

# ***Interactive comment on* “Stream restoration and sanitary infrastructure alter sources and fluxes of water, carbon, and nutrients in urban watersheds” by M. J. Pennino et al.**

## **Anonymous Referee #2**

Received and published: 4 April 2016

The topic of how urban streams transfer nutrients is of interest. The experimental setup is quite confusing though, it is not obvious why and what you compare. Some terminology is not very specific and confusing: unrestored, sanitary infrastructure etc. How are you assessing the impact of the ‘sanitary infrastructure’? Do you have enough study sites to derive meaningful and statistically significant conclusions? In my opinion, lots of the comparison between streams/catchments in terms of the ‘sanitary infrastructure’ is speculative and does not support your conclusions. Below are some more specific comments:

Title – should be fluxes of water and nutrients

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Abstract – please rewrite confusing parts: ‘more similar to a less developed’, ‘higher and less frequent streamflow’

Abstract – please rewrite ‘stream draining stormwater management’

Abstract – please rewrite ‘Although stream restoration appeared to potentially influence hydrology to some degree,’ – did it or did it not?

Abstract – please choose groundwater or ground water

Abstract and introduction – the description of what streams you measure is very confusing, do you measure only urban streams? Restored and unrestored? Please rewrite to make it clear what you compare with what

Methods, page 13154, line 9 – please rewrite ‘the entire mainstem of the stream from headwaters to mouth is greater than 95% restored’

Methods, page 13154, most of this information should be in a table

Methods, page 13155, please consider putting some of this text in supplementary material

Methods, page 13157 – how long were the NO<sub>3</sub>N samples stored for before analysis?

Methods section is far too long, please make it more concise.

Methods - I am not sure how useful are your load estimates if the approach does not sample high flows?

Discussion:

A lots of discussion is speculative. Do you have any evidence in support of your hypotheses about leaky sewers, erosion of stream channel etc?

The hydrological metrics and their interpretation is convincing but not the biogeochemical part of the study. Perhaps you should tease out more the differences in nutrients. At the moment this aspect is not clear.

C7036

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A clearer link between results and conclusions should be made. At the moment the results and their interpretation do not support conclusions and implications. It is more what you would want your study to show.

Finally, the paper needs language revision to remove not very scientific expressions as those highlighted above.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 13149, 2015.

**HESD**

12, C7035–C7037, 2016

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