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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Epic landslide erosion from mountain roads in Yunnan, China – challenges for sustainable development" *by* R. C. Sidle et al.

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Regarding the comparison of landslide erosion rates between this study and those reported from the Mekong River basin (Sidle et al., 2011), we now include this comparison at the end of the first paragraph of the Results and discussion section. As noted in our response to Referee #3, we acknowledge the importance of large storm events as a trigger mechanism for most of the road-related landslides. Unfortunately, due to the sparse meteorological data in this region, particularly the lack of short-term rain intensity data, which is the most critical determinant of shallow landslide initiation, we were not able to make quantitative relationships between rainfall characteristics and

road-related landslides. Looking at the recent Ma et al. (2014) paper from the Salween River basin, apparently such data are not even available to Chinese researchers – these researchers noted stated that the rainfall data in their study area was uncertain with inadequate spatial coverage. As such, we added a sentence in the last paragraph of section 4.3 noting the need for better spatial and temporal coverage of rainfall data.

We did not attempt to estimate surface erosion in our road study sections in the Salween River basin. We could not find good consistency amongst sites of well-preserved soil pedestals (the method we used to approximate surface erosion along the road in the Sidle et al. 2011 study). Additionally, since surface erosion was a minor contribution to the overall sediment budget, we opted to measure landslide erosion at more sites in our limited timeframe. After extensive searching, I have not been able to uncover any statistics on road-related landslide erosion from Chinese government sources – even road building rates were difficult to obtain.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 3887, 2014.