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MEMORANDUM

August 2, 2023

To: Belvedere City Council

From: M. R. Wolfe & Associates, P.C.
on behalf of Belvedere Residents for Intelligent Growth (BRIG)

cc: Members of the Planning Commission
Robert Zadnik, City Manager
Rebecca Marwick, Director of Planning & Building
Andrew Shen, City Attorney

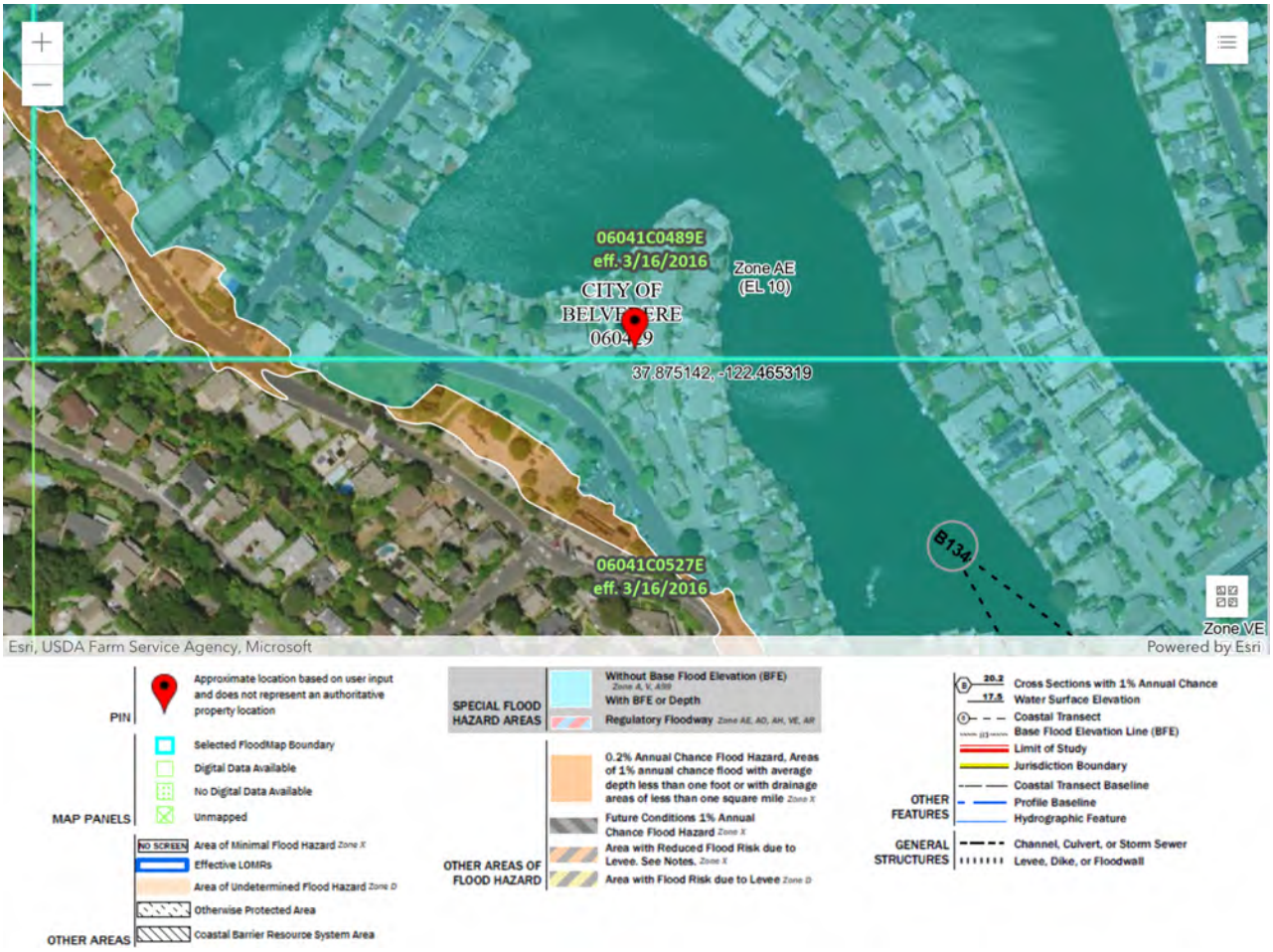
Re: Mallard Pointe Project – Updated Preliminary Geotechnical Investigation and Floodplain Management Requirements

In a memorandum to you dated June 16, 2023, BRIG addressed the Mallard Pointe Project applicant's October, 2022 "Updated Geotechnical Investigation" ("Updated Report"), explaining that it had not addressed concerns BRIG and its geotechnical engineering expert, Lawrence Karp, PhD, had raised in April, 2022 with respect to the original Report, and underscoring that the Project does not qualify for any exemption from environmental review under CEQA. Dr. Karp has since had the opportunity to review the Updated Report and has drafted the attached letter responding to it.

In his letter, Dr. Karp confirms that, like its predecessor, the Updated Report does not address the site's unusual circumstances, which arise from its composition of bay mud and dredged/fill material, or acknowledge that construction of the apartment building will require driven or cased piles driven deep into bedrock, or other environmentally impactful engineered measures that will be necessary to prevent uneven settling of the long, narrow structure, and to comply with floodplain management requirements.

Indeed, further evidence of unusual circumstances giving rise to significant impacts relating to noise, geology and soils, and hydrology, and further corroborating Dr. Karp's opinion, arises from the fact that the site is within a FEMA-designated Special Flood Hazard Area ("SFHA"). According to FEMA's National Flood

Insurance Rate Map ("FIRM"), which the City of Belvedere has incorporated by reference for flood hazard delineation within its boundaries,[1] the site sits squarely within a SFHA Zone AE, with a Base Flood Elevation of 10 feet. (*See* diagram excerpted from the FIRM, below.) This means the Project site is subject to the 100-year flood occurrence at an elevation of 10 feet above sea level.



Because it is situated within an AE Zone, the site is subject to FEMA regulations and guidelines governing new construction of multi-family residential structures in such zones. (*See* FEMA, National Flood Insurance Program, Mitigation

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[1] *See* Belvedere Municipal Code ("BMC"), Ch. 16.20.010, Flood Plain Management, and sec. 16.20.110 ("The areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in the Flood Insurance Study (FIS) dated March 16, 2016, and accompanying Flood Insurance Rate Maps (FIRMs) dated March 16, 2016, and all subsequent amendments and/or revisions, are hereby adopted by reference and declared to be a part of this Chapter.")

Measures for Multi-Family Buildings (FEMA P-2037, Oct. 2019);[2] Home Builder's Guide to Coastal Construction (FEMA P-499, Dec. 2010).)[3] For two- to four-story structures such as the apartment building proposed at Mallard Pointe, the regulations prohibit below-grade parking garages, while also highly recommending use of "deeply embedded" pile or column foundations instead of solid wall, slab, or other forms of shallow foundation.

We note that BMC section 16.20.200 requires the Mallard Pointe developer to apply for and obtain a floodplain development permit before any construction can begin within the SFHA. An application for such a permit must provide detailed information showing structural elevations in relation to the base flood, describing floodproofing measures, and documenting construction methods and practices capable of achieving floodplain construction standards. (BMC § 16.20.300.) BRIG is not aware that any floodplain development permit application, or the required supporting information, has been submitted for Mallard Pointe. Meanwhile, nothing in the Updated Report or any of the developer's other technical submittals documents how the long, narrow apartment building can be safely constructed in a SFHA, on soils comprising fill and bay mud, without deeply embedded piles and/or other environmentally damaging measures.

BRIG submits that under these unusual circumstances it would be irresponsible for the City to allow the Project to evade environmental review by finding it categorically exempt from CEQA.

Thank you for your consideration of these additional comments.

MRW:
Attachment

[2] https://content.govdelivery.com/attachments/USDHSFEMA/2020/06/24/file_attachments/1481529/16-J-0218_Multi-FamilyGuidance_06222020.pdf

[3] https://www.fema.gov/sites/default/files/2020-08/fema499_2010_edition.pdf

ATTACHMENT

LAWRENCE B. KARP
CONSULTING GEOTECHNICAL ENGINEER

FOUNDATIONS, WALLS, PILES
UNDERPINNING, TIEBACKS
DEEP RETAINED EXCAVATIONS
SHORING & BULKHEADS
CEQA, EARTHWORK & SLOPES
CAISSONS, COFFERDAMS
COASTAL & MARINE STRUCTURES

SOIL MECHANICS, GEOLOGY
GROUNDWATER HYDROLOGY
CONCRETE TECHNOLOGY

July 31, 2023

Mark R. Wolfe, Esq.
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Subject: Proposed Mallard Pointe Development, Belvedere
Significant Environmental Impacts Not Identified - EIR Required

Dear Mr. Wolfe:

As I wrote on 4/16/22, geotechnical engineering is a specialty field within civil engineering; "geotechnical" is a collective term for "soil mechanics and foundation" engineering adopted by California in 1986 which expertise was entirely missing from the 1/18/22 report by Miller Pacific and is still missing from their newest revision (10/19/22) which is still prefaced with the protective disclaimers "document is for the sole use of the client and consultants on this project" and "No other use is authorized". Both first and second "Preliminary" reports are specious and were submitted to the City by the developer of the subject project in attempts to gain advantage by circumventing important safeguards provided by the California Environmental Quality Act.

The revised Miller Pacific report still does nothing to show why demolition of residences and construction of the apartment house will not have very significant adverse effects upon the environment and does nothing to explain the unusual circumstances of the project's environment that construction of will cause environmental damage. Dredged, filled, and flooded marshland between Belvedere Island and the Tiburon peninsula opened in 1955 without any environment oversight or modern engineering. The revised report has minor changes in text along with a significant but poorly conceived addition that the site for the apartments would be excavated for parking partly below grade so the weight of the excavated soil will be replaced by the building thereby eliminating the need to foundation piles. And this theory (known as "compensation") was blindly advanced without consideration that excavation and building do not occur simultaneously, and not insignificantly that there is no analytical exploration of soil and water conditions at the building's location. There is no understanding of shoring that requires pile driving, excavation relieves stress on subgrade so there will be rebound and basal heave, construction requires dewatering which will increase effective stress on subgrade, spoil disposal requires extensive trucking which alone is an environmental problem, and there will be future adverse effects on the neighboring properties and with the future apartments as noted below.

Projects for multi-family residential use on reclaimed land in the locally sensitive and seismically active marine environment of San Francisco Bay have been proven to be environmentally problematical; typical examples are developments where long narrow buildings have experienced distress due to ground movements causing unacceptable differential settlements and deflections resulting in unrepairable damages. The planned apartment building is roughly 270 feet long with the southern 200 foot length 60 feet wide and the northern 70 foot length 90 feet wide. If the structure is rigid the configuration is unbalanced resulting in center of mass eccentricity; if not rigid the differential settlements on the north end will exceed the south end. The only solution is driven or cased piles to bedrock which will also be very damaging to the environment.

Lawrence B. Karp

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