

**Comments concerning the manuscript “Microbial community composition and function in an urban waterway with combined sewer overflows before and after implementation of a stormwater storage pipe” submitted by Kazuaki Matsui and Taleshi Miki**

This manuscript provides a potential and relevant information about microbial community composition and function in an urban waterway before and after implementation of a stormwater storage pipe.

**Specific suggestions on the manuscript**

- The **Title** relates the content of the MS.

**-ABSTRACT:**

- Unclear sentence: “*By contrast, the temporal variations in microbial function and bacterial community structure were **significantly greater** in heavy rainfall with CSO than in heavy rainfall after storage pipe implementation*”; perhaps “**significant greater**” is not appropriate. I suggest to improve.
- From line 29 to 39 (“*Heat .....waterway*”): The proportion of the abstract that you devote to these results is too much detailed. I suggest to briefly outlining the following information.

**-INTRODUCTION:**

- from 75 to 79: Unclear sentence: “*The effluent dilution effect means that analytical data alone cannot reveal the ecotoxicological risk of CSOs to organisms (Bi et al., 2015). However, such dilution effects are expected to be lower in urban waterways, where the limited volume of water tends to be stagnant. Thus, the waterway may be sensitive to ecotoxicological risk from CSOs*”. Modify o delete
- Line 92 ARGs: indicate the acronym: ANTIBIOTIC RESISTENCE GENES
- Line 105 tet: indicate the acronym: TEN-ELEVEN-TRASLOCATION

**-MATERIALS AND METHODS**

Methods described with sufficient detail. There are no suggestions.

**-RESULTS AND DISCUSSION**

In general, in the Results and Discussion more points should be improve. There are very imprecision and unclear sentences and they do not yet have enough data to support a lot of hypotheses.

- from line 297 to 298: “*Therefore, we used these three parameters to categorize the intensity of rainfall periods*”. The sentence is not clear; please explain or write it more clearly.

- from line 298 to 302: Information concerning the section Materials and Methods and should not be repeated: “*Phases 1 and 3 were heavy-rainfall periods, whereas phase 2 was a light-rainfall period. Phase 1 was before storage pipe implementation; CSOs have been reported at H-waterway when hourly precipitation exceeds 3.5–5.5 mm/h (Yoshida, 2007). A CSO discharge in phase 1 was also confirmed by visual observation.*

Delete or improve the information

- The temporal variations of the CSO in Fig.2 do not show the legend. Please insert phases 1,2,3
- Line 336: “*Therefore, the bacterial community structure at station C is dynamic*”: please explain better this sentence. What do you mean?

- Line from 345 to 347: *“Because a bacterial community can develop in the stagnant water of combined sewer structures during dry weather, the stagnant water discharge may explain the sudden bacterial community replacement in the waterway. Although the size of combined sewer structures varies, the largest structure had a weir measuring 3900 mm long × 550 mm high (Yoshida, 2007).”* This sentence unclear. Please rewrite.
- Line 350: *“Because the stagnant water volume is limited, the bacterial community shift in phase I at station C was transient”* There is an inappropriate use of technical words.
- Line 358: *“However, we do not yet have enough data to support these hypotheses”* it is not pleasant to read this sentence in the discussion.
- Line 370: *The difference in water quality between the upstream river and the waterway is unclear.* Too many doubts! Delete the sentence.
- The paragraph: *tet genes* shows the results but little discussion. It need to be added.
- **CONCLUSION** do not satisfy, a list of results and with a very concise and approximate final conclusion.