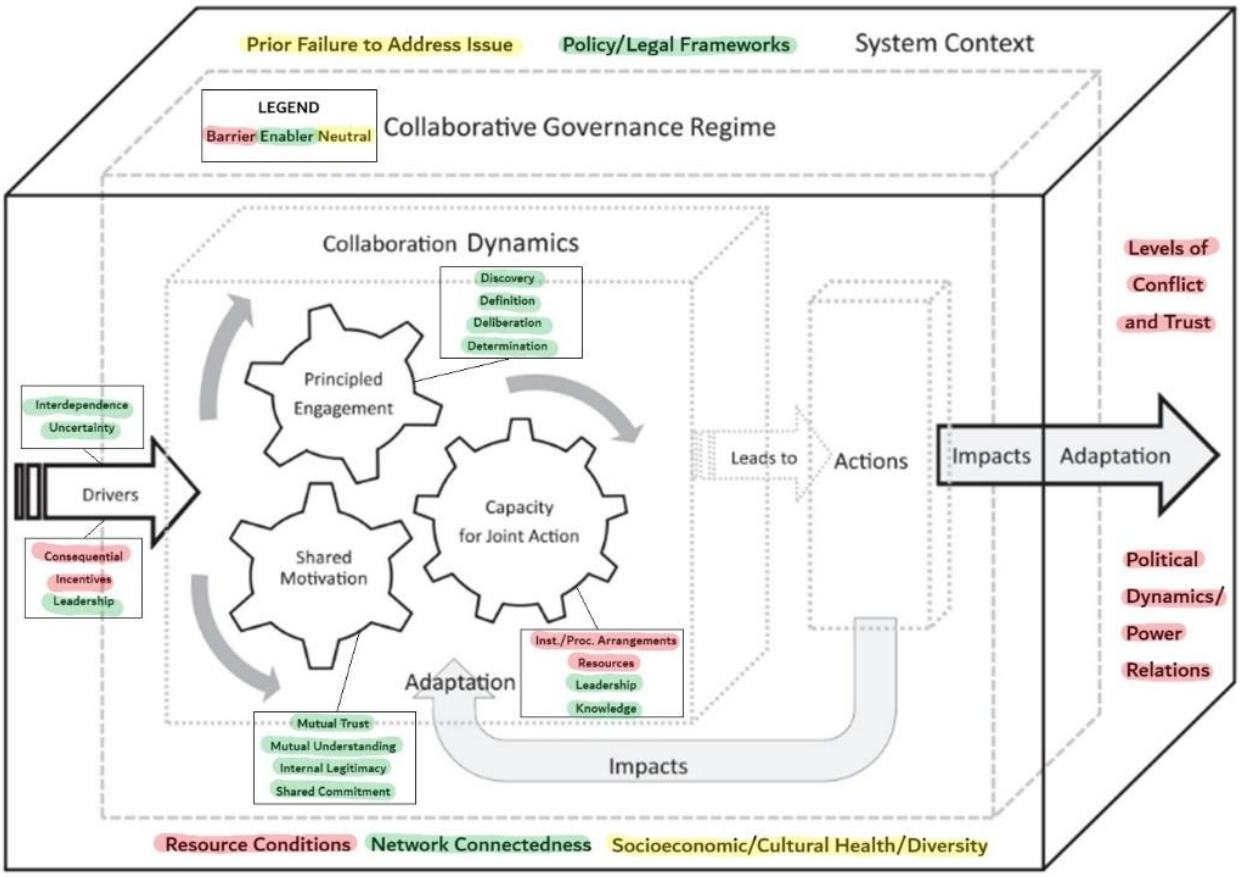

Figure 9. Integrative Collaborative Governance Framework, with subthemes added and highlighted based on whether each dimension helps, hinders, or does not affect implementation of wildlife crossings at East Vail Pass. Dimensions are highlighted red for barriers, green for enablers, and yellow for neutral items. Adapted from Emerson, Nabatchi, and Balogh (2012).

DISCUSSION

Key Findings

To my knowledge, this study is the first theoretical analysis of collaborative governance for wildlife crossings implementation to be undertaken in the body of Western literature (Maya, 2021; Beckmann et. al., 2010; Ribeiro et. al., 2025), although the Integrative Collaborative Governance Framework has been used to analyze similar cross-boundary collaborative governance issues such as bike sharing, air pollution, and prescribed fire (Ma et. al., 2018, Lieu et. al., 2021, Schulz et. al. 2019). The results of my study have revealed several governance barriers and enablers to implementing wildlife crossings in Summit County, CO which can be described by the Integrative Collaborative Governance Framework. Notably, most barriers to implementation fall outside of the collaboration dynamics that constitute the CGR, while enablers mostly fall inside the CGR (Figure 9). This pattern suggests that even when a collaborative has control over its internal dynamics and shapes them positively, or "does everything right" per se, wildlife crossings are extremely difficult to implement due to contextual factors beyond the control of actors within the CGR. Many of these barriers appear to emerge as a function of the considerable time and funding scales on which transportation infrastructure projects occur (Beckmann et. al., 2010), and the inability of the small volunteer teams that are often governing wildlife crossings to do the work of many more people who would be working on any other transportation project. My results also contrast with previous research that suggests wildlife crossings are apolitical (Reed and Kauffman, 2024); the reintroduction of gray wolves within Summit County creates

conditions under which wildlife crossings are political due to widespread conflict (Gonzalez et. al., 2024). Additionally, low wildlife mortality and human safety risks at the proposed wildlife crossing implementation site relative to other places in the state beget weak consequential incentives for some governance actors to involve themselves in the CGR or contribute financially to implementation (Kintsch et. al., 2017). The results also revealed a possible addition to the Integrative Collaborative Governance Framework (Emerson, Nabatchi and Balogh, 2012). Collective action issues such as presence of the free-rider problem and lack of accountability to the "polluter pays principle" function as barriers to the implementation of wildlife crossings, and I speculate they may not be represented in the framework (Emerson, Nabatchi and Balogh, 2012). This study will extend scholarly understanding of wildlife crossings governance and collaborative governance theory and inform practice for a growing global will to deploy wildlife crossings.

Literature Comparison

While this study contributes an important governance perspective to the world of wildlife crossings literature, it is not the first to do so (Beckmann, 2010; Maya, 2021; Jaicks, Ament & Callahan, 2017; Ribeiro, 2025). Beckmann et. al. (2010) describe several case studies of wildlife crossings implementation in the third part of their book Safe Passages, which is called "Effective Partnerships". Similarly to this study, they include details about the system context, formation of the groups, collaborative processes and activities, outcomes, and lessons learned, although not through an exclusively governance lens. Maya (2021) presents a comparative case study of three wildlife crossings implementation projects

across the U.S., including SCSP, and similarly to this study, draws conclusions about what processes and traits within the governance system are conducive or unfavorable to the implementation of wildlife crossings. The Maya (2021) thesis also uses interviews to establish several enablers of wildlife crossings, such as cross-sector collaboration due to interdependence and policy mechanisms, and also identifies the long time scale required for implementation as a common thread between the case studies. Jaicks, Ament & Callahan (2017) employ social science methods to derive institutional barriers to implementation from interviews with practitioners in Wyoming, Idaho, and Montana DOTs, then match relevant solutions to each problem. Ribeiro et. al. (2025) present multiple barriers to the implementation of wildlife crossings in their study system, many of which are governance focused. These barriers were generalized from a literature review and confirmed through interviews with local experts in a single case study. A few of these barriers closely matched the ones derived from my study, including financial constraints and institutional and political obstacles. Ribeiro et. al. (2025) go on to propose several solutions to these barriers, most of which are represented positively in SCSP, meaning that even with their proposed opportunities for wildlife crossings implementation, success is not guaranteed.

The primary difference between my research and the aforementioned studies is the theoretical nature of the methods and analysis in this study. The chapters in Beckmann et. al. (2010) that present case reports, while comprehensive and helpful for practitioners, are not theoretically driven or informed. Furthermore, these chapters do not use systematic social science methods. Likewise, the thesis by Maya (2021) is very useful in that it synthesizes cross-system information to draw conclusions, but it is not theoretically driven and is not

published for wider use. Jaicks, Ament & Callahan (2017), similarly to Maya (2021), derive meaning through synthesis and comparison of multiple cases, and do not engage with theoretical frameworks. The most similar research to mine is the Ribeiro et. al. (2025) paper, which still exemplified large conceptual and empirical differences from this study and the SCSP system. While theoretically informed, the methods do not employ a theoretical framework, instead deriving barriers from a literature review before employing social science methods. Empirically, in Mato Grosso do Sul, Brazil, practitioners consistently identify a lack of cross-sector collaboration, lack of enabling policy mechanisms, lack of available research and knowledge about the ecological conditions of the road, and communication issues between parties (Ribiero et. al., 2025). Similar barriers were identified by Jaicks, Ament & Callahan (2017). These are not barriers that presented themselves in the SCSP case study. Indeed, many of these barriers fall inside what would be considered the CGR for that system, which reflects the lack of institutionalization of this issue into collaborative governance mechanisms that could make steps toward solving the WVC problem in their study system. Because these four studies do not provide opportunities to compare the theoretical implications of this research, I will compare my results to a similar strand of literature: the governance of implementing fish passages infrastructure. Fish passages ensure that fish can reach the necessary habitat and resources to complete life functions, and include such solutions as stream bed engineering, fish ladders, and retrofitted culverts (Silva et. al., 2018).

The comparison of fish passages to wildlife crossings governance, which I undertake briefly here, opens the door to understanding CGRs for the removal of barriers to animal

movement, or *barrier mitigation ecology*. Both terrestrial wildlife and fish movement do not adhere to political or spatial boundaries, meaning collaborative governance is nearly always necessary to remove or mitigate physical barriers to movement. There are conceptual differences between wildlife crossings and fish passages, however, which prevent the overlaying of theory about either one to the other. First, wildlife crossings attempt to create a discrete location for a decidedly indiscrete process of large mammal movement and migration, while fish passages, especially culverts, necessarily occur in the discrete unit of waterways. Large mammals have large home ranges and are not limited in movement by physical features as much as fish are by water. The discrete nature of fish passages therefore gives them a much smaller footprint than wildlife crossings, which require many kilometers of fence to exclude mammals from the road and funnel them into the crossings (Huijser et. al., 2015). The larger the footprint of the project is, the more actors and stakeholders that need to be brought to the table, which increases the complexity of the governance processes and regimes necessary for implementation. Another conceptual difference is the incentives to implement these solutions. Insufficient fish passages do not create human safety issues and economic losses due to WVC-related road closures, which are often some of the most important consequential incentives to get governance actors to aid in provision of most wildlife crossings. Incentives to provide fish passages appear to arise because the fish themselves are important economically, culturally, and legally under multilevel policy and treaties with Indigenous nations (Ebel and Ortman, 2024). Lastly, while wildlife crossings and related infrastructure and vegetation must be maintained often, fish passages, due to their small footprint and lack of required fencing, do not require as much

maintenance. Wildlife crossing exclusion fence, which is necessary to the success of the crossing, creates a worse safety issue than the original road situation if it breaks, as many individuals will attempt to cross wherever they can find the opportunity.

Cross-pollinating wildlife crossings and fish passages governance theory will also require examination of the empirical similarities and differences between the two. Most of the scholarship on fish passages is centered around prioritization indices used by agencies to prioritize locations for culvert retrofitting, fish ladders, and other infrastructure fish movement across barriers within river systems. Burch et. al. (2024) investigated the similarities and differences between the indices used by a variety of different agencies, governance systems and fish passages projects to understand how much different knowledge and consequential incentives affect the prioritization models. Flye et. al. (2020) examines the collaboration dynamics within the Atlantic Salmon Recovery Framework, which governs fish recovery in Maine, using a network governance lens. This study showed that the agencies and stakeholders in the CGR were functioning under a flawed structure that did not facilitate effective principled engagement, therefore creating low shared motivation and capacity for joint action. Despite the technical connectedness of the organizations, they could not provide adequate governance to recover salmon populations to a desired level of an entire group because they were entrenched in conflict and withholding knowledge and cooperation from each other. Ebel and Ortman (2024) used the case study of fish passage and recovery in the Columbia River Basin to understand what causes the emergence of effective governance systems. This article uncovered that diverse lifeways and interests, along with inequities in representation, are barriers to providing fish recovery when true

collaboration with all parties is not achieved. While all of the aforementioned studies provide useful insights into collaborative governance for fish passages, they are either not informed by theory or are using a different theory to examine their case(s).

Theoretical Results Interpretation and Contribution to Theory

These results on wildlife crossings largely fit the Integrative Collaborative Governance Framework. Most of my excerpts were codable to the framework and matched the descriptions given by Emerson, Nabatchi, and Balogh (2012) when they first proposed the framework to synthesize the body of collaborative governance literature up to that point in time. My empirical results also supported the propositions the framework authors put forth regarding the interactions between the pieces of the framework. However, some data was not codable to the framework, and through iterative inductive and deductive coding, the subthemes of free riding and accountability to the "polluter pays principle" emerged. Free riding reduces the pro-social motivations and actions of other governance actors, limiting the ability of the CGR to provide public goods (Choi and Robinson, 2018). This effect is exacerbated by the refusal of the corporate actors perceived to be free riding to come to the table beyond paying legally required mitigation funds toward wildlife crossings implementation. This behavior is in line with the shareholder primacy theory in economics and law, which posits that creating wealth for shareholders is the sole responsibility of a corporation (Friedman, 1970). While this theory has received criticism for its lack of nuance about risk that corporations take on by ignoring a host of other factors such as consumer satisfaction with business practices, it largely explains the unwillingness of multinational corporate actors to be involved in collaboration or community at a local or regional level. The risk an

international land-based business operator takes on by not participating in SCSP is less than the internal risk any decision-maker within the company takes on by advocating for or spending money on constructing a wildlife crossing.

This actor restricting financial contribution to mandated participation also exhibits lack of accountability to the "polluter pays principle," which would encourage the actor who is responsible for the increased traffic on the roadway to pay for implementation (Stevens, 1994). According to key informants, the corporate actors who are free riding are the same actors whose expansions required widening and reroutes of the roadways, therefore exacerbating wildlife mortality and habitat connectivity problems. While they have paid the mandated amount of mitigation money to the project, they have not gone beyond mitigation, which grossly underestimates the cost of repairing damages (Passas, 2025). This phenomenon puts the corporations in a category of "lawful but awful" that includes actors who produce legal and desirable services but simultaneously attempt to deregulate or not cooperate in solving the socially undesirable negative externalities that they have a hand in producing (Passas, 2005). This lack of accountability to the "polluter pays principle" in turn discourages prosocial behaviors from other actors that enable collective action for the provision of public goods (Choi and Robinson, 2018).

These barriers to collective action appear to lie within the collaboration dynamics theme of the Integrative Collaborative Governance Framework (Emerson, Nabatchi & Balogh, 2012). When the actors many others perceive to be free riding has yet to contribute meaningfully to SCSP and has instead affected the CGR from the outside, the attitudes of actors at the table change, and individuals become less willing to lead or participate in collective action.

I speculate that collective action could be a theme within collaboration dynamics, with free riding and accountability to the "polluter pays principle" as subthemes within it. Until a consequential incentive that motivates this corporation to collaborate is found or someone internal takes leadership to be pro-social and mitigate negative externalities, the CGR will be affected by the lack of cooperation from this actor.

Implications for Conservation Practice

As an increasing number of wildlife crossings are being deployed globally, understanding their governance dimensions becomes paramount to inform future efforts. Wildlife crossings can be considered part of large-scale ecological restoration efforts, which are a global priority under Target 2 of the Kunming-Montreal Protocol (Society for the Conservation of Biodiversity, 2024) and the UN Decade of Ecological Restoration (UN General Assembly, 2021-2030). Many implications for the deployment of wildlife crossings can be derived from the results in this study. First, it has shown that the greatest barriers to collaborative governance for implementation are contextual rather than internal. This means collaboratives need extra support to overcome contextual barriers that cannot be achieved exclusively by pooling the resources and authority of governance actors. Collaboratives should lean heavily into contributing to and endorsing advocacy for state-level policy and creation or explanation of consequential incentives to powerful governance actors outside the CGR. The large time scale required to navigate bureaucratic processes and raise large amounts of funding will give actors in a CGR plenty of room to figure out collaboration dynamics, as actors and individuals representing them will change over time. Once a CGR is formed, creating and synthesizing the proper knowledge to make an informed decision, including

location prioritization and stakeholder involvement processes, is essential for both effective implementation and creating consensus. Ensure that these stakeholders and governance actors are invited to participate in an update or listening meeting at least once a year to maintain engagement. Creating clear roles, data-sharing platforms, and decision-making processes prevent mistrust and ineffectiveness among the actors who will participate in the CGR.

This study also shows that the Integrative Collaborative Governance Framework (Emerson, Nabatchi & Balogh, 2012) can be a useful approach for conservation research. While it has not yet been used extensively in environmental contexts, the framework provides an alternative lens through which to examine the social, behavioral, and political aspects of conservation besides psychology. Importantly, the framework still zeroes in on the collaboration dynamics that make up a CGR, although it does not focus as much on other dimensions of collaborative governance such as collaboration emergence and adaptation. Using this governance framework for conservation research lends the ability to distinguish between system context and CGR elements, hence revealing whether future improvements should be focused on internal adaptation or changing external factors through actions such as advocating for policy change. These insights can be used to identify specific barriers, enablers, and future strategies for a collaborative's actions. My methodology in using this framework, specifically the operational definitions of each subtheme (Table 1) and interview guide with questions about each subtheme (Appendix 1), contributes to a growing body of literature operationalizing the Integrative Collaborative Governance Framework.

Ideally, these contributions can be used by others to design research and practical evaluation.

Limitations

The largest limitation to the application of this study is its status as a single case study. Single case studies are a useful research tool for deep diving into complex topics that require building relationships with key informants but are not generalizable past the study system being observed by the researcher (Flyvbjerg, 2006). Other limitations of this study are largely similar to the limitations of the SCSP collaborative itself. I was unable to get in contact with some market actors for interviews, and this dynamic of inability to get ahold of certain companies was confirmed by many SCSP members in their interviews. It also proved difficult to obtain some historical and governance documents about SCSP and relevant governance actors because some materials had been lost in the cloud. While this may speak to lack of institutionalization of the group, the facilitators are fully aware of this issue and cannot invest the capacity to solve it because they are volunteering their time. I also did not have the opportunity to interview any members of the Ute Mountain Ute Nations of Colorado, New Mexico, or Utah, who are rights-holders to the land, resources, and wildlife of Summit County. Their land was ceded via Cession 515 of Treaty 367: Treaty Between the United States of America and the Tabeguache, Muache [Moache], Capote, Weeminuche [Wiminuche], Yampa, Grand River, and Uintah [Uinta] Bands of Ute Indians (Ratified Indian Treaty 367, 1868). The Ute Mountain Ute peoples do not currently have sovereign territory within Summit County as recognized by U.S. federal or state institutions. They have not been contacted to participate in SCSP at any point in the process for that reason, so no

tribal members have personal knowledge about the East Vail Pass wildlife crossings effort. My restrictive schedule prevented me from making these connections, especially because I would have liked to have time to build relationships with Indigenous individuals before asking questions about what are likely low-priority issues.

Future Research Directions

Further research is needed to clarify questions raised by this study. For example, the spatial scale of the WVC problem is likely much larger than Summit County, which is the scale at which wildlife crossings are currently governed in the region, as exemplified by the name Summit County Safe Passages. The social-ecological fit of the conservation problem and the governance solution is most likely low as a result, which contributes to many of the funding and capacity issues faced by SCSP. Most people who recreate in Summit County come from outside the area and drive past the proposed wildlife crossing locations on East Vail Pass, which means people in nearby counties and tourists who come to the area are affected when I-70 shuts down due to WVCs. I-70 in Colorado is also an important route for shipping commerce between Los Angeles, California and many cities in the Great Plains and Midwest regions of the U.S. Los Angeles is the number 1 importer of goods in the U.S., and the principal origin of these goods as of November 2025 is China (Observatory of Economic Complexity, 2026). This means that businesses and individuals as far away as China probably lose money when a WVC totals a truck or increases traffic on I-70. Research about the telecoupling relationship between U.S. highways or even specific highway passes, especially places with high rates of WVCs, could clarify the true scale of this problem and create incentives for more actors to get involved in the CGR.

Other interesting directions for future research include the comparison of the collaborative governance required to provide removal or mitigation of barriers to wildlife migration and movement, including but not limited to implementation of fish passages and ladders or wildlife-friendly fence additions and retrofits. A comparison between multiple cases with large-n samples could also strengthen our understanding of governance patterns between systems, and a multi-level governance approach would be warranted considering statewide collaborations such as the Colorado Wildlife and Transportation Alliance are beginning to emerge. The long-term viability and effectiveness of wildlife crossings governance could also be explored, with the lens of adding static pieces of infrastructure (e.g., concrete overpasses) to dynamic systems (wildlife migration and movement). This is especially relevant as the mosaic of landownership and pressure to subdivide and develop land continue to shape patterns of wildlife movement, which opens the possibility of shifting WVCs and habitat connectivity loss to a different location without sufficient wildlife crossing infrastructure. Lastly, an analysis of the ecosystem services provided by wildlife crossings at both system and individual actor levels would clarify their costs and benefits, which could provide some actors with the necessary incentives to collaborate and/or donate to the process.

Conclusion

This study underscores the need for collaborative governance scholarship for wildlife crossings to focus on mechanisms for actors to overcome contextual barriers going forward. Identifying barriers and enablers are useful starts to the process of uncovering what makes a wildlife crossings CGR effective, and yet the expansive habitat and resilient

wildlife that occupy our landscapes need more investment from us in both research and practice. If we are to truly conserve landscapes and large mammals to the best of our ability, achieving wildlife and ecosystem connectivity through creative physical and social infrastructures must be at the heart of solving our “people problems.”

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APPENDICES

Appendix 1: Interview Guide

Verbal Informed Consent Script

Would it be OK if I record our conversation for purposes of accurately capturing your responses? (*If yes, proceed. If not, "do I have your permission to take notes?"*) I may also take notes. [Turn on voice recorder.] Thank you in advance for your time and contributions!

As you know, my name is Julia, and I am a graduate student conducting a case study for my master's thesis in Environmental Leadership at Colorado State University. The purpose of this interview is to describe the enablers and barriers to implementing wildlife crossings through the lens of the Summit County Safe Passages collaborative and important stakeholders. The information gained from this study will be used to enhance our understanding of the human dimensions of wildlife connectivity, ideally to aid in the planning of future infrastructure projects in Summit County and globally.

This interview should take around an hour. You have been selected to participate because of your position as a stakeholder in safe passages for wildlife and your knowledge about the Summit County study system. We are unaware of any benefit to you personally from being in this study, but your answers could help us understand more about the human dimensions of road permeability to wildlife.

We expect about 20 people to respond to our request for an interview. The interviews will be audio recorded for transcription and analysis purposes and stored securely in a locked drive with encoded titles.

Please keep in mind that your participation in this study is voluntary, and your responses will remain completely confidential. You may choose not to answer certain questions or leave the interview at any time for any reason, and your name and contact information will never in any way be released or associated with your responses in reporting of the data. We will make every effort to safeguard your data. Also keep in mind that the ordering of some of the questions may change, and new questions may arise during the interview.

If you realize you have questions about the study after the fact, please contact the researcher using the email that will be provided to you when you leave. If you have any questions about your rights as a volunteer in this research, contact CSU IRB at CSU_IRB@colostate.edu. Do you have any questions about the study before we begin? Are you willing to participate in this study? (*if yes, proceed. If no, stop*)

Icebreakers

1. Tell me a little about your professional background and role in your organization.
2. What was/is your role in the collaboration?

System Context

3. Have there been past attempts to build crossings or solve habitat connectivity issues here?
    3.1. If so, how successful have they been?

4. Tell me a little about Summit County Safe Passages (SCSP) and wolf reintroduction.
5. What can you tell me about the socioeconomic and demographic makeup of Summit County?
6. How available are the resources necessary to implement a wildlife crossing?
7. How are the roads in Summit County in terms of wildlife-vehicle conditions?
8. How are the wildlife habitats in Summit County in terms of spatial connectivity?
9. What external political and power dynamics have affected the actions of the collaborative?
10. Who in the collaborative do you work with or have worked with in the past on this initiative or others?
11. Can you tell me about any policies or laws that have impacted SCSP?

Drivers

12. How did you get involved with SCSP?
13. Tell me about the history of how SCSP came about.
14. Who led the charge in convening the collaborative?
15. Tell me about your organization's priorities within SCSP.

Collaboration Dynamics: Principled Engagement

16. What did the process of discovering stakeholder interests and values look like?
17. Who else may be interested in joining the collaborative, but has not yet weighed in?
18. What are the purpose and objectives of SCSP?
    18.1. How were these recorded at the beginning of the collaboration?

19. How would you describe communication between collaborators, both during and between SCSP meetings?
20. Can you tell me about the way SCSP is facilitated?
21. How does the SCSP collaborative make decisions?
    21.1. Would you change anything about this method if you could? Please elaborate.

Collaboration Dynamics: Shared Motivation

22. Who do you interact with in the collaborative?
    22.1. What are those interactions like?
23. Can you share an example of a time SCSP had an internal conflict?
    23.1. Can you elaborate on how it was handled?
24. How do members of SCSP exchange differing opinions?
25. Are group members supportive of the collaborative's decisions, and how do you know?
26. How do involved governance actors feel about the chances of achieving SCSP's goals?
27. What commitments has your organization made to contribute toward the process of reaching the collaborative's goals?

Collaboration Dynamics: Capacity for Joint Action

28. What are the processes that organize this collaboration and implementation?
29. What are the structures under which your organization functions?
30. How well recorded or remembered are the functions and processes of SCSP over time?

31. How are SCSP roles and responsibilities structured?

    31.1. Has this changed over time? If so, what changes were made and why?

32. Has any SCSP member or other governance actor had a disproportionate effect on the outcomes of the collaborative? Please elaborate.

33. What kinds of knowledge and expertise have been necessary to the functions of SCSP?

    33.1. How is knowledge generated for the collaborative?

    33.2. How has knowledge been incorporated into the collaborative process?

    33.3. How is knowledge transmitted among collaboration members?

34. Do the stakeholders share resources such as funding, time, expertise, and power with one another? If yes, how?

    34.1. What has your experience with this sharing been like?

35. What does the funding picture look like for the future of the collaborative?

36. What non-monetary resources would be most helpful to the group going forward?

General Barriers and Enablers

37. What has prevented or slowed the implementation process from moving forward?

38. What has allowed or sped up the implementation process to move forward?

39. *SHOW INFORMANT I AM TURNING OFF RECORDING DEVICE* Is there anything else you would like to add or clarify?

Appendix 2: Codebook

Parent Code	Child Code	Example Quotes	Barri-ers	En-abl-ers	Neu tral
?	Collective Action	"We kind of feel like they should be first, in a way, because they're most directly impacted, like anybody that [recreates nearby] has to go by this proposed wildlife crossing. So I guess in our minds, it's like they should be the first ones to kick it off, because they're the ones that will benefit most from it." "They should be digging into their pockets and putting money up for this, and not just mitigation dollars that they were required by law to spend. They're impacting the forest by expanding the [businesses]. They should say, this is important work, and we do use the forest. Our business model depends on the forest, and our business increases traffic on the roadway through the forest." "I mean, talk about a problem where there's a ton of like, negative externalities, but nobody wants to pay. It's like a textbook example of, it's actually way cheaper for us to build this really expensive wildlife crossing than to continue to have collisions with animals and all that sort of thing. But it's, you know, tragedy of the commons."	**13**	0	0
System Context	Prior Failure to Address Issues	"Some of them, [government agencies] consider underpasses already, but we view them as really ineffective... I've been told that both of them think that that's a sufficient underpass for ungulates like moose and elk and deer, but it's definitely not, the box culverts." "Our fence ends here, so the elk apparently don't like this north underpass. So instead of crossing where the fence is directing them to our north structure, they're going around and they're camping out now on this private hayfield. And these owners are not happy because it didn't used to happen. So I think they're	18	12	**2**

		complaining to [SCSP member], and now it's on us."			
System Context	Political/ Power Dynamics	"I wonder if two years ago, that sentiment would have been as strong. I still think, of course, the financial ramifications would have been talked about, but I wonder if people would have been as like, passionate about, like, protecting that money and not spending it on initiatives that are too progressive." "The town of Vail, they totally bailed on us, and they had the money in their budget, and they bailed on us. It was really, really frustrating. And it was, I think, a timing thing, and if we had made the ask six months prior, when they had a different mayor, it might have been different." "In Summit County, we have [independent land-based business operator] that are not part of [corporate land-based business operator], and they have been super supportive. They care about their environment, and that they're working on and with Forest Service land, and they care about the broader area and how they can help... And [land-based business operator] is just the complete opposite. They are impossible to get ahold of and very corporate in nature."	**78**	35	7
System Context	Policy/ Legal Frameworks	"The policy to do the mitigation is what led to that. There wasn't anything else at that time, because it was still early on. You know, but now, there's an executive order by the governor from 2020 that like mandates [state agencies] to work together on these types of projects. But prior to that, it didn't exist, so it was really that mitigation for disturbance on Forest Service land originally." "I think it was like 2017 and there was a highway mitigation project thing happening kind of around the Dillon Reservoir, and CDOT and the Forest Service were working together to try and figure out where to mitigate some of these impacts, and they realized that there wasn't really good habitat where this project was, or nearby. So instead of that, I think the Forest Service	29	**42**	2

		essentially requested the funds be used to, I guess, come up with this SCSP plan." "When we had the state bill, so like, in 2022 we passed - we had a couple of people that we brought onto the board who were already leading a charge for the state bill to provide state funding for wildlife crossings, which became Senate Bill 151."			
System Context	Resource Conditions	"Any other project like ours across the country has no other viable option but private capital today, yeah, because it's a trickle down, the feds have quit funding. They've hammered the states with cutbacks since January. That rolls down to the counties. They don't have the money, and the feds are intentionally not - they've turned the spigot off." "East Vail Pass has none of that. It's an important area for wildlife, but it's such a big highway that you aren't, like on the highway, you're seeing wildlife-vehicle crashes, but not in the numbers that you see on State Highway 9."	**82**	96	18
System Context	Levels of Trust/ Conflict	"So I was there as more of a representative of the service rather than leading it because we know that people don't really love it when the government or big agencies are saying, we're going to create this document that says where it's important to for animals to cross over, and what some management recommendations are in those areas, and thou shalt nots." "They caught one of the first wolves, Oregon wolves, on one of the cameras along I-70. And that, you know, if some people, because, if they think we're building it, some people would be supportive, and others might not give us money on that principle alone, where they otherwise might. So it is just very polarized and I don't know that that's going to change." "People are pulling back wanting to apply for [state agency] funds for that work. So there's land protection still happening, but with maybe different entities than getting [state agency] money, because you have to with land protection and a conservation easement, you have to	**68**	67	1

		get a land deed, and that deed language has like, what you can and can't do on your property for perpetuity. And they don't want to be partners with the state for perpetuity."			
System Context	Socio-economic/ Cultural Health	"[Government agency employee] left last year because she never could afford to live in Summit County. She was living in Idaho Springs. And she just got sick of it and her life was split, you know, and like, she had a community and stuff elsewhere, and she's like working this job in Summit County. And she just, you know, she couldn't afford to live in Summit County." "Reducing the amount of time that corridor is closed, it's a big impact to our community, both the businesses and quality of life within where we live... I'm glad I don't live in Silverthorne when I-70 closes, because it has real impacts to people, whether they're just trying to get home, or whether they're trying to get to a grocery store, you know, or to an Airbnb or to another business.	18	14	**0**
System Context	Network Connectedness	"I was in all the design meetings for Vail Pass. Well, for Iron Springs, where kind of all started kind of to fruition. Like [SCSP facilitator] knew that I understood, because I had a bunch of history with other jobs too, like on Berthoud Pass from way back and then Highway 9 North like 20 years ago. So kind of all my experiences, like, it was like, yeah, let's keep talking." "We're working together almost daily on various projects, especially wildlife related. So having her voice on the board, you know, was just another - it resonated with us being the town's open space department, like, hey, the county's already contributed... she is probably the best example. But you know, there's numerous other people involved that we work with." "The biologists in each of the regions do a great job at trying to incorporate as much as we can and we all try to kind of work together to say, hey, you did this on your project. Did this work? Was it effective? Like share with me, you know,	51	**132**	2

		like tell me how we could do it. And then also with, you know, the Wildlife and Transportation Alliance and having that as a sounding board, you know, helping navigate some of this. I think there's just more communication and more education."			
Drivers	Consequential Incentives	"We could put an overpass in so easy and fence this and just solve this problem. And we had a meeting with this landowner, and the message was [a clear no]. So that's a barrier, I think, is visual aesthetic. Some people are really sensitive to that." "East Vail Pass doesn't have the highest wildlife-vehicle collision counts, right? And so the cost benefit from a crash perspective is hard to justify, but her argument is probably right that they're avoiding the highway because there's so much traffic, so they're not attempting to cross, and that's why we have a biological problem, right? Because the populations can't connect."	**45**	64	3
Drivers	Interdependence	"We have several [land-based business operators] permitted here on the Dillon Ranger district, so they essentially have a 30-year permit to operate on National Forest lands... so it's a really unique relationship in that they are permitees and, you know, at the end of the day, they're private businesses that are making money off of public lands." "You need the roadside because Vail Pass is a state highway. You need CDOT to put it on their project plan, and if it's not part of their plan, then it's never going to happen."	18	**37**	1
Drivers	Leadership	"My understanding is that a lot of the genesis of the project came from a former wildlife biologist of ours. I think that's been our biggest contribution so far, is really just getting it off the ground." "It was actually a very novel situation because normally [state agency] does not direct mitigation funds in that way, but it was something that [wildlife biologist] really pushed for and had support to do that with the forest, and they were able to get that funding for this purpose."	21	**34**	2

Drivers	Uncertainty	"I remember being in a meeting with [federal and state agency members]... they were kind of like, we need a prioritization plan, because some of it came down to, maybe this isn't the best place to do mitigation. We have needs other places in the county."	15	**12**	0
Principled Engagement	Discovery	"What I wanted to do was analyze the whole district and beyond for that connectivity piece, where are critical pinch points, where are increased numbers of wildlife-vehicle collisions? What can we do to create this assessment where we pull in all of these stakeholders from the community to start building this vision of what this landscape could look like with connectivity." "I think that's why we were successful. You really do have to get everyone's input, even if it's not input you want to hear." "Everybody brought back what they thought were the most important areas for wildlife connectivity and for people. Other people brought back areas like, this is an important area for the town, or for [independent land-based business operator]. These areas are important. Everybody gave us what their values were."	17	**51**	2
Principled Engagement	Definition	"One of the things that study sort of pointed to or identified was that I-70 is the biggest barrier to landscape connectivity in the Southern Rockies. And then, made some initial attempts and sort of like, well, okay, so we identified this problem. Like here's a physical barrier, and we probably need wildlife crossings on it." "I think everybody was in agreement on those objectives and what the whole purpose of that the project was - really to kind of find those areas in need of some safe passage work, some vehicle collision reduction work."	9	**23**	1
Principled Engagement	Deliberation	"I think you have a better product at the end of the day when people don't always agree. From the get go, you have a bunch of opinions, and a lot of times you'll come up with a better product, sometimes it defaults to a worse project. But I want to say most of this time, and with	24	**44**	1

		this group we have, we are just bringing a lot of different perspectives to the table." "When we have a committee and that committee is doing the deep dive and they come back with a recommendation, we might have a lot of questions or something like that, but we're generally going to go with the recommendation of the committee."			
Principled Engagement	Determination	"We try to go for a consensus approach, you know, which I think we get most of the time, but we do have formal votes, yeah, that we document. I also think that while consequential for us because we're such a small organization with a minimal budget, our vote margins have been pretty even, you know, like they're not earth shattering or anything." "The goal is unanimity. We haven't had to face any real divisive issues." "I think [East Vail Pass] kind of got a little bit more momentum. That's why it rose to the top more than the other two sections of road."	16	**47**	1
Shared Motivation	Mutual Trust	"Everybody just kind of steps up where they need to be and it's usually like yay, you got this, type of thing... everybody's really kind and nice and supportive." "They had to put their trust in us, too, and trust the process, and show up to the meetings. And then as we started moving through the process, it definitely became easier."	14	**32**	0
Shared Motivation	Mutual Understanding	"We all understand that everyone wears different hats, and everyone has a job, and everyone is still your neighbor, and you know, sees the benefits of some projects and maybe others they don't." "You can tell why biologists would be upset or think that there's a need for mitigation because we wiped out this kind of swath of forest. Yeah, but this is just kind of the world we live in with big infrastructure projects, is like, there's kind of a trade-off every time."	10	**23**	0
Shared Motivation	Internal Legitimacy	"I think those are some of the folks that have been on the board forever with me and I think that sort of longevity and that commitment, having people in the same roles to bring the	17	**34**	1

		history is important, and that's part of why I couldn't let it go and just pass it off, because I feel like I can bring that to the table. We've been working at this, and we have some successes. It's a very, very dedicated group." "I think people started seeing this as a real thing that could happen, not just a pipe dream. And I think that's what it took."			
Shared Motivation	Shared Commitment	"So it's worked out well, yeah, except I'm taking on an enormous amount of time commitment to get this done. But I'm gonna get it done. I'm committed." "We'll stay involved as much as they need us to in order to see if we can help them achieve their goals. We like the projects. We think they're important to the community. We think they're important to the mountain corridor as a whole. So as much as one business can, we'd like to help them achieve those goals."	17	**49**	2
Capacity for Joint Action	Knowledge	"I have some counterparts that work at [land-based business operator] who share my role as working with the USFS, for instance. So people sit down and talk about, hey, I ran into this problem in this project... If you guys ran into similar problems doing a project, how'd you get around it? Can you help me navigate my way around this issue?" "I think having the diversity of the group and then having folks with knowledge and expertise to run stakeholder involvement programs... [SCSP member] works on so many conservation types of things. [Different SCSP member] has been doing this for eons. So I think just the diversity in that expertise and knowledge and kind of working together with that, everybody kind of brings a different piece to it." "I'm on our board. I'm the only person that's not a biologist, a scientist, a road ecologist, working for a government agency, state, federal, county. I don't work for a not for profit."	71	**133**	16
Capacity for Joint Action	Leadership	"What I was talking about with champions, [SCSP facilitator] is our main champion right now. She's been working so hard and she's got so many other things going on her own. I mean	32	**66**	2

		all of us are volunteering to help kind of make this happen. So she's doing a phenomenal job trying to keep it going." "We needed a storyteller because people like me, we're just geeks and don't know how to tell the stories in a way that's very relatable. And so to have him as kind of a figurehead and a spokesperson for the work that we're trying to do has been monumental. I mean, it's just so impactful."			
Capacity for Joint Action	Procedural/ Institutional Arrangements	"I know there's been projects where we've tried to come in and make changes and they've said sorry, yeah, we can't do this because of money or whatever, because the bridge enterprise, I don't think they can get funding to make it better for wildlife, right? They can only get funding to improve the structure for transportation." "You need to have a couple champions in that group I guess in order for those things to get done... all of us are advocates, but I think you really need to have somebody to help drive that, I guess is what I'm saying. And then for making the decisions, I think we're mostly having those champions or the chairs of the committees making those types of decisions, but it's kind of also hard because it's in [state agency]'s world, like that's our infrastructure." "Like you're trying to navigate supporting and advocating for something, but I can't make decisions because I'm an environmental unit and I'm down here. I'm not up here. So I don't necessarily have decisions that I can make. I can pass that on and, you know, support or advocate for that, but it becomes, you know, a little bit difficult in my role, in my position within the agency."	**71**	118	11
Capacity for Joint Action	Resources	"We have raised successfully some organizational funds, which are general pot funds. Without that, I don't think we'd have enough funds in hand to be able to start fundraising, and we've had these conversations internally as a board, like okay, we have some startup funds to pay this firm to kick off and to get the	**118**	105	7

process rolling. It costs money to raise money; nothing is free."

"One of the challenges is that, because we're a working board, everybody's volunteering their time, you know? My role at [NGO], it pays the bills, right? Like, my salary and stuff. So this is also, at the end of the day, a secondary priority, in the sense of like, [NGO] pays the bills, not Summit County Safe Passages. And so everybody's in roughly the same position."

"First of all, there haven't been any grants to apply for - federal grants - to apply to for funding since January... we're almost done raising the design dollars without any federal funding. But construction is like - conservation grants for $32 million just don't really exist, you know, like, conservation work operates on a different financial scale than transportation projects."