

**Memorandum Of Agreement
In-Lieu Fee Lynx Mitigation Strategy
Among
Federal Highway Administration, Colorado
Department of Transportation
And
U.S. Fish and Wildlife Service**

Background

Construction, operation, and maintenance actions carried out by Federal Highway Administration (FHWA) and Colorado Department of Transportation (CDOT) can and do cause negative effects to the Canada lynx (*Lynx canadensis*) [lynx] that may be difficult to mitigate due to the limitations and technical difficulties of on-site effective mitigation options, or due to the relative cost of an effective mitigation compared to the cost of a project. Negotiations of mitigation may also cause project delays in the completion of the environmental analysis that is disproportionate to the size of the project. Some impacts may go unmitigated due to the cost of an effective mitigation compared to the overall cost of a minor, yet impacting, project. This Memorandum of Agreement (MOA) was developed to address these issues and to provide another strategy for mitigation that can be considered during consultation with US Fish and Wildlife Service (USFWS) for actions by FHWA and CDOT.

Goal

The goal of the MOA is to provide a framework to address the issues identified and discussed in the Background section above. FHWA and CDOT, in accordance with Section 7(a)(1) of the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531-1544), proposes the in-lieu fee mitigation framework to provide an alternative to on-site mitigation that contributes to the conservation of the lynx while continuing to provide the best multi-modal transportation system for Colorado.

Purpose

The purpose of this interagency MOA is to establish a general framework for a streamlined process for interagency cooperation among FHWA, CDOT and USFWS, in the exercise of their responsibilities under the ESA. In particular, this MOA outlines a mitigation strategy that can be used to satisfy the agencies' Section 7 obligations and is not meant to supersede existing agreements. This MOA addresses only those activities (large or small) occurring in Colorado that are proposed by FHWA/CDOT, and are determined to have an adverse effect on lynx.

An adverse effect finding and proposed mitigation would be determined through a Biological Assessment (BA) or other review by FHWA and CDOT and ESA Section 7 consultation among FHWA, CDOT, and USFWS. After such a finding, USFWS will move forward with a biological opinion in which the agency will concur or not whether the proposed mitigation for impacts to lynx can be accomplished by utilizing the in-lieu fee fund. FHWA and CDOT are required to

mitigate once USFWS agrees that the project will adversely affect the species, and is not dependent on a jeopardy finding by USFWS during the biological opinion process.

The procedures outlined in this MOA will enhance existing procedures for conducting Endangered Species Act Sections 7 and 10 consultations. This process will provide a number of efficiencies, allowing the agencies to better achieve compliance with the ESA without altering or diminishing the FHWA's and CDOT's existing responsibilities under the ESA or its regulations. Although consultation already occurs on project plans and site-specific activities, this process will result in more effective mitigation for transportation operations and infrastructure impacts to lynx and associated habitat while minimizing impacts to project scheduling and engineering.

This agreement in no way alters the commitment of the action agency to consult at the site-specific level or the commitment to avoid and minimize impacts to the lynx prior to contributing to the fund.

This MOA establishes interagency commitment to the following: (1) Early interagency communication, coordination, and discussion relating to the conservation of lynx including information concerning location, movement, habitat and lynx behavior; (2) supporting this mitigation strategy through participation in the management teams; and (3) encouraging the success of the strategy by sharing expert knowledge and opinion on mitigation appropriateness, design and location.

Context of Agreement

As part of their Every Day Counts Initiative, FHWA was encouraged to develop and implement various types of streamlining actions which would allow for faster, more efficient project delivery while still maintaining compliance. One of the suggested actions was to develop a fee in lieu of immediate mitigation. Colorado's highway system crosses over lynx habitat throughout their range in the southern Rocky Mountains. As these highways continue to become larger and more sophisticated and vehicle numbers and speeds continue to increase, lynx find it difficult to move throughout their home range or disperse into new territories without impacts, including death, from the highway system.

On-site mitigation for these impacts is often difficult because of the relatively few options and the economic and technical difficulties associated with their implementation. One major concern is that seemingly simple projects can increase the highway's barrier effect to lynx and it is difficult to develop mitigation that would best address that impact. Often, the resulting mitigation proposal would be more expensive than the offending project itself, and may not be the best location to mitigate these types of impacts, rendering the mitigation invalid as a cost-effective solution.

Projects can choose, or may be required as a part of USFWS consultation, to do on-site mitigation instead of using this in-lieu fee mitigation strategy. On-site mitigation may be more or less expensive than the amount that would be contributed to the Lynx Mitigation Fund.

Project Contribution to the Lynx Mitigation Fund

The proposed process would address these issues by allowing individual projects to contribute to a fund as their mitigation for impacts to lynx. The amount of contribution required would be based on a sliding scale and tied to the type and severity of the impact the project would be expected to have on lynx. The result should be comparable to the cost of lynx mitigation for impacts caused by previous projects in Colorado as required in their biological opinions. The amount put into the fund can be used for a better lynx conservation effort than if the funds were being restricted to a specific project location or to a lesser mitigation type. Funds can also be leveraged, and partnering is encouraged, through this in-lieu fee mitigation; it is an option that is not available as part of most on-site mitigation plans. Below is the scale that will be used; it was based upon the average cost of mitigation and compliance with the ESA compared to total construction costs (by percent) to past projects that needed to mitigate for impacts to lynx in Colorado:

Adverse effect to lynx. Any project that may affect, and is likely to adversely affect, lynx = 1% of the total construction costs.

The following will be added to the initial 1% as applicable:

Adjacent lynx habitat/activity. If any part of the project has either accessible lynx habitat on both sides of the roadway, is within a U.S. Forest Service (USFS) or Bureau of Land Management (BLM) lynx movement corridor, or if there are known occurrences of lynx within 1 mile of project = 1% of the total construction costs.

Permanent Physical barriers to movement. The addition of a new permanent element that physically interferes with the movement of a lynx across a highway. This includes, but is not limited to, vertical elements such as guardrails, glare screen, wildlife exclusion or mesh fencing, retaining walls, increased hardtop width including the addition of acceleration/deceleration/auxiliary lanes, and concrete barriers = 2% of the total construction costs.

Temporary physical and non-physical barriers to movement. The addition of a new temporary element that physically interferes with the movement of a lynx across a highway and is not associated with the installation of new permanent barriers. Temporary barriers include, but are not limited to plastic or concrete barriers, or other vertical elements that are not a permanent feature of the highway infrastructure, as well as a new element having non-physical temporary impacts to include but are not limited to lighting at night during construction = 1% of the total construction costs.

Non-physical barrier to movement. Any changes of right-of-way characteristics that deter or prevent the movement of lynx. This includes, but is not limited to, increases in travel speed, increase in traffic volumes, increased noise or light levels, increased snow compaction, loss of usable habitat, reductions to median width, loss of vegetation along highway lanes and in the median, and change in operational activity, etc. = 1% of the total construction costs.

Other actions that affect lynx. If there are any other actions not listed here that are determined to have an adverse effect on lynx, a description of the action, the expected effects to lynx and the proposed level of project monetary contribution will be proposed and submitted to the USFWS for their concurrence as part of the consultation process. The contribution level and justification for that level will be determined by the CDOT Wildlife Biologist who is completing the BA for the project.

The total contribution to the Fund will be capped at 5% of the total construction costs even if the additive total is more than 5%. See Appendix A for examples.

The total percentage of construction costs to be used for lynx mitigation for a qualifying project will be arrived at, and agreed upon, with the affected CDOT Region(s), CDOT's Environmental Programs Branch (EPB) Wildlife Specialist, and FHWA prior to the submission of a BA to USFWS.

Management of the Lynx Mitigation Fund

The project mitigation fund contributions are based on project "award" costs because these represent the most accurate construction cost estimates. Although the budget request to FHWA regarding estimated project costs, including mitigation costs, are sent to FHWA prior to award authorization, all project budgets are modified at award. CDOT's Office of Financial Management and Budget (OFMB) suggests that the award cost that goes out to construction will not include the Lynx Mitigation Fund contribution amount which would be de-budgeted from the award amount as with wetland mitigation banking credits and paid to the fund as invoiced from the fund.

Over time, the funds contributed would accumulate to the point where they could be spent on mitigation that would be of significant benefit to lynx, as well as to their habitat and movement, throughout the state. These funds cannot be indefinitely sequestered though, and must be spent in whole or in part at least once every three years. Additional federal funds are not required in order to implement mitigation activities.

Because this process does not prescribe the specific type, timing or location of lynx mitigation, there could be some level of uncertainty associated with the potential consequences it would have on these animals. To alleviate this concern, two management teams, an Advisory Committee and a Fund Management Team, would be created to oversee and manage the process.

The Advisory Committee, composed of CDOT, FHWA, USFWS, USFS, Colorado Parks and Wildlife (CPW) and BLM personnel and other lynx experts with statewide knowledge of lynx behavior, populations, or movements will identify priority areas and projects. Projects will be prioritized based on the most scientifically credible and effective mitigation strategies. The mitigation must address impacts caused by construction, operation, and maintenance of roadways. The Advisory Committee will also recommend adaptive management approaches including pre- and post-mitigation project monitoring to help future project decisions to adapt the program to effectively meet the objectives of lynx conservation over time, and to contribute to the larger body of scientific knowledge on the lynx.

Members of the Fund Management Team will include representatives from those CDOT Regions containing lynx habitat, CDOT's EPB Wildlife Specialist, and representatives from FHWA and USFWS, and will be convened to provide direction on distribution of the funds from the Fund.

Expenditures of the Fund may be located anywhere in Colorado as long as 1) the funded mitigation will be beneficial to lynx, 2) the Fund Management Team has considered input from the Advisory Committee, 3) the expenditures have been agreed upon by the Fund Management Team, and 4) the expenditure proposal has been properly consulted on with USFWS. Special consideration should be given to qualified projects (as determined by the Advisory Committee) with opportunities to engage matching funds, add to mitigation plans by others, or add additional lynx mitigation into an upcoming transportation project for greatest cost-efficiency. The Fund Management Team will prepare an annual report as required by this mitigation strategy. The annual report will be provided to the signatory agencies, the Advisory Committee, and posted on CDOT's website. At least one Fund Management Team member will be on the Advisory Committee as liaison with the Fund Management Team.

Responsibilities

A. CDOT has the responsibility to:

1. Work with FHWA to comply with the National Environmental Policy Act (NEPA), ESA, Clean Water Act (CWA) and all other applicable environmental regulations, including the preparation of ESA compliance documents.
2. Ensure that their projects include avoidance and minimization measures that will lessen the on-site impacts to lynx to the maximum amount practicable prior to contributing to the fund.
3. Set up and participate on the Fund Management Team and Advisory Committee to determine prioritization of fund distribution and the distribution of funds.
4. Set up and manage the fund, and maintain a log of fund transactions and mitigation activities as prepared by the Fund Management Team to be reported annually to each CDOT region, FHWA, USFWS, and the Advisory Committee. The annual report will also be posted on CDOT's website.
5. Implement mitigation projects funded by the Lynx Mitigation Fund including project development, development of ESA compliance documents, and construction oversight.
6. The projects using the Lynx Mitigation Fund will be reviewed by CDOT's Wildlife Program Manager quarterly through SAP to ensure that the fund contribution amount is still accurate to the project construction costs. OFMB will assist in the transfer of funds, either to or from the fund, to keep the construction contributions in line with the agreed-upon percent for mitigation.

B. FHWA has the responsibility to:

1. As lead federal agency, to comply with NEPA, ESA, CWA and all other environmental regulations.
2. Participate in funding Federal-aid highway projects and associated conservation/mitigation, if included in CDOT's Statewide Transportation Improvement Program.
3. Participate in the development of ESA compliance documents and consult with USFWS on any project that may have an effect on lynx.

4. Include USFWS when determining future mitigation for lynx that would use the in-lieu fee funds.
5. Participate on the Advisory Committee and Fund Management Team to determine prioritization of fund distribution and the distribution of funds.
6. Ensure that the fund expenditures are completed as directed by the Fund Management Team.
7. Ensure that any money used to mitigate for impacts to lynx that originate from this Fund, are used to address impacts caused by the construction, operation, and maintenance of the highway system.
8. Ensure that projects avoid and minimize impacts to lynx prior to contributing to the fund.

C. USFWS has the responsibility to:

1. Prepare and/or assist in the preparation of ESA compliance documents to meet the purpose of the MOA.
2. Make ESA decisions based on the best available scientific and commercial data during individual project consultations using this mitigation strategy.
3. Utilize regulatory flexibility to achieve interagency streamlining goals and to support effective, proactive conservation of lynx.
4. State in its biological opinions to FHWA/CDOT that,

Where appropriate, mitigation for impacts to lynx will be accomplished by utilizing the fund and that mitigation will be considered complete for that project once funds have been deposited into the lynx fund account.

Ensure that projects avoid impacts to lynx or minimize impacts to lynx in addition to contributing to the fund.
5. Participate on the Fund Management Team and Advisory Committee to find acceptable fund mitigation sites and to determine prioritization of these fund mitigation sites, as well as contribute to the discussion regarding distribution of funds on these mitigation sites.
6. Provide the most up-to-date information and science available to the Advisory Committee and the Fund Management Team when determining the most appropriate mitigation for lynx.

By collaborating in this manner, mutual feelings of respect and trust among the participating agencies would be expected to increase through communication, participation, and a common desire to conserve the lynx throughout the state.

Tasks and Committee/Team Guidance

A. Advisory Committee

1. Will provide a prioritized list of mitigation measures and locations to the Fund Management Team for consideration.
2. Will recommend adaptive management approaches including pre- and post-mitigation project monitoring to help future project decisions adapt the program to effectively meet the objectives of lynx conservation over time, and to contribute to the larger body of scientific knowledge on the lynx.
3. Will contribute the most up-to-date information on lynx habitats, movements, locations, impacts from transportation, and other pertinent information needed to prioritize mitigation measures and the locations of those measures.
4. Will use lynx experts to help propose, discuss and arrive at appropriate mitigation measures using the most up-to-date scientific information.
5. Will update the prioritized list annually or as needed.
6. Will obtain the most up-to-date information and science available when determining the most

appropriate mitigation opportunities for lynx.

B. Fund Management Team

1. Will take under consideration the recommendations put forth by the Advisory Committee when determining how funds should be expended.
2. Will create and maintain a log that will record each contribution and expenditure of the Fund and provide an annual reporting of Fund balances and activities to each CDOT region, FHWA, USFWS and the Advisory Committee.
3. Will select activities, including project enhancements or stand-alone mitigation projects that will benefit lynx as per the Advisory Committee recommendations.
4. Will fund or find interested partners to conduct pre- and post-mitigation project monitoring to help future project decisions to adapt the program to effectively meet the objectives of lynx conservation over time, and to contribute to the larger body of scientific knowledge on the lynx.

Scope

The scope of this MOA includes those FHWA/CDOT projects that are located in lynx habitat or could otherwise affect lynx and have been determined through biological analysis to be adverse to the lynx. Use of this in-lieu fee mitigation strategy as mitigation for project impacts will be determined during the BA/BO process.

Nothing in this MOA constrains the obligations of the agencies in carrying out their authorities under applicable laws.

Funding and Resources

Nothing in this MOA shall be construed as obligating any of the parties to the expenditure of funds in excess of appropriations authorized by law. It is understood that the level of resources to be expended under this MOA will be consistent with the level of resources available to the agencies to support such efforts.

Effective Date/Amendments/Termination

This MOA will be effective upon the last signature of the listed signatories. Its provisions will remain in effect for a period of 10 years after the date it takes effect; or until it is amended, superseded, or revoked; whichever comes first.

Thereafter, provided there are no objections from the signatory parties, the terms of the Agreement will automatically be extended each year for one year as evaluated and recommended

in the annual report of the in-lieu fee mitigation strategy. The Fund Management Team will provide an annual reporting to Fund balances and activities to each CDOT region, FHWA, USFWS, and the Advisory Committee. Subsequent to that submittal, FHWA/CDOT will request a written statement from the USFWS after the 10-year period indicating that they continue to agree with the use of this mitigation alternative. If any MOA signatory objects to extending the Agreement, or proposes amendments, the parties will work together to consider amendments or other actions to avoid termination.

If any signatory to this MOA determines that the terms of the Agreement cannot be met or believes a change is necessary, that signatory will immediately request the remaining parties to consider an amendment or addendum that shall be executed in the same manner as the original agreement. An amendment is effective when it is signed by all signatories to this agreement.

Any party to this Agreement may terminate it by providing 30 days written notice to other parties, provided that the parties will consult during that 30-day period before termination to seek agreement on amendments or other actions that would avoid termination. Should consultation result in an agreement on an alternative to termination, the signatory parties shall proceed in accordance with that agreement. Should consultations fail, the signatory party proposing termination may terminate this Agreement by promptly notifying the other parties in writing.

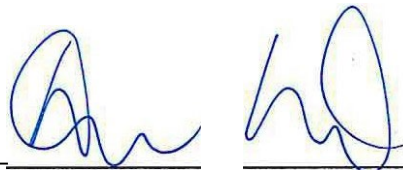
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John M Cater, PE
Division Administrator, Colorado Division, Federal Highway Administration

6/23/15

(date)



DRUE L. DEBERRY, ACTING
Acting Colorado Field Supervisor, U.S. Fish and Wildlife Service

7/7/15

(date)



Shailen P. Bhatt
Executive Director, Colorado Department of Transportation

6/22/2015

(date)

Appendix A - Example Project Mitigation Fund Contribution Calculations

These project mitigation fund contributions are based on project "award" costs since these are fairly accurate most of the time with regard to construction costs. Although the budget request to FHWA regarding estimated project costs, including mitigation costs, are sent to FHWA prior to award authorization, all project budgets are modified at award. CDOT's Office of Financial Management and Budget (OFMB) suggests that the award cost that goes out to construction will not include the Lynx Mitigation Fund contribution amount which would be de-budgeted from the award amount as with wetland mitigation banking credits and paid to the fund as invoiced from the fund. OFMB will assist in the transfer of funds, either to or from the fund, to keep the construction contributions in line with the agreed-upon percent for mitigation.

Example 1 - Project A. \$5,000,000 construction budget

The project includes

- 1) adding a glare screen to the median barrier
- 2) adding a passing lane
- 3) lighting an existing chain station
- 4) construction to be done at night

The work was determined to have an adverse effect on lynx due to movement barrier and loss of habitat = 1% of construction costs = \$50,000.

The project footprint included areas that could be used by lynx on both sides of the highway = 1% of construction costs = \$50,000.

The glare screen and passing lane constitute an increase in physical barrier = 2% of construction costs = \$100,000.

The lights would constitute an increase in non-physical barrier = 1% of construction costs = \$50,000.

The night work would constitute a temporary non-physical barrier = 1% of construction costs = \$50,000.

This project is in easily traversed lynx habitat and is increasing physical and non-physical barriers. The in-lieu fee for mitigation for these effects would be \$300,000 or 6%. However, because the cost to any project cannot exceed 5% of the construction costs, the in-lieu fee would be reduced by 1% to \$250,000.

Example 2 - Project B. \$300,000 construction budget

The project includes replacing 10,000' of cable rail with w-beam guardrail. The cable rail is currently placed on top of a very steep fill slope that would not be expected to be used by lynx

The work was determined to have an adverse effect on lynx due to movement barrier = 1% of construction costs = \$3,000

Replacing cable rail with w-beam guardrail would increase physical barrier = 2% of construction costs = \$6,000.

This project, located in lynx habitat, but in an area that would not be easily accessible for use, would have an adverse effect by increasing the physical barrier. The in-lieu fee mitigation for these effects would be 3% of the construction costs, or \$9,000. Note: Because the barrier increase is located in an area not easily accessible by lynx, the "Adjacent lynx habitat/activity" percentage was not assessed.