FROM: Chris McDonald – Email: Chris@developingsvcs.com

RE: City of Mercer Island (CoMI)- Summary response to 2209-287-SUB1-PLANS_review-1.pdf

The Civil related requests by the City were lacking codes, references or any justification to support their requests which usually accompanies review comments so, I spent some time doing some research in the Jurisdiction and have the following comments that warrant some clarification with the City Planner. Specifically, Im addressing the civil / site plan scopes as referenced below from the review comments, regarding the water service and side sewer items, as follows:

PAGE 5 - #2 - DOMESTIC WATER SERVICE UPGRADES

CITY COMMENT – KEVIN NGUYEN (KEVIN.NGYEN@MERCERISLAND.GOV)

This site requires a 1" water meter upsize, 1.5" water supply line upsize (from meter to building) and a reduced pressure backflow assembly (RPBA)…

RESPONSE:

In coordination with Don Cole at the CoMI, we have run a hydraulic analysis, in the effort to try and avoid the waterline upsize/replacement due to the significant ECA impacts it would create. Instead, we ran the analysis of the original 1" copper line based on the site conditions, and were able to fall within suitable parameters while only upsizing the meter to a 1", and keeping the existing 1" copper service from the meter to the home, and installing a 1" RPBA at the location shown on the attached plans. This RPBA to be installed / inspected by a someone licensed to perform this work in the city, and in accordance with attached hydraulic analysis, and per C2.0 of the attached plans, including either a Hotbox or heat trace, or below grade methods to avoid freezing. Additionally, the existing easement is reflected within the plan sheets, although no work will be required outside of the CoMI water dept upsizing the meter/setter from the 5/8 (3/4") meter that the City replaced back in 2018, to a 1" meter/setter. Both supply and service lines to remain as installed (1" copper).

SEWER BACKFLOW DEVICE REQUEST – CITY COMMENTS PAGE 5 NUMBER 4

CITY COMMENT – KEVIN NGUYEN (KEVIN.NGYEN@MERCERISLAND.GOV)

The site must have a sewer backflow prevention valve installed for the building, refer to the sewer standard details S-23 through S-26 for more information.

RESPONSE:

Details S-23 to S-26 make specific reference to "… *direct* side sewer connections from a residence to the Lake Line" only. This does not apply to our side sewer which, actually connects to a public main in an easement north of the property, and *that* public main connects to the Lake Line. Subsequent conversations between Kevin and I (**Chris McDonald)** concluded as much, and that the only concerns were that we confirm the lowest fixture on the side sewer connection from the home, is higher than the next upstream manhole. The below info is reflected on the sewer plan, and from either survey or As-Built data on record, and summarized below:

Upstream manhole info:

Rim 52.01
IE (E) 45.94
IE (W) 46.11

Existing SFR/SIDE Sewer:

SS Tap IE at public main	+/- 45.21
C/O IE at entrance to SFR	59.55 (18" below F.F./GRADE)
SFR main finish floor elevation	61.05 (+/- 15' above low IE of upstream manhole)

All waste from the SFR is from 2 bathrooms on the main level, and a 3rd bath, in the addition on the south side of the home, which stacks with the 2nd bath. Below the main level is unhabitable space used for storage/ductwork/etc and contains no known plumbing, of which would require pumps/forcemain lines up to the waste line where it enters the SFR shown on the plan sheets

Respectfully,
Developing Services

Chris McDonald
206.280.3278

cdavidson@codarchitects.com

From: Don Cole <Don.Cole@mercergov.org>
Sent: Tuesday, March 28, 2023 2:36 PM
To: Chris McDonald
Cc: Chris Davidson; Deborah Alexander; Daniel Yaeger
Subject: RE: Follow up on Hydraulic Analysis at 6010 E. Mercer Way

Hi Chris,

The analysis is acceptable. Please go ahead and submit formally for approval.

Please let me know if I can be of further assistance.

Don Cole
Building Official
City of Mercer Island - Community Planning & Development
206.275.7701| mercerisland.gov/cpd| mybuildingpermit.com

From: Chris McDonald <chris@developingsvcs.com>
Sent: Monday, March 27, 2023 8:46 PM
To: Don Cole <Don.Cole@mercergov.org>
Cc: Chris Davidson <cdavidson@codarchitects.com>; Deborah Alexander <dalexander@alexanderlawoffice.com>; Daniel Yaeger <dyaeger81@gmail.com>
Subject: Follow up on Hydraulic Analysis at 6010 E. Mercer Way

Good evening Mr. Cole hope this finds you well. Playing a little phone tag with ya but I'm thinking this gets you what you want to know but let me know. WE ran a few different scenarios so let me know if we need to tweak anything but I'm sending this as a courtesy first, just to confirm this was along the lines of our chat, as there are several ways to run this but think this is should work. I've included the report, a 1 page PDF plan sheet, and the original Sheets I sent showing the issues/conflicts just for additional info, but here's the jest of it:

Criteria used:
- 300' of 1" copper pipe w/ an RPBA
- Replacing the ¾" with a 1" meter (also ran a 1.5" meter if you want a copy)
- 30' of grade change
- 40.5 fixture units – we revised the fixture count (incl on pdf) as the original had all tubs in the other baths, but they are ¾ baths not full for the other (e) baths

This resulted in a pressure drop of less than 10%, flow rate of 7.69 gpm, and velocity of 4.95ft/s which I believe are all within tolerances yeah?! 😊 We also did the Table C 303.2 calcs to on the plan but if we don't' need that with this report I can pull that off the plan. And I don't' plan to include the "supporting docs" pdf, that's just FYI

Thanks again Don for ALL your help, you have been very helpful / insightful If this looks acceptable to you, I will get it uploaded formally but wanted to get the criteria confirmed for the analysis since there are plenty of variations as you know. IF there are any other calcs you need to see, that we didn't included let me know and thank you again, in advance, for all your support on this, and I'm sure the hillside, trees and neighbors will thank you equally if this works. Give me a buzz if you want to chat this over, my cell is below and look forward to hearing from you.

Respectfully,
Developing Services

Chris McDonald
206.280.3278