Response UT-2: Stormwater and Sewer

~~[Note to Reviewer: To be finalized between RTC-2 and RTC-Screencheck.]~~

The comments state that the draft SEIR does not address the increase in wastewater and stormwater caused by the project. The comments also express concern regarding the existing condition of and capacity of downstream combined sewer lines and how the proposed project would impact them.

Refer to Response AL-1, Range of Alternatives, on RTC p. **Error! Bookmark not defined.** for further information regarding consideration of 100 percent affordable housing.

Impacts UT-2 and UT-3 on draft SEIR Appendix B, pp. B-74 to B-76, and Impact HY-2 on draft SEIR Appendix B, pp. B-111 to B-112, analyze impacts associated with wastewater and stormwater generated by the project. The proposed project would be subject to several regulations that require onsite water re-use and decreasing the amount of stormwater runoff from the site. The proposed project could result in long-term changes in the volume of discharges to the City's combined sewer system in the sub-basin due to new residents, employees, and visitors who could increase the amount of wastewater generation (draft SEIR Appendix B, p. B-112). The draft SEIR Appendix B concludes on p. B-112 that all "wastewater discharges to the combined sewer system would be treated at the Oceanside Treatment Plant in compliance with the Oceanside NPDES permit … because the stormwater and wastewater discharges from the project would not result in an increase in the frequency of combined sewer discharges, the project's impacts related to changes in combined sewer discharges would be less than significant."

Regarding concerns about the downstream overflow conditions, please refer to Impact UT-3, draft SEIR Appendix B, p. B-75, which acknowledges that the Ocean Avenue sewer main is designated as high risk and slated for replacement through SFPUC's Collections System Asset Management Program (CSAMP). A CASMP ranking of "high" indicated potential need for replacement. As further stated on page B-75, the "project team would be required to confirm with SFPUC and the San Francisco Department of Public Works' Engineering Hydraulics Division that adjacent sewer infrastructure has adequate capacity and integrity to serve the potential development program."

Sanitary sewage (wastewater) volumes flowing into the combined sewer system are considerably smaller than stormwater flows into the same system. For example, the City's wastewater treatment system treats approximately ~~70~~ 575 million gallons per day (mgd) of combined sanitary sewage and stormwater during storm conditions, but ~~more than eight times~~one eighth that volume ~~of combined sanitary sewage and stormwater~~ —~~575~~ 70 mgd—during non-storm conditions.[1] ~~During storm conditions, however, the~~

The ratio of stormwater to sanitary sewage from the project site, is substantially greater than 8:1 during storm conditions. This is because stormwater runoff flow to the combined sewer system is

[1] San Francisco Public Utilities Commission, *Sewer System Improvement Program Fact Sheet*, June 5, 2019, *https://sfwater.org/modules/showdocument.aspx?documentid=13986*, accessed March 15, 2020.

highly irregular, whereas sanitary sewer flow is less so. That is, storm flow peaks during and shortly after heavy rainfall, and diminishes considerably as time elapses; as a result, stormwater volume, for purposes of sizing stormwater and wastewater conveyance piping such as that along Ocean Avenue, is typically measured in cubic feet per second of peak flow, rather than gpd of total flow. Conversely, sanitary sewer flow may result in multiple peaks during the day, depending on land uses. For strictly residential areas, similar to the proposed project, flows are generally higher before and after the typical work day, although there is sewer flow throughout the day because not all working residents are on the same schedule, some residents may work at home, some residents do not work, some attend school, etc.

Moreover, under current conditions, according to the project engineer, stormwater flow from the project site (west basin) and the east~~including both the lower and upper~~ basin~~s~~) drains to the combined sewer at a highly constrained rate due to the small capacity of the existing drain inlet and pipe at X location. That is, the project site acts to retain peak stormwater flow into the combined sewer.

The proposed project would ~~make no changes to this storm drain system in order to~~ not increase the project site's peak stormwater flow into the combined sewer during the 5-year, 3-hour~~,~~ and 100-year, 3-hour storm conditions, as a requirement of the SFPUC for project implementation. These peak stormwater flow periods are what the SFPUC uses to size stormwater and wastewater conveyance piping, such as that along Ocean Avenue. Thus, while combined sewage overflows would continue to occur with the project, the project would not be resulting in or exacerbating that existing condition.

Accordingly, with project implementation, during the 5-year and 100-year storms, and assuming the worst-case condition in which peak sanitary sewage flow would occur simultaneously with peak stormwater flow, the project and the existing project site would contribute less than ~~two~~ 2 percent of the total volume of combined stormwater and sanitary sewage that would flow from the site into the combined sewer, as shown in **Table RTC-X**.[2] ~~This relatively small increase in total flow would not be considered to substantially affect the combined sewer system.~~ Moreover, the proposed project's landscaping and open space features would serve to diminish stormwater flow, compared to existing conditions. While peak stormwater flow could, indeed, occasionally coincide with peak sanitary sewer flow, it is far more likely that the peak flows would not overlap, and therefore the project increase in total flow would be substantially less than the existing project site percent of total noted in Table RTC-X. Finally, for the smaller 2-year, 24-hour storm, the project would be required to reduce peak stormwater flow by 25 percent, which would result in a *decrease* in total combined stormwater and sanitary sewer flow from the project site to the combined sewer system during this storm condition.

The analysis in Impact UT-3, as supplemented by the above, determines that the proposed project impacts related to stormwater and wastewater would be less than significant through compliance with the Non-Potable Water Ordinance, the San Francisco Stormwater Ordinance, and SFPUC and public works infrastructure review.

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[2] Brian Scott, BKF Engineers, e-mail to Karl Heisler, ESA, March 12, 2020.

TABLE RTC-X: PROJECT ~~INCREASE IN~~SITE COMBINED SEWER FLOW

Storm Condition	Existing Peak Stormwater Flow (cfs) [a]	Peak Sewer Flow (cfs) [b]	Total Site Flow to Combined Sewer (cfs) [c]	Percent of Total Flow
5-year, 3-hour	25.7	0.45	26.15	1.7%
100-year, 3-hour	38.2	0.45	38.65	1.2%

NOTES:

[a] cfs – cubic feet per second

[b] Assumes peaking factor of 3.0 (peak flow of three times average flow).

[c] Does not assume any decrease in existing peak stormwater flow due to~~from the~~ project, such as landscaping and open space, and, therefore, is conservative.

SOURCE: BKF Engineers, March 2019.

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