

**QUARTER 3 2007**

**ANIMAL VEHICLE CRASH MITIGATION USING ADVANCED TECHNOLOGY**

**PHASE II**

SPR 3(076) & Misc. Contract & Agreement No. 17,363

for

Oregon Department of Transportation  
Research Unit  
200 Hawthorne SE, Suite B-240  
Salem OR 97310

and

Federal Highway Administration  
400 Seventh Street SW  
Washington, DC 20590

and

Departments of Transportation of California, Indiana, Iowa, Kansas, Maryland, Montana, Nevada, New Hampshire, New York, North Dakota, Pennsylvania, Wisconsin, and Wyoming

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## ***Monthly report Animal-vehicle pooled fund study***

***July***

***2007***

General

**Task 1: Site survey            100%**

**Task 2: Modifications to system            90%**

STS further developed soft- and hardware for remote access through satellite.

STS, with the help of an MDT representative (Jason Norman), installed the remote access on 19 and 20 July

STS, MDT and WTI noted that the vegetation was causing false detections, and potential desensitizing, and that the vegetation in the right-of-way needed to be mowed. WTI contacted YNP and MDT about this issue. YNP granted approval for mowing on 25 July, but MDT could not mow due to fire restrictions. The affected zones appear to be zone 7, 1, 0, 2 (east side) and C, 8, 5, 9 (west side)

STS found that 2 radios were out, perhaps one perhaps due to lightning and one perhaps because of some corrosion). Both radios were repaired on site.

WTI and STS modified the beacon activation protocol (see attachment).

**Task 3: Confirmation of system modifications            30%**

**Task 4: System reliability 0%**

**Task 5: System effectiveness    15%**

WTI further developed a research plan for the speed study.

WTI submitted the speed study plan to YNP for review on 9 July.

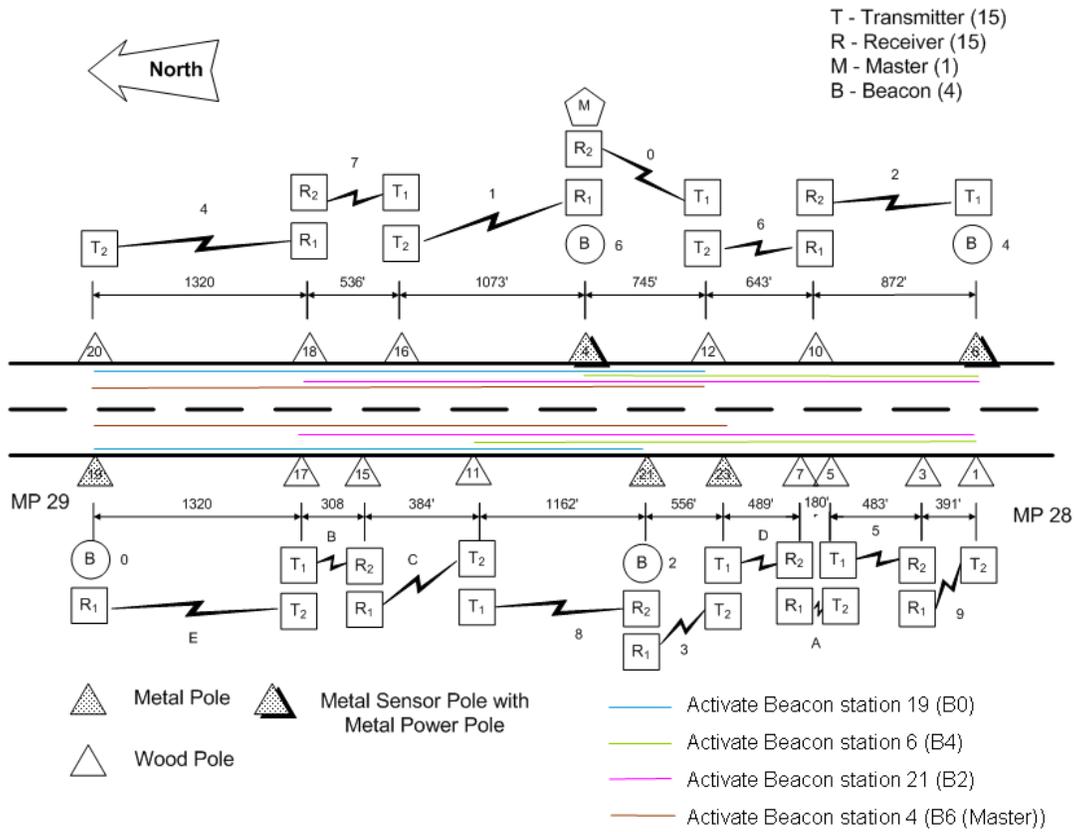
**Task 6: System acceptance            10%**

WTI developed a draft survey for the traveling public.

**Task 7: Information to project partners            59% (month 19 out of 32)**

# Task 8: System removal 0%

Marcel Huijser



**Modified beacon activation protocol since 20 July**

## ***Monthly report Animal-vehicle pooled fund study***

***August***

***2007***

General

1. ODOT and WTI planned for a TAC meeting on 30 Aug (telephone conference)
2. WTI replied to questions from YNP and provided raw speed data as requested.

**Task 1: Site survey            100%**

**Task 2: Modifications to system            90%**

WTI and STS discovered inconsistent operation of the satellite remote access on 10 Aug. STS is sending a replacement cable and circuit board. In addition, STS will provide a software update that should reduce communication errors with the satellite. Modifications were successfully installed on 29 Aug.

**Task 3: Confirmation of system modifications            50%**

STS and WTI are compiling documentation for the checklist to prepare for transfer of ownership and responsibility of operation and maintenance to MDT.

**Task 4: System reliability 0%**

*Mowing (maintenance)*

WTI was in frequent contact with MDT (and YNP) about the mowing and fire restrictions.

MDT mowed the road section with the animal detection system on Fri 24 Aug. WTI (Tiffany Holland) provided directions.

For future reference; it is advisable to mow the road section with the system sometime in June, before potential fire restrictions are in effect.

*False detections*

Beam 8 showed bursts of detections during some nights. It is unclear what might be causing this. Further tests were done on 31 Aug. This is under monitoring and further investigation.

**Task 5: System effectiveness 20%**

*Speed study*

WTI installed 3 traffic counters on Fri 10 Aug. The traffic counters were pulled (not the tubes) on Fri 24 Aug to retrieve the data and to recharge. The counters will be put in place within a few days after which the light on / light off trials will be initiated.

**Task 6: System acceptance 15%**

WTI applied for approval of the survey by the Institutional Review Board for human subjects. Approval was granted.

WTI (Angie Kociolek and Tiffany Holland) started asking the traveling public to fill out the survey on 24 Aug, 29 Aug.

WTI is in the process of putting the survey on WTI's website and plans on having the survey up through March 2008.

Note: WTI is waiting to transfer ownership to MDT until the system has its problems solved.

**Task 7: Information to project partners 63% (month 20 out of 32)**

**Task 8: System removal 0%**

Marcel Huijser

## ***Monthly report Animal-vehicle pooled fund study***

### ***September***

***2007***

General

**Task 1: Site survey            100%**

**Task 2: Modifications to system            90%**

**Task 3: Confirmation of system modifications            50%**

**Task 4: System reliability 0%**

#### False detections

Beam 8 shows burst of false detections at certain times; a clear pattern seems to be lacking. It was discovered (8 Sep 2007) that a road reflector was installed after the new post of the transmitter for beam 8 was put in. This post is in the beam path. MDT removed the reflector pole (on or before 14 Sep). However, this did not eliminate the bursts of false detections. It is now believed that the gain may be too high after the signal is no longer blocked by the pole. Further tests were done to pinpoint the cause of the problem, but since it happens at unpredictable times (it doesn't happen all the time) it is hard to find out where the problem lies exactly. This is under further investigation.

Beam 0 and 1 (at master station) show suspicious detections, though at a much lower rate, and more consistent, than beam 8. Additional vegetation clipping in the beam path did not result in the desired effect. The alignment of the sensors and signal strengths were checked and modified. Initial results showed an improvement, but it did not solve the problem completely. It is now believed that the circuit board may be aging and that it needs to be replaced. However, since there are no more spare parts it would have to be sent in for repairs. Priority is given to beam 8 since the removal of the circuit board would shut down the entire system just before seasonal migration of the elk. This issue is under further investigation.

#### Modem problems

A new modem was sent by STS and installed by WTI because of satellite access problem. Late Sep a satellite error occurred at the satellite company, hindering remote communication for several days.

**Task 5: System effectiveness 20%**

*Speed study*

The tubes were in and lights were forced on during certain times. However, the “normal operation” mode is “polluted” by some false detections from beam 8 and 0/1, at least at certain times.

**Task 6: System acceptance 15%**

The survey for the traveling public was put online: [www.detectionsystemssurvey.org](http://www.detectionsystemssurvey.org)  
Posters and handouts with the website address were distributed at 5 locations in Big Sky and 5 locations in West Yellowstone.

**Task 7: Information to project partners 65% (month 21 out of 32)**

**Task 8: System removal 0%**

Marcel Huijser