

CHAPTER 3

AN ORDINANCE RELATING TO THE INSTALLATION OF SEWER SYSTEMS ON BAY MUD

PURPOSE. An ordinance regulating the construction and installation of sanitary sewer facilities in areas underlain by bay mud in the Las Gallinas Valley Sanitary District.

ARTICLE I. RECITALS

Section 101. The Las Gallinas Valley Sanitary District (“the District”) is a duly organized Sanitary District pursuant to Division 6 of the Health and Safety Code of the State of California.

Section 102. The Board of Directors of the District (“the Board of Directors”) is charged by law with providing sanitary sewers and sewage treatment facilities within its boundaries.

Section 103. The District, from time to time, is required to accept the annexation of contiguous areas and to provide sewers and sanitary service for such areas. The District can also serve those areas through an Extra-Territorial Service Agreement.

Section 104. The District is being required to meet stringent State standards for sewer service. The State water quality control legislation provides that if a district such as this District fails to meet these standards, severe fines, penalties and other sanctions, including total ban on all new sewer connections in the District, can be imposed upon the District by the California Regional Water Quality Control Board.

Section 105. By law, the Board of Directors is empowered to pass ordinances regulating sewers, sewer connections and related matters.

ARTICLE II. PURPOSE

Section 201. There is a substantial area adjacent to the San Francisco Bay, within the Las Gallinas Valley District, which is underlain by bay mud. The District is responsible for the long-term operation and maintenance of the public sewers within its service area.

Section 202. Sewers constructed on land underlain by bay mud can be problematic and require more stringent design and construction provisions in order to minimize the occurrence of conditions that cause sanitary sewer overflows and other problems.

Section 203. Improper construction and insufficient engineering for sewers and sewer lines on property underlain by bay mud could pose a substantial risk and hazard to the inhabitants of the District.

Section 204. Substantial additional requirements and precautions are essential if the construction of sewers on land underlain by bay mud is not to result in harm to the District and its ratepayers.

Section 205. Substantial additional requirements and precautions are intended to mitigate the need for frequent inspection and maintenance and will assist the District in its effort to control the cost of service to its ratepayers, its property owners, and its inhabitants.

Section 206. For the reasons set forth above, it is necessary and proper, for the protection of property owners within the District, for the protection of the District itself, and to meet the obligations and requirements imposed by law upon this District, for the District to adopt this Ordinance for the regulation of construction of sanitary sewer facilities on property underlain by bay mud.

ARTICLE III. REQUIREMENTS

Section 301. Relating to construction underlain by bay mud, the following special provisions shall apply on any application for sewer connections on any construction on property underlain by bay mud:

- (a) Either private sanitary sewer systems, private laterals or public sewer systems shall be permitted on property underlain by bay mud where the thickness of the bay mud exceeds five (5) feet. Any such system must meet the standards of this Ordinance and other District rules, regulations, and specifications. Developer need also comply with any other applicable laws, federal, state or local, regarding approval and construction of such sewer improvements.

(b) No sewer construction shall be undertaken on any property underlain by bay mud until such plans and construction are approved by the District Engineer in his sole discretion and approved by the Board of Directors. Approval will require plans and specifications prepared by a Design Engineer, and written geotechnical reports as provided in this Ordinance prepared by Soils Engineer. No will serve letter nor any other sewer commitment shall be issued by the District until after the District Engineer has approved the plans. The developer shall submit a title report and other necessary assurances to the District demonstrating the required real property interests allowing construction of sewer improvements.

For the purpose of this Section:

- Design Engineer – The engineer hired by the developer who is responsible for the project design and preparation of the plans, specifications and details. The Design Engineer shall be a Registered Professional Engineer in the State of California and shall be responsible for the project design and all construction staking.
- Soils Engineer – The engineer hired by the developer who is responsible for evaluating the geotechnical aspects of the project, recommending appropriate design criteria related to soils and settlement, and providing geotechnical engineering oversight on the construction work. The Soils Engineer shall be a Registered Professional Engineer and a Registered Geotechnical Engineer in the State of California, and must have at least five (5) years of experience in soil mechanics or soils engineering, part of which shall involve work in bay mud conditions in San Francisco Bay Area.

(c) For the purposes of this Ordinance, a property shall be considered underlain by bay mud if any one of the following criteria applies:

- The District Engineer so reports that the underlying soil has low strength and high compressibility, which could cause the surrounding ground to likely settle over time, potentially damaging sanitary sewer systems and connections to structures, or
- It is located less than ten (10) feet above mean sea level, unless an approved Soils Engineer reports in writing, together with substantiating evidence in the form of test boring logs, to the contrary and the District Engineer agrees with the conclusion in his sole discretion;
- It is located within the inner meanders of the inner line of the salt marsh, as shown on Map No. 3 of the Salt Marsh and Tidelands Situate in the County of Marin, dated 1871, prepared by the order of the Board of Tideland Commission.

(d) Construction shall be considered approved by the District Engineer for the purpose of this Ordinance, only if:

1. The Soils Engineer makes what he reports as a sufficient number of borings with a minimum of three (3) per subdivision, or other development, before submission of plans. The District Engineer reserves the right to require additional borings up to a maximum of one (1) boring per one hundred (100) lineal feet of sewer line.
2. These borings go down as far as the Soils Engineer determines is necessary to reach firm soils conditions beneath the bay mud.

3. The Soils Engineer reports to the District Engineer in writing the results of each test boring, the conditions of the soils, the proposed grade level, his calculated subsidence over a 50 year period under existing conditions and for alternative heights of new fill, within six (6) inch contours and his prediction of subsidence rate for the first five (5) years after construction. This report shall be submitted to the District Engineer at least fifteen (15) days prior to the date plans are to be considered by the Board of Directors for approval.

4. The Design Engineer reports to the District Engineer in writing at least fifteen (15) days before plans are presented to the Board of Directors that, in his professional opinion, based on the tests required by this Ordinance, and by such additional tests and investigation as the Soils Engineer may consider appropriate (additional tests, if any, shall be specified and the results described), the conditions of the soils are such that construction can safely be made on the site without undue risk of damage or without undue risk of causing an increase in infiltration to the sanitary sewer facilities in excess of three (3) times the allowable leakage as defined hereinafter of this Chapter 3.

5. The Soils Engineer shall review all plans before submittal to the District Engineer and report in writing any adverse effects to the sanitary sewer facilities that would be caused by the proposed construction.

6. The Soils Engineer shall monitor, with at least one (1) inspection per day, construction of the approved design and shall make an immediate report to the District Engineer if he finds

that soils conditions exposed in the course of construction differ materially from those stated in the submitted report. In this event, the Soils Engineer and Design Engineer shall submit an alternative proposal, designed to take into consideration the soils conditions exposed during the course of construction. No further work shall be done until such alternative design is approved by the District Engineer after review of all plans.

7. The Design Engineer, at the end of construction, before the District accepts the system, shall file a report in writing setting forth what protective steps have been proposed by the Soils Engineer and stating that these protective steps, or others, which, in his opinion, are fully satisfactory, specifying the nature and extent of such alternative steps, have been taken by the developer.

8. No sewer system shall be approved for any construction underlain by bay mud as defined herein above, unless the District Engineer in his sole discretion determines that the proposed sewer system will function properly, not adversely impact any other District facilities, has an adequate schedule for future maintenance, and will not adversely impact the public health, safety or welfare. Any sewer improvements shall consider the impact of sea level rise as defined by then existing BCDC maps and FEMA maps. Moreover, the sewer system has a minimum installed grade of 150% of the allowable slope per the District Standard Specifications. The predicted grade of all sewer mains after 50 years shall continue to be 150% of the allowable slope per District Standard Specifications. Prior to acceptance, gravity lines shall be inspected for sags and other defects at the developer's expense with standard television camera testing.

9. The clearance between the sewer and adjacent buried utilities or other underground features (e.g. sheet piling) shall be one (1) foot plus three times the predicted settlement of the sewer at that location.

10. All pipe for public sewers on property underlain by bay mud shall be a minimum of eight (8) inches in diameter and shall be constructed of high density polyethylene (HDPE) SDR17 with butt-fusion welded joints with the exception of forced mains, sizing which must be approved by the District Engineer. All metallic fittings and valves shall be wrapped and include cathodic protection. Lateral sewers shall be a minimum of four (4) inches HDPE SDR 17 with butt-fusion welded joints.

11. All sewer mains and laterals shall be laid on a minimum of 12" inches in depth of $\frac{3}{4}$ " or 1-1/2" crushed rock placed over geofabric laid at the bottom of the trench and extending up each side of the trench to be wrapped over the top of the pipe zone material a minimum of 12" above the top of the pipe.

12. Geofabric shall be Mirafi 700 or approved equal.

13. Manholes shall be of HDPE conforming to ASTM D3350 with a minimum cell classification value of 345464C. Flexible joints consisting of thermoplastic high deflection couplings shall be installed no more than one (1) foot outside of manholes or any other structures.

14. Other details of construction shall be specified by the District Engineer in specifications which shall be on file at the District

office.

15. If sewers are to be installed crossing old sloughs, dikes, or other ground with potential high differential settlements, the District Engineer shall specify additional protective steps to minimize the risk of line sags.

16. Sewers and pumping stations shall be constructed a sufficient distance from creek banks to reduce the possibility of damage due to unforeseen soil movement.

17. All sewer mains, laterals, and manholes shall be leak-tested after installation per the District Standard Specifications.

18. All metal to be buried underground shall be Type 316L stainless steel, wrapped, and include cathodic protection.

19. The depth of cover over the sewer mains and laterals shall not be less than three (3) feet or greater than 10 feet.

20. Pump stations, if required, shall be located as close as possible to the area of maximum predicted settlement.

All pressure lines connecting to a pump station structure shall exit the structure through a suitable flexible joint or ball joint. Gravity sewers shall connect to pump stations or manholes through a thermoplastic high deflection coupling located no more than one foot outside the structure. The invert elevation of any sewer connecting to a pump station shall be a minimum of six (6) inches lower than the invert elevation of the nearest upstream manhole.

21. Pump stations and other structures may be supported on piles as

determined by the Soils Engineer. Approval of structures on piles shall be at the sole discretion of the District. All sewer lines connecting to a pile supported structure shall connect through a flexible telescoping or rotational type of joint, which is designed to remain watertight through the predicted range of movement over 50 years of settlement between the structure and soil. All sewer laterals under pile-supported structures shall not be buried but shall be positively fixed to the pile supported grade beams so they will remain fixed with the structure.

22. An independent storm water pump station, if constructed with the project or required by the District, shall be designed to meet the minimum requirements of a 100-year storm. The storm water pump station shall be provided with a containment structure and sump pumping system to prevent flooding and protect equipment at the sanitary sewer pump station during storm events.

23. Under no circumstances shall surface runoff and ground water infiltration be allowed to enter the pump station and tributary sewer collection system at any time during and after construction of the project.

24. Force mains shall be of HDPE material designed with uniform slope upward toward the point of discharge. The uniform grade shall be demonstrated after the predicted 50 year settlement has occurred. The force mains shall not have air release valves. They shall be designed to carry the projected peak flows together with any accumulation of air that may occur as the result of settlement.

25. Pump stations that may become subject to saltwater intrusion, as determined by the Soils Engineer and the District Engineer, may require ongoing monitoring to ensure elevated salts and other compounds do not detrimentally degrade District's recycled water or plant effluent quality.

26. The District may require the District's downstream pump station to be equipped with an active (forced-air) District-approved treatment system for the control and removal of odorous compounds in the exhausting air from the station. Chemical additions and passive systems are not acceptable for long-term odor abatement. The District may require additional private pump station flow monitoring and reporting.

27. Any subsidence of sewer improvements, or failure of any equipment on property described in this Section, after completion and acceptance of construction, or within the warranty period, shall be corrected by the District as maintenance, which shall be reimbursed by the developer.

28. The District reserves the right to hire a third party Design Engineer and Soils Engineer to review the developer's reports, sewer design, plan, specifications and details related to the project. The cost to the District of the third party engineer(s) shall be reimbursed by the developer.

29. The developer shall furnish to the District a program for Future maintenance which must be approved by the District Engineer in his sole discretion on an annual basis. The District may charge for employee costs and other costs for any monitoring efforts.

30. The developer shall warranty all work to be free from defects for a period of five (5) years from the original date of acceptance by the District. No sewer system shall be approved for any construction underlain by bay mud, unless the developer shall post with the District a performance bond in the amount of one hundred (100) percent or more and a maintenance bond in the amount of one hundred fifty (150) percent of the District Engineer's estimate of the original cost of the sewer system for a period of five (5) years from the date of acceptance of the sewer system by the District.

31. This Ordinance shall be considered in addition to Title 2, Chapter 1. In the case of conflict between this Ordinance and any other District Ordinance or regulation the provisions of this Ordinance shall control.

Section 302. All engineering, legal, architectural and other expenses which may be required to meet the requirements of this Ordinance shall be paid by the developer.

If any lawsuit is brought by the District to abate any violation of this Ordinance, or any nuisance condition caused by construction on property underlain by bay mud, against any developer who applies for a sewer connection permit on such property after the effective date of this ordinance, or against any owner or lender who violates any provision of this ordinance, and the District prevails, such party shall pay reasonable attorney's fees if the Court determines that such party knowingly violated this ordinance or knowingly caused or refused to abate such nuisance condition.

Section 303. The District may seek injunctive relief, civil fines or criminal sanctions for violation of this Ordinance. Any violation of this Ordinance shall constitute a nuisance per se and the District shall be entitled to all remedies and attorney's fees and costs for enforcement of this Ordinance.

ARTICLE IV. SEVERABILITY. If any section, sub-section, sentence, clause or phrase of this Ordinance, or the application thereof to any person or circumstances, is for any reason held to be

unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Ordinance or the application of such provision to other persons or circumstances. The Board of Directors hereby declares that it would have passed this Ordinance or any section, sub-section, sentence, clause or phrase hereof, irrespective to the fact that any one or more section, sub-section, sentences, clauses or phrases be declared to be unconstitutional.