RESEARCH PROGRAMS

Research Project
Quarterly Progress Report

INSTRUCTIONS

Consultant project managers/principal investigators should complete a quarterly progress report for each calendar quarter, or part thereof, during which project is active. All fields must be completed.

Date: 8 May 2013	**Progress Report Number:** Quarterly Report 2013-1
Project Title: US 93 North Post-Construction Wildlife-Vehicle Collision and Wildlife Crossing Monitoring and Research on the Flathead Indian Reservation between Evaro and Polson, Montana	**Report Period:** — **Due Date** ■ Quarter 1 (January 1 – March 31) — *April 30* ☐ Quarter 2 (April 1 – June 30) — *July 31* ☐ Quarter 3 (July 1 – September 30) — *October 31* ☐ Quarter 4 (October 1 – December 31) — *January 31*
Consultant Name Marcel Huijser Authors quarterly report: Marcel Huijser, Whisper Camel-Means & Elizabeth Fairbank	**Consultant Project Manager(s):** Marcel Huijser

Consultant Phone Number(s): 406-543-2377	**Consultant E-Mail(s):** mhuijser@coe.montana.edu	**Consultant Project Number:** 4W2972
MDT Project Manager Sue Sillick	**MDT Project Number:** #8208	**Project Start Date:** 1 January 2010
Original Project End Date: 31 July 2015	**Current Project End Date:** 31 July 2015	**Number of Extensions:** 0

Project Schedule Status:

☐ On schedule ☐ On approved revised schedule ☐ Ahead of schedule ■ Behind schedule

Project Expenses Statistics:

Project Expenses This Quarter	Total Project Expenses to Date	Projected Cost to Date
$12,314	$185,026*[1] *[1]Invoices from CSKT not received since July 2012. Billing now worked on by CSKT (status 8 May 2013).	$314,812 (incl. $50K in 2012)

Percent Over/Under	Total Project Budget	Remaining Total Budget
41% under budget (but see note on billing CSKT above)	$550,000 (incl. $50K in 2012)	$364,973

Project Schedule Status (list all tasks with percentage complete, original and revised estimated and actual begin date; original and revised estimated and actual completion date, any outstanding issues, including such items as: schedule, resources, etc.)**:**

Task	Planned Percentage complete	Actual Percentage complete
1. Deer and black bear vehicle collisions	65%	60%[*1]
2. Wildlife use of underpasses	65%	55%[*2]
3. Cost-benefit analyses	65%	55%[*3]

Dates:
This is a long term project with many tasks that reoccur annually.
The starting date for the tasks was 1 January 2010 and the end date for the project is 31 July 2015.

Notes:

*1 Behind: crash and carcass data for 2012 were not requested yet by 30 April 2013.
This task has since then been conducted: Data were requested from MDT on 8 May 2013.

*2
Crossing structures:
Behind: Data entry for 2012 for Evaro and Ravalli Curves, and isolated structures in Evaro area is not complete yet.
Student needs perhaps an additional month.
Data entry for Ravalli Hill and isolated structures north of Ravalli is complete; CSKT is checking the data entries now.

Jump-outs: Data entry not initiated yet.

Deer pellet surveys: on schedule.

*3 Basic data have been obtained in 2011 and 2012. Analyses are possible now but have not been conducted yet.

Progress and Accomplishments this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

1. TAC meeting

A TAC meeting was held in Missoula on 26 March 2013.
Meeting notes and status of action items are listed below.

Meeting notes TAC meeting US93 N

1. Presentation preliminary results US93N research by WTI/CSKT
    a. Human safety likely to be only 20-40% improved rather than >80% in the sections with relatively long fences. Possible reasons:
        i. Relatively long sections of fencing along US93 N are still quite short when compared to those studied elsewhere. Thus the "edge" effects may play a bigger role in our study area.
        ii. The gaps for access roads, though mitigated by gates or guards, are potential weak points in the fence.
        iii. The absolute number of wildlife-vehicle crashes and the wildlife carcasses removed are relatively low. Thus one more or less crash or carcass can make a big difference if expressed as a percentage.
        iv. Wildlife guards appeared to be a substantial barrier to deer, but not to black bear and coyote.
        v. Ongoing student project that focuses on the effect of different length of short fencing (e.g. up to 500 m from structures) on human safety (at grade crossings) and habitat connectivity (through structures).
    b. Habitat connectivity:
        i. The numbers of black bear and deer movements seem at least similar to what they were prior to the road reconstruction and mitigation implementation. However, be careful with a direct comparison of the summary data for 2011 to the preconstruction data. The 2011 summary data relate not only to structures in EV, RC and RH; they also include other structures. In addition, the season for preconstruction data was May-Oct which means that we must have a similar seasonal selection for the post construction data for a valid comparison.
        ii. 23 species or species groups have been recorded using the structures in 2011.
        iii. Grizzly bears appear to have started using structures more frequently in 2011 compared to previous years.
        iv. Student project: Cover appears to benefit small mammals, but results based on tracks may be inconclusive. However, results based on life trapping suggest increased movements between structures and surroundings when cover is present.
    c. Cost-benefit
        i. Input data have been collected and analyzed (distinguished between wildlife vs. other costs).
        ii. Researchers aim to include cost-benefit analyses in upcoming annual report.
    d. Outreach
        i. Ongoing outreach program with Defenders of Wildlife, MDT, CSKT and WTI.
        ii. Interpretative road signs are currently being prepared.

2. Discussion points.

    a. Current TAC members
    b. Fence length vs. road length fenced
    There is a mistake in the Measures of Effectiveness. Fence length was mistaken for road length fenced.
    c. Missing carcass data 2008-2009
    The report through 2010 showed that carcass data were likely under reported in 2008 and 2009. This may pose a problem for some of the safety analyses as search and reporting effort appears to have been lower during those years.
    d. Fence maintenance
    Some fence repairs are conducted quickly and adequately. Others are not; e.g. SE of overpass. It is very important to repair fences quickly and adequately. This is not only because it can result in safety issues but also because just 1 more carcass can make a big difference with the calculations on how effective the mitigation measures are in reducing wildlife-vehicle collisions

e. FYI: monitoring RC and RH will stop in May 2013; end 5th year.
f. Finances:
2010-mid 2015 project (4 seasons): $100,591 UTC shortfall
5th year Ravalli hill and curves (2012-2013): $6,658 MDT/FHWA shortfall
Potential future 5th year EV / isolated structures $107,249 needed (new money)

Through 31 Dec 2012 $74k has been saved through CSKT grant and student labor. Still, gaps of $26k + $7k remain, and another $107k is needed to fund 5th year in Evaro and isolated structures. Marcel wants to have another meeting in the fall (e.g. September/October) and a final decision on whether work scope needs to be adjusted if the financial situation does not change. If the financial situation does not change, Marcel considers suggesting the following changes to the work scope:
i. No field work in 2014 (only 3 years in Evaro and isolated structures)
ii. Direct all remaining funds to analyses and reporting.

3. Action points
a. Sue provides list of current TAC members
Done:

Names and presence at TAC meeting:
Pat Basting, MDT (present)
Dale Becker, CSKT (present)
Kevin Christensen, MDT
Kris Christensen, MDT (present)
Vickie Edwards (MT FW&P)
Jonathan Floyd, MDT (present)
Brian Hasselbach, FHWA (present by phone)
Susan Sillick, MDT (present)
Shane Stack, MDT (present)
Ed Toavs, MDT

On phone, not a TAC member: Whisper Camel (CSKT)

b. Marcel:
i. Provides paper cost-benefit analyses (2009 publication): done
ii. Provides: paper wildlife guards (2013): done
iii. Provides: Crash and carcass data/graphs: done
iv. Suggests changes to measures of effectiveness because of mistake fence length vs. road length fenced. Action item open.

c. Sue and Marcel
i. Schedule meeting September/October to discuss financial situation and potential changes to the work scope. Action item open.

d. MDT
i. Repair fence SE of overpass: almost done (see e-mail Shane Stack 28 March 2013)
ii. Discuss
- Financial gap current project (4 yrs EV, RC, RH, and isolated structures, and 5th yr RC, RH). Action item open.
- Potential new funding for 5th year Evaro and isolated structures (would need to start 1 January 2015, provided that the financial gap for 4th yr is solved of course). Jonathan Floyd reported (8 May 2013) that safety funds are not available. Action item open for alternative funding sources.

2. Grant proposal.

Grant proposal submitted for 5th year monitoring Evaro to 2013 Montana Federal lands Access Program on 27 April 2013.

3. Publications:

Online publication of peer-reviewed article:
Tiffany D. H. Allen, Marcel P. Huijser and David W. Willey. Effectiveness of wildlife guards at access roads. Wildlife Society Bulletin. Article first published online: 18 MAR 2013 | DOI: 10.1002/wsb.253

Presentation accepted for ICOET 2013 conference:

Hayley R. Connolly-Newman, Marcel P. Huijser, Len Broberg, Cara R. Nelson, Whisper Camel-Means: Effect of cover on small mammal movement through wildlife underpasses on Highway 93 North.

Posters accepted for ICOET 2013 conference:

Tiffany D. H. Allen, Marcel P. Huijser and David W. Willey. Effectiveness of wildlife guards at access roads.

Kylie Paul, Whisper Means, Marcel Huijser, Rob Ament. Outreach matters! Highway wildlife mitigation outreach activities on the Flathead Indian Reservation and surrounding areas, Montana.

Jeremiah Purdum, Marcel P. Huijser, Whisper Camel-Means, Mark Hebblewhite, Len Broberg:
Acceptance of large mammal underpasses by white-tailed deer and mule deer.

4. Excursions:
Deputy Minister of Transportation of Mongolia, Deputy Minister of Environment of Mongolia and 11 others (13 delegation members in total) visited the US93 N project on 7/8 April 2013. MDT, CSKT and WTI all contributed to meetings and field trip. Article in Missoulian:
http://missoulian.com/news/state-and-regional/mongolian-officials-look-to-western-montana-wildlife-crossings-as-model/article_a538d3a2-a09f-11e2-8e8d-001a4bcf887a.html

Circumstances Affecting Project, Scope, or Budget (please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems):

As discussed previously there are substantial financial shortfalls for the project.

Substantial savings have been made through CSKT (had access to supplementary funding) and through involving students. It is uncertain though if these savings are sufficient to allow for the completion of the current work scope and how long student labor is available (as it is it will run out later this summer).

A decision should be made about potentially modifying the work scope in Sep/Oct 2013.

Results/Risk/Anything Learned:

1. See meeting notes for preliminary results.
2. At grade Grizzly crossings at Post Creek 3.
3. Through student project research conducted by Elizabeth Fairbank we know that 2 grizzly bears (most likely a sow and collared cub born in 2012 or earlier) crossed at grade at Post Creek 3 from NE end fence to SW end fence on 28 May 2012. Thus the bears crossed at grade at Post Creek 3, crossing diagonally through the fenced area. This illustrates the potential benefits of connecting the fences between Post Creek 1, 2 and 3 as discussed about 1 year ago with other agencies in response to ongoing grizzly bear mortality along US93 N between St. Ignatius and Ronan. While this would only relate to a short road section, it is a road section where grizzly bears are known to cross and get hit by traffic. Thus it is likely to reduce but not eliminate the probability of grizzly bear-vehicle collisions. On 23 April 2013 Elizabeth Fairbank found a dead deer stuck in between wing wall and fence at SW side of underpass RC406 (opposite of taxidermist). Upon further investigation it appears the deer may have tried to escape the fenced right-of-way by entering the funnel created by the fence and the wing wall. The fence was not snug along the wing wall except for at the last fence post. It appears the deer tried turning around instead of backing up. The deer then appears to have fallen with legs and head stuck in fence and eventually died. This incident illustrates that it is not only important to position the last pole for the wildlife fence snug up against the wing wall of an underpass, but that it is also important to have the fence be snug alongside (parallel) to the wing wall from the beginning of the wing wall onwards. Retrofitting is possible; e.g. through stuffing rolled-up fencing at the entrance of the funnel.

Anticipated Work Next Quarter:

Field:

Crossing structures
Monitoring crossing structures Evaro and isolated structures continues.
Monitoring crossing structures Ravalli Curves and Hill will end May 2013 (end 5th season).

Wildlife guards (4) and people access point (1)
Monitoring continues.

Jump-outs Evaro
Prepare sand tracking beds jump-outs Evaro: 8 May 2013.
Start monitoring jump-outs Evaro for the season.

Desk:

Crossing structures
Finalize data entry for crossing structures 2012.

Wildlife guards and people access point:
Enter data.

Jump-outs Ravalli Curves, Hill and Evaro
Enter data.

Economic analyses:
Conduct analyses.

Separate from MDT project:

Hayley Connolly-Newman defends her MSc thesis on 20 May. Effect of cover on small mammal presence and movement through wildlife underpasses on US Hwy 93 North.

Outreach effort

1. Media outreach for crossing structures, journalists fly over crossing structures 17 June 2013.
2. Grant proposal submitted to Doll Foundation.
3. ICOET 2013 conference:

   Presentation:
   Hayley Connolly-Newman et al.: Effect of cover on small mammal presence and movement through wildlife underpasses on US Hwy 93 North.

   Posters:

   Tiffany D. H. Allen, Marcel P. Huijser and David W. Willey. Effectiveness of wildlife guards at access roads.

   Kylie Paul, Whisper Means, Marcel Huijser, Rob Ament.
   Outreach matters! Highway wildlife mitigation outreach activities on the Flathead Indian Reservation and surrounding areas, Montana.

   Jeremiah Purdum, Marcel P. Huijser, Whisper Camel-Means, Mark Hebblewhite, Len Broberg:
   Acceptance of large mammal underpasses by white-tailed deer and mule deer.

Potential Implementation, including the party(ies) responsible for implementation, any identified barriers to implementation and a discussion of how these barriers can be eliminated or at least reduced, and the products required for implementation:

The outreach program (separate from MDT project) aims to make the lessons learned accessible to the transportation and natural resource management community. It is up to agencies to evaluate or update their own policy with regard to highway wildlife mitigation though.