

## 1.A Initial Study Topics

### *Comment UT-2: Stormwater and Sewer*

This response addresses comments from the commenter listed below; each comment on this topic is quoted in full below this list:

O-NAF-1  
I-GOODMAN-4

"San Francisco's sewer collection system and storm drain system are a combined sewer system (CSS). The vast majority of stormwater should be conveyed through the CSS, which includes the streets and their curbs, catch basins, and underground storm drain, which is then collected and treated. However, the sewers on Ocean Avenue between Frida Kahlo Way (formerly Phelan Avenue) and Miramar are undersized and unable to convey the combined sewage from the sewers uphill from them. Excess combined sewage flow is discharged from the sewers into the streets causing heavy overland flow along Ocean Avenue during moderate storm situations which has resulted in combined sewage, including human waste, flooding downstream of the Balboa Reservoir.

The following CCSF EIR report excerpt from the EIR report (Page 4.6-5 of [https://www.ccsf.edu/MP/Docs/046Services\\_DEIR.pdf](https://www.ccsf.edu/MP/Docs/046Services_DEIR.pdf)) documents that:

"The area west of Phelan Avenue is served by a 30-inch reinforced concrete sewer in Phelan Avenue that carries flow south to Ocean Avenue. Although the sewer's condition is unknown, it is severely undersized. According to the SFDPW, the sewers surrounding the Main Campus, while adequate for the dry weather flow from the campus, are inadequate for flows that occur in a 5-year storm event. Currently, the City does not have the funds to upgrade the under-sized sewers surrounding the campus. The SFPUC is in the process of revising its 1973 Wastewater Master Plan. Among other things, this Plan would include upgrading the City's hydraulically and structurally inadequate sewers."

In addition, low lying areas are already negatively impacted by flow from upstream projects like the 2011 Colon/Greenwood/Plymouth/Southwood/Wildwood/Miramar sewer system improvement project which resulted in a transfer of flood risk to Ingleside Terraces:

City and County of San Francisco 2030 Sewer System Master Plan TM505 (<http://sfwater.org/modules/showdocument.aspx?documentid=592>), Section 5.7.3.1, "Conveyance along Ocean Avenue (Upsizing and Auxiliary, page 107, "This alternative will lower the HGL and alleviate flooding in the upstream portions of the reach, along Ocean Avenue between Phelan and Miramar avenues. However, the extra conveyance capacity provided by the relief and auxiliary sewers serve to move larger peak flows downstream to the Legion Court area west of Ashton Avenue. Predictably, the higher arriving peak flows will cause elevated HGLs and effectively transfer the flooding problems to this area."

Even though the Balboa Reservoir project would not "substantially" alter the existing drainage pattern, any additional waste from additional residents would increase the quantity of human waste discharged during

these events and increase the exposure to residents and businesses downstream in low lying areas. The Balboa Reservoir EIR fails to address this issue and fails to fully disclose the project's dry and wet-weather impact on the existing sewer system.

The constant expansion of lines upstream, continued development, and the failure to correct the defects in the existing sewer lines have created and continues to create a nuisance and public health risk by subjecting those residents in low lying areas to the risk of exposure to hazardous waste.

The sewer lines downstream of the Balboa Reservoir project must be enlarged, and all known and foreseeable deficiencies corrected, prior to the start of this development."

*(Neighbors Against Flooding, Email, September 17, 2019 [O-NAF-1])*

"I am for the design and proposal of the housing development as an individual, and feel the need for 100% affordable units and a more robust look at water-use and retention on the site for reclamation and sewage issues and infrastructure must be a part of both sites (Balboa Reservoir and CCSF land developments). My concerns were raised during meetings where I attended SFPUC water games planning charrettes and we indicated the importance of water/sewer systems above sea-level that can begin to alleviate lower down systems elevation wise."

*(Aaron Goodman, Letter, September 12, 2019 [I-GOODMAN-4])*

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## **Response UT-2: Stormwater and Sewer**

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 CSAMP ranking of "high" indicates 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 575 million gallons per day (mgd) of combined sanitary sewage and stormwater during storm conditions, but one eighth that volume—70 mgd—during non-storm conditions.<sup>1</sup>

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 variable, 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 gallons per day (gpd) of total flow. Conversely, sanitary sewer flows, though considerably smaller in volume, are more consistent and typically have one or two peaks during any given day. For 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, stormwater flow from the project site (west basin) and the east basin drains to the combined sewer at a constrained rate due to the small capacity of the existing drain inlets and pipes. In particular, the great majority of the west basin drains into two undersized storm drains located along the western perimeter of the former reservoir.<sup>2</sup> That is, the project site, and especially the former reservoir, acts to detain peak stormwater flow into the combined sewer. Additional storm drains in the east basin and along a service road on the west basin (the location of the proposed Lee Avenue extension) provide for more stormwater conveyance capacity.

The project's master infrastructure plan would include requirements to prevent the project exacerbating that existing condition. Those requirements would include:

- the proposed project would not increase the project site's peak stormwater discharge to the Ocean Avenue sewer system during the 5-year, 3-hour; and 100-year, 3-hour storm conditions. The peak stormwater flows are what the SFPUC and San Francisco Public Works (public works)<sup>3</sup> use to size the stormwater and wastewater conveyance system (the sewer pipe and street surface below top of curb), such as that along Ocean Avenue.
- the proposed project would reduce the existing peak stormwater flows further by an amount to offset the project's additional worst-case condition in which the project's peak sanitary sewage flow

<sup>1</sup> 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.

<sup>2</sup> BKF Engineers, *Balboa Reservoir Hydrologic and Hydraulic Modeling*, January 9, 2020.

<sup>3</sup> San Francisco Public Works has jurisdiction over flows in street surfaces below the top of the curb.

would occur simultaneously with peak stormwater flow. This would be achieved through infrastructure design that includes green infrastructure or a combination of green infrastructure and detention facilities.<sup>4</sup>

The master infrastructure plan would be part of the development agreement that must be approved by the Board of Supervisors for the project to proceed, and the design requirements would be a term within the agreement. Thus, while combined sewage overflows would continue to contribute to occasional downstream flooding, implementation of project would not exacerbate that existing condition due the project's peak discharge limitation requirements in its master infrastructure plan.

Additionally, and in compliance with the city's Stormwater Management Ordinance, the project would be required to reduce stormwater rate and volume by 25 percent for the smaller 2-year, 24-hour storm, which would result in a decrease in total flow from the project site to the combined sewer system during this storm condition.

The analysis in the draft SEIR Appendix B, 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 terms of the master infrastructure plan in the development agreement, Non-Potable Water Ordinance, the San Francisco Stormwater Ordinance, and SFPUC and public works infrastructure review.

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<sup>4</sup> Brian Scott, BKF Engineers, e-mail to ESA, April 24, 2020.