

ALIVE Implementation Matrix



The following matrix outlines specific inputs, considerations, and outcomes during each of the five life cycle phases for improvements in the I-70 Mountain Corridor that are needed to improve, protect, or restore permeability for wildlife and important habitat components, as put forth in the ALIVE Memorandum of Understanding. As activities in the corridor move from corridor planning to project development to project design and so on, the outcomes from the previous phase become inputs for the subsequent phase. This approach is consistent with the Life Cycle Phases and 6-Step Process in the CSS Guidance for the I-70 Mountain Corridor. The Implementation Matrix was developed as a part of the project: *A Regional Ecosystem Framework for Terrestrial and Aquatic Wildlife along the I-70 Mountain Corridor in Colorado.*

Each Life Cycle Phase is represented in a separate column in the Implementation Matrix. For each phase, two primary considerations, as indicated by the ALIVE MOU, have been identified: 1) Connectivity/Permeability and Wildlife Habitat, and 2) Information Needs and Data Updates. Users should identify the Life Cycle Phase(s) of interest and then read down the appropriate column to view all Inputs, Consideration and Outcomes & Products for that phase. Life Cycle Phase columns may flow onto multiple pages.

	Corridor Planning	Project Development	Project Design	Project Construction	Operations, Maintenance and Monitoring
<p>WILDLIFE CONNECTIVITY AND HABITAT</p> <p><u>Objective:</u> To increase the permeability of the I-70 Corridor to terrestrial and aquatic species, including the development of management strategies that will result in the long-term protection and restoration of wildlife linkage areas that intersect the I-70 Corridor, improve habitat connectivity, and preserve essential ecosystem components. (MOU Purpose and Intent)</p>	<p><u>Inputs:</u></p> <ul style="list-style-type: none"> • Wildlife data • Land use information (incl. local land use, USFS management plans, BLM, etc.) • Ownership data (incl. private lands) • Existing LIZ and Ecological information and recommendations <p><u>Considerations</u></p> <ul style="list-style-type: none"> • What opportunities exist to improve, protect or restore permeability and habitat components? • How have wildlife habitat and populations changed since the original or last updated analyses? (continued on next page) 	<p><u>Inputs</u></p> <ul style="list-style-type: none"> • Target species movements and habitats • Wildlife guidelines and BMPs • Avoidance and mitigation strategies (pdf) (xls) • Existing recovery efforts (USFWS/CDOW) • Coordination with CDOW, USFWS, USFS, BLM, local governments, other stakeholders <p><u>Considerations</u></p> <ul style="list-style-type: none"> • Are there permeability concerns outside of identified LIZs? • Where are there existing barriers to wildlife movement? <p>(continued on next page)</p>	<p><u>Inputs</u></p> <ul style="list-style-type: none"> • Species specific needs and compatible project designs • Terms and conditions from Biological Opinion, if applicable <p><u>Considerations</u></p> <ul style="list-style-type: none"> • Will project designs improve or restore habitat and permeability? • Will project designs minimize impacts to habitat and permeability during construction? • Will project designs minimize impacts to habitat and permeability during operations and maintenance? <p>(continued on next page)</p>	<p><u>Inputs</u></p> <ul style="list-style-type: none"> • Terms and conditions from Biological Opinion, if applicable • New species & habitat data since PS&E relative to all target species (or new target species) - NEPA re-evaluation <p><u>Considerations</u></p> <ul style="list-style-type: none"> • Are there unforeseen issues affecting habitat & permeability during construction? • Are there changes to the construction timeline that could affect habitat & permeability? <p><u>Outcomes and Products</u></p> <ul style="list-style-type: none"> • Mitigation modifications 	<p><u>Inputs</u></p> <ul style="list-style-type: none"> • Implementation and Monitoring Plan • Terms and conditions from Biological Opinion, if applicable <p><u>Considerations</u></p> <ul style="list-style-type: none"> • Are the mitigations successful relative to the permeability goals set during corridor planning and project development? - What could be done differently? - How could a structure be built better, cheaper next time? <p><u>Outcomes and Products</u></p> <ul style="list-style-type: none"> • Monitoring results • Lessons learned
	Corridor Planning	Project Development	Project Design	Project Construction	Operations, Maintenance

					and Monitoring
	<p><u>Considerations (con't)</u></p> <ul style="list-style-type: none"> • What types of changes in wildlife habitat, populations or movements might occur in the reasonably foreseeable future? <p><u>Outcomes and Products</u></p> <ul style="list-style-type: none"> • Identify measurable permeability goals for the corridor • Avoidance strategies • Mitigation strategies (Permeability) (Connectivity) • Revised or refined LIZ information for that corridor segment • Identify partnership and acquisition or easement opportunities (permanent protection opportunities for adjacent habitat) 	<p><u>Considerations (con't)</u></p> <ul style="list-style-type: none"> • What opportunities exist to improve, protect or restore permeability and habitat components? • How have wildlife habitat and populations changed since the original or last updated analyses? • What types of changes in wildlife habitat, populations or movements might occur in the reasonably foreseeable future? • Do opportunities exist to enhance recovery efforts (e.g., approved Recovery Plans for ESA-listed species and State analog)? • Does the target species list include ESA-listed T&E species, species of state economic importance, USFS and BLM sensitive species, USFS MIS, & state spp. of concern? • Are there potentially conflicting mitigation/BMPs actions (crosswalk proposed mitigations) <p>(continued on next page)</p>	<p><u>Considerations (con't)</u></p> <ul style="list-style-type: none"> • Are there potentially conflicting mitigation/BMPs actions (crosswalk proposed mitigations) <p><u>Outcomes and Products</u></p> <ul style="list-style-type: none"> • Final Plan Specifications and Estimates (i.e., final designs) including specific mitigation measures • Monitoring plan, estimates and identified funding for monitoring & ongoing maintenance 		

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		<u>Outcomes and Products</u> <ul style="list-style-type: none"> Biological Evaluation (USFS sensitive spp.), Biological Assessment (USFS), Biological Opinion (USFWS), Biological Report (USFS) <ul style="list-style-type: none"> Identify project-specific mitigation strategies relative to all target species Establish commitment to monitoring 			
INFORMATION NEEDS AND UPDATES <u>Objective:</u> Identify and acquire information needed to inform decision-making and outcomes at each life cycle phase.	<ul style="list-style-type: none"> Changing and shifting habitats and wildlife populations Ongoing LIZ revisions 	<ul style="list-style-type: none"> General and species-specific BMPs 	<ul style="list-style-type: none"> Species-specific and site-specific monitoring needs – what protocols should be implemented to evaluate the functionality of mitigation measures? 	<ul style="list-style-type: none"> Surveys prior to implementation 	<ul style="list-style-type: none"> Are there new or improved monitoring techniques which could provide greater efficiency and effectiveness in monitoring?

CSS Project Phase Definitions

Phase 1: *Corridor Planning* integrates with statewide planning efforts, champions corridor-wide planning, and promotes consistency among local planning efforts. Deliverables include the Programmatic Environmental Impact Study and other corridor-wide planning studies. This phase includes the study of sub-corridors within the larger I-70 Mountain Corridor.

Phase 2: *Project Development* brings improvement concepts, environmental documents, and mitigation strategies to completion. Deliverables include Tier 2 environmental documents and feasibility studies (including Section 7 consultation), as well as a level of preliminary design (~15 – 30% design).

Phase 3: *Project Design* develops construction plans and undergo necessary permitting for a project. Deliverables include project design plans, specifications, and cost estimates (100% design).

Phase 4: *Project Construction* safely builds a functional transportation facility. Deliverables include completion of the physical improvements, work acceptance, as-built drawings, and project closure documents.

Phase 5: *Corridor Operations, Maintenance, and Monitoring* will inspect, monitor, assess, manage, and maintain completed facilities, as well as provide feedback to Phase 1 Corridor Planning and Phase 2 Project Development for incorporation into future projects. Deliverables include monitoring feedback and program documents; for example: incident management plans, mowing and paving programs, and safety inspection reports.