Local Agency Management Program for Onsite Wastewater Treatment Systems

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Appendix A: Supporting Rationale for Malibu OWTS Siting and Design Criteria
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Appendix C: City of Malibu Wastewater Ordinance (Malibu Municipal Code)
Appendix D: City of Malibu Onsite Wastewater Treatment Systems Manual (OWTS Manual)

Introduction

In 2000, the California Legislature passed Assembly Bill 885 (Water Code § 13290) that required the State Water Resources Control Board (SWRCB) to adopt regulations or standards for the permitting and operation of Onsite Wastewater Treatment Systems (OWTS). These new standards were adopted by the SWRCB in June, 2012, as the *Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems*, also referred to as the "OWTS Policy" (Policy). The Policy became effective in May 2013 and sets minimum standards for OWTS and for OWTS program administration by local agencies. The Policy contains five categories, Tiers 0 through 4, for OWTS administration with the following different requirements at each level:

- **Tier 0 – Existing OWTS** that are not failing or contributing to impairment of surface water
- **Tier 1 – Low risk new or replacement OWTS** where there is not an approved LAMP
- **Tier 2 – Local Agency Management Program (LAMP) for New or Replacement OWTS** allows the local agencies with approval from the Regional Water Board to develop equivalent requirements to achieve the same Policy purpose
- **Tier 3 – Impaired Areas** to cover existing, new, and replacement OWTS within 600 feet of water bodies impaired for pathogens or nitrogen per the State
- **Tier 4 – OWTS Requiring Corrective Action** because they are either failing or at the point when an OWTS fails

The SWRCB OWTS Policy provides a multi-tiered strategy for management of OWTS in California. This LAMP has been prepared by the City of Malibu to obtain approval for OWTS management under Tier 2 of the OWTS Policy. As such, it is intended to allow the City to continue providing local oversight of OWTS by implementing practices that: (a) are suited to the conditions in the Malibu area; (b) meet or exceed the environmental protections of the "default" siting and design requirements for OWTS identified in Tier 1 of the SWRCB Policy; and (c) ensure the best opportunity for coordinated and comprehensive management of OWTS, public health and water quality within Malibu. The LAMP has been prepared in accordance with the requirements of the SWRCB's OWTS Policy.

The LAMP is intended to apply to both residential and commercial discharges utilizing conventional or alternative/advanced OWTS (collectively referred to as OWTS) within Malibu having wastewater design flows of up to 10,000 gpd, with the exception of those located on State and Federally-owned lands. Any OWTS with a design flow exceeding 10,000 gpd or OWTS containing high strength wastewater with discharge limits would be regulated by the Los Angeles Regional Water Quality Control Board (Regional Water Board).

This document was developed with the assistance of Norman Hantzsche from Questa Engineering Corporation.

Organization of the LAMP

This LAMP is organized to present a comprehensive explanation of the various requirements, policies, procedures and measures used to regulate and oversee the use of OWTS in the City of Malibu. It is also structured as much as possible to address the items listed in the SWRCB OWTS Policy pertaining to Local Agency Requirements and Responsibilities (Section 3.0 of the OWTS Policy) and Local Agency Management Program for Minimum OWTS Standards (Section 9.0 of the OWTS Policy). Reference is made throughout this LAMP to the City's Wastewater Ordinance (Malibu Municipal Code) and OWTS Manual, which are attached to this LAMP. Definitions contained in this LAMP are consistent with definitions in the OWTS Policy and MMC.

The following briefly summarize the contents of this document.

- **Section 1: Background.** This section describes the overall purpose, scope, geographical coverage and overview of the key elements of the LAMP.

- **Section 2: Environmental Conditions, OWTS Usage and Water Quality Management.** This section provides background information on environmental conditions pertinent to the use and suitability for OWTS, extent of OWTS usage in the City, and summary of OWTS management approaches and requirements adopted for protection of water quality in the City addressing items in OWTS Policy Section 9.1.

- **Section 3: OWTS Siting, Design, and Construction Requirements.** This section summarizes key items of the MMC and the OWTS Manual pertaining to requirements for siting, design and construction of OWTS, per the requirement of section 9.2 and covering applicable items listed under Tier 1 (Sections 7.0 and 8.0) of the OWTS Policy.

- **Section 4: Special Management Issues.** This section describes the provisions contained in the City of Malibu LAMP corresponding with special OWTS management issues listed in Sections 9.2.1 through 9.2.12 of the SWRCB OWTS Policy.

- **Section 5: Prohibitions.** This section describes the provisions contained in the City of Malibu LAMP corresponding with the required prohibitions set forth in Section 9.4 of the SWRCB OWTS Policy.

- **Section 6: Program Administration.** This section presents the City's existing program and plans for addressing the administrative aspects of the LAMP, including record keeping, on-going assessment of water quality issues related to OWTS, and reporting to the RWQCB(s), as required under Sections 3.3 and 9.3, of the OWTS Policy.

- **Appendix A: Supporting Rationale.** This presents discussion of the supporting rationale (including literature sources) for the various siting and design requirements for conventional and alternative (advanced) OWTS, comparison with Tier 1 standards of the OWTS Policy, historical practices and performance of OWTS in Malibu, and highlighting the requirements and management practices that are more protective than the provisions of the OWTS Policy.

- **Appendix B: OWTS Inventory and Land Uses -** This presents the supporting information and details of OWTS inventory and land uses in Malibu, distribution in different geographical and watershed areas.

- **Appendix C: City of Malibu OWTS Ordinance (Malibu Municipal Code) -** This document is a comprehensive ordinance containing various code sections in the City Municipal Code pertaining to regulation of OWTS.

- **Appendix D: City of Malibu Onsite Wastewater Treatment Systems Manual (OWTS Manual) -** This document is a consolidation of guidelines and policies for the siting, design and construction of OWTS.

Statewide OWTS Policy: LAMP Reference

OWTS Policy Section	OWTS Policy Section	Location of Corresponding Content in LAMP
Section 1	**Definitions**	
1.0	Definitions	Introduction
Section 2	**Responsibilities and Duties**	
2.0	OWTS Owners Responsibilities and Duties	4.1
2.1	Basin Plan Prohibition	4.2
2.2	Local Codes and ordinances	4.1
2.3	Permitting conditions	3.4
2.4	Domestic wastewater	1.2
2.5	Maintain OWTS	1.2
2.6-2.7	Report of waste Discharge	Intro., 1.2
Section 3	**Local Agency Requirements and Responsibilities**	
3.0	Local Agency Requirements and Responsibilities	1.2
3.1	Local Agency Management Plan applicability	1.2
3.2	Local Agency Management Plan notification	1.2
3.3	Annual report	6.4.1
3.4	OWTS Permitting records	6.2
3.5	Water well notification	4.11
3.6	OWTS Policy enforcement	1.2
3.7	More protective OWTS standards	AP. A-6
3.8	Withdraw LAMP	6.4
Section 4	**Regional Water Board Functions and Duties**	
4.0	Regional Water Board Functions and Duties	6.4
4.1	Water Board oversight	Intro, 1.2
4.2	Basin Plan Amendment	N/A
4.3	Water Board review of LAMP	N/A
4.4	Revocation/corrective action of a LAMP by Water Board	N/A
4.5	Requests for modification or revocation of LAMP	N/A
4.6	WDRs in jurisdictions without LAMP	N/A
4.7	Water Board notifications for Tier 3 OWTS	N/A
4.8	WDR exemptions	N/A
Section 5	**State Water Board Functions and Duties**	
5.0-5.7	State Water Board Functions and Duties	N/A
Section 6	**Tier 0 - Existing OWTS**	
6.0	Coverage for Properly Operating Existing OWTS	Superseded by LAMP
6.1	Waiver of discharge requirements	
6.2	Coverage denied by Water Board	

6.3	WDR coverage	
Section 7	**Tier 1 - Low Risk New or Replacement OWTS**	
7.0	Minimum Site Evaluation and Siting Standards	Superseded by LAMP
7.1	Qualified professional	
7.2	Soil depth	
7.3	Depth to groundwater	
7.4	Percolation test results	
7.5	Horizontal setbacks	
7.6	Drinking water source intake setback and notification requirements	
7.7	Ground slope	
7.8	Subdivision density	
Section 8	**Tier 1 - Low Risk New or Replacement OWTS**	
8.0	Minimum OWTS Design and Construction Standards	Superseded by LAMP
8.1	OWTS design requirements	
8.1.1	Qualified professional	
8.1.2	OWTS Does not create a nuisance	
8.1.3	Design flow less than 3500 gpd	
8.1.4	Soil cover	
8.1.5	Depth to groundwater	
8.1.6	Dispersal systems - application rates	
8.1.7	Dispersal systems - maximum depth	
Table 3	Application rates based on percolation	
Table 4	Application rates based on soils type	
8.1.8	OWTS 100% replacement area	
8.1.9	Dispersal areas - impermeable surface	
8.1.10	Native soil	
8.1.11	Increased allowance for IAPMO dispersal systems	
8.2	OWTS Construction and Installation	
8.2.1	Septic tanks	
8.2.2	New Septic Tank Requirements	
8.2.3	Septic tank approval	
8.2.4	Septic tank filter	
8.2.5	OWTS installer	
Section 9	**Tier 2 - Local Agency Management Program (LAMP)**	
9.0	Minimum standard for OWTS	Section 3
9.1	LAMP general conditions	3.6, 4.1, 4.2, 4.3
9.1.1	Hydrogeological	2.2-2.5, 2.7, 3.1, 3.5.5, Ap-A-1
9.1.2	Environmental Conditions	3.4, 3.6, Ap A-1, A-5, A-6
9.1.3	Shallow soils	2.7, 3.4, Ap A-2

9.1.4	Domestic wells	2.7.1, 3.1
9.1.5	Fractured bedrock	2.7, 3.2
9.1.6	Poorly drained soils	2.7, 3.2
9.1.7	Surface water	2.7.2, 2.7.3, 4.2, 4.8
9.1.8	Impaired surface water	4.2
9.1.9	OWTS density	2.6, 2.7.4, Ap-B
9.1.10	Parcel size	2.7.4, 3.5.5, Ap A-6
9.1.11	Existing OWTS -- non-conforming	2.7.5, 3.6, 4.1, 4.3.2, 6.2
9.1.12	Existing OWTS -- setbacks	2.7.5, 3.6, 4.1, 4.3.2, 6.2
9.2	LAMP Scope of coverage	1.2, Section 3
9.2.1	Operation and maintenance programs	3.6, 4.1, 4.3, 4.7, 4.13
9.2.2	OWTS within impaired areas	2.7.3, 4.2, 4.7, 4.8
9.2.3	Variances	4.3, 4.12, Section 5, Ap A-6
9.2.4	OWTS Certification for providers	3.2, 4.4
9.2.5	Education and outreach	3.6, 4.1, 4.5
9.2.6	Septage disposal	4.6.3, 4.7
9.2.7	Maintenance districts	4.7
9.2.8	Salt and nutrient management plans	4.8
9.2.9	Watershed management groups	4.9
9.2.10	Sewer System location	4.1
9.2.11	Surface Water treatment locations	4.11
9.2.12	Surface water intake locations	4.12
9.2.13	Cesspool	4.13
9.3	LAMP - local agency responsibilities	Section 6, 6.2, 6.3, 6.4
9.4	LAMP - conditions not authorized	Section 5
9.5	LAMP - technical info	1.2, 1.3, Section 3, Section 4, Section 5, Ap-A
9.6	LAMP - water board review	1.2, 1.3, Ap-A
Section 10	**Tier 3 - Impaired Areas**	
10.0	Advanced Protection management program	Superseded by Civic Center Prohibition
10.1	TMDL - geographic area	
10.2	TMDL - implementation plan	
10.3	APMP - Special provisions	
10.4	TMDL - adoption and requirements (Water Board)	
10.5	Corrective action - qualified professional report	
10.6	APMP - conditions not authorized	
10.7	Existing non-conforming OWTS - connection to sewer	
10.8	APMP - Supplemental treatment required	

10.9	Supplemental treatment for nitrogen	
10.10	Supplemental treatment for pathogens	
10.11	Performance requirements	
10.12	Third party testing	
10.13	Monitoring	
10.14	Alarm system	
10.15	Inspection	
10.16	Local Agency Responsibilities	
Section 11	**Tier 4 - OWTS Requiring Corrective Action**	
11.0	Corrective action	3.6, 4.1, 4.3
11.1	Replacement	3.6, 4.1, 4.3
11.2	Compliance	3.6, 4.1, 4.3
11.3	Repair	3.6, 4.1, 4.3
11.4	Nuisance	3.6, 4.1, 4.3
11.5	Water Board / Local Agency authorization	3.6, 4.1, 4.3
11.6	Time Schedule	3.6, 4.1, 4.3
11.7	Enforcement action	3.6, 4.1, 4.3
Section 12	**Waiver - Effective Date - Financial Assistance**	
12.0	WDR waivers	N/A
13.0	Effective Date	N/A
14.0	Financial Assistance	N/A

Section 1: Background

1.1 Geographical Setting

The City of Malibu, which incorporated on March 28, 1991, is located within the boundaries of Los Angeles County and lies entirely within the State Designated Coastal Zone. The city extends along the Southern California coast approximately 21 miles from the Ventura County line on the west to Topanga Canyon Boulevard on the east. Inland, the City's Coastal Zone boundary extends approximately 2 miles and includes portions of the coastal terrace and slopes of the Santa Monica Mountains. A map of the area is shown in **Figure 1-1.**

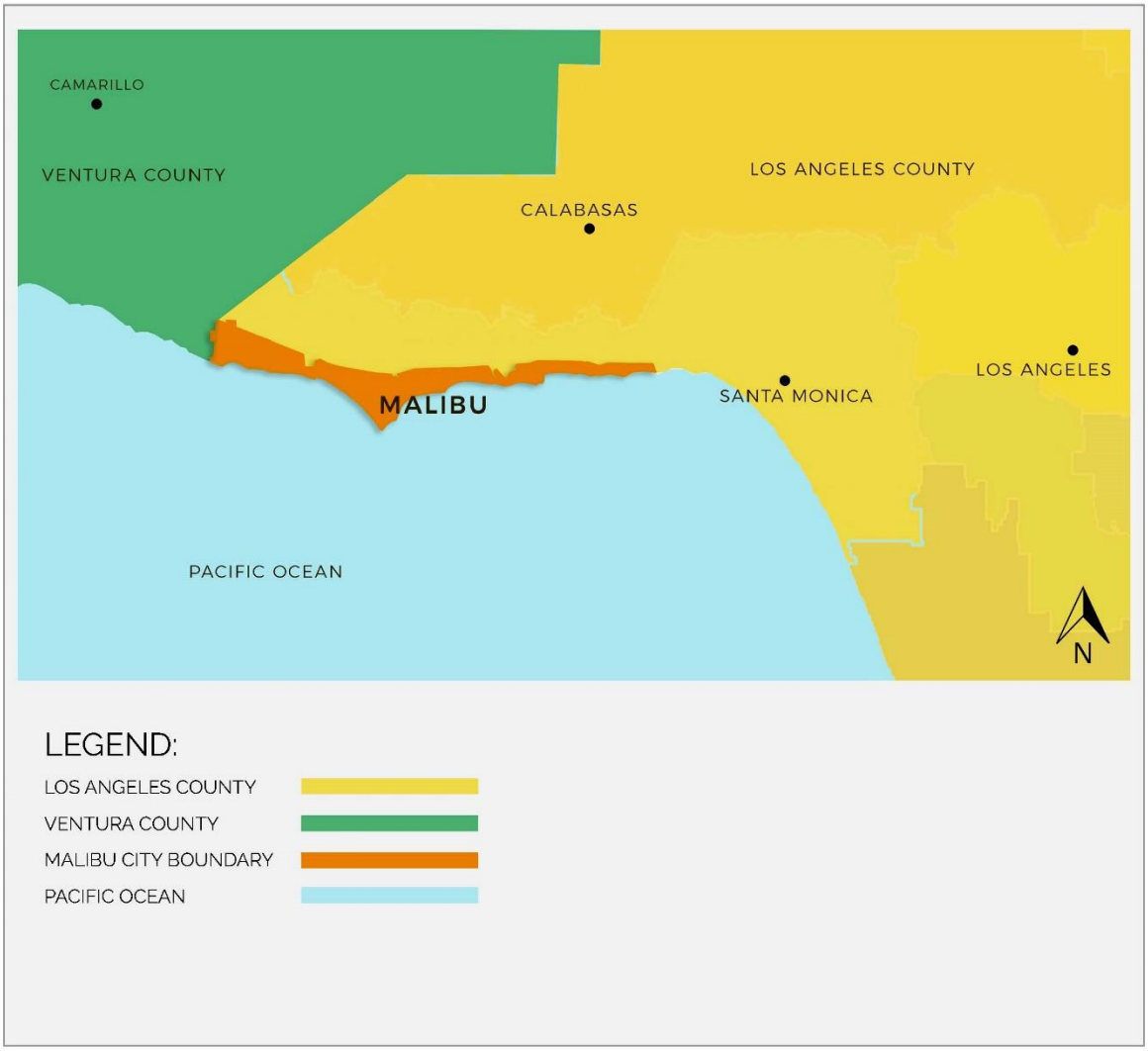
The topography of the area is dominated by the Santa Monica Mountains, an east-west trending mountain range that rises steeply from the Pacific Ocean. The shoreline along the city contains sandy beaches, bluff backed crescent coves and rocky headlands. Drainage is characterized by steep, narrow canyons which run out of the Santa Monica Mountains across a very narrow coastal plain. The shallowest surface geologic units consist of colluvium/soil, alluvium, estuarine deposits, landslide deposits, and terrace deposits, and may be locally covered by artificial fill. Bedrock formations exposed in the Santa Monica Mountains north of the Malibu Coast fault consist of two main sequences. The lower sequence consists of basement rocks including slates, schists, and granitic rocks which are overlain by sandstone and siltstone formations. The upper sequence is a varied group of sedimentary and volcanic formations of Sespe, Vaqueros, Topanga, Conejo Volcanics, Monterey and Trancas.

Annual rainfall within the Malibu area ranges between 16-22 inches, though annual rainfall can vary significantly from year-to-year as well as geographically throughout the area, primarily due to the Santa Monica Mountains. Although rainfall in the area is generally low and infrequent, passing storms (coinciding with the southern California rainy season from November to April) are generally intense, capable of releasing large rain amounts in relatively short periods of time.

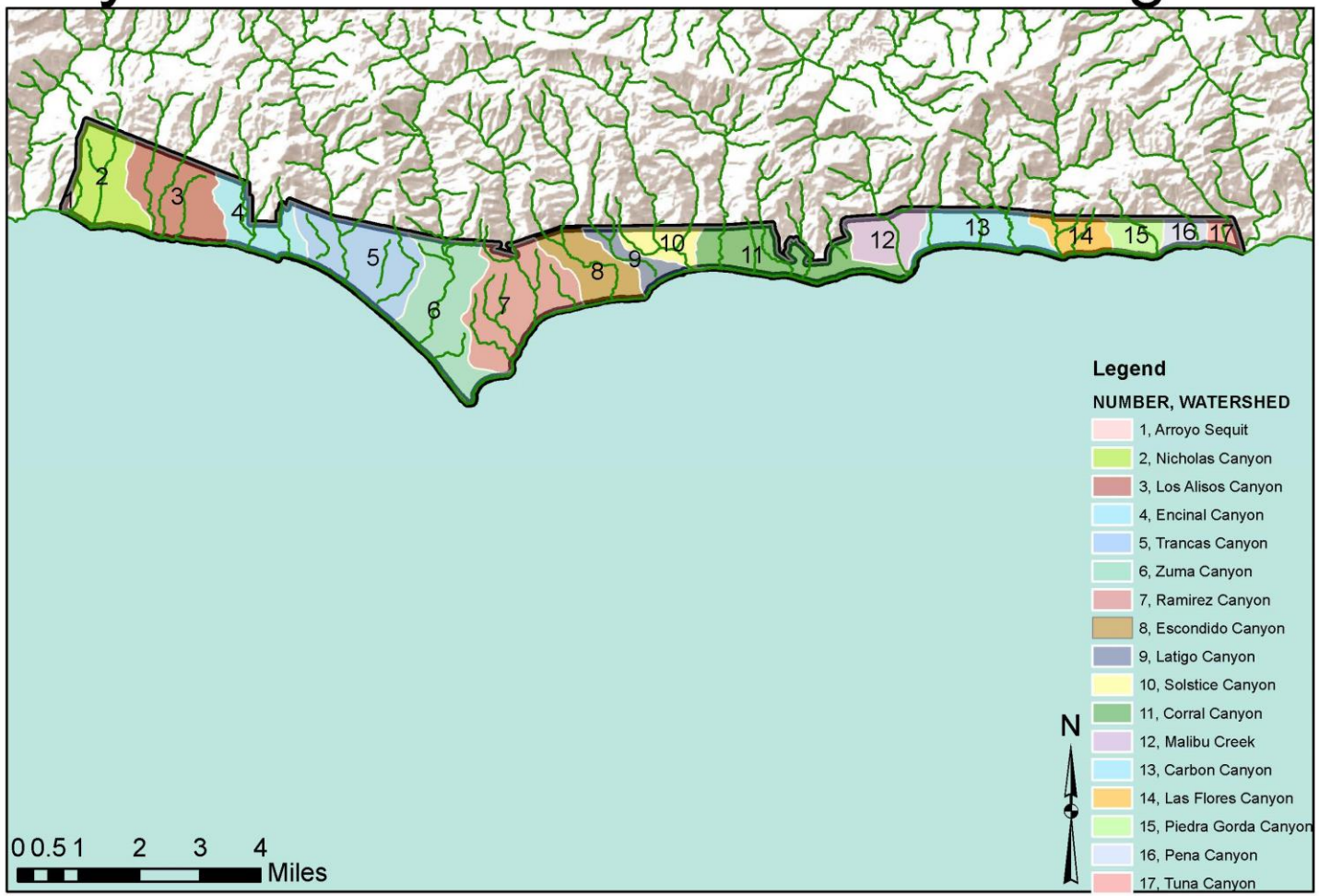
Land use consists of mostly low density and rural residential development. The majority of developed land is located along or adjacent to the narrow stretch of coastal plain. Commercial development is sparse, generally concentrated along the Pacific Coast Highway by Malibu Canyon and Point Dume. Currently, there are no industrial uses.

The City is located within two main watersheds as defined by the Regional SWRCB most recent Basin Plan. The Malibu Creek Watershed and a portion of the Santa Monica Bay Watershed. There are several subwatersheds in the region including creeks, streams and coastal waters. A map of the watersheds is shown in **Figure 1-2**.

City of Malibu Geographical Setting Fig. 1-1



City Of Malibu Watersheds Fig. 1-2



1.2 Regulation of Onsite Wastewater Treatment Systems

1.2.1 Background

The City has administered a local wastewater management program for OWTS since its incorporation in 1991. Under the City's Environmental Sustainability Department (ESD), the scope of the wastewater program includes plan review, permitting, construction and management of OWTS. Most recently in 2004, the City as a Qualified Local Agency, entered into an agreement with the Regional SWRCB for implementation of the wastewater program for most OWTS within the city.

The City's existing wastewater program consists of a combination of municipal codes, plans and policies. The siting and design of systems is regulated under provisions of Malibu Municipal Code (MMC) Chapters 15.40 and 15.42 incorporating sections from the California Plumbing Code as amended by Los Angeles County and City of Malibu, and the Local Coastal Program/Local Implementation Plan. Management of OWTS is fulfilled with the Operating Permit Program contained in MMC Chapter 15.44 and OWTS Practitioner Program in MMC Chapter 5.38. Due to the complex nature of the city, various policies and procedures have been put in place for the City to carry out the provisions of the municipal code and intent of the wastewater program.

1.2.2 Update and Transitioning to Tier 2 LAMP requirements

In response to the SWRCB OWTS Policy, beginning in late 2014 the City began taking measures to modify and update the City's onsite system management program to meet provisions of the Policy. This effort has included (a) comprehensive review, update, revisions and merging applicable sections of the City Code pertaining to OWTS; and (b) development of an accompanying OWTS Manual containing and consolidating various guidelines for siting, design and construction of OWTS along with other policies and procedures for implementation of the MMC and State Policy requirements.

1.3 City of Malibu OWTS Requirements

Requirements for the installation, use and maintenance of OWTS within city limits are contained in two primary documents (summarized below), which accompany and form the basis for this LAMP.

1.3.1 Onsite Wastewater Treatment Systems Ordinance (MMC)

The Statewide OWTS Policy requires that, in order for the City to continue its oversight of OWTS, the City must prepare a LAMP document and obtain approval from the Regional SWRCB. The current MMC has been revised in order to align with the requirements of the State OWTS Policy. The ordinance is a combination of the City's plumbing code, coastal program plan and operating permits program. The ordinance is referenced in this LAMP as Appendix C.

1.3.2 Onsite Wastewater Treatment Systems Manual (OWTS Manual)

The OWTS Manual provides the technical details, guidelines, policies and procedural requirements for implementation of the MMC. It includes permitting forms and procedures, siting criteria, site evaluation requirements and methods, requirements/guidelines for cumulative impact studies and geotechnical reports, design standards and guidelines related to both conventional and alternative/advanced OWTS, performance evaluation procedures, operation and monitoring requirements, and related technical and procedural information. The OWTS Manual will be reviewed and updated as necessary every three years, to keep pace with new issues, policies, procedures, and technologies affecting the use and management of onsite systems. The OWTS Manual will be maintained by the City and is submitted with this LAMP as Appendix D.

Brief summary of OWTS Manual by sections:

Section I Environmental Health Submittal Guidelines - This section describes the type of project reviews conducted by Environmental Health and the information required to be submitted with the applications.

Section II Specifications for OWTS Plans and Reports – This section includes the specific details that must be contained in reports and plans and how this information is evaluated by the Environmental Health reviewers.

Section III OWTS Management Program - This section provides information on the operating permit program and registered practitioners program for OWTS.

Section IV Policies and Procedures – This section contains the various policies and procedures used by the City's Environmental Health Program to provide interpretation and clarification of municipal codes.

Section 2: Environmental Conditions, OWTS Usage and Water Quality Management

This section provides background information on environmental conditions, OWTS usage and management approaches adopted for protection of water quality in the city.

2.1 Climate

Average annual rainfall in the Malibu area varies across the City, generally in the range of about 16 to 22 inches. Nearly all of the rainfall occurs between November and April. The City experiences warm and dry summers and has a warm summer Mediterranean climate. Average monthly temperatures do not exceed 72 degrees F. The City is also subject to seasonal hot and dry "Santa Ana Winds", onshore winds that often contribute to wildfires in the area. The topography in the City is generally characterized by steep hillslopes with incised canyons and creeks that drain to the Pacific Ocean. Steep rocky bluffs are common along the coastline with sandy beaches located below and between promontories.

2.2 Surface Water Hydrology

California is divided into 10 hydrologic regions by the California Department of Conservation. A hydrologic region is the area drained by a river system or a segment of a river system, a closed basin, or a group of streams forming a coastal drainage area. The City of Malibu is located in the South Coast Hydrologic Region, which extends from Ventura County to the border with Mexico.

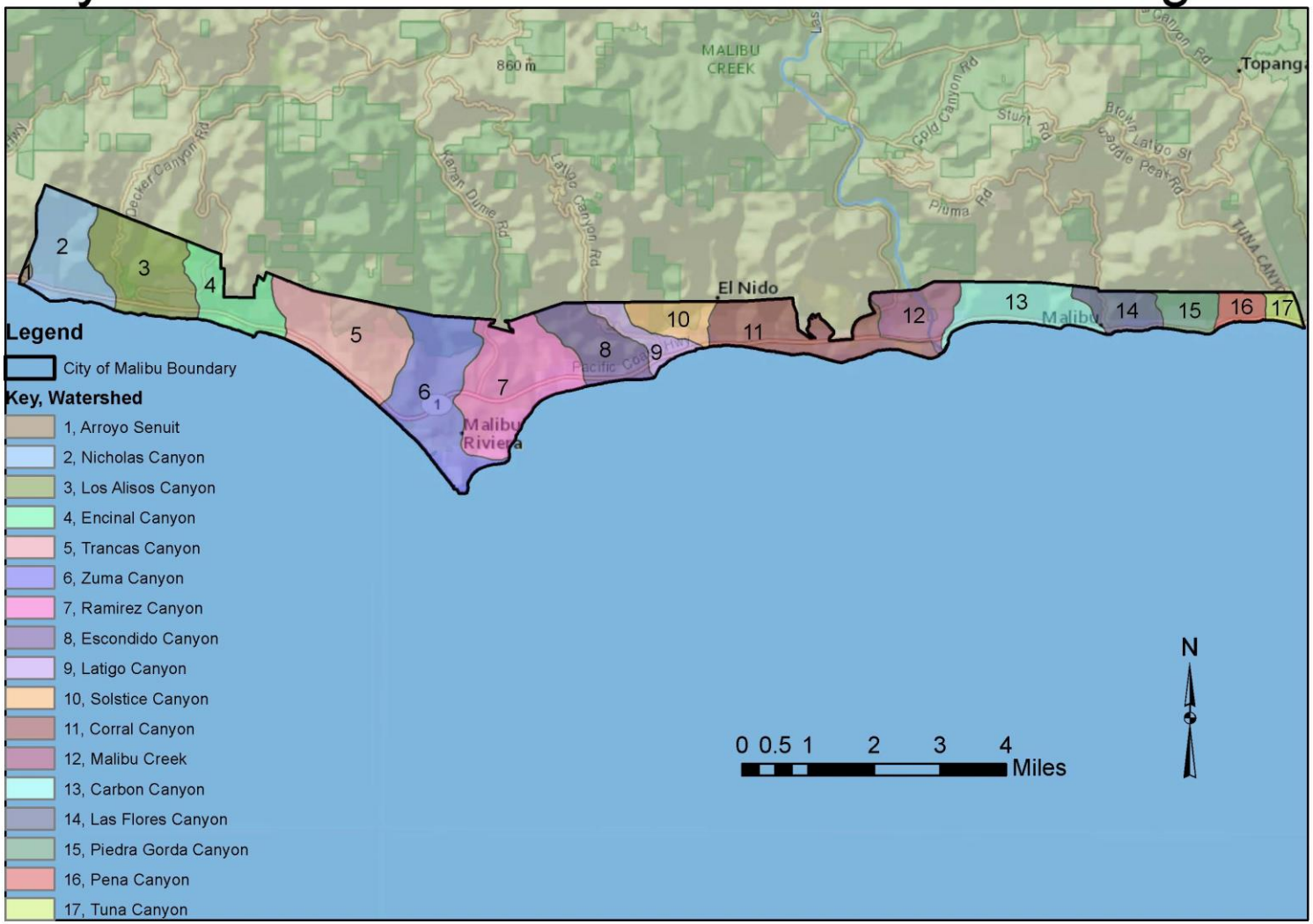
The South Coast Hydrologic Region is managed under the Los Angeles Regional Water Quality Control Board- Region 4. The Regional Water Board has subdivided the region into 5 Hydrologic Units. The city is located in the Malibu Hydrologic Unit.

The County of Los Angeles also subdivides the County into six major watersheds. A watershed is the area of land where all of the water that is under it or drains off of it transmits to a common place. The city is located in the Malibu Creek watershed. The Malibu Creek watershed includes a number of creeks and streams which flow directly into Santa Monica Bay and the Pacific Ocean along the Malibu coastal area. These creeks and streams originate in the Santa Monica Mountains or in the hills adjacent to the coast line.

Utilizing watershed boundaries established by the California Department of Water Resources (DWR), seventeen (17) hydrologic areas were delineated and labeled as shown in **Figure 2-1**. The watersheds as shown on the map include from west to east, Arroyo Sequit, Nicholas Canyon, Los Alisos Canyon, Encinal Canyon, Trancas Canyon, Zuma Canyon, Ramirez Canyon, Escondido Canyon, Latigo Canyon, Solstice Canyon, Corral Canyon, Malibu Creek, Carbon Canyon, Las Flores Canyon, Piedra Gorda Canyon, Pena Canyon, and Tuna Canyon.

City of Malibu Watersheds

Fig. 2-1



2.3 Groundwater

Groundwater resources in Malibu are scarce. The only defined groundwater basin is the Malibu Valley Groundwater Basin (Department of Water Resources Basin No. 4-22) which coincides with the Civic Center area of the City. The Malibu Valley Groundwater Basin is approximately 613 acres in size, located along the Santa Monica Bay Coastline. The groundwater basin is bounded on the south by the Pacific Ocean and on the north, east, and west by non water-bearing Tertiary age rocks of the Santa Monica Mountains. (DWR Bulletin #118, Basin No. 4-22).

Groundwater in the basin occurs primarily in Holocene alluvial deposits including clays, silts, sands and gravels. Alluvial thickness is estimated at approximately 90 feet at the upper end of the basin to 140 feet at the lower end. The Malibu Valley Groundwater Basin contains, in general, four hydrostratigraphic units including shallow alluvium, a low permeability zone consisting of fine grained clay and silt deposits, the Civic Center Gravels, and underlying bedrock of Tertiary sedimentary rock.

Recharge of the basin occurs from several sources including: (1) the infiltration of precipitation that falls onto pervious surfaces; (2) runoff in Malibu Creek flows through the basin and water from the creek infiltrates into the alluvium in the upper portions of the creek; (3) percolation from OWTS located within the shallow alluvium and in shallow soils in upland areas; and (4) excess irrigation which infiltrates into and through the shallow surface soil deposits.

Groundwater quality in the basin has primarily been studied in the shallow alluvium and mostly for nitrogen, nitrates and bacteria influences from development. Shallow groundwater in the basin along the coastline in the Malibu Lagoon area shows elevated sodium and chloride concentrations related to tidal influences and previous overdrafting.

The Malibu Valley Groundwater Basin historically served as a source of water supply for the area, but is no longer used. All water service in the basin area of Malibu is now provided by Waterworks District 29 (WWD 29), supplied by the Metropolitan Water District of Southern California *(wholesaler*) from various sources, including the Colorado River, State Water Project, and the Owens Valley Aqueduct. The Malibu Valley Groundwater Basin is currently listed as a "potential" groundwater source by the State.

On the west side of the Civic Center area there is a small adjacent groundwater basin in the area known as Winter Canyon. Beyond that there are other smaller alluvial groundwater basins aligned with the lower reaches of some of the stream canyons near their confluence with the ocean. Little is known about the extent and conditions of these groundwater areas. In the upland areas groundwater occurrence is sporadic.

A few domestic water wells are currently used to supply water to properties that are unable to utilize water from WWD 29. These properties tend to be larger lots in the outlying areas of the city. The wells are permitted through the Los Angeles County Environmental Health office and the OWTS are subject to setback requirements contained in Chapter 15.42 of the MMC.

2.4 Geology

The Geology of the City of Malibu is characterized by the intersection of Coastal Processes and surficial geologic processes associated with Santa Monica Bay, Beaches and Sea Cliffs and the Santa Monica Mountains located north of the coast. The Santa Monica Mountains are part of the east-west trending Transverse Ranges. The Geology of Malibu is divided by the east-west striking Malibu Coast fault, with dominantly bedrock units to the north and a combination of bedrock and quaternary sedimentary deposits to the south.

The bedrock of the Santa Monica Mountains consists of a sequence of folded and faulted units. The bedrock formations exposed in the Santa Monica Mountains north of the Malibu Coast fault consist of two main sequences. The lower sequence consists of basement rocks of middle Mesozoic age, including slates, schists, and granitic rocks which are overlain by marine sediments consisting of late Cretaceous and early Tertiary age sandstone and siltstone formations. The upper sequence is a varied group of sedimentary and volcanic formations of middle Tertiary (Oligocene and Miocene) age that make up part of the south-central and western Santa Monica Mountains. The sequence includes the Sespe Formation, Vaqueros Formation, and Topanga Formation, the Conejo Volcanics (volcanic rocks that were deposited in the Middle Miocene, the same time period as the Vaqueros and Topanga Formations and are locally in contact with those units), the Monterey Formation, and the Trancas Formation.

South of the Malibu Coast fault, the geology consists of a variety of units including bedrock and surficial units. The bedrock formations consist of Trancas Formation siltstone, sandstone and claystone (found at Trancas) and Monterey Formation shales (found at Point Dume). The Trancas and Point Dume areas also have associated Pleistocene terrace deposits or Quaternary alluvium, beach, or estuarine deposits. Surficial geologic units include colluvial deposits, alluvial deposits, estuarine deposits, landslide deposits, and terrace deposits. These range in age from very recent (historic) to early Quaternary (Pleistocene), and may be locally covered by artificial fill. All of the natural units were deposited by either water (streams, debris flows, long shore currents, and high tidal surges), gravity (slow creep or rapid slippage), or by in-place weathering (soil).

The Malibu Coast fault is the only fault within the City of Malibu that is zoned as an active earthquake fault by the State of California. A number of other inactive faults have been mapped in the hills on the north side of the City.

2.5 Soils, Landforms and OWTS

The Malibu area can be divided into a number of distinctly different landforms, or geologic units, each of which has differing physical characteristics, capabilities, and limitations with respect to onsite wastewater disposal. These landforms or geologic units reflect the complex geologic history of the area, and each landform or unit has a different assemblage of soils or soil types associated with it (see **Figure 2-2**). The landforms or geologic units which would be encountered along an idealized cross-section, from the beach to the uplands, include the following:

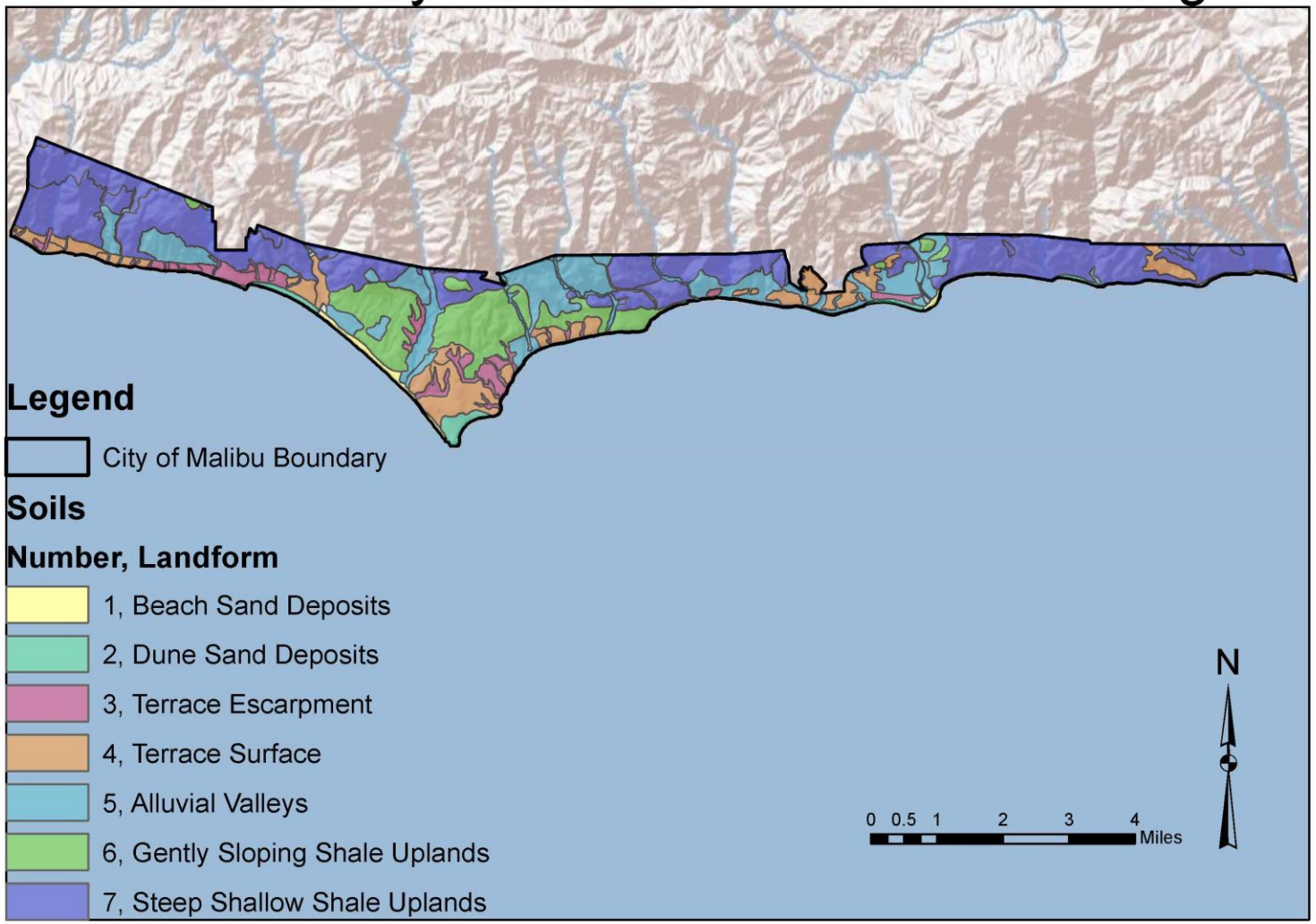
- beach sand deposits;
- dune sand deposits;

- terrace escarpment;
- terrace surface;
- alluvial bottom lands;
- gently sloping shale uplands;
- steep shallow shale uplands.

It should be understood that the characteristics of these landform units will vary somewhat from place to place, but it still is helpful from a planning viewpoint to be able to broadly characterize these units in terms of their capabilities, constraints, and limitations, and to further provide an overview of a geographic area by describing and summarizing the landform units.

Detailed Soils by Landform

Fig 2-2



Beach Sand Deposits

Beach sand deposits consist of the generally well sorted, medium grained sands that are deposited at the water's edge by wave action. Many of the houses along the Malibu shoreline are at the landward edge of the beach deposits, with at least a part of the house's foundation being on piles. The common practice for these houses is to locate the OWTS in sand deposits protected by a shoreline protection device (seawall) against damage by wave action or winter storms. OWTS in beachfront areas require advanced (supplemental treatment), including disinfection.

Dune Sand Deposits

Dune sand deposits consist of the loose, hummocky wind deposited sands landward from the beaches. The width of the dunes vary greatly in the Malibu area, from as little as 200 feet along the eastern side of the City to several hundred feet in the Broad Beach area in the west. Dune sand deposits have rapid infiltration/percolation rates, but with long lateral run-out areas and flat gradients a high degree of wastewater soils treatment can occur. High water table conditions, shifting or eroding dune sands, and sea level rise present growing long-term concerns for OWTS in beachfront dune sands.

Terrace Escarpment

The Terrace Escarpment landform consists of the steep slopes along the ocean front edge of the Malibu-Dume terrace or platform. The soils are generally thin, loose, locally re-worked or slope transported materials (colluviums) over more consolidated (dense) sandy clays and clayey sands of the older terrace deposits. In some areas small landslide deposits and soil slips occur along the terrace escarpment. Although only a few structures are located on the less steep areas of the terrace escarpments, their placement and design should take into consideration potential for lateral migration of wastewater and potential breakout of seepage on the slopes below. This analysis is conducted during OWTS project reviews which includes a geotechnical review of the specific site conditions.

Terrace Surface

Much of the elevated, flat lying surface along the Pacific Coast Highway consists of an ancient wave cut marine platform. Marine terrace deposits overlie this platform, and in some areas older wind deposited sands and alluvium washed from the local hills blanket the marine deposits. A number of different soil types are associated with these deposits, including the Lockwood, Rincon, Huerhuero, and Ysidora soils. The soils differ primarily in the texture of the upper 3 to 4 feet; some have clay loams subsoils, some have clayey subsoils and some have hardpan. However, the soils are generally not dissimilar at depths greater than 4 feet and generally have permeable loamy substrata. Although there is no evidence of a high groundwater table within the terrace deposits, areas of hardpan soils may perch infiltrating rainwater during winter months. Areas of terrace deposits, pose slight to moderate constraints for OWTS, but individual soil differences must be considered in system design.

Alluvial Valleys

Stream land alluvial deposits occur in small canyon and valley bottoms throughout the Malibu area, many of which are largely undeveloped because of potential flooding. The largest developed areas on alluvial soils are in the Malibu Civic Center area (to be addressed with the CCWTF Project), and the Busch Drive – Bonsall Drive area. Alluvial areas near the mouths of oceanfront stream canyons tend to have high groundwater tables; however, this does not appear to be the case in the Busch Drive – Bonsall Drive area. Adherence to horizontal setback requirements from watercourses must be considered in alluvial valley areas. Generally, the deep, well drained loamy alluvial soils of the Elder and Yolo series that occur in the valley bottoms pose few constraints for OWTS siting.

Gently Sloping Shale Uplands

Soils of the Cositas, Diablo, and Cibo series occur on the soft, moderately weathered and fractured sandstones and clay-shales of the Tertiary formations of the Malibu hills. These units commonly weather to form gently rolling hills, small ridges, and upland benches. The soils generally have clay loam or clayey textures overlying weathered bedrock at depths commonly between two and four feet. Depending on soil texture, percolation rates may be moderately slow to very slow. Historically, the common practice has been to install deep seepage pits in the weathered and fractured rock in these areas. A concern can arise in lightly weathered-highly fractured zones due to limited biological activity at depth, and the potential for interconnected rock fractures to provide a conduit of for migration and break-out of poorly treated wastewater effluent. Incorporation of supplemental treatment, greater vertical and horizontal setbacks to stream channels and steep slopes can mitigate this concern.

Steep, Shallow Shale Uplands

Generally shallow (less than 2- to 3-foot deep) soils occur on steep upland slopes in the Malibu area. These include soils of the Gaviota, Gilroy, Millsholm, and Los Osos series. These areas provide generally poor and sometimes severely constrained sites for OWTS because the limited soil depth. The availability and use of subsurface drip dispersal methods (preceded by supplemental treatment) has provided a viable option in these shallow areas on steeper slopes. The potential for lateral migration and down slope break-out or surfacing effluent must be examined and addressed in the siting and design of these OWTS. Additionally, as slopes steepen, the potential for slope de-stabilization by OWTS construction and discharges is an important aspect of the project feasibility review.

2.6 OWTS Inventory and Land Uses

In 2001, the City implemented a data management system for all OWTS within city limits developed by Stone Environmental, Inc. and termed “Integrated Wastewater Management

Information System" (IWIMS). In support of the development of this LAMP, IWIMS data were extracted and merged with GIS to create a series of maps and an inventory of OWTS usage in Malibu for each of the coastal watersheds that comprise the City. The maps are provided in **Appendix B** along with some of the key information developed from this inventory and analysis. This information provides an overview and comparison of the amount and distribution of OWTS inventory and approximate development densities in the subwatersheds within city limits. This information will be used in the development of the water quality assessment plan that will be carried out in the course of implementing the Malibu LAMP. These data will also be used in conjunction with water quality monitoring information from other existing data collection programs (see Section 6), and for consideration and design of any additional monitoring activities planned by the City to fulfill obligations under this LAMP.

2.7 Water Quality Management Measures

The following summarizes how key site suitability, land use and development factors have been addressed in the OWTS requirements of Malibu's LAMP for protection of water quality. This summary is organized to correspond with the elements listed under Section 9.1 of the State OWTS Policy.

2.7.1 Groundwater Quality Protection

1. **Soil Conditions.** Soil suitability is the single most critical aspect of onsite wastewater treatment and dispersal. The soil provides the medium for the absorption and treatment of wastewater discharged through sub-surface dispersal systems. This is accomplished mainly through a combination of physical filtering, biological and chemical processes, and dilution. Protection of underlying groundwater relies on provision of an adequate depth of permeable soil below the dispersal field (zone of aeration) for absorption and treatment to occur. MMC Chapter 15.42 and the OWTS Manual requires detailed site evaluation to document suitable soil characteristics and depth for each OWTS installation consistent with industry practices and appropriate for the conditions and requirements in Malibu (see **Section 3**). The observed depth and percolation characteristics of the soil are used to select the appropriate location, sizing and design of the OWTS to achieve proper effluent dispersal and groundwater protection.

2. **Geologic Factors.** Geology is important to the suitability and performance of OWTS due to its influence on topography and landforms, the type and characteristics of soils that develop at the surface, the occurrence and movement of sub-surface water, and slope stability. Although the greatest development densities in Malibu are in areas closest to the ocean, there are also large numbers of OWTS in the upland regions, where the rock formations may influence the suitability for, and effects of, OWTS. Geologic factors are addressed for new OWTS based on: (a) information from basic site geotechnical evaluations for all installations; and (b) for systems located on steep slopes or near areas of unstable land masses, the completion of a geotechnical study, including assessment of hydrogeologic conditions, water movement and slope stability.

3. **Groundwater Conditions.** Groundwater is not relied upon as a primary source of water supply in Malibu. However, groundwater conditions are of importance for OWTS usage due to the close hydrological connection with coastal streams and ocean waters, and the extensive recreational water uses. Site evaluation practices include requirements for documenting groundwater conditions, which may include wet weather observations. Documentation of groundwater levels, in combination with soil permeability (percolation rate), provide the basis for selection of the appropriate OWTS design and maintenance of an appropriate vertical separation distance between the point of effluent dispersal and the water table for protection against pathogen impacts. Siting and design criteria contained in MMC Chapter 15.42 address groundwater separation requirements as follows:

    - Vertical separation distance of 5 feet for conventional OWTS and 10 feet for seepage pits;

    - Reduced vertical separation distance of 2 to 3 feet, based on inclusion of supplemental treatment including disinfection and/or alternative dispersal designs (e.g., pressure distribution, drip dispersal) found to provide more effective use of the shallow unsaturated soil zones for improved absorption and biodegradation of wastewater constituents, including pathogens.

    - Required use of supplemental treatment (including disinfection) for all beachfront properties.

    Appendix A provides further discussion of the supporting rationale, including literature sources, for the OWTS groundwater separation requirements adopted by Malibu.

4. **Areas with High Usage of Domestic Wells.** Most development in Malibu is served by a public water system. There are few domestic wells located on larger lots in the outlying areas of the city. Consistent with the OWTS Policy, MMC Chapter 15.42 and the OWTS Manual include appropriate horizontal setbacks between OWTS and domestic wells to ensure their protection, when water wells are proposed for development projects.

2.7.2 Surface Water Quality Protection

1. **Minimum watercourse/water body setback requirements.** The primary measure for protection of surface water quality is the establishment of safe horizontal setback buffers between OWTS components (treatment tanks and dispersal fields) and various water and landscape features. The requirements contained in MMC Chapter 15.42 are consistent with current and historical policies and guidelines of the Los Angeles Regional Water Board (Regional Water Board) as well as requirements in the State OWTS Policy. They address setbacks to springs, drainage ditches/swales, watercourses, and reservoirs.

2. **Alternative treatment and dispersal technologies.** MMC Chapters 15.40 and 15.42 include alternative/advanced treatment and dispersal technologies incorporating supplemental treatment that provides flexibility and options for system repairs. This has two positive effects for surface water quality protection: (1) the use of alternative/advanced treatment technologies, producing higher quality effluent, can

compensate for reduced amount of soil absorption area where the repair of a system on an older non-conforming development site encroaches within the normal setback buffer; and (2) alternative dispersal methods and sizing criteria can reduce the amount of encroachment into the setback area by making more portions of the property (e.g., shallow soil areas) potentially feasible for wastewater dispersal.

3. **Erosion control measures.** Depending on site conditions and system design, construction of an OWTS may pose a threat of soil erosion and impacts on downstream receiving waters from excavations for tanks, trenching for pipelines and dispersal trenches, and associated clearing and grading activities. Malibu's OWTS review process is closely coordinated with other City departments including review and approval of grading, drainage and erosion control plans and construction Best Management Practices.

4. **Coastal Engineering.** Flooding and/or wave damage along the shoreline represents one of the most significant threats to buildings and OWTS in Malibu. In accordance with MMC Chapters 15.40 and 15.42, all beachfront property development requires a Wave Uprush Report by a Coastal Engineer to address the necessity of a shoreline protection device (seawall), and the location, design and adequacy of any existing, or proposed shoreline protection device (seawall), meant to protect any existing, or new OWTS from damage by ocean waters, and to protect against discharges or impacts to the ocean waters from the OWTS.

2.7.3 Impaired surface waters (nitrogen or pathogens)

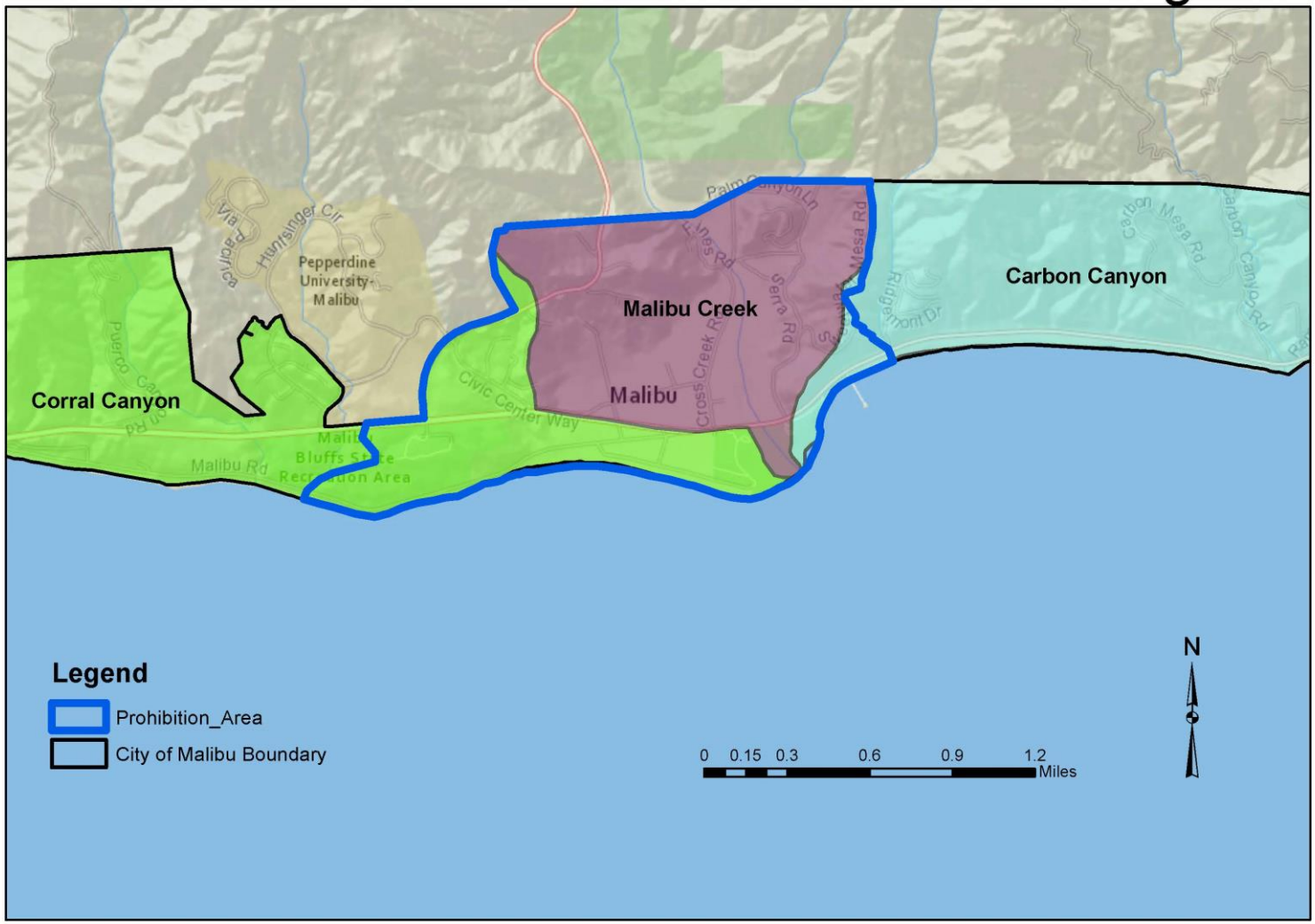
The following surface waters in the Malibu area have been designated as impaired for nitrogen and/or pathogens by the Los Angeles Regional Water Board:

- Malibu Creek Watershed (nutrients, bacteria)
- Malibu Creek and Lagoon (nutrients, invertebrates)
- Santa Monica Bay Beaches (bacteria)

In all cases, Total Maximum Daily Load (TMDL) studies have been completed and adopted. In the case of Malibu Creek and Lagoon and Santa Monica Bay, the adopted TMDLs found OWTS not to be a contributory factor to the impairment, and therefore no loadings were assigned to OWTS. With respect to Malibu Creek Watershed, OWTS were determined to be a contributory factor, and loadings were assigned. Further discussion on this topic is provided in Section 4.2 of this document. The affected OWTS in Malibu are all situated within the Malibu Creek watershed in an area subsequently encompassed by the OWTS Prohibition adopted by the Los Angeles Regional Water Board in 2009, Resolution No. R4-2009-007(see **Figure 2-3)**. The OWTS Prohibition area is now scheduled for inclusion into the Malibu CCWTF Project, which has been approved and will replace OWTS with a community wastewater collection, treatment and water recycling/groundwater injection system in a series of implementation phases. Agreement on the part of all OWTS owners to connect to the CCWTF Project by the year 2028, will relieve the owners from the need to implement other changes to their OWTS to comply with Tier 3 pathogen treatment standards in the State OWTS Policy.

Civic Center OWTS Prohibition Area

Fig. 2-3



2.7.4 High Density of OWTS, Parcel Size and Cumulative Impacts

There are properties throughout the city where restrictions on parcel size would preclude an individual from developing their property. To reconcile these concerns, consideration of OWTS density, parcel size and potential cumulative OWTS impact issues (e.g., groundwater mounding, nitrate loading) are addressed in MMC Chapter 15.40. The regulations require the completion of cumulative impact assessments for certain types of projects or locations, including consideration of such factors as the constituent levels (e.g., nitrogen content) in the wastewater, the volume of wastewater flow, the density of OWTS discharges in a given area, and/or the sensitivity and beneficial uses of water resources in the discharge area.

Additionally, the MMC Chapters 15.40 and 15.42 contain provisions requiring the use of alternative/advanced treatment and dispersal technologies to mitigate nitrate loading (e.g., addition of supplemental treatment systems) and hydraulic mounding (e.g., utilizing pressure distribution or drip dispersal designs). The supplemental treatment along with conditions in the Operating Permits (e.g. more frequent inspections and monitoring) would result in an equal level of public health and groundwater protection. Further discussion is contained in **Appendix A, item 5**.

2.7.5 Geographic areas with many older legal non-conforming OWTS installations and setbacks

Older, legal non-conforming OWTS exist in Malibu, but the problem is not as significant as in many areas of California. There is a high property turnover rate in Malibu and substantial building activity which facilitates discovery and upgrading of older legal non-conforming building conditions. Additionally, the City's unique OWTS management program, MMC Chapter 15.44, Operating Permits Program, requires inspection and evaluation of OWTS at the time of property transfer (point of sale) and has proven to be very helpful in bringing about OWTS upgrades where needed.

Measures contained in MMC Chapter 15.42 that significantly aid the city's ability to address problems related to older, legal non-conforming OWTS include the requirement for alternative/advanced treatment and dispersal system designs to provide more effective upgrades and repairs for smaller or constrained lots, soil limitations or other constraints of OWTS.

Section 3: OWTS Siting, Design, Construction and Permitting Requirements

3.1 Siting Criteria

The following summarize minimum siting criteria for OWTS as adopted in MMC Chapter 15.42. Additional information is contained in **Appendix A, Table A-1.**

- **Soil Depth, Groundwater Separation and Percolation Rates.** Minimum soil depth, groundwater separation and percolation rates are summarized in **Table 3-1**. Included for comparison are applicable requirements for (a) conventional OWTS (trenches and beds), (b) alternative/advanced systems (AOWTS) including pressure distribution or drip dispersal methods employing supplemental treatment, and (c) seepage pits with supplemental treatment.

Table 3-1.
Minimum Soil Depth, Groundwater Separation and Percolation Requirements

Type of OWTS	Minimum Soil Depth[1] (feet)	Minimum Groundwater Separation[2] (feet)	Allowable Percolation Rate (mpi)[3]
Conventional Septic Tank & Dispersal Trench/Bed	5	5	5-60
Conventional Trench/Bed w/Supplemental Treatment	3	3	1-60
Pressure Distribution w/Supplemental Treatment	2	2	1-60
Drip Dispersal w/Supplemental Treatment	2	2	1-120
Seepage pit w/Supplemental Treatment	10	10	-[4]

[1] Depth of soil to limiting layer
[2] Vertical distance measured from the bottom of the dispersal system to the water table
[3] mpi = minutes per inch
[4] Expressed in gallons per day (gpd) per requirements detailed in City of Malibu "Seepage Pit Percolation Testing Policy"

- **Ground Slope.** Maximum ground slope requirements:
  - 30% for conventional gravity trenches;
  - 45% for pressure distribution, drip dispersal or seepage pits;
  - Any dispersal field on 30 to 45% slope requires a geotechnical report which must assess critical factors of soil depth, restrictive horizons, soil permeability, application rates and dispersal methods;

- Any dispersal system on slope greater than 10% must be evaluated to assess possible impacts of lateral migration of effluent.

- **Horizontal Setbacks.** Minimum required horizontal setback distances between OWTS components and wells, public water supply intakes, watercourses, and other site features are listed in Chapter 15.42 of the MMC. Setbacks are in compliance with criteria contained in the CPC as well as additional requirements specified in the State OWTS Policy.

- **Areas of Flooding.** OWTS systems must be located outside of flood hazard areas. Exception: For existing lots of record where a suitable site outside of flood hazard areas is not available, the OWTS may be permitted to be located in flood hazard areas where appropriate measures are incorporated to minimize the potential of infiltration of floodwaters into the system and discharges from the system into the floodwater.

- **OWTS Located on Property Served.** OWTS must be located on the same property as the building(s) being served. Exception: An exception may be granted by the City for existing legal lots, where the OWTS may be located on an adjoining property within a non-revocable permanent easement.

3.2 Site Evaluation Requirements for OWTS

- For all locations where an OWTS is proposed to be installed, site evaluations must be conducted prior to permit approval to verify conformance with applicable soils, groundwater, horizontal setbacks, ground slope and other requirements as prescribed in MMC Chapter 15.42. This generally requires more than one professional discipline to complete the following primary elements: (1) soils and percolation testing; (2) a supporting geology/soils report; and (3) OWTS design.

- Site evaluation methods include soil profiles, percolation tests and other exploratory tests, as necessary, to verify adequate depth and permeability of soil, and vertical separation between dispersal field and groundwater for both primary and reserve dispersal areas.

- Testing must be conducted in accordance with standards and guidelines provided in MMC Chapter 15.42 and Section II and IV of the OWTS Manual. All practitioners must be registered with the city per MMC Chapter 15.44.

    - Soils analysis must be conducted by a California Registered Geotechnical Engineer or a California Registered Civil Engineer in the environmental/geotechnical field and the results expressed in United States Department of Agriculture classification terminology.

- Percolation tests must be conducted by a California Registered Geologist, a California Registered Geotechnical Engineer, a California Registered Civil Engineer, or a California Registered Environmental Health Specialist.

- Supporting geology/soils report must be prepared by a Professional Geologist or Geotechnical Engineer, and must cover field studies and analysis of soils, geologic conditions, groundwater occurrence and movement, slope stability, cumulative impacts and other conditions pertinent to the siting, design, construction and operation of the proposed OWTS.

- Where the City has been provided adequate evidence to demonstrate suitable soil conditions and groundwater separation, testing requirements may be waived.

- For new divisions of land, soil profiles, percolation tests and groundwater determinations are required on every parcel unless the City determines, on a case-by-case basis, that such testing is not necessary due to the availability of sufficient information to demonstrate conformance with applicable siting criteria for all proposed OWTS locations. Additional information is contained in **Appendix A-5.**

- The permit application for a new or replacement OWTS installation requires an OWTS Design Report prepared by a qualified professional along with supporting results and analysis from soils, percolation testing and geology studies.

3.3 Wastewater Flows for OWTS Design

Wastewater flow requirements for OWTS design are covered in MMC Chapter 15.42 and Section II of the OWTS Manual and include the following provisions:

- **Peak daily flow.** All OWTS must be sized for peak daily flow

- **Residential OWTS.** Peak daily flow is based on number of bedrooms and plumbing drainage fixture unit counts consistent with MMC Chapter 15.42

- **Multiple Dwelling Units or Apartments.** Peak daily flow is based on the number of dwelling units and plumbing drainage fixture unit counts consistent with MMC Chapter 15.42

- **Non-residential OWTS.** Peak daily flow is based on consideration of projected activities, occupancy, and facilities and estimating factors (unit flows) and consistent with MMC Chapter 15.42. Alternative flows may be based on other appropriate literature references (e.g., U.S. EPA Manuals) or documented wastewater flow for a comparable facility, as deemed acceptable by the City

- **Flow Equalization.** Flow equalization may be used for non-residential and mixed use facilities that experience significant, regular and predictable fluctuations in wastewater flows, such as churches, schools, and special event venues. Flow equalization is the process of controlling the rate of wastewater flow through an OWTS by providing surge capacity storage and timed-dosing of the incoming flow. It allows peak surges (e.g., weekend usage) to be spread out over several subsequent days to aid in overall OWTS performance. Where used, the following are required:
    - septic tank capacity must be sized based on the peak daily flow for the facility;
    - design flow used for supplemental treatment unit(s) and/or the dispersal field may be based on the equalized ("average") flow rate for the facility;
    - supporting engineering calculations and operational specifications must be provided; and
    - operating permit conditions for the OWTS may include provisions for monitoring and documenting compliance with the flow equalization design parameters.

3.4 Design and Construction Requirements

The following summarizes key design and construction requirements for OWTS which are detailed in MMC Chapter 15.42 and Section II of the OWTS Manual. Graywater systems are not part of the OWTS program and are permitted under separate regulations in MMC Chapter 15, Plumbing, under the jurisdiction of the City's Building Department. Graywater systems cannot displace any capacity for an OWTS.

3.4.1 Treatment Components

Septic Tank Requirements. Requirements for septic tanks conform to specifications in the MMC Chapter 15.42 as well as additional requirements contained in the State OWTS Policy, covering the following:

- Capacity
- Plans
- Structural design
- Prefabricated tanks
- Construction materials
- Compartments, partitions and baffles
- Access manholes and sidewalls
- Pipe opening sizes, extension and venting
- Effluent Filter
- Water-tightness Testing

Supplemental Treatment Systems. Alternative or advanced OWTS (AOWTS) providing additional advanced treatment such as secondary/tertiary treatment and disinfection over that which would be provided by a conventional OWTS. Requirements for supplemental treatment systems conform to requirements contained in the State OWTS Policy, are consistent with methods and standards described in U.S. EPA publications and other professional literature, and employed in many jurisdictions in California over the past 15 to 20 years, including Malibu. Design requirements are contained in MMC Chapter 15.40, 15.42 and OWTS Manual Section II and cover the following:

- General - provisions, objectives, and definition of terms;
- Applications – approved and/or required conditions of use;
- Siting criteria – for treatment unit and associated dispersal component;
- Performance requirements – general, tanks and component parts, and effluent quality;
- Design and sizing – wastewater flow, third-party testing standards (e.g., NSF), tanks, controls, emergency storage provisions, manufacturer requirements;
- Engineering plans and installation – engineering plans, installer requirements, maintenance contract, installation inspection;
- Operation and management requirements.

3.4.2 Dispersal Components

Conventional Disposal Trenches and Beds. Requirements for conventional disposal trenches and beds conform to specifications in MMC Chapter 15.42 as well as additional requirements contained in the State OWTS Policy, covering the following:

- General – requires design to be based on soils analysis and/or percolation testing;
- Sizing – effective absorption area and absorption capacity for trenches, leaching beds and chamber designs.
- Construction and materials – addresses depth, length, width, spacing, cover, grade, pipe and filter material, distribution boxes and laterals, connections and joints, surface covering and dosing siphons;
- Inspection - minimum requirements for inspection and testing of installation.

Seepage Pits. New and replacement seepage pits require the addition of supplemental treatment. Requirements for seepage pits are consistent with requirements contained in MMC Chapter 15.42 and cover the following:

- Sizing and design – effective absorption area, capacity and wastewater treatment
- Multiple Installations – level and sloping sites
- Construction
- Spacing
- Lining
- Sidewall
- Cover
- Inlet Fitting

Pressure Distribution Trench Systems. Systems that utilize pressure distribution technology require the addition of supplemental treatment. Requirements for pressure distribution trench systems are consistent with methods and standards described in U.S. EPA publications and other professional literature, and employed commonly over the past 30+ years in many jurisdictions in California and throughout much of the US. Design requirements are contained in MMC Chapter 15.42 and OWTS Manual Section II and cover the following:

- General – description of technology, principles and objectives;
- Applications – approved and/or required conditions of use;
- Siting criteria – highlighted differences from conventional disposal trench requirements;
- Sizing and design – wastewater treatment, trench sizing, pressure-dosing, pump(s) and piping, and hydraulics;
- Construction and Materials – dispersal trench, pressure distribution components, control systems;
- Engineering plans and installation – reference guidelines, engineering plans, construction inspection and hydraulic testing;
- Operation and management requirements.

Subsurface Drip Dispersal Systems. Systems that utilize subsurface drip dispersal technology require the addition of supplemental treatment. Requirements for subsurface drip dispersal systems are consistent with methods and standards described in U.S. EPA publications and other professional literature, and employed over the past 10 to 15+ years in many jurisdictions in California and throughout much of the US. Design requirements are contained in MMC Chapter 15.42 and OWTS Manual and cover the following:

- General – description of technology, principles and objectives;
- Applications – approved and/or required conditions of use;
- Siting criteria - highlighted differences from conventional disposal trench requirements;
- Sizing and design - wastewater treatment, dripfield sizing, wastewater application rates, dripfield zones and configuration, hydraulic design, pump(s) and piping;
- Construction and materials – dripline materials, layout, depth, and control systems;
- Engineering plans and installation – reference guidelines, engineering plans, construction inspection and hydraulic testing:
- Operation and management requirements.

3.5 Project Submittal Procedures and Guidelines

3.5.1 General

Nearly all building projects in the city are potentially subject to Environmental Health review at some level. Most of the existing developed properties in Malibu are served by OWTS. Environmental Health reviews are performed to ensure that proposed uses of new or existing OWTS are compliant with applicable regulatory requirements.

Simple projects that do not impinge on a property's existing OWTS often can be reviewed expeditiously. Projects where there is a known or significant potential for the building or development activity to affect the existing OWTS (either through encroachment on regulated setback distances or increased loading from sanitary drainage), or where there is no existing OWTS, are subject to more extensive review to determine conformance with the Statewide OWTS Policy, MMC and OWTS Manual.

The City submittal guidelines are contained in various sections of the OWTS Manual for major categories of building and development projects and special study areas (beachfront) are described in the following sections.

3.5.2 New Buildings/Additions/Remodels/Auxiliary Structures

Essential submittal elements for the City's review of these projects are: (a) an OWTS plot plan; (b) a fixture unit worksheet; and (c) project drawings including architectural plans, grading plans, and (in certain cases) structural plans. In most cases the City performs its review in two stages: conformance review and plan check. Conformance review is performed to evaluate project feasibility for the Planning Department, and provide a list of conditions for ESD approval. Plan check is the final review stage for the issuance of building permits, where the project construction drawings are inspected to ascertain satisfaction of the requisite conditions of approval.

3.5.3 Reductions in Regulated Setback Distances

Reduction in the horizontal setbacks specified in MMC Chapter 15.42 and the OWTS Manual between OWTS and structures is permissible where supported by a letter from the project Structural Engineer and a letter from the project Soils Engineer certifying that the proposed reduction in setbacks will not adversely affect the structural integrity of the OWTS nor the structural integrity of the structures for which the setback is reduced. In the case of a building, a supporting letter must also be provided by the Project Architect, who must certify that the proposed reduction in setbacks will not produce a moisture intrusion problem for the proposed building(s).

3.5.4 New OWTS

The City performs a two-stage review of all projects involving a new OWTS (e.g., a new single family residence, commercial building and/or OWTS expansion). Conformance Review is the first-stage review and is completed when the applicant demonstrates the feasibility of the project in support of Planning Division requirements. The second ESD review occurs during Building Plan Check stage. When the Building Plan Check review is completed successfully, ESD issues Final Approval, which is required for all OWTS plans, building plans, and grading plans.

3.5.5 Subdivisions and Lot-line Adjustments

Subdivisions and lot-line adjustments require demonstration of the feasibility of using OWTS as the method of sewage disposal on each proposed lot. A designated area for the OWTS must be established using the same site evaluation procedures as are required for new OWTS (percolation/infiltration tests, soil classification, OWTS design/layout, and supporting geology). For lot line adjustments, the new property boundaries must preserve the integrity of the OWTS for

each lot, including designated expansion/replacement areas for effluent dispersal. Submittal requirements for subdivisions and lot line adjustments include an OWTS plot plan showing each lot, the existing and proposed lot lines, the existing and proposed OWTS with expansion/replacement areas designated for effluent dispersal.

3.5.6 Beachfront Property

Beachfront development that includes a new OWTS or expansion of existing OWTS is required to provide advanced treatment. In addition, a Wave Uprush Report by a Coastal Engineer must be prepared addressing the necessity of a shoreline protection device, and the location and design of any existing, or proposed shoreline protection device, meant to protect any existing, or new OWTS. The report must describe the design beach profile and beach scour line subject to significant storm events. It must include a cross-section drawn to scale with a precise datum reference showing the design beach profile and the proposed location for a structural protection device. The beach scour line must be clearly labeled to facilitate development of an integrated cross-section drawing showing geologic units and the anticipated path of effluent (fill, bedrock, beach sand). A copy of the report must be submitted to both ESD and to the City Coastal Engineer. The City Coastal Engineer must sign and stamp all beachfront OWTS plans prior to ESD final approval. Sea level rise and impacts from climate change are addressed by the City Coastal Engineer in conformance with the Local Coastal Program or other future studies, such as vulnerability assessment, as determined by the City.

3.6 Management and Monitoring

MMC Chapter 15.44 (formerly Chapter 15.14 enacted in 2001), establishes requirements to assure appropriate operation and maintenance of OWTS to protect public health and safety, the environment and water quality, and to allow OWTS to continue to be a part of the long-term sanitation solution for the City. Chapter 15.44, Operating Permits, requires owners of property served by OWTS to be responsible for:

- Obtaining all required inspections and permits;
- Ensuring continued maintenance and proper functioning of the OWTS; and
- Ensuring any necessary repairs, modifications or upgrades to the OWTS are timely completed and made fully operational.

Under Chapter 15.44, the key mechanism to ensure ongoing inspection and monitoring is the issuance of a renewable operating permit for all OWTS in the City. The operating permit program is consistent with U.S. EPA Management Level 3. Operating permits are issued for all new development utilizing OWTS, and required for all existing commercial facilities and multi-residential OWTS. For all other existing OWTS, the issuance of an operating permit is triggered as follows:

- At the time of repair, modification or replacement of an existing OWTS (e.g., for abatement or system upgrade);

- At the time of modifications or expansion to an existing structure or uses of a property served by an OWTS that involves additional plumbing fixtures or potential increases in the load to the existing OWTS; and
- At the time of property transfer (point-of-sale OWTS inspections).

Operating permits specify performance standards and expected operation and maintenance practices, according to MMC chapter 15.44 and OWTS inspection guidelines provided by the City. The permit duration ranges from two to five years, depending on the nature of the facility (commercial or residential) and type of OWTS (conventional or alternative/advanced) as indicated below:

- Commercial and Multi-family OWTS are valid for two years
- Residential Advanced OWTS are valid for three years
- Residential Conventional OWTS are valid for five years

For advanced OWTS, a City registered maintenance provider is required to provide regular inspection and maintenance of the OWTS in accordance with the terms of the operating permit and any manufacturer's recommendations. More frequent inspection and sampling may be required for advanced OWTS as part of a condition for variance, alternative OWTS, or recommendation of the manufacturer, OWTS designer or maintenance provider.

Inspections required prior to the issuance of an operating permit (e.g., point-of-sale inspections) must be conducted by a "Registered Onsite Wastewater Treatment System Inspector", as provided in MMC Chapter 5.38. Issuance or renewal of an operating permit requires completion of any outstanding repair work, which must be done under appropriate permitting from the City, as applicable. Ongoing operation, monitoring, maintenance and reporting under the terms of the operating permits are required to be conducted by "Registered Operation, Monitoring and Maintenance (OM&M) Specialists" as provided in MMC Chapter 5.38.

The provisions for inspection, monitoring, maintenance and repair of OWTS are summarized in **Table 3-2** below.

Table 3-2. Summary of City of Malibu Provisions for OWTS Inspection, Monitoring, Maintenance and Repairs

Activity	Inspections	Monitoring	Maintenance & Repairs
Building Additions & Remodels	OWTS performance inspection required at time of application for building addition or remodel; Conducted by City Registered Inspector per evaluation procedures specified in OWTS Manual.	Construction inspections to determine conformance with MMC and permits. Enrollment into the Operating Permit Program	Maintenance and/or repair/system upgrade work may be required as a result of inspection findings. Completion of work required before operating permit issued.
Operating Permits	Regular inspections of OWTS according to terms of operating permit by a City Registered Practitioner.	Monitoring of OWTS under terms of operating permit varies according to type/size of OWTS; may include flows, water levels, pump-out volumes, and water quality sampling, as applicable. City Registered Maintenance provider required for AOWTS.	Maintenance and/or repair/system upgrade work may be required based on observations during routine inspections or as part of normal system servicing. Completion of required work prior to operating permit renewal or sooner depending on nature and urgency of repair.
Point of Sale Inspections	Inspection of OWTS conducted by City Registered Inspector in conjunction with sale of a property. Inspection work in accordance with evaluation procedures specified in OWTS Manual.	Enrollment into Operating Permit Program. City Registered Maintenance provider required for AOWTS.	Maintenance and/or repair/system upgrade work may be recommended or required as a result of inspection findings.
Complaint Investigations (Abatement)	Inspections of OWTS by City staff in response to complaints or observed violation(s). Additional follow-up inspection by City Registered Inspector may be required.	May involve water sampling, dye testing or other monitoring. Enrollment into Operating Permit Program. City Registered Maintenance Provider required for AOWTS.	Maintenance and/or repair work/system upgrade may be required as a result of inspection findings. Completion of work required before reissuance of clearance by the City and re-issuance of operating permit.

3.7 Sea Level Rise and Climate Change

The potential effect on OWTS from sea level rise and climate change is and will continue to be an on-going issue for a large number of beachfront properties in Malibu. Following is a summary of the various policies and practices in place or planned as part of LAMP implementation addressing this issue. The combination of measures provides an adaptive management approach consistent with guidance provided in the "*State of California's Sea-Level Rise Guidance*", *2018 Update*.

- **Coastal Engineering Report.** A coastal engineering report is required in connection with all new and upgraded OWTS on beachfront parcels in Malibu to: (a) assess the needs and design measures for shoreline protection devices and other protection measures for OWTS installations; and (b) confirm the appropriate system design features. Such reports are conducted in accordance with detailed guidelines and procedures provided by the City, which were most recently updated in January 2014. These reports entail research and analysis of existing and projected tidal elevations as well as evaluation of various coastal hazards including sea level rise, wave up-rush, storm surge, coastal flooding, and tsunamis.

- **Operating Permits and OWTS Monitoring.** Monitoring of OWTS is required in accordance with operating permits issued for all new and upgraded OWTS, all commercial and multi-family facilities, and other OWTS issued at the time of property transfer, system repair, or building remodeling projects affecting the OWTS. Monitoring is conducted to assess the functional condition and performance the OWTS, and provide the basis for identifying any needed corrective work or improvements. For beachfront parcels, system inspection and monitoring serves as a means for regular review and assessment seawall protection measures as well as identification of other signs of impact from sea level rise that may warrant other preventative measures.

- **OWTS Design and Mitigation Strategies.** In addition to protecting OWTS installations against damage from wave action and sea level rise, beachfront OWTS must provide an adequate level of safety against impacts to coastal water quality and the shoreline environment. Current standards require secondary treatment followed by disinfection, with the dispersal system design governed by tidal water and groundwater separation requirements as well as space limitations. Additional design measures may be considered in the future as determined by City evaluation or required in response to OWTS Policy amendments, TMDLs or LAMP revisions.

- **Vulnerability Study.** The City of Malibu is presently developing an RFP in consultation with the USC Sea Grant program to address coastal vulnerabilities in Malibu. The Coastal Vulnerability Assessment will address several issues related to climate change and sea level rise including vulnerability assessment of OWTS along the coast. The assessment will identify strategies to protect OWTS from these natural events. The City will instigate future planning policies and permitting requirement for OWTS based on the assessment outcomes.

- **5-Year Review and Updates**. Every five years (or as needed), the City intends on reviewing and updating policies and practices regarding beachfront OWTS parcels in response to findings and developments related to sea level rise and climate change. This may include design standards, coastal engineering report requirements, and operating and monitoring measures. This review and update would typically coincide and/or be reported with the 5-year Water Quality Assessment of OWTS as provided in Section 6 of this LAMP.

Section 4: Special OWTS Management Issues

The following describe the provisions contained in the City of Malibu LAMP corresponding with special OWTS management issues listed in sections 9.2.1 through 9.2.12 of the SWRCB OWTS Policy.

4.1 OWTS Inspection, Monitoring, Maintenance and Repair

MMC Chapter 15.44 (formerly Chapter 15.14 enacted in 2001), establishes requirements to assure appropriate operation and maintenance of OWTS to protect public health and safety, the environment and water quality, and to allow OWTS to continue to be a part of the long-term sanitation solution for the City. Chapter 15.44, Operating Permits, requires owners of property served by OWTS to be responsible for:

- Obtaining all required inspections and permits;
- Ensuring continued maintenance and proper functioning of the OWTS; and
- Ensuring any necessary repairs, modifications or upgrades to the OWTS are timely completed and made fully operational.

Under Chapter 15.44, the key mechanism to ensure ongoing inspection and monitoring is the issuance of a renewable operating permit for all OWTS in the City. Operating permits are issued for all new development utilizing OWTS, and required for all existing commercial facilities and multi-family OWTS. For all other existing OWTS, the issuance of an operating permit is triggered under a variety circumstances as follows:

- At the time of repair, modification or replacement of an existing OWTS (e.g., for abatement or system upgrade);
- At the time of modifications or expansion to an existing structure or uses of a property served by an OWTS that involves additional plumbing fixtures or potential increases in the load to the existing OWTS; and
- At the time of property transfer (point-of-sale OWTS inspections).

Currently, the City has issued operating permits for approximately 2600 OWTS, roughly 43% of the total OWTS in Malibu. On average, an additional 200 to 250 new operating permits are issued every year.

Operating permits specify performance standards and expected operation and maintenance practices, according to MMC Chapter 15.44 and OWTS inspection guidelines. The permit duration ranges from two to five years, depending on the nature of the facility (commercial or residential) and type of OWTS (conventional or alternative/advanced). Inspections required prior to the issuance of an operating permit (e.g., point-of-sale inspections) must be conducted by a "Registered Onsite Wastewater Treatment System Inspector", as provided in MMC Chapter 5.38. Issuance or renewal of an operating permit requires completion of any outstanding repair work, which must be done under appropriate permitting from the City, as applicable. Ongoing operation, monitoring, maintenance and reporting under the terms of the operating permits are required to be

conducted by "Registered Operation, Monitoring and Maintenance (OM&M) Specialists" as provided in Chapter 5.38.

For advanced OWTS, a City Registered Maintenance provider is required to provide regular inspection and maintenance of the OWTS in accordance with the terms of the operating permit and any manufacturer's recommendations. More frequent inspection and sampling may be required for advanced OWTS as part of a condition for variance, alternative OWTS, or recommendation of the manufacturer, OWTS designer or maintenance provider.

The provisions for inspection, monitoring, maintenance, and repair are summarized in **Table 4-1**.

Table 4-1. Summary of City of Malibu Provisions for OWTS Inspection, Monitoring, Maintenance and Repairs

Activity	Inspections	Monitoring	Maintenance & Repairs
Building Additions & Remodels	OWTS performance inspection required at time of application for building addition or remodel; City Registered Inspector required as specified in OWTS Manual.	Construction inspections required to determine conformance with MMC and permits. Enrollment into the Operating Permit Program.	May require maintenance and/or repair/system upgrade work as a result of inspection findings. Completed work required before operating permit issued.
Operating Permits	Regular inspections of OWTS requited according to terms of operating permit by a City Registered Practitioner.	Monitoring under terms of operating permit varies according to type/size; may include flows, water levels, pump-out volumes, and water quality sampling. City Registered Maintenance provider required for AOWTS.	May require maintenance and/or repair/system upgrade based on routine inspections or as part of normal system servicing. Completed work required prior to operating permit renewal or sooner depending on repair.
Point of Sale Inspections	Inspection of OWTS conducted by City Registered Inspector in conjunction with sale of a property. City Registered Inspector required as specified in OWTS Manual.	Enrollment into Operating Permit Program. City Registered Maintenance provider required for AOWTS.	Maintenance and/or repair/system upgrade work may be recommended or required as a result of inspection findings.
Complaint Investigations (Abatement)	Inspections of OWTS by City staff in response to complaints or observed violation(s). May require additional follow-up inspection by City Registered Inspector.	May involve water sampling, dye testing or other monitoring. Enrollment into Operating Permit Program. City Registered Maintenance Provider required for AOWTS.	May require maintenance and/or repair work/system upgrade. Completed work required prior to clearance by the City and operating permit reissuance.

4.2 OWTS Near Impaired Water Bodies

The Statewide OWTS Policy includes special provisions for OWTS located near water bodies impaired for pathogen indicators and/or nutrients (i.e., listed for these pollutants pursuant to Section 303(d) of the Clean Water Act). Currently there are two water bodies with such impairments within city limits. Santa Monica Bay Beaches is listed as impaired for bacteria, and Malibu Creek and Lagoon is listed for both bacteria and nutrients. A summary of existing TMDLs applicable the LAMP is presented in **Table 4-2**.

4.2.1 Protective Measures for OWTS

Beachfront development that includes a new OWTS or expansion of existing OWTS is required to provide advanced treatment. MMC Chapter 15.44, Operating Permits, also establishes requirements to assure appropriate operation and maintenance of OWTS to protect public health and safety, the environment and water quality. Owners of property served by OWTS are responsible for obtaining all required inspections and permits, ensuring continued maintenance and proper functioning of the OWTS to ensure any necessary repairs, modifications or upgrades to the OWTS are completed timely and made fully operational.

4.2.2 Tier 2 Program Coverage for Impaired Areas

All OWTS near impaired water bodies within city limits are addressed under Tier 0, Tier 2, Tier 4, and OWTS prohibition provisions of the Policy. Malibu's Tier 2 program, coupled with the Malibu Civic Center OWTS Prohibition Order No. R4-2009-007, is protective of water quality and meets the requirements of the Policy with respect to impaired water bodies, as detailed below.

For those impaired water bodies that have an adopted TMDL addressing the applicable impairment (prior to the effective date of the Policy), but the TMDL does not assign a load allocation to OWTS, no further action is required unless the TMDL is modified at some point in the future to include actions for OWTS.[1] Santa Monica Bay falls into this category, as no load allocations for OWTS were included in either the wet- or dry-weather bacteria TMDLs. Additionally, it should be noted that Santa Monica Bay is not included on the Attachment 2 list of water bodies in the Statewide OWTS Policy. OWTS that are near impaired water bodies not listed on Attachment 2, and that do not have an assigned load allocation, are not addressed by Tier 3 of the Policy. [see OWTS Policy Tier 3, Impaired Areas, Section 10.0-10.3, p. 34-35]

The Statewide OWTS Policy states that an adopted TMDL implementation plan issued in lieu of Tier 3 requirements. According the Statewide OWTS Policy, OWTS in areas near a water body with a TMDL implementation plan addressing OWTS contributions are included in Tier 3 only when the TMDL implementation plan was adopted after the effective date of the OWTS Policy. [see OWTS Policy Tier 3, Impaired Areas, Section 10.0, p. 34]

[1] Statewide OWTS Policy, Section 10.2 (top of p. 35).

For Santa Monica Bay, wet- and dry-weather bacteria TMD implementation measures addressing OWTS were adopted before the effective date of the Policy, and therefore supplant Tier 3.

- The 2005 wet-weather bacteria TMDL implementation plan was adopted before the effective date of the policy; implementation measures to address OWTS include providing OWTS maintenance guides to OWTS owners and service companies.
- The 2012 reconsideration of the wet- and dry-weather bacteria TMDL a adopted before the effective date of the policy; implementation measures to address OWTS include reference to regulatory provisions adopted pursuant to section 13291 of the Water Code (i.e., enabling legislation for developing the Statewide OWTS Policy).

Modification of Santa Monica Bay Beaches bacteria TMDLs or addition of new TMDLs could establish new actions for OWTS. In this event, updates to the LAMP may be needed to establish a Tier 3 program.

For Malibu Creek and Lagoon, a TMDL to address sedimentation and nutrients was adopted by the U.S. EPA in 2013, and the Regional Water Board adopted an implementation plan for this TMDL in 2016. The TMDL assigned a load allocation to OWTS, and the TMDL implementation plan was adopted after the effective date of the Policy. Therefore, OWTS near (within the TMDL geographical area of) the TMDL for Malibu Creek and Lagoon are subject in Tier 3. The 2016 TMDL implementation plan addresses potential impacts from OWTS through State Water Board and Regional Water Board issuance of Waste Discharge Requirements (WDRs) or waivers of WDRs where local agencies implement delegated permitting authority. The plan also includes provisions for an Advanced Protection Management Program to regulate OWTS under Tier 3.

Within city limits, all existing OWTS within the geographical area of the Malibu Creek and Lagoon TMDL for sedimentation and nutrients are also located within the Malibu Civic Center OWTS Prohibition Area, Order No. R4-2009-007. According to the 2017 Revised Memorandum of Understanding (MOU) between the City and the Regional Water Board, all properties using OWTS within the Malibu Civic Center Area (which encompasses the geographic area of the TMDL) must be connected to a state-of-the-art centralized wastewater treatment facility by September 2018 (Phase I area), November 2024 (Phase II area), and November 2028 (Phase III area, non-excluded properties).[2] The Malibu Civic Center OWTS prohibition and MOU effectively supplants the need for implementing a Tier 3 program in the LAMP.

Malibu Creek also has a bacteria and nutrient TMDL, which was adopted prior to the effective date of the Policy. These TMDLs do not have a specific load allocation for OWTS. The geographical area of this TMDL is now covered by the Malibu Civic Center OWTS Prohibition, Order No. R4-2009-007.

[2] Los Angeles Regional Water Quality Control Board. 2017. Memorandum of Understanding with the City of Malibu and the State Water Resources Control Board Regarding the Malibu Civic Center Area Prohibition. Resolution R17-001.

The 2010 303(d)-listed water bodies and associated pollutants within the City of Malibu are summarized in **Table 4-2** below:

Table 4-2. 2010 303(d)-Listed Water Bodies and Relevant TMDLs

Water Body	Pollutant Class	Pollutant	Notes
Santa Monica Bay Beaches	Pathogens	Coliform Bacteria	Addressed by Bacteria TMDL
Malibu Creek	Pathogens	Coliform Bacteria	Addressed by Bacteria TMDL
	Nutrients	Nutrients (Algae)	Addressed by U.S. EPA Nutrient TMDL and U.S. EPA Benthic TMDL
Malibu Lagoon	Pathogens	Coliform Bacteria	Addressed by Bacteria TMDL
	Nutrients	Eutrophic Conditions	Addressed by Nutrient TMDL and U.S. EPA Benthic TMDL

4.3 Variances and Exceptions

4.3.1 Malibu Municipal Code

Provisions for variances to OWTS requirements are specified in MMC Chapter 15.40, which reads as follows:

> "Variances from the terms of this chapter may be granted by the City Council where the following findings can be made:
>
> - The variance will not harm the environment, public health, safety and welfare of the people of Malibu;
>
> - Due to special conditions or exceptional characteristics of the property, its location or surroundings, a literal enforcement of this chapter would result in an exceptional hardship (as defined in Section 15.20.040 of this chapter); and
>
> - The variance will not have any adverse environmental effect on the use of the adjoining property.
>
> Upon consideration of the factors and purposes of this chapter, the City Council may attach such conditions to the granting of variances as it deems necessary to further the purposes of this chapter."

4.3.2 OWTS Repairs and Corrective Actions

OWTS that require corrective action to address a current or threatened failure condition must be repaired in a manner approved by the City that brings the OWTS into substantial conformance with the MMC and OWTS Manual to the greatest extent practicable. The repair work must be implemented as soon as is reasonably possible and in accordance with any time limits issued by the City. Notification to appropriate agencies such as Los Angeles County Public Health and the Regional Water Board will be followed in accordance with established protocol.

The overall goal with all OWTS repairs is to obtain a practical, timely and effective long-term correction to the failure condition. In determining the level of corrective work required, the City will take into consideration a variety of factors, generally according to the following priorities:

- public health and safety
- soil characteristics and groundwater separation
- setbacks from wells and streams
- ground slope and setback from unstable landforms
- OWTS sizing standards
- other setback criteria, e.g., foundations, pipelines, trees

Interim measures such as installation of a holding tank and pumping/hauling of septage may be required for failed systems that require replacement and submittal of system design plans. Submittal requirements for OWTS repairs may vary case-by-case, and will depend on the nature of the failure condition, the property location and type of occupancy, and the type of corrective work needed. A legally binding compliance agreement with the property owner is recorded on the property to ensure compliance with the interim measures within a specified time period. The agreement binds all future owners of the property to the obligations of the agreement.

4.3.3 Prohibitions

Corresponding to Statewide OWTS Policy Section 9.4, no variances or exceptions are permitted to prohibitions 1 through 9 listed in **Section 5** of this LAMP.

Prohibition 10 in **Section 5,** relating to OWTS in proximity to public water wells and/or water supply intakes, contains specific exception clauses applicable to OWTS repairs and new or replacement OWTS on existing legal lots of record.

4.3.4 Appeals

The MMC sets forth a process for appeals of an OWTS decision of the Environmental Sustainability Director/Building Official to the City Council, which may include issues related to variances or exceptions to code requirements. The City Council may reject, affirm or modify the Environmental Sustainability Director /Building Official's decision.

4.4 Professional, Contractor and Maintenance Provider Qualifications

MMC Chapter 5.38 establishes requirements for registration of professionals and other practitioners that cover work related to design, installation, inspection and maintenance of OWTS within the City. The registration categories include the following:

a. Wastewater Residuals Management (Pumpers).
b. Onsite Wastewater Treatment System Installer (Installer)
c. Onsite Wastewater Treatment System Designer (Designer)
d. Operation, Monitoring and Maintenance Specialist (OM&M)
e. Onsite Wastewater Treatment System Inspector (Inspector)

The standard duration of registration is for two years and requires successful completion of a City approved written and/or field examination particular to the given registration category as well as the additional requirements for each practitioner discipline as summarized in **Table 4-3.**

Table 4-3. Registration Requirements for OWTS Practitioners

Registration Category	Authorized Activities	License or Registration	Experience	Annual OWTS Education Hours
Pumpers	Pump and haul septage	- Vehicle registered with Los Angeles County Public Health and/or Ventura County Environmental Health; - DMV Registration	Not Specified	3
Installers	Install OWTS in accordance with approved plans and permit conditions per City	Licensed Contractor: - Class A, Gen. Engr. or - Specialty C-42	2 years experience installing OWTS	4
Designers	Site evaluations**, preliminary and final design report, drawings and supporting design analysis required for permitting and OWTS installation	California Registered Civil Engineer, Professional Geologist or Registered Environmental Health Specialist	- 2 years OWTS design experience or - Completion of an OWTS training course	8
OM&M Specialists	Perform inspections, maintenance, monitoring and reporting of OWTS in accordance with conditions of City-issued operating permit	Not Specified	2 years experience - Performing OM&M in Malibu, or - Working with OM&M Specialist or - Working as an OWTS Designer	8
Inspectors	Conduct performance evaluation of OWTS for building addition/remodel project, failure investigation, point of sale inspection, or as required by City	California Registered Civil Engineer, Registered Geologist or Registered Environmental Health Specialist or Contractor Class A, or C-42	Attend City course on guidelines for OWTS inspections	4

** Site Evaluations include Percolation/Infiltration Test Report and Geology/Soils Report

- Percolation/Infiltration Test Report, including field studies, testing and evaluation of percolation/infiltration rates for the purposes of siting and design of an OWTS; by California Registered Civil Engineer, Engineering Geologist or Registered Environmental Health Specialist.
- Supporting Geology/Soils Report, including: Conduct field studies and analysis of soils, geologic conditions, groundwater occurrence and movement, slope stability, cumulative impacts and other conditions pertinent to the siting, design, construction and operation of an OWTS; by Professional Geologist or Geotechnical Engineer.

4.5 Education and Outreach

From its inception in 1991, the City has been committed to ensuring appropriate and sustainable use of OWTS to address long-term sanitation and environmental protection needs in the city. Ongoing education and outreach to property owners, OWTS practitioners and the general public is a critical component and consists of a broad range of activities and materials as described below.

- **Direct Public Interaction.** The City maintains public counter hours, as well as availability by phone and email, for direct interaction with the property owners, consultants and others on individual projects and issues related to OWTS.

- **Website - Informational Material.** The City website, www.malibucity.org/owts, includes up-to-date information on OWTS-related matters, such as: (a) regulatory issues; (b) permitting requirements, procedures, fees, forms, etc.; (c) meetings and other announcements; and (d) OWTS user information, guidelines and references. In addition to OWTS policies and procedures, examples of educational and outreach on OWTS and related topics include:

    - **Septic Smart Week.** The City participates in the U.S. EPA's *Septic Smart Week* each September, involving outreach activities to encourage homeowners and communities to care for and maintain their septic systems.

    - **Graywater Reuse.** City guidelines and homeowner information about the benefits and methods for implementing graywater reuse. Graywater regulations are not included in the OWTS program. Regulation of graywater systems are enforced by the City under provisions in the MMC Chapter 15, Plumbing.

    - **Water Conservation and Landscaping.** This includes City regulations, guidelines and FAQs promoting water conservation and sustainable landscaping practices.

    - **Environmental Programs.** Various information and resources on water resources, recycling, energy and other environmental sustainability topics.

- **Onsite Wastewater Treatment Systems Manual (OWTS Manual).** The numerous OWTS policies, procedures and guidelines for Malibu have been consolidated into a single OWTS Manual to facilitate the distribution of information and understanding of applicable

requirements among OWTS practitioners, the professional community involved with development projects, homeowners and others.

- **Wastewater Advisory Committee.** Established by the City Council, the Wastewater Advisory Committee is a diverse group of OWTS practitioners and other professionals that meet monthly to review and may make recommendations to the City Council on matters within the City's jurisdiction concerning wastewater management, treatment and disposal, and other matters as directed by the City Council.

- **Clean Water Team.** The Clean Water Team is a partnership of the City, local businesses, and concerned residents that meet and work together to provide guidance, informational pamphlets, and input on a wide range of issues and activities within the community affecting the health of the ocean waters.

- **24-hour Hotline.** The City offers a 24-hour hotline with bilingual operators dedicated to receiving information on spills and other pollution incidents observed within city limits. The service is provided to protect public health and wildlife, and prevent pollution to storm drains, streams and ocean waters.

4.6 Septage Management

4.6.1 Septic Tank Pumping Contractors. All septic tank pumping within city limits must be provided by pumpers registered with the City or Los Angeles County or Ventura County, and comply with requirements detailed in MMC Chapter 5.38 and California Health and Safety Code, which includes, among other things:

- Obtain "registered residuals management certificate" ("Pumper") from the City (requires renewal every two years) or County of Los Angeles or Ventura and maintain current legal address on file with the City;
- Provide documentation of adequate vehicle for pumping and transporting septage, including registration of vehicle with Los Angeles Public Health and/or Ventura County Public Health;
- Provide monthly reports to the County of every septic tank serviced and the specific disposal location for each load;
- Provide a list to the County of all proposed authorized disposal sites to be used;
- Successfully complete a written and/or field exam administered by the City demonstrating knowledge of regulations, health and safety and practices related to septage pumping and transport; and
- Provide evidence of three hours per year attendance at educational course(s) related to septage pumping, handling and disposal.

4.6.2 Estimated Septage Pumping Volumes. Based on an average pumping frequency of once every three (3) to five (5) years and a pump-out volume of 1,500 gallons per tank, the estimated annual volume of septage generated by the approximately 6,000 OWTS in the city is in the range of 1.8 to 3.0 million gallons per year. This equates to an average pumping of about 4 to 6 tanks (6,000 to 9,000 gallons) per day, city-wide.

4.6.3 Septage Disposal Location. There are no septage disposal facilities in Malibu. The primary disposal location for septage generated in Malibu is the Joint Water Pollution Control Plant in the City of Carson, with a treatment capacity of 400 million gallons per day.

4.7 Onsite Maintenance Districts

Presently there are no onsite wastewater maintenance districts (e.g., per Health and Safety Code Sections 6950-6982) in the city, and none are currently under consideration. However, many of the key functions of an onsite wastewater maintenance district are already covered on a city-wide basis by requirements and activities under the MMC and within the provisions of this LAMP, including: (a) operating permits, with inspection, reporting, and regular maintenance for all enrolled OWTS; (b) requirements for point-of-sale OWTS inspections (c) establishment and maintenance of a comprehensive data management system for all OWTS in the City; (d) ongoing water quality assessment and reporting to the Regional Water Board (see **Section 6** of this LAMP).

In the future, should the need arise for additional focused OWTS management activities or community-type wastewater solutions in given geographical areas of the City, it is anticipated that feasibility studies may include (as a project alternative) consideration of the formation of an onsite wastewater maintenance district ("zone"), in accordance with provisions of the Health and Safety Code. This may be beneficial, for instance, to facilitate and manage cluster/community wastewater solutions for problematic areas, especially where a common/shared system for multiple properties may make water recycling a feasible alternative to augment or replace OWTS capacity. An example of this is the Malibu Civic Center Wastewater Treatment Facility which will replace OWTS with a community system to collect, treat and recycle/dispose of wastewater within the most heavily developed and environmentally sensitive area of the City.

4.8 Regional Salt and Nutrient Management Plans

Groundwater resources within city limits are extremely limited, with the only defined basin being the Malibu Valley Groundwater Basin, a small alluvial basin (approximately 600 acres) generally coinciding with Civic Center area of Malibu. Although the basin does not support any active water supply uses per State Water Board's Recycled Water Policy (Resolution No. 2009-0011), a Salt and Nutrient Management Plan (SNMP) has been adopted by the Los Angeles Regional Water Quality Control Board for the Malibu Valley Groundwater Basin as an amendment to the Water Quality Control Plan for the Los Angeles Region (Basin Plan). The requisite studies for the SNMP found that the proposed Civic Center Wastewater Treatment Facility (CCWTF) Project, providing for elimination of OWTS discharges in the Civic Center area and replacement with a central wastewater treatment facility and water recycling for irrigation and injection, would have a net long-term positive impact on groundwater quality as compared with continued use of OWTS. The SNMP supports the CCWTF and the City's program to phase out the use of OWTS in this part of Malibu. The SNMP was also required by the former State Department of Health to allow for the dispersal and use of recycled water in the Civic Center Area. Ongoing surface and groundwater monitoring programs, groundwater elevation monitoring and background ambient loading are being conducted with the SNMP.

4.9 Watershed Management Coordination

The Environmental Sustainability Department and other City departments actively participate in watershed management programs in cooperation with various state, county and federal agencies, landowners, environmental organizations, and volunteer groups. This is essential and unavoidable, given the geographical position of the City at the base of nearly 20 coastal watersheds, most of which extend beyond City borders well into the Santa Monica Mountains and, in the case of Malibu Creek Watershed, into inland urban areas at the edge of the San Fernando Valley.

Two primary areas of coordination are (a) development of guidance and educational materials to address various non-point source runoff issues and water management and (b) data collection (e.g., water quality sampling). The activities and publications of the Clean Water Team (noted under Public Outreach above) are a good example of the coordinated efforts to educate landowners and property owners on practical land and water management practices. The City is a joint participant in stormwater runoff sampling efforts and over the years has either sponsored or supported numerous groundwater and water quality investigations in Malibu, especially in relation to wastewater discharges and potential impacts. The City is also a key partner in the Enhanced Watershed Management Plan (EWMP) for North Santa Monica Bay Coastal Watersheds, recently prepared in collaboration with the County of Los Angeles and Los Angeles County Flood Control District to address watershed-specific conditions, control measures in compliance with stormwater management requirements under the National Pollution Discharge Elimination Permit.

Going forward under this LAMP, the up-to-date and continuing inventory and assessment of OWTS usage, wastewater loading, and water quality monitoring results, organized by watershed, will be a useful and readily available data source to share and with EWMP and other watershed management efforts.

4.10 Evaluating Proximity to Public Sewers

There are four public wastewater facilities in Malibu; the Malibu Civic Center Wastewater Treatment Facility (under development), and, three other systems operated by the Los Angeles County Department of Public Works. There is also a large private wastewater facility at Point Dume, serving multiple connections, which is included in this discussion. A brief description of each facility is provided below.

- **Malibu Civic Center Wastewater Treatment Facility.** This recently approved project is under construction and includes development of a centralized wastewater treatment facility in the Malibu Civic Center area that would treat, reuse, and/or dispose of wastewater flows from properties in the Civic Center, to be implemented in three phases beginning with the core Civic Center commercial properties.

- **Malibu Mesa Wastewater Reclamation Plant.** This plant, located at 3863 Malibu Country Drive, treats domestic wastewater from 102 single family homes in the Malibu

Country Estates (within the City of Malibu), 66 condominiums on Pepperdine campus, and Pepperdine University, which is located in the unincorporated county area.

- **Malibu Water Pollution Control Plant.** This plant, located at 3620 Vista Pacifica Street, treats domestic wastewater on behalf of four condominium complexes in the City of Malibu: 48-unit complex at Maison DeVille; 104-unit complex at Malibu Canyon Village; 17-unit complex at Vista Pacifica; and 22-unit complex in the City of Malibu.

- **Trancas Water Pollution Control Plant.** This plant, located at 6338 Paseo Canyon Drive, treats domestic wastewater on behalf of the Malibu West and Lechuza communities on western end of the City.

- **Point Dume Club Wastewater Treatment Plant.** This plant, located at 29500 Heathercliff Road, is a privately owned and operated wastewater facility that provides service to 297 mobile homes, four 1-bedroom apartments and 90 2-bedroom condominiums (Zuma Bay Villas) in the Point Dume Area.

All properties within the defined sewer service area of these facilities are currently connected or, in the case of the Civic Center project, will be connected to the public sewer during the phased implementation. Public sewer service is not currently available to any other properties in the City, including lands bordering the existing sewer service districts above. In the future, if public sewer service boundaries are expanded and connections become available to other properties, evaluation of public sewer connection options for new and replacement OWTS in affected areas would likely involve procedures similar to the following:

(1) Modify OWTS permit instructions to include advice on the code requirement for connection to public sanitary sewer where the property is within 200 feet of an available sewer.

(2) Modify permit application form to include an entry related to sewer line proximity.

(3) Modify permit review to include sewer proximity as a checklist item for any geographical areas of the city near available public sewers.

4.11 OWTS Notification to Public Water System Owner(s)

There are currently no public water wells or public surface water supply intakes in Malibu. All public water service is provided by Waterworks District 29 (WWD 29), supplied by the Metropolitan Water District of Southern California (wholesaler) from various sources, including the Colorado River, State Water Project, and the Owens Valley Aqueduct. Prior to the advent of WWD 29, water was developed and supplied by the former Malibu Water Company from local water resources, which potentially may be developed and used again in the future. Should this occur, careful siting of new water wells and surface water intakes to maintain safe distances between public water facilities and OWTS. Conformance with the Malibu Valley Groundwater Management Plan for the protection of any potential water supplies will be maintained. In compliance with the State OWTS Policy, MMC Chapter 15.42 includes special horizontal setback

requirements for OWTS located in the proximity of public water supply wells and public water system surface water intakes, which would apply in the event of any future development of public water supplies within the City. Should this transpire, it is anticipated that providing adequate notification to the owner(s) of such public water systems about OWTS installations near their facilities would be accomplished by procedures substantially in conformance with those listed below:

(1) The City would document the location and respective owner(s) of any new public water supply well or public water supply surface intake at the time of its establishment and incorporate that information on appropriate GIS maps and OWTS database.

(2) Subsequently, at the time of permit application for any new or replacement OWTS, City staff will review the location of the proposed OWTS in relation to the known public water wells and surface water intakes using information available per (1) above.

(3) Where City staff determines the proposed OWTS dispersal system is closer than 150 feet to a public water well, or closer than 1,200 feet to a public water system surface water intake in a location tributary to the intake, notification of the proposed OWTS application will be sent to the water system owner(s). The notification will be accompanied by a copy of the permit application and supporting OWTS design information, including documented soils, topography, groundwater and percolation data.

(4) The owner(s) receiving notification of proposed OWTS installations per (3) above will be afforded a 15-day period in which to submit comments on the proposed OWTS application.

(5) Prior to issuing an OWTS installation permit for any system per (3) above, the City will review and consider any comments and recommendations submitted by affected water system owner(s) per (4) above.

(6) Upon issuance and/or denial of an OWTS installation permit per (3) above, the City will provide notification to the affected water system owner(s) of the action taken.

4.12 Procedures for Dispersal System Located Within Public Well/Intake Setback

As noted above, there are currently no known public water wells or surface water intakes within city limits that would trigger the special horizontal setback provisions per the State OWTS Policy and MMC. Conformance with the Malibu Valley Groundwater Management Plan for the protection of any potential water supplies will be maintained. However, in the event that any water supply well or public water supply surface water intake is developed in the future, the following procedures would be followed by the City with respect to any OWTS dispersal system within the prescribed setback distances for such public water systems.

4.12.1 New OWTS

In cases where a new OWTS is proposed on a lot created prior to the effective date of the SWRCB OWTS Policy (May 13, 2013), and the dispersal system does not meet the specified OWTS horizontal setbacks per MMC Chapter 15.42 from public water wells or public water supply intakes, the OWTS may be permitted subject to complying with the following requirements to address possible water source impacts:

(1) The dispersal system shall be sited to comply with the setback requirements to the maximum extent practicable;
(2) The OWTS shall incorporate supplemental treatment, including pathogen removal;
(3) Pathogen removal is defined as achieving an effluent fecal coliform bacteria concentration less than or equal to 200 Most Probable Number (MPN) per 100 milliliters;
(4) Minimum vertical separation to groundwater shall be three (3) feet below the bottom of the dispersal system;
(5) The minimum dispersal system soil cover shall be 12 inches;
(6) Additional conditions, such as more frequent inspections, sampling and corrective action plans may be included in the Operating Permits to ensure that water quality is protected; and
(7) Other measures as specified by the City.

On a case by case basis, the City may establish alternative OWTS siting and operational requirements to those listed above where it is determined by the City that the alternate requirements will provide a similar level of protection against adverse impact to the public water source. Notification to the Los Angeles RWQCB will occur for properties incorporating alternative requirements and additional measures as indicated above.

4.12.2 Repair/Replacement OWTS

For repair or replacement of an existing OWTS where the dispersal system does not meet the specified OWTS horizontal setbacks per MMC Chapter 15.42 from public water wells or public water supply intakes, the OWTS may be permitted subject to complying with the following requirements to address possible water source impacts:

(1) The dispersal system shall be sited to comply with the setback requirements to the maximum extent practicable;

(2) The OWTS shall incorporate supplemental treatment or other mitigation measures specified by the City, unless City staff finds no evidence of an existing or potential threat of impact to the public water source by the OWTS based on topography, soil depth and groundwater conditions.

4.13 Phase-Out of Cesspool Usage

The City of MMC Chapter 15.40 states the following regarding cesspools:

> *"Cesspools are declared to be a public nuisance and are not authorized for use in the City of Malibu. Upon discovery, cesspools shall be abated in accordance with the provisions of this chapter in a manner approved by the Building Official."*

Cesspools are not in common usage in Malibu. However, some cesspools may still exist and, when discovered, they will be abandoned as called for by the MMC. There are several ways that discovery and abandonment of existing cesspools will come about: (a) voluntarily by the property owner; (b) in response to complaints; (c) observations and advice to homeowners by septic tank pumping contractors; (d) through OWTS inspections associated building remodels and additions; and (e) through mandatory OWTS inspections at the time of property transfers as required by the point of sale inspection and permitting procedures contained in the MMC Chapter 15.44, Operating Permit requirements. Identification and removal of cesspools will be included in the annual reporting to the Los Angeles RWQCB.

Section 5: Prohibitions

The following describe the provisions contained in the MMC Chapters 15.40, 15.42, 15.44 and OWTS Manual corresponding with the required prohibitions set forth in section 9.4 of the SWRCB OWTS Policy.

1. **Cesspools (OWTS Policy 9.4.1).** The use of cesspools for sewage disposal is not authorized under the MMC Chapter 15.40.

2. **OWTS over 10,000 gpd capacity (OWTS Policy 9.4.2).** The MMC applies to any OWTS where the maximum daily flow volume of waste produced is 10,000 gpd or less. If the amount of waste produced is more than 10,000 gpd, high strength wastewater such as a restaurant, or where a community system serving multiple discharges under separate ownership is proposed, the method of treatment and dispersal must be approved by the Los Angeles RWQCB either through the issuance of Waste Discharge Requirements (WDR) or waiver. However, in such instances the City will be responsible for review of construction plans and for issuance of installation, building and grading permits, as applicable. The City will also issue an operating permit for these OWTS, consistent with requirements contained in any WDR or waiver issued by the RWQCB.

3. **OWTS with surface discharge (OWTS Policy 9.4.3).** Surface discharge of wastewater from an OWTS is not authorized under the MMC and defines an OWTS as "a system…used to collect, treat, and disperse/discharge wastewater into the receiving environment below ground surface." Any wastewater system utilizing other than subsurface methods for treatment and dispersal must be approved by the Los Angeles RWQCB either through the issuance of Waste Discharge Requirements (WDR) or waiver. However, in such instances the City will be responsible for review of construction plans and for issuance of installation, building and grading permits, as applicable. The City will also issue an operating permit for these OWTS, consistent with requirements contained in any WDR or waiver issued by the RWQCB.

4. **OWTS on steep slopes without slope stability report (OWTS Policy 9.4.4).** Under MMC Chapter 15.42, any OWTS dispersal field located on slopes greater 30% requires a geotechnical assessment and report addressing slope stability, drainage and other pertinent geotechnical factors affecting the operation and and/or impacts from the construction and use of the proposed OWTS. Also any OWTS dispersal field located on slopes greater than 10% requires assessment of potential impacts from lateral migration of effluent.

5. **Sizing reductions for IAPMO certified dispersal systems (OWTS Policy 9.4.5).** MMC Chapter 15.42 allows for the use of chambers or alternative filter material in place of standard drain rock in dispersal trenches. However, no reduction in drainfield sizing of more than 30% is allowed for such methods/materials.

6. **Supplemental treatment systems without monitoring (OWTS Policy 9.4.6).** OWTS with supplemental treatment are required to have operating permits in Malibu. MMC Chapters 15.40 and 15.44 require the issuance of an operating permit and associated monitoring

provisions for all commercial/multi-family and OWTS that incorporate supplemental treatment units. Operating permits are issued for new, replacement and repair of OWTS, as well as any existing OWTS reviewed in the course of mandatory point of sale OWTS inspections required by MMC Chapter 15.44. In addition, during renewal of operating permits, the operational status of all OWTS, including AOWTS with supplemental treatment are verified with inspection by a city registered practitioner. See Table 4-1 for more information on inspection, monitoring and maintenance requirements.

7. **OWTS for RV Dump Stations (OWTS Policy 9.4.7).** The MMC pertains to the treatment and dispersal of domestic wastewater which, by definition in Chapter 15.40, does not include wastewater from industrial processes or recreational vehicle (RV) dump stations. Domestic wastewater may include incidental RV holding tank discharges, e.g., at the owner's residence/storage location. Any proposals for RV Dump Stations will be referred to the Los Angeles RWQCB for permitting. This limitation does not apply to full hook-up sewer connections similar to those used at a recreational vehicle park.

8. **Groundwater separation less than two (2) feet, or less than 10 feet for seepage pits (OWTS Policy 9.4.8).** MMC Chapter 15.40 sets forth minimum siting requirements for OWTS dispersal systems, which specifies a minimum vertical separation distance to groundwater of: (a) two (2) feet for dispersal fields, provided supplemental treatment is included in the OWTS design; (b) 10 feet for seepage pits with supplemental treatment; or as otherwise approved by the Administrative Authority.

9. **Where public sewer connection is available (OWTS Policy 9.4.9).** MMC Chapter 15.40 requires connection to an available public sewer, subject to approval by the sewer authority, for: (a) newly proposed structures requiring sewage disposal that are within 200 feet of an available public sewer; and (b) developed property where structures served by an existing OWTS are within 200 feet of an available public sewer, at the time of OWTS failure or when replacement or addition to the OWTS is required.

10. **Proximity to public water system wells and surface water intakes (OWTS Policy 9.4.10).** As noted previously, there are currently no known public water wells or surface water intakes within city limits. However, in compliance with the State OWTS Policy, MMC Chapter 15.42 sets forth minimum horizontal setback requirements for OWTS that include the following restrictions between the location of OWTS dispersal systems and public water supply wells and public water system surface water intakes that may be developed in the future.

(a) Public water well:

- 150 feet setback for any dispersal system no greater than 10-feet deep
- 200 feet for any dispersal system greater that 10-feet deep
- Completion of 2-yr microbial transport study for any OWTS >20-ft deep and within 600 feet

(b) Public water system surface water intake:

- 400 feet setback from edge of watercourse/water body where OWTS dispersal field is <1,200 feet from water supply intake

- 200 feet setback from edge of watercourse/water body where OWTS dispersal field is between 1,200 feet and 2,500 feet from the water supply intake

(c) Exceptions for replacement OWTS. For replacement OWTS unable to meet the horizontal setback requirements of (a) or (b) above, the replacement dispersal field shall meet the setback requirements to the greatest extent practicable. Additionally, the City will require the replacement OWTS to incorporate supplemental treatment and other measures, as appropriate, unless the City finds no evidence of an existing or potential threat of impact to the public water source by the OWTS based on topography, soil depth and groundwater conditions.

(d) Exceptions for new OWTS. For new OWTS on parcels created prior to May 13, 2013, that are unable to meet the horizontal setback requirements of (a) or (b) above, the new dispersal field shall meet the setback requirements to the greatest extent practicable. Additionally, the City will require the new OWTS to incorporate supplemental treatment, including pathogen removal, plus other requirements noted below. In accordance with SWRCB OWTS Policy, pathogen removal in this case is defined as achieving an effluent fecal coliform bacteria concentration less than or equal to 200 Most Probable Number (MPN) per 100 milliliters. Other requirements include:

(1) providing a minimum vertical separation to groundwater of three (3) feet below the bottom of the dispersal field;
(2) providing a minimum dispersal field soil cover of 12 inches; and
(3) other measures as specified by the City.

On a case-by-case basis, the City may establish alternative OWTS siting and operational requirements to those listed above where it is determined by City that the alternate requirements will provide a similar level of protection against adverse impact to the public water source.

Section 6: Program Administration

6.1 Staff Qualifications

City staff involved with review of OWTS projects includes California Registered Environmental Health Specialists (REHS), non-REHS professional staff and clerical support staff. In addition, contract professionals consisting of California Registered Geologists and/or California Civil Engineers are utilized for complex projects, excavation/grading concerns and geology issues.

Site suitability reviews, OWTS design approvals, and construction/repair approvals are conducted by California Registered Geologist, Civil Engineer, REHS or equivalent. Non-REHS personnel may conduct field site investigations and conduct construction/repair inspections under indirect supervision of an REHS or the Building Official.

The City of Malibu staff responsible for the OWTS program are currently comprised of the following personnel:

- Environmental Sustainability Director
- Building Official
- Environmental Sustainability Manager
- Environmental Health Administrator
- Wastewater Management Program Analyst
- Permit Services Technician
- Contract Professionals – Geologist, Coastal Engineer

6.2 OWTS Permitting Records

6.2.1 Integrated Wastewater Information Management System (IWIMS)

In 2001, the City began converting from paper files to an online electronic data management system, IWIMS, to track and manage onsite wastewater treatment systems in the City. All OWTS (existing and new) are captured in IWIMS. IWIMS was utilized in the compilation of baseline information presented in this LAMP and will facilitate the ongoing record keeping and reporting required by the State OWTS Policy. The system was developed under contact with Stone Environmental, Inc[3]., and provides a range of tools for comprehensive management of OWTS information and activities, including the following:

- Operating permits issued for existing, replacement and new OWTS
- Report generation
- Conjunction with other City database systems (e.g., building, planning, zoning)
- Data import tool (e.g., monitoring data)
- Program data query and export tool

[3] www.stone-env.com

6.2.2 Databases

The City also maintains some individual projects and other program activities in hard copy files and electronic files. Permit record storage and data importing are uploaded into the OnBase system. These documents are also available to the public on the City's Website at www.malibucity.org/onbase. In addition to data storage, other parcel information is available in the City's Development Database and GIS programs.

In compliance with the State OWTS Policy Tier 2 requirements, the City will retain permanent records of OWTS permitting actions and will make those records available within 10 working days upon written request for review by the Regional Water Board. At a minimum this includes:

- Installation permits issued for new, repair and replacement OWTS
- OWTS variances and/or exemptions issued, including number, location and description
- Engineering, geological, infiltration and percolation reports
- OWTS design and plot plans

6.3 Water Quality Assessment Program

6.3.1 Objectives

The City will maintain an OWTS water quality assessment program having three primary objectives: (1) to determine the general operational status of OWTS in the City; (2) assess possible impacts of OWTS on groundwater and surface water quality, and their associated beneficial uses; and (3) identify areas for changes to existing OWTS management practices.

6.3.2 Watershed Approach

The OWTS-water quality assessment will be organized according to the various watershed areas delineated and presented in this LAMP. This will allow the existing GIS-based mapping, OWTS inventories, and wastewater loading analyses to be utilized and updated. Other localized focus areas within each watershed sub-basin may be delineated in the future if warranted.

6.3.3 Operational Status of OWTS

The operational status of OWTS will be assessed through compilation and review of the following types of information:

(1) Point of sale inspection reports;
(2) Complaints and abatement activities for failing OWTS;
(3) Exemptions issued for new and/or repair OWTS;
(4) Performance inspections of existing OWTS in connection with building additions/remodel projects, or property transactions;
(5) Monitoring information submitted in connection with terms of an operating permit.

The data review and assessment will focus on both positive and negative findings, apparent trends, and areas for changes in practices. The assessment will maintain and update the existing IWIMS database of OWTS in the City.

6.3.4 Water Quality Assessment Plan

A separate water quality assessment plan to supplement the LAMP will be developed and submitted to the Regional Water Board for review and approval. The water quality assessment will include the following:

(1) **Water Quality Parameters of Concern.** The initial focus of the water quality assessment program will be on two key water quality parameters – pathogens and nitrate-nitrogen. Other parameters of concern may be added if warranted.

(2) **Wastewater Discharge Volumes.** Estimates of annual wastewater discharge estimates from OWTS will be updated based upon the running inventory of OWTS per above.

(3) **Nitrogen Loading.** Nitrogen loading estimates (by watershed and/or groundwater area) will be maintained and updated based on the running inventory of OWTS in the City.

(4) **Water Quality Monitoring Data Sources**. Relevant water quality monitoring data for (pathogens and nitrate-nitrogen) will be compiled from a variety of available sources. Primary sources of data are expected to be:

- **OWTS Operating Permits**. This includes effluent monitoring data and, in some cases, receiving water sampling (groundwater and/or surface water) that may be required under the terms of operating permits issued by the City for individual OWTS. Water quality monitoring is not required for all OWTS; however, the City has the prerogative to include monitoring requirements appropriate to the size, type and location of the OWTS.

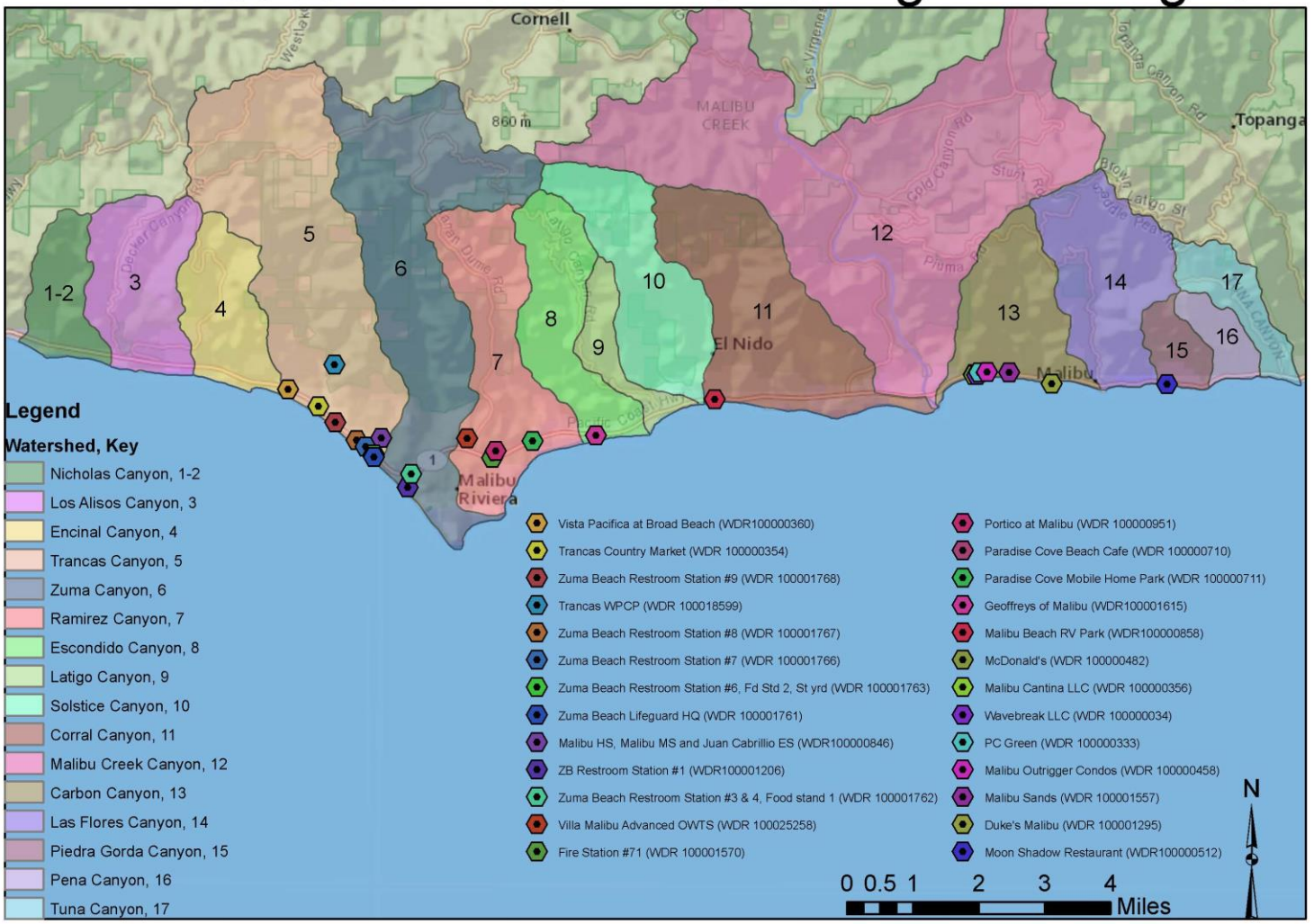
- **WDR Monitoring Reports.** Based on review of the Geotracker Database, there are 42 wastewater systems in Malibu currently covered under Waste Discharge Requirements (WDRs) issued by the Regional Water Board. Of this total 27 are currently required to monitoring groundwater quality, typically including one upgradient monitoring well and two or more downgradient wells. The WDR sites of interest are listed in **Table 6-1** and their locations shown in **Figure 6-1**.

Table 6-1: Waste Discharge Requirements that Include Groundwater Monitoring

WDR No.	WDRs with GW Monitoring Requirement	Watershed Name	No.
100000360	Vista Pacifica at Broad Beach	Trancas Canyon	5
100000354	Trancas Country Market	Trancas Canyon	5
100001768	Zuma Beach Restroom Station #9	Trancas Canyon	5
100018599	Trancas WPCP	Trancas Canyon	5
100001767	Zuma Beach Restroom Station #8	Trancas Canyon	5
100001766	Zuma Beach Restroom Station #7	Trancas Canyon	5
100001763	Zuma Beach Restroom Station #6, Fd Std 2, St yrd	Trancas Canyon	5
100001761	Zuma Beach Lifeguard HQ	Trancas Canyon	5
100000846	Malibu HS, Malibu MS and Juan Cabrillio ES	Trancas Canyon	5
100001206	ZB Restroom Station #1	Zuma Canyon	6
100001762	Zuma Beach Restroom Station #3 & 4, Food stand 1	Zuma Canyon	6
100025258	Villa Malibu Advanced OWTS	Ramirez Canyon	7
100001570	Fire Station #71	Ramirez Canyon	7
100000951	Portico at Malibu	Ramirez Canyon	7
100000710	Paradise Cove Beach Cafe	Ramirez Canyon	7
100000711	Paradise Cove Mobile Home Park	Ramirez Canyon	7
100001615	Geoffreys of Malibu	Escondido Canyon	8
100000858	Malibu Beach RV Park	Corral Canyon	11
100000482	McDonald's	Carbon Canyon	13
100000356	Malibu Cantina LLC	Carbon Canyon	13
100000034	Wavebreak LLC	Carbon Canyon	13
100000333	PC Green	Carbon Canyon	13
100000458	Malibu Outrigger Condos	Carbon Canyon	13
100001557	Malibu Sands	Carbon Canyon	13
100001295	Duke's Malibu	Las Flores Canyon	14
100000512	Moonshadows Restaurant	Piedra Gorda Canyon	15

WDR Locations with GW Monitoring

Fig. 6-1



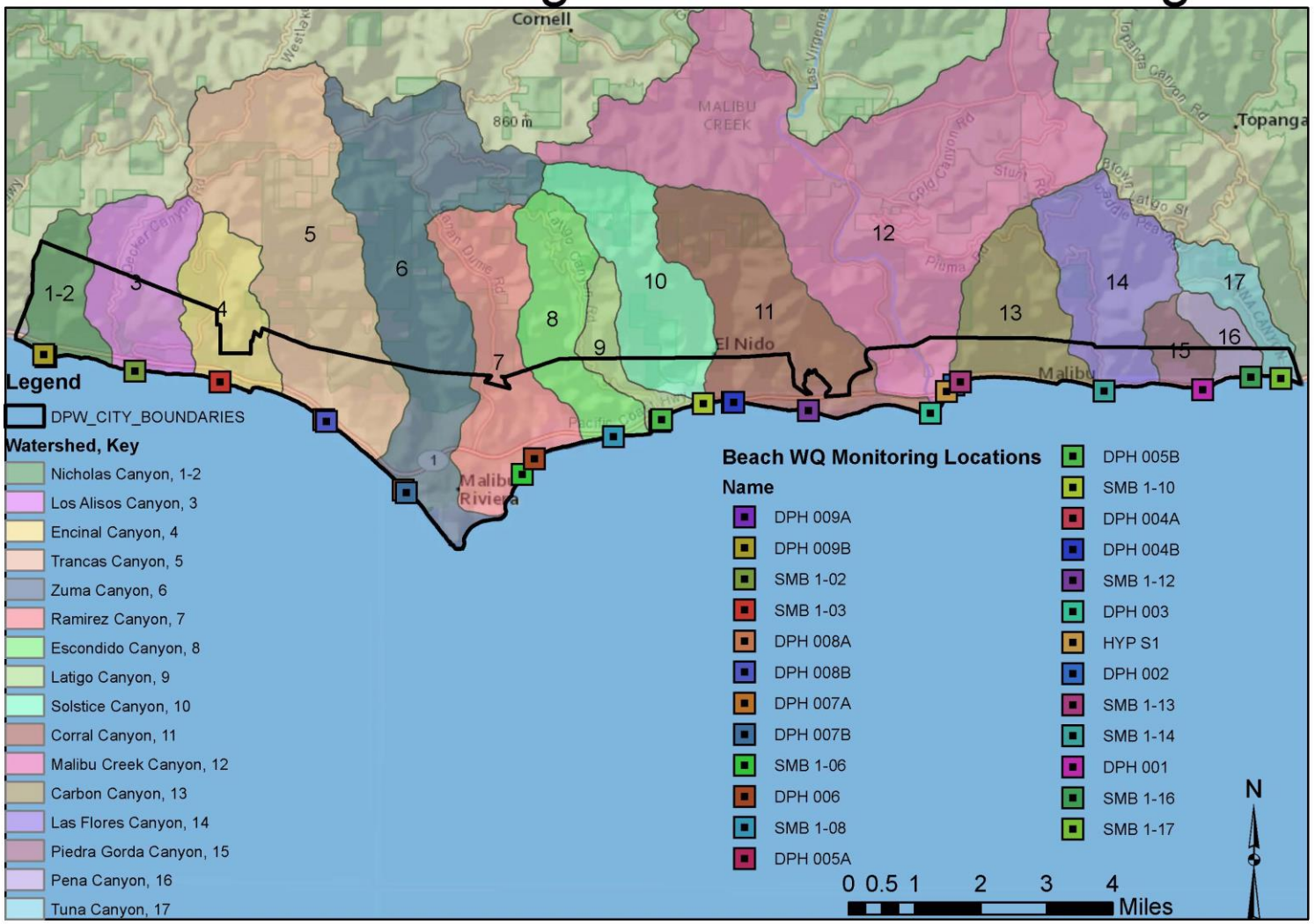
- **Beach Water Quality Monitoring**. Los Angeles County Environmental Health Recreational Waters Program routinely collects ocean water samples every Monday at 40 sampling sites extending from the Ventura/Los Angeles County border to south of the Redondo Beach pier. Samples are collected in the surf zone and analyzed by the Department of Public Health laboratory for total coliform, E. coli and enterococcus bacteria. Sampling locations within city limits are listed in **Table 6-2** and shown in **Figure 6-2**.

Table 6-2: Beach Water Quality Monitoring Locations

Agency Site No.	Beach Monitoring Location	Watershed Name	No.
DPH 009A	Nicholas Canyon County Beach at Nicholas Creek, Malibu	Nicholas Canyon	2
DPH 009B	Nicholas Canyon County Beach 100 ft. west of Nicholas Creek, Malibu	Nicholas Canyon	2
SMB 1-02	El Pescador State Beach open beach, Malibu	Los Alisos Canyon	3
SMB 1-03	El Matador State Beach open beach, Malibu	Encinal Canyon	4
DPH 008A	Zuma Beach at Trancas Creek at Trancas Creek, Malibu	Trancas Creek	5
DPH 008B	Zuma Beach at Trancas Creek 50 yds. east of Trancas Creek, Malibu	Trancas Creek	5
DPH 007A	Zuma Beach at Westward Beach Road at Zuma Creek, Malibu	Zuma Creek	6
DPH 007B	Zuma Beach at Westward Beach Road 50 yds. east of Zuma creek, Malibu	Zuma Creek	6
SMB 1-06	Paradise Cove In front of Walnut Creek, Malibu	Ramirez Canyon	7
DPH 006	Paradise Cove at Ramirez Creek, Malibu	Ramirez Canyon	7
SMB 1-08	Escondido State Beach In front of Escondido Creek, Malibu	Escondido Canyon	8
DPH 005A	Latigo Beach (26610 Latigo Shore Drive) at dewatering well, Malibu	Latigo Canyon	9
DPH 005B	Latigo Beach (26610 Latigo Shore Drive) at treatment plant, Malibu	Latigo Canyon	9
SMB 1-10	Dan Blocker County Beach in front of Solstice Creek, Malibu	Solstice Canyon	10
DPH 004A	Corral Beach (formerly Puerco Beach) at creek, Malibu	Corral Canyon	11
DPH 004B	Corral Beach (formerly Puerco Beach) at lifeguard tower, Malibu	Corral Canyon	11
SMB 1-12	Puerco Beach In front of Marie Canyon storm drain, Malibu	Corral Canyon	11
DPH 003	Malibu Point at west end of Surfrider beach at lifeguard tower #3, Malibu	Malibu Creek	12
HYP S1	Surfrider Beach last known breech, Malibu	Malibu Creek	12
DPH 002	Malibu Pier at Surfrider Beach 50 yards east of Malibu Pier, Malibu	Carbon Canyon	13
SMB 1-13	Carbon Canyon Beach in front of Sweetwater Canyon storm drain, Pacific Palisades	Carbon Canyon	13
SMB 1-14	Las Flores State Beach In front of Las Flores creek, Malibu	Las Flores Canyon	14
DPH 001	Big Rock Beach at Piedra Gorda Canyon In front of stormdrain, 17200 PCH, Malibu	Piedra Gorda Canyon	15
SMB 1-16	Las Tunas County Beach In front of Pena Creek, Malibu	Pena Canyon	16
SMB 1-17	Las Tunas County Beach Santa Monica Canyon storm drain., Malibu	Las Tunas Canyon	17

Beach WQ Monitoring Locations

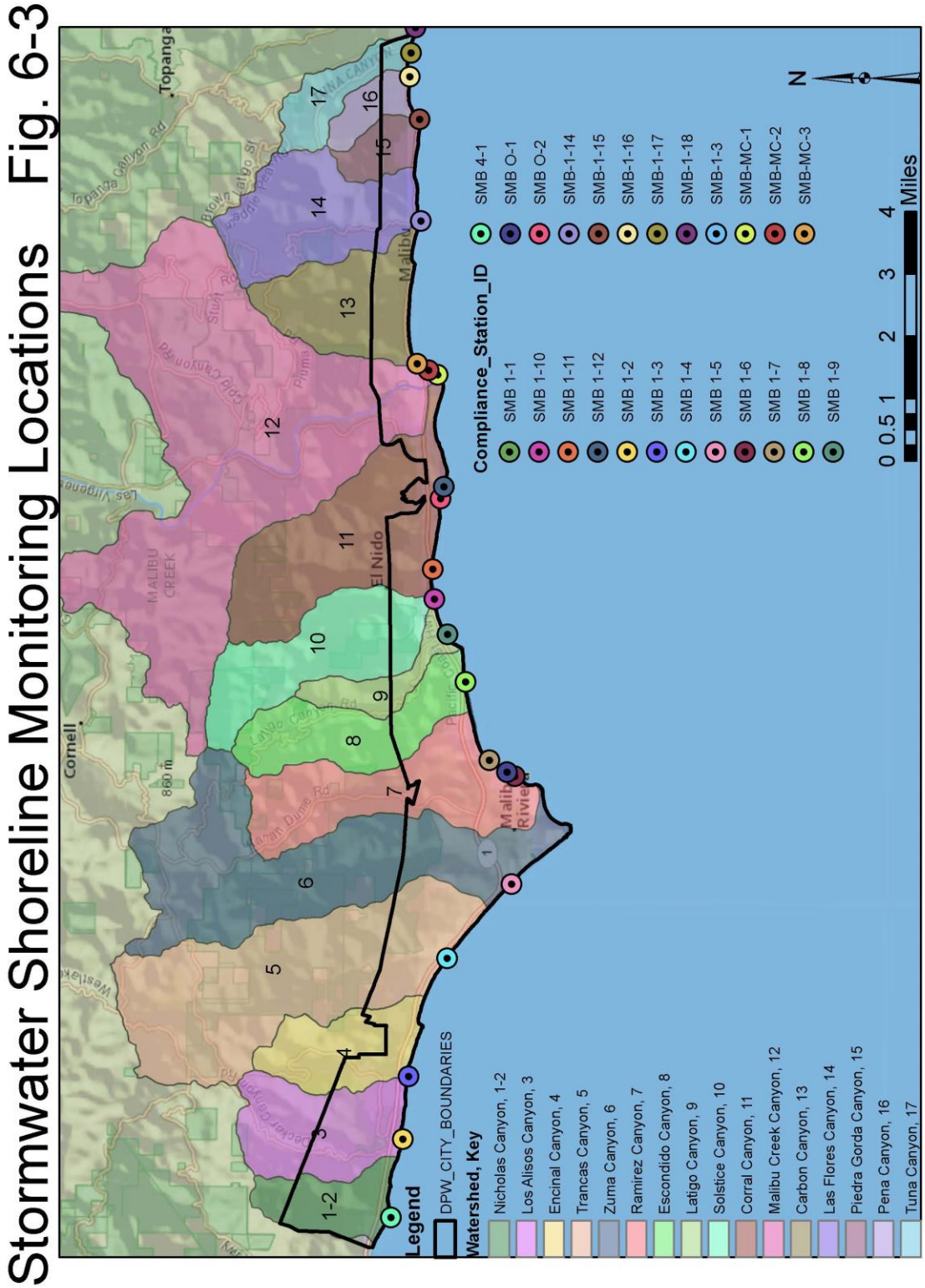
Fig. 6-2



- **Stormwater Quality Sampling.** Under the recently completed Enhanced Watershed Management Program for North Santa Monica Bay Coastal Watersheds, surface water runoff is sampled regularly for compliance with NPDES MS4 stormwater permitting requirements. Sampling and analysis includes a broad range of water quality constituents, some of which are relevant to ongoing OWTS water quality assessment under this LAMP. Sampling locations within city limits are listed in **Table 6-3** and shown in **Figure 6-3**.

Table 6-3: Stormwater Shoreline Monitoring Locations

Agency Site No.	Stormwater Shoreline Monitoring Locations	Watershed Name	No.
SMB 1-1	Arroyo Sequit Canyon at Leo Cabrillo Beach	Arroyo Sequit	1
SMB 4-1	Nicholas Creek at Nicholas Beach	Nicholas Canyon	2
SMB 1-2	Unnamed Watershed at El Pescador Beach	Los Alisos Canyon	3
SMB 1-3	Encinal Canyon at El Matador Beach	Encinal Canyon	4
SMB 1-4	Trancas Creek at West Zuma Beach	Trancas Creek	5
SMB 1-5	Zuma Creek at East Zuma Beach	Zuma Canyon	6
SMB 1-6	Walnut Canyon at the End of Zumirez Drive	Ramirez Canyon	7
SMB O-1	Unnamed Gully between Point Dume and Paradise Cove Beach	Ramirez Canyon	7
SMB 1-7	Ramirez Creek at Paradise Cove Beach	Ramirez Canyon	7
SMB 1-8	Escondido Creek at Escondido Beach	Escondido Canyon	8
SMB 1-9	Latigo Canyon at Latigo Beach	Latigo Canyon	9
SMB 1-10	Solstice Creek at Corral Beach	Solstice Canyon	10
SMB 1-11	Corral Creek at Corral Beach	Corral Canyon	11
SMB O-2	Puerco Canyon at Puerco Beach	Corral Canyon	11
SMB 1-12	Marie Canyon at Puerco Beach	Corral Canyon	11
SMB MC-1	Malibu Creek at West End of Surfrider Beach	Corral Canyon	11
SMB MC-2	Malibu Lagoon at Most Recent Breach Location	Malibu Creek	12
SMB MC-3	Malibu Pier at East End of Surfrider Beach	Carbon Canyon	13
SMB 1-13	Sweetwater Canyon at Carbon Beach	Carbon Canyon	13
SMB 1-14	Las Flores Creek at Las Flores Beach	Las Flores Canyon	14
SMB 1-15	Piedra Corda Canyon at Big Rock Beach	Piedra Gorda Canyon	15
SMB 1-16	Pena Canyon at Las Tunas Beach	Pena Canyon	16
SMB 1-17	Pena Canyon at Las Tunas Beach	Tuna Canyon	17
SMB 1-18	Topanga Canyon at Topanga Lagoon and Beach	Topanga Canyon	N/A



Other potential sources of water quality data may include:

- Data from cumulative impact studies for new project proposals;
- Data from special studies or investigations conducted within the City;
- Groundwater data collected as part of the Groundwater Ambient Monitoring and Assessment Program available in the Geotracker Database; and
- Water well information from any well drilling activity.

(5) **Assessment.** In addition to periodically updating the OWTS wastewater loading estimates for the City, it is anticipated that assessment of the data will include a review to: (a) determine relevance of the various data to OWTS; (b) identification of any obvious water quality degradation attributable to OWTS warranting follow-up investigation or action; (c) identification of any water quality degradation where OWTS may be implicated as a possible source; and (d) identification of water quality data/areas indicating no apparent issues of concern related to OWTS.

6.4 Reporting to Regional Water Quality Control Board

6.4.1 Annual Report

The City of Malibu submits an annual report pertaining to OWTS activities to the Los Angeles Regional Water Quality Control Board (RWQCB) by February 1st. The annual report will, at a minimum, include the following information, organized in a tabular spreadsheet format:

(1) Number and location of complaints to the City pertaining to OWTS operation and maintenance, and identification of those which were investigated and how they were resolved;

(2) Number, location and description of permits issued for new and replacement OWTS, including any variances and/or exemptions issued;

(3) Number, location and results of inspection reports received per the City's point of sale inspection requirements, operating permits and other inspections in connection with building remodels/additions;

(4) List of applications and registrations issued as part of the local septic tank pumper registration program pursuant to Section 117400 et seq. of the California Health and Safety Code and MMC Chapter 5.38.

The report will include: (a) a summary of whether any further actions related to OWTS are warranted to protect water quality or public health; (b) status of water quality data collection and review; and (c) any other information deemed appropriate by City staff, such as identification of cesspool removals.

6.4.2 5-Year Water Quality Assessment Report to RWQCB

Every five (5) years the annual report to the RWQCB will be accompanied by a Water Quality Assessment Report that summarizes the information and findings from the City's Water Quality Assessment Program described above. The report will present an overall assessment regarding any evidence of water quality impact from OWTS along with any recommended changes in the LAMP to address the identified impacts. Additionally, any groundwater water quality data generated by the City from monitoring activities will be submitted in EDF format for inclusion in Geotracker, and any surface water quality data will be submitted to CEDEN in A SWAMP comparable format.

Appendix A

Supporting Rationale for Malibu OWTS Siting and Design Criteria

Supporting Rationale for
City of Malibu OWTS Siting and Design Criteria

Following is a discussion of the supporting rationale (including literature references) for the various siting and design requirements for OWTS contained in City of Malibu's LAMP for those items that differ from the Tier 1 requirements of the SWRCB OWTS Policy. The topic areas addressed include: (1) groundwater separation requirements; (2) OWTS design and sizing; (3) use of seepage pits; (4) horizontal setback distances; and (5) allowable OWTS densities (lot size) for new subdivisions. Additionally, highlighted at the end are the various requirements and management practices contained in City of Malibu's LAMP that constitute a higher level of water quality and environmental protection relative to OWTS than provided in the Tier 1 requirements.

1. Pathogen Removal and Groundwater Separation Requirements

Bacteria, viruses, and other pathogens are present in great numbers in sewage and represent an ongoing threat to public health. Preventing the transmission of disease is the foremost concern associated with the treatment and dispersal of sewage and is the basis for many of the established standards that dictate how, where and when wastewater treatment and dispersal can occur. Ground waters and surface waters are afforded protection from OWTS contamination through the establishment of specific criteria pertaining to the soil properties, vertical separation (i.e., the distance from the bottom of the dispersal trench to the seasonal high groundwater below), and horizontal (surface water) setback requirements. The level of wastewater treatment (prior to dispersal) and the design of the dispersal system can also play a role in pathogen removal. The soil is critical, but the factors are complex, and there is no simple rule for proper design and operation. Attenuation and removal of pathogens in the soil is accomplished through such mechanisms as microbial predation, filtration, adsorption, and die-off.[1] Related factors include the depth, texture, and structure of the soil, hydraulic loading rate, and other physicochemical properties such as moisture, temperature, oxygen and pH.

It is well known that soils have a tremendous capacity to remove bacteria from percolating wastewater. The retention and die-off of most, if not all, pathogenic bacteria occur within 2 to 3 feet of the soil infiltrative surface in a properly functioning OWTS (Anderson et al, 1994; Washington Dept. of Health, 1990). Viruses can also be retained and eliminated within a few feet, depending on the soil conditions; but it is generally accepted that they can persist longer and travel farther in the soil than bacteria (Anderson, et al, 1991; Ayres and Associates, 1993). Unlike bacteria, viruses are not always present in individual residential OWTS discharges, since it depends on the health status of the residents. Viruses are more likely to be consistently present at some level in commercial and community wastewater systems, which accept wastes from a

[1] "microbial predation" refers to consumption by other soil microbes; "filtration" refers to physical trapping between soil particles; "adsorption" refers to attachment to the surfaces of soil particles; "die-off" refers to degradation or inactivation due to the inability of the pathogen to sustain itself in the soil environment.

broader segment of the population. Once reaching the water table, bacteria and viruses have been found to survive and travel significant distances with the groundwater (potentially hundreds of feet), depending on the rate of groundwater movement. Survival time in soil and groundwater is typically on the order of days to weeks for bacteria, and weeks to months for viruses.

Consistent with current knowledge and practices for preventing pathogen impacts from OWTS, the City of Malibu's LAMP includes a combination of siting and design requirements including: soil depth and percolation characteristics, minimum vertical separation to groundwater, minimum horizontal setbacks to various water/landscape features, dispersal field design/sizing criteria based on percolation rates, and, for some situations, options or requirements for use of supplemental treatment and alternative dispersal designs. Horizontal setbacks are the same for all OWTS (conventional and alternative/advanced) and are consistent with long-standing criteria contained in the guidelines of the Los Angeles Regional Water Board and other jurisdictions in California. The setback requirements also include more restrictive requirements for public water wells and public water system surface water intakes per the State OWTS Policy.

The key issue related to potential pathogen impacts from OWTS is the vertical separation below the dispersal trench to the seasonally high groundwater level (i.e., water table). **Table A-1** lists the depth to groundwater requirements for conventional OWTS in Malibu, along with the corresponding groundwater separation requirements contained the Tier 1 requirements in the State OWTS Policy. LAMP Section 3.1, Table 3.1 Siting Criteria, describes the process of evaluation. The adopted approach in Malibu utilizes a standard depth to groundwater distance of 5 feet for soils with percolation rates in the range of 5 to 60 mpi; below 5 mpi and above 60 mpi are not permitted for conventional OWTS without supplemental treatment. In addition, OWTS on beachfront properties are required to include supplemental treatment. As such, Malibu requirements for conventional OWTS are more restrictive than Tier 1 for rapid percolation rates (<5 mpi) and slow percolation rates (>60 mpi), since conventional OWTS are not permitted in these soil conditions, but instead require use of an alternative/advanced OWTS design. In the middle percolation range Malibu standards are less conservative than the Tier 1 criteria (5 ft. vs 8 ft.) for 5 to 30 mpi, and match the Tier 1 standard of 5-ft separation for 30 to 60 mpi. On balance, due to local hydrogeological conditions Malibu groundwater separation requirements are substantially equal to Tier 1, and could potentially be viewed as somewhat more conservative.

Table A-1.
Comparison of Depth to Groundwater Requirements for Conventional OWTS
(feet, below trench bottom)

Percolation Rate (min per inch)	City of Malibu	SWRCB OWTS Policy Tier 1 Requirements
1-4	Not permitted	20
5-30	5	8
31-60	5	5
61-120	Not permitted	5

Under current practices and this LAMP, City requirements allow reduced groundwater separation distances for different types of alternative/advanced treatment and dispersal systems as shown in **Table A-2**, which also includes the requirements for conventional OWTS for comparison.

Table A-2.
Depth to Groundwater Requirements for Conventional and Alternative/Advanced OWTS
(feet, below trench bottom) MMC Chapter 15.42

Type of OWTS	Percolation Rate (MPI)	Min. Depth to Groundwater (feet)[1]			
		2	3	5	10
Conventional Septic Tank & Dispersal Trench	5-60			X	
Conventional Trench w/Supplemental Treatment Pressure Distribution (PD) Trench	1-120		X		
Pressure Distribution w/Supplemental Treatment Mound Drip Dispersal with Supplemental Treatment	1-120	X			
Seepage Pit with Supplemental Treatment	-[2]				X

[1] Measured from the bottom of the dispersal system
[2] Per Malibu seepage pit percolation testing policy expressed in gallons per day (gpd)

The supporting rationale for the reduced vertical separation requirement for the various alternative/advanced OWTS designs is derived from research studies done over the past 30 to 40 years, largely funded by the US EPA and referenced in the *On-site Wastewater Treatment Systems Manual* (US EPA, 2002). These studies have documented how various advanced treatment and dispersal methods can improve the operation and treatment effectiveness of OWTS as compared with conventional septic tank-gravity dispersal trench designs. A major focus of the research efforts has been on finding methods to augment or improve the natural pollutant removal processes in the soil (especially related to pathogens) to help overcome limited soil depth and high groundwater conditions, which are a common constraint virtually everywhere OWTS are used.

The following is a review of some of the key findings and principles that have emerged from the research and have supported changes in OWTS siting and design criteria.

a. **Pressure Distribution.** There is strong evidence and agreement in the professional literature that pressure distribution improves the performance of any soil absorption system as compared with standard gravity distribution, and should be the distribution method of choice (US EPA, 2002). This is due to two main factors: (1) pressure distribution disperses the wastewater flow uniformly over the entire available soil infiltrative surface, which allows the maximum absorption potential to be realized for any given soil condition; and (2) creation of wetting and draining cycles (via effluent dosing) promotes the maintenance of aerobic soil conditions at the infiltrative surface, which improves biodegradation and reduces the potential for soil clogging caused by the buildup of organic matter. The professional literature also notes that uniform spreading of the effluent discharge to the soil with the use of pressure distribution (or drip dispersal), ideally with timed-dosing, is critical to assure effective pathogen reduction in situations where the vertical separation is reduced.

b. **Supplemental Treatment.** Pathogen removal efficiencies can vary greatly amongst the different types of supplemental treatment systems that would be permitted and used under this LAMP. The greatest removal efficiencies are generally attributed to intermittent sand filters. Crites and Tchobanoglous (1998) present data showing fecal coliform removal efficiencies of 97.9 percent to 99.9 percent for intermittent sand filters. Leverenz, et al (2002) estimate intermittent sand filters as having the ability to produce effluent with fecal coliform concentrations <800 MPN/100 ml. For comparison, the fecal coliform concentration in effluent from a standard septic tank is similar to that in raw sewage, and typically ranges from about 10,000 to 100,000 MPN/100 ml. (Crites and Tchbanoglous, 1998). Additionally, however, an important purpose of the supplemental treatment unit in combination with the dispersal system design is to establish and maintain aerobic/unsaturated conditions in the soil absorption field. Maintenance of aerobic soil conditions is conducive to pathogen removal and an improvement over the operational conditions of conventional gravity dispersal fields, which are designed to allow a saturated (anaerobic) soil-infiltrative surface. Research has demonstrated that aerobic effluent: (a) promotes the growth of aerobic soil microflora that can have antagonistic effects on viruses; and (b) reduces the amount of organic compounds that compete for adsorption sites with viruses and bacteria (Potts, 2003).

c. **Pathogen Removal in Soils.** The retention and die-off of most, if not all, pathogenic bacteria occur within 2 to 3 feet of the soil infiltrative surface in a properly functioning OWTS (Anderson et al, 1994; Washington State DOH, 1990). Viruses can also be retained and eliminated within a few feet, depending on the soil conditions; but it is generally accepted that they can persist longer and travel farther in the soil than bacteria (Anderson

et al, 1991; Ayres Associates, 1993). Studies have shown that vertical separation distances to groundwater of 12 to 18 inches are sufficient to achieve good fecal coliform removal where the wastewater receives supplemental treatment prior to soil application along with pressure distribution or drip dispersal methods (Converse and Tyler, 1998; Duncan et al, 1994). Additionally, most of the research studies of OWTS pathogen removal have focused on sandy soil types; and the results of these studies have formed the basis for the soil depth criteria, such as those contained in the US EPA Design Manual (2 to 4 feet unsaturated soil depth). Consequently, the soil depth criteria are already oriented toward the "worst case" conditions (sandy, permeable soils), and there is a built-in safety factor, with respect to pathogen removal, for finer textured soils with higher silt and clay fractions.

As previously noted, while there is no simple rule or absolute formula for OWTS-groundwater separation, the City of Malibu depth to groundwater criteria related to type of OWTS and percolation rates are similar to standards adopted and followed in many other counties in California over the past 10 to 20+ years (for example, Butte, Nevada, Placer, Solano, Marin, Sonoma, Napa, Contra Costa, Mendocino, among others).

Additionally, an important aspect of siting and design of OWTS under these criteria is the process for determining seasonally high groundwater levels in the dispersal field area. The requirements in Malibu specify field observation methods for groundwater determination consistent with best industry practices. These requirements have been in effect for a number of years and will continue under the City's LAMP.

Finally, the LAMP includes an operating permit program for all OWTS that will ensure ongoing inspection and monitoring of OWTS for verification of proper performance.

Based on the above considerations, the criteria relative to the depth to groundwater requirements and use of alternative/advanced treatment and dispersal methods are consistent with the current state of knowledge and best management practices and would provide suitable protection against pathogen impacts from onsite wastewater treatment systems.

2. Dispersal Trench Sizing

Dispersal trench sizing (i.e., length) is commonly based on three factors: (a) design wastewater flow; (b) trench infiltrative surface dimensions (width and depth); and (c) wastewater application rates (gpd/ft^2) related to percolation rate or soil type. City of Malibu requirements differ in some respects from the SWRCB Tier 1 criteria, but overall provide a more conservative (safe) design approach, as follows:

a. Malibu specifies the use of peak daily wastewater flow for dispersal system sizing; Tier 1 specifies the use of average daily wastewater flow (8.1.3). As a rule of thumb, average

daily flow is typically about 50% of peak wastewater flow, resulting in 100% greater sizing/safety factor in the Malibu design approach.

b. The standard allowance for infiltrative surface in Malibu requirements is trench bottom areas, up to 3 ft^2 per lineal foot of trench, which is more conservative than the 4 ft^2 per lineal foot specified in the Tier 1 requirements (8.1.6). Malibu also has allowance for up to 7 ft^2 per lineal foot of trench, which is higher than the Tier 1 requirement; however Malibu also limits the use of conventional trenches to sites having percolation of greater than 5 mpi and less than 60 mpi, compared with allowance for percolation rates up to 120 mpi in Tier 1. Infiltration rates faster than 5 mpi and slower than 60 mpi up to 120 mpi require the use of supplemental treatment.

c. For conventional OWTS only standard percolation test and soil classification analysis, whichever is greater, is acceptable for dispersal field sizing. Malibu requirements are patterned after the California Plumbing Code (CPC) and USEPA Design Manual for soils analysis, which have been followed in Malibu and several other California counties for many years. Malibu requirements in MMC Chapter 15.42 are more conservative in the fast range (<5 mpi), where conventional OWTS are not permitted in Malibu; they are somewhat higher in the 5-10 mpi range, similar in the middle range (10-30 mpi), somewhat higher for 30-60 mpi, and more conservative in the slower range (>60 mpi), where conventional OWTS dispersal fields are not permitted in Malibu.

3. Seepage Pits

Tier 1 of the State OWTS Policy permits seepage pits only for repairs. Tier 2 of the Policy provides only that where seepage pits are used, they shall maintain a minimum separation to groundwater of at least 10 feet, and various other setback requirements from public water wells related to the depth of the seepage pit. Malibu and, before incorporation, Los Angeles County, historically allowed for the use of seepage pits in accordance with the CPC, including the additional requirements that they only be used where disposal fields are not feasible. MMC Chapter 15.42 and Malibu LAMP and retains these same existing provisions and requirements for the use of seepage pits and, additionally, requires the inclusion of supplemental treatment for OWTS discharges to seepage pits for new and expanded development.

Malibu has not conducted a local investigation of seepage pit performance and water quality impacts. However, the following two studies with some relevance have been reviewed.

(1) "Potential for Ground-Water Contamination from Movement of Wastewater through the Unsaturated Zone, Upper Mojave River Basin, California." This was a study of the long-term effect of wastewater discharge impacts from seepage pits on groundwater quality in the Mojave River Basin, conducted jointly by the U.S. Geological Survey and the Lahontan Regional Water Board and reported in Water-Resources Investigations Report 93-4137 (USGS, 1995). The study confirmed a high rate of bacteria removal within a few feet of

travel in the unsaturated zone below 30-ft deep seepage pits. The study was aimed at evaluating effects on groundwater quality, but was unable to document any significant change in groundwater quality at an average depth of 150 feet below land surface from the seepage pits after many years of operation. The seepage pits in the area of study are estimated to account for 18% of the annual basin recharge. Rates of wastewater travel in the unsaturated zone ranged from 0.07 to 1.0 feet per day, affording several months to several years of travel time for wastewater constituents to undergo treatment in the unsaturated zone.

(2) "Comparative Treatment Effectiveness of Conventional Trench and Seepage Pit Systems." This was a field study of four conventional trench systems and four seepage pits in Arizona, conducted and reported in 2007 by the University of Arizona. It involved collection and analysis of soil samples from locations to the side and below operating systems. Analyses were completed for various chemical and biological constituents, including E. coli, total coliform, nitrogen parameters, total organic carbon and others. The results showed most parameters approached background levels within shorter distances (laterally and vertically) for the trench systems as compared with the seepage pits. Bacteriological analyses showed inactivation or attenuation of E. coli within approximately 30 cm of the infiltrative surface for all of the trenches and seepage pits studied.

4. Horizontal Setbacks

MMC Chapter 15.42 includes horizontal setback distances that equal or exceed the SWRCB Tier 1 requirements in all respects except for Tier 1 paragraph 7.5.5 which specifies a 200-ft setback from "… vernal pools, wetlands, lakes, ponds, or other surface waters…". Paragraph 7.5.5 includes reference to "tidal waters", which would imply the Pacific Ocean fits in the category of "other surface waters". Consistent with historical RWQCB guidelines and requirements found in all other jurisdictions reviewed, Malibu's approach to tidal water is contained in MMC Chapters 15.40, 15.42 and the City's Beachfront Policy which require the addition of supplemental treatment for beachfront properties.

The City's 100-ft setback distance is meant to protect beneficial uses of both watercourses and water bodies, which primarily include contact and non-contact recreation and aquatic resources. Consistent with the State OWTS Policy, Malibu includes a 200-ft to 400-ft setback for surface waters in proximity to public water supply intakes – a beneficial use of water warranting a higher level of protection from waste sources. Also, with respect to the Pacific Ocean, MMC Chapter 15.42 and Malibu's Beach Front Policy require supplementary treatment (including disinfection) for all OWTS in beachfront locations.

The scientific rationale for the Tier 1 200-ft setback in paragraph 7.5.5 is not known. It appears to be without substantial merit and is at odds with other setback requirements – e.g., 100-ft setback

from a domestic water supply well. The justification for a 200-ft setback from such water features as stock watering ponds, golf course lakes, and wetlands (that may or may not have any surface water features) is not known; and therefore, it is not included in Malibu OWTS requirements.

5. Allowable Densities for New Subdivisions

The City of Malibu's Local Coastal Program and General Plan have strict provisions for new subdivisions. As a result, there have only been a few subdivisions processed in the last 5 years. Tier 1 (section 7.8) of the OWTS Policy specifies that average development density (i.e., acres per dwelling unit/OWTS) be based on a sliding scale (0.5 to 2.5 acres) related to average rainfall. City of Malibu does not specify minimum lot size requirements, but instead relies on project and site specific analysis of cumulative impacts (e.g., nitrate loading, groundwater mounding) to determine appropriate density of development and OWTS discharges contained in MMC Chapter 15.42. The results of these analyses may also provide a basis for imposing other mitigation measures (e.g., supplemental treatment providing nitrogen removal), where warranted on a case-by-case basis. This meets the same objective of Section 7.8, but is done on the basis of site specific conditions and analysis.

6. More Protective Aspects of City of Malibu LAMP

The following highlight the more protective aspects of the City of Malibu LAMP as compared with the Tier 1 requirements of the State OWTS Policy.

- **Alternative/Advanced OWTS.** MMC Chapter 15.42 contains requirements for alternative/advanced OWTS with supplemental treatment, providing better options, design guidance and a managed system for dealing with repairs/replacement (where needed) for the approximately 6,000 existing OWTS in the City.

- **Operating Permits.** MMC Chapters 15.42 and 15.44 contain operating permit requirements for all OWTS to provide a higher level of performance monitoring and regular reporting to the City.

- **Cumulative Impact Assessments.** MMC Chapter 15.42 includes requirements for conducting cumulative impact assessments related to nitrate loading, groundwater mounding and other issues of local concern (e.g., lateral migration) for most OWTS proposals based on system location, ground slope, system size (design flow), etc. Tier 1 allows OWTS designs up to 3,500 gpd with no comparable requirements.

- **Pump Systems.** OWTS Manual Section II includes design guidance and requirements for pump systems; none are provided in Tier 1.

- **Pressure Distribution Systems.** MMC Chapter 15.42 treats pressure distribution systems as an alternative/advanced OWTS, including requirements for operating permit and

performance monitoring/reporting. Tier 1 (8.1.4) recognizes pressure distribution as a conventional trench design option without providing or referencing any design criteria.

- **Cut Banks and Steep Slopes.** MMC Chapter 15.42 includes horizontal setback requirement for cut banks and steep slopes, which represent potential avenues for effluent seepage.

- **Peak vs Average Flow.** Under MMC Chapter 15.42 dispersal system design is based on peak, rather than average wastewater flow as provided in Tier 1.

- **Performance Evaluation Guidelines.** MMC Chapter 15.44 provides procedures and criteria to guide performance evaluations of OWTS in connection with building remodel projects, property transfers, abatement investigations, etc. In addition, the registration and training of practitioners under the Registered Practitioner Program in MMC Chapter 5.38 for conducting this work to ensure consistency and standard of care.

7. References

Anderson, D.L., A.L. Lewis, and K. M. Sherman. 1991. Human Enterovirus Monitoring at Onsite Sewage Disposal Systems in Florida. Pages 94-104 in *On-site Wastewater Treatment: Proceedings of the Sixth National Symposium on Individual and Small Community Sewage Systems*, December 16-17, 1991, Chicago, IL., American Society of Agricultural Engineers, ST. Joseph, MI.

Anderson, D. L., R. J. Otis, J. I. McNeillie, and R. A. Apfel . 1994. In-situ Lysimeter investigation of Pollutant Attenuation in the Vadose Zone of a Fine Sand. In *On-Site Wastewater Treatment: Proceedings of the Seventh International Symposium on Individual and Small Community Sewage Systems*. American Society of Agricultural Engineers, St. Joseph, MI.

Ayres Associates. 1993. Onsite Sewage Disposal Research in Florida: An Evaluation of Current OSDS Practices in Florida. Report to the Department of Health and Rehabilitative Services, Environmental Health Program, Tallahassee, FL. Ayres Associates, Madison, WI.

Converse, J.C., and E.J. Tyler. 1998. Soil Dispersal of Highly Pretreated Effluent – Considerations for Incorporation into Code. In Proceedings: Seventh Annual Conference and Exhibits. National Onsite Wastewater Association, Northbrook, IL.

Crites, R. W., and G. Tchobanoglous. 1998. *Small and Decentralized Wastewater Management Systems.* WCB/McGraw-Hill, New York, NY.

Duncan, C.S., R. B. Reneau, Jr., and C. Hagedorn. 1994. Impact of Effluent Quality and Soil Depth on Renovation of Domestic Wastewater. In Onsite Wastewater Treatment: Proceedings of the Seventh International Symposium on Individual and Small Community Sewage Systems, ed. E. Collins. American Society of Agricultural Engineers, St. Joseph, MI.

Field, J.P., K.L. Farrel-Poe, and J.L. Walworth. 2007. Comparative Treatment Effectiveness of Conventional Trench and Seepage Pit Systems. Water Environment Research, Volume 79. https://www.researchgate.net/publication/6359735_Comparative_Treatment_Effectiveness_of_Conventional_Trench_and_Seepage_Pit_Systems

Leverenz, H., G. Tchobanoglous, and J.L. Darby. August 2002. *Review of Technologies for the On-site Treatment of Wastewater in California*. University of California, Davis. Report No. 02-2. Prepared for California State Water Resources Control Board.

Potts, David A., et al. 2003. Effects of Aeration on Water Quality from Septic Leachfields. Journal of Environmental Quality 33:1828-1838, 2004.

State Water Resources Control Board. June 2012. Final Draft Water Quality Control Policy for Siting, Design, Operation and Maintenance of On-site Wastewater Treatment Systems.

U.S. Environmental Protection Agency. February 2002. *Onsite Wastewater Treatment Systems Manual*. (EPA/625/R-00/008). Office of Water. Office of Research and Development. Washington, DC.

U.S. Geological Survey. 1995. Potential for Ground-Water Contamination from Movement of Wastewater through the Unsaturated Zone, Upper Mojave River Basin, California. Water-Resources Investigations Report 93-4137.

Washington State Department of Health. October 1990. Vertical Separation – A Review of Available Scientific Literature and Listing from Fifteen Other States. Olympia, Washington. http://www.doh.wa.gov/Portals/1/Documents/Pubs/337-094.pdf

Appendix B

OWTS Inventory and Land Uses

Nicholas Canyon
Watershed 1-2

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	61	55	194	90	56	627.3
	Multi-Family (Low - Med Density)	2	6	2.323	2	6	2.323
	Multi-Family (High Density)	0	0	0	0	0	0
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
Subtotal		63	61	196.32	92	62	629.62
Non-Residential	Agriculture	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	0	0	0	36	0	167.1
	Recreation	0	0	0	1	0	98.88
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
Subtotal		0	0	0	37	0	265.98
Residential & Non-Residential Total		**63**	**61**	**196.32**	**129**	**62**	**895.6**

Los Alisos Canyon
Watershed 3

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	131	127	317.1	205	127	1008
	Multi-Family (Low - Med Density)	0	0	0	0	0	0
	Multi-Family (High Density)	0	0	0	0	0	0
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
Subtotal		131	127	317.1	205	127	1008
Non-Residential	Agriculture	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	0	0	0	13	0	347.5
	Recreation	0	0	0	0	0	0
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
Subtotal		0	0	0	13	0	347.5
Residential & Non-Residential Total		**131**	**127**	**317.1**	**218**	**127**	**1355.5**

Encinal Canyon
Watershed 4

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	242	239	238	388	241	518.4
	Multi-Family (Low - Med Density)	1	2	0.156	1	2	0.156
	Multi-Family (High Density)	1	5	11.98	1	5	11.98
	Mixed Use	1	2	6.761	1	2	6.761
	Mobile - Homes	0	0	0	0	0	0
Subtotal		245	248	256.9	391	250	537.3
Non-Residential	Agriculture	1	1	2.668	2	2	4.905
	Commercial	0	0	0	0	0	0
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	0	0	0	0	0	0
	Recreation	0	0	0	10	0	14.16
	Restaurants	1	0	1.121	0	0	0
	Schools	0	0	0	0	0	0
Subtotal		2	1	3.789	12	2	19.065
Residential & Non-Residential Total		**247**	**249**	**260.69**	**403**	**252**	**556.36**

Trancas Canyon
Watershed 5

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	441	423	543.3	529	423	785.9
	Multi-Family (Low - Med Density)	17	80	18.926	18	80	19.006
	Multi-Family (High Density)	6	54	4.136	6	54	4.136
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
Subtotal		464	557	566.36	553	557	809.04
Non-Residential	Agriculture	0	0	0	0	0	0
	Commercial	1	1	13.74	1	1	13.74
	Gas & Service Stations	1	1	3.874	1	1	3.874
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	2	0	94.53	8	0	437.5
	Recreation	1	0	2.14	2	2	14.72
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
Subtotal		5	2	114.28	12	4	469.83
Residential & Non-Residential Total		**469**	**559**	**680.65**	**565**	**561**	**1278.9**

Zuma Canyon
Watershed 6

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	504	498	657.4	576	499	789.6
	Multi-Family (Low - Med Density)	23	114	22.164	23	114	22.164
	Multi-Family (High Density)	1	12	0.471	1	12	0.471
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	528	624	680.04	600	625	812.24
Non-Residential	Agriculture	1	0	3.954	2	3	4.427
	Commercial	2	2	3.463	3	0	4.762
	Gas & Service Stations	1	1	0.291	1	1	0.291
	Lodging (Commercial)	1	12	2.034	1	12	2.034
	Office / Industry	4	1	6.227	29	1	498.5
	Recreation	0	0	0	1	0	6.546
	Restaurants	1	0	0.85	1	0	0.85
	Schools	0	0	0	0	0	0
	Subtotal	10	16	16.819	38	17	517.41
	Residential & Non-Residential Total	**538**	**640**	**696.85**	**638**	**642**	**1329.6**

Ramirez Canyon
Watershed 7

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	682	673	1030	821	674	1352
	Multi-Family (Low - Med Density)	12	375	45.89	12	375	45.89
	Multi-Family (High Density)	0	0	0	0	0	0
	Mixed Use	2	236	69.93	2	236	69.93
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	696	1284	1145.8	835	1285	1467.8
Non-Residential	Agriculture	0	0	0	0	0	0
	Commercial	3	0	2.464	5	0	21.4
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	1	12	4.344	1	12	4.344
	Office / Industry	3	1	2.336	9	1	22.35
	Recreation	2	2	7.65	2	2	7.65
	Restaurants	0	0	0	0	0	0
	Schools	1	0	0.431	1	0	0.431
	Subtotal	10	15	17.225	18	15	56.175
	Residential & Non-Residential Total	**706**	**1299**	**1163**	**853**	**1300**	**1524**

Escondido Canyon
Watershed 8

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	243	235	411.3	328	236	720.7
	Multi-Family (Low - Med Density)	4	18	6.762	4	18	6.762
	Multi-Family (High Density)	2	20	4.659	2	20	4.659
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	1	1	4.063	1	1	4.063
	Subtotal	250	274	426.78	335	275	736.18
Non-Residential	Agriculture	0	0	0	1	0	5.17
	Commercial	0	0	0	0	0	0
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	0	0	0	0	0	0
	Recreation	0	0	0	0	0	0
	Restaurants	1	0	0.734	1	0	0.734
	Schools	0	0	0	0	0	0
	Subtotal	1	0	0.734	2	0	5.904
	Residential & Non-Residential Total	**251**	**274**	**427.52**	**337**	**275**	**742.09**

Latigo Canyon
Watershed 9

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	62	59	172.9	108	59	330.2
	Multi-Family (Low - Med Density)	5	118	5.436	5	118	5.436
	Multi-Family (High Density)	0	0	0	0	0	0
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	67	177	178.34	113	177	335.64
Non-Residential	Agriculture	0	0	0	0	0	0
	Commercial	0	0	0	0	0	0
	Gas & Service Stations	1	0	0.359	1	0	0.359
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	0	0	0	6	0	12.46
	Recreation	0	0	0	0	0	0
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
	Subtotal	1	0	0.359	7	0	12.819
	Residential & Non-Residential Total	**68**	**177**	**178.7**	**120**	**177**	**348.46**

Solstice Canyon
Watershed 10

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	0	0	0	6	0	71.63
	Multi-Family (Low - Med Density)	3	7	0.438	3	7	0.438
	Multi-Family (High Density)	0	0	0	0	0	0
	Mixed Use	1	2	4.929	1	2	4.929
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	4	9	5.367	10	9	76.997
Non-Residential	Agriculture	0	0	0	3	0	155.6
	Commercial	0	0	0	0	0	0
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	1	0	64.61	1	0	64.61
	Recreation	0	0	0	0	0	0
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
	Subtotal	1	0	64.61	4	0	220.21
	Residential & Non-Residential Total	**5**	**9**	**69.977**	**14**	**9**	**297.21**

Corral Canyon*
Watershed 11

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	333	324	311.58	430	327	681.4
	Multi-Family (Low - Med Density)	42	214	7.559	46	214	15.35
	Multi-Family (High Density)	2	11	0.404	2	11	0.404
	Mixed Use	2	5	2.822	2	5	2.822
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	379	554	322.37	480	557	699.98
Non-Residential	Agriculture	0	0	0	2	0	81.68
	Commercial	1	2	23.65	1	2	23.65
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	1	0	14.41	2	0	18.67
	Office / Industry	3	0	98.78	12	0	113.3
	Recreation	0	0	0	1	0	4.639
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
	Subtotal	5	2	136.84	18	2	241.94
	Residential & Non-Residential Total	**384**	**556**	**459.21**	**498**	**559**	**941.92**

* Approximately 280 lots to be connected to Civic Center Wastewater Treatment Facility

Malibu Creek*
Watershed 12

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	135	129	222.7	163	129	278.4
	Multi-Family (Low - Med Density)	3	114	15.4	4	114	15.6
	Multi-Family (High Density)	0	0	0	0	0	0
	Mixed Use	1	0	2.1	1	0	2.1
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	139	243	240.2	168	243	296.1
Non-Residential	Agriculture	0	0	0	3	0	33.4
	Commercial	10	4	63	28	4	139.9
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	11	0	89.4	13	0	115
	Recreation	0	0	0	1	0	24
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
	Subtotal	21	4	152.4	45	4	312.3
	Residential & Non-Residential Total	**160**	**247**	**392.6**	**213**	**247**	**608.4**

* All to be connected to Civic Center Wastewater Treatment Facility.

Carbon Canyon*
Watershed 13

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	408	386	216.2	546	386	641.9
	Multi-Family (Low - Med Density)	33	180	13.85	34	180	48.46
	Multi-Family (High Density)	14	117	5.283	14	117	5.283
	Mixed Use	12	22	3.843	12	22	3.843
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	467	705	239.18	606	705	699.49
Non-Residential	Agriculture	0	0	0	0	0	0
	Commercial	12	36	6.526	20	36	9.15
	Gas & Service Stations	2	0	0.803	2	0	0.803
	Lodging (Commercial)	3	37	2.391	3	37	2.391
	Office / Industry	13	3	7.579	17	3	7.733
	Recreation	1	1	1.126	1	1	1.126
	Restaurants	5	0	3.816	5	0	3.816
	Schools	0	0	0	0	0	0
	Subtotal	36	77	22.241	48	77	25.019
	Residential & Non-Residential Total	**503**	**782**	**261.42**	**654**	**782**	**724.51**

* Approximately 15 lots to be connected to Civic Center Wastewater Treatment Facility

Las Flores Canyon
Watershed 14

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	178	165	134.7	277	167	382
	Multi-Family (Low - Med Density)	35	97	5.347	38	100	5.52
	Multi-Family (High Density)	5	60	1.612	5	60	1.612
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	218	322	141.66	320	327	389.13
Non-Residential	Agriculture	0	0	0	1	6	0.3222
	Commercial	1	1	0.183	7	1	1.842
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	1	1	0.163	5	1	2.876
	Recreation	0	0	0	1	0	2.959
	Restaurants	1	1	1.761	1	1	1.761
	Schools	1	0	0.724	1	0	0.724
	Subtotal	4	3	2.831	16	9	10.484
	Residential & Non-Residential Total	**222**	**325**	**144.49**	**336**	**336**	**399.62**

Piedra Gorda Canyon
Watershed 15

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	204	204	125.3	236	236	175.3
	Multi-Family (Low - Med Density)	28	63	2.125	28	63	2.125
	Multi-Family (High Density)	1	6	0.201	1	6	0.201
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	233	273	127.63	265	305	177.63
Non-Residential	Agriculture	0	0	0	0	0	0
	Commercial	0	0	0	1	0	2.748
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	3	21	1.217	3	21	1.217
	Office / Industry	0	0	0	0	0	0
	Recreation	0	0	0	0	0	0
	Restaurants	1	1	0.301	1	1	0.301
	Schools	0	0	0	0	0	0
	Subtotal	4	22	1.518	5	22	4.266
	Residential & Non-Residential Total	**237**	**295**	**129.14**	**270**	**327**	**181.89**

PenaCanyon
Watershed 16

	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	34	34	3.717	53	34	152.6
	Multi-Family (Low - Med Density)	11	26	7.81	11	26	7.81
	Multi-Family (High Density)	0	0	0	0	0	0
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	45	60	11.527	64	60	160.41
Non-Residential	Agriculture	0	0	0	2	0	40.8
	Commercial	0	0	0	0	0	0
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	0	0	0	9	0	1.989
	Recreation	0	0	0	0	0	0
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
	Subtotal	0	0	0	11	0	42.789
	Residential & Non-Residential Total	**45**	**60**	**11.527**	**75**	**60**	**203.2**

Tuna Canyon
Watershed 17

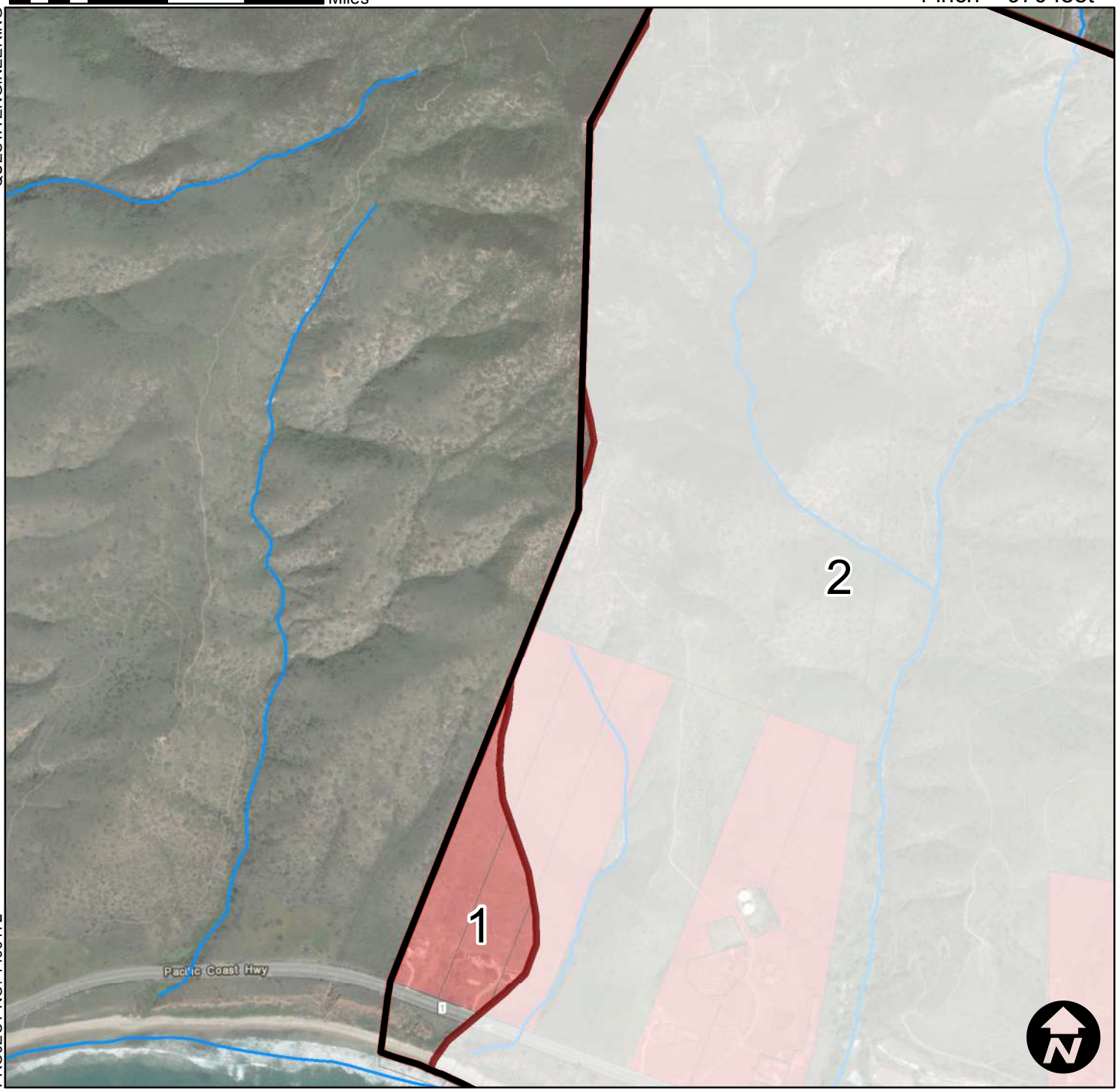
	Land Use Type	Developed			Total		
		Lots	Units	Acres	Lots	Units	Acres
Residential	Single Family Residences	60	59	5.661	72	59	108.9
	Multi-Family (Low - Med Density)	8	18	1.166	8	18	1.166
	Multi-Family (High Density)	2	22	0.374	2	22	0.374
	Mixed Use	0	0	0	0	0	0
	Mobile - Homes	0	0	0	0	0	0
	Subtotal	70	99	7.201	82	99	110.44
Non-Residential	Agriculture	0	0	0	0	0	0
	Commercial	1	1	0.402	1	1	0.402
	Gas & Service Stations	0	0	0	0	0	0
	Lodging (Commercial)	0	0	0	0	0	0
	Office / Industry	0	0	0	1	0	0.006
	Recreation	0	0	0	0	0	0
	Restaurants	0	0	0	0	0	0
	Schools	0	0	0	0	0	0
	Subtotal	1	1	0.402	2	1	0.408
	Residential & Non-Residential Total	**71**	**100**	**7.603**	**84**	**100**	**110.85**

0 0.05 0.1 0.2 0.3 0.4 Miles

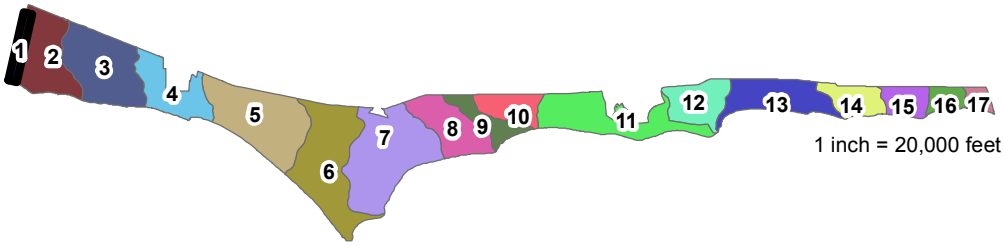
1 inch = 970 feet

QUESTA ENGINEERING

PROJECT NO. 1400172



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Arroyo Sequit

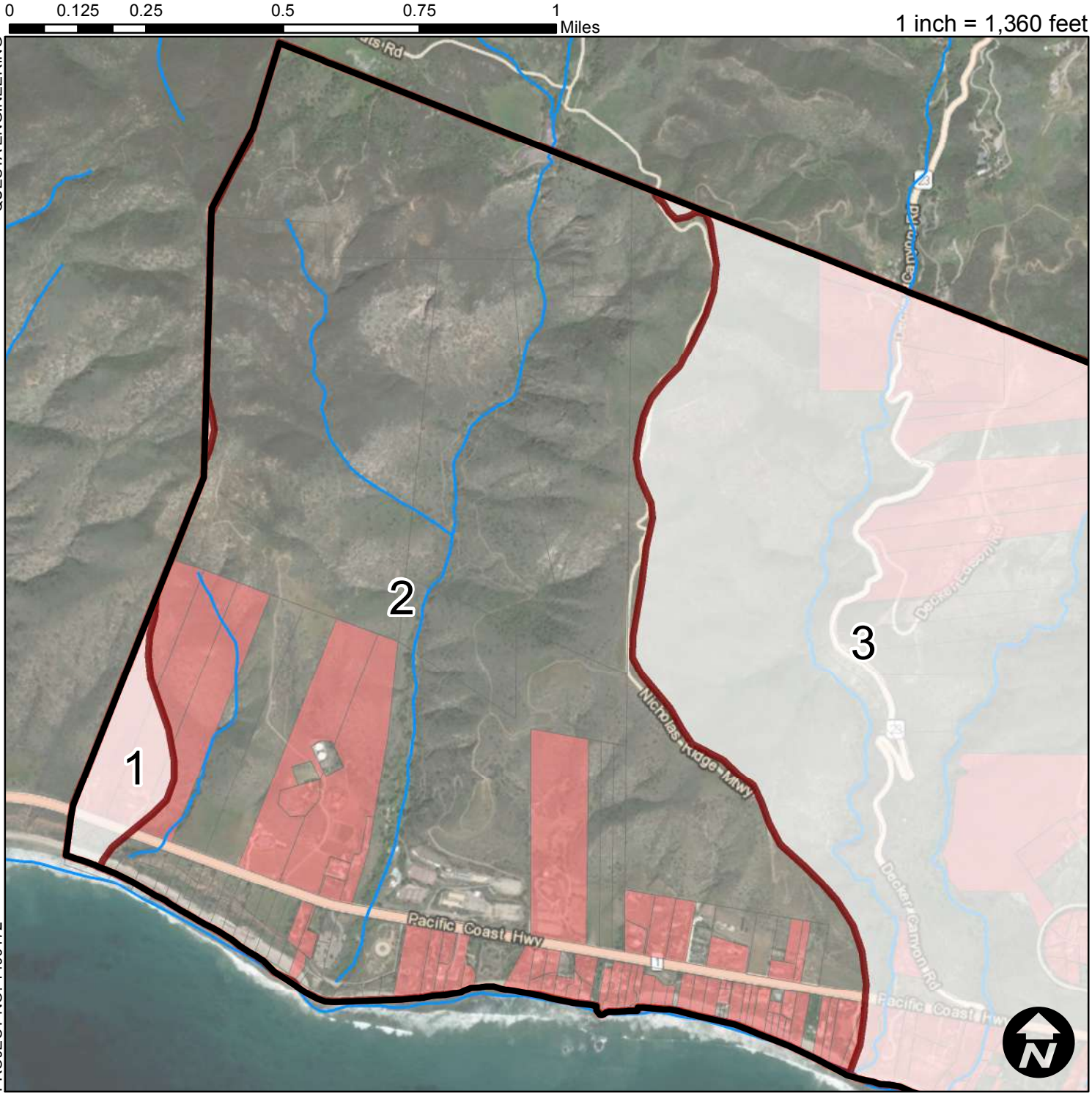
Watershed 1

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



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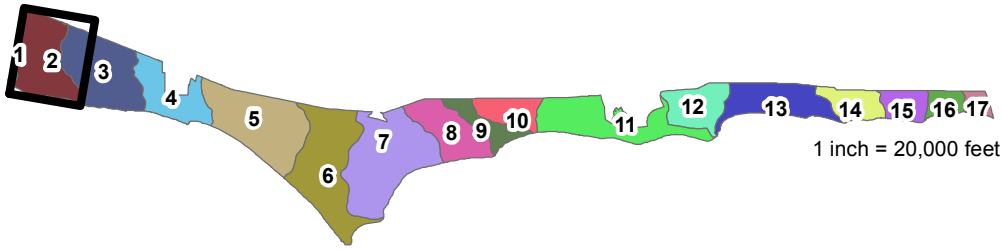


Nicholas Canyon

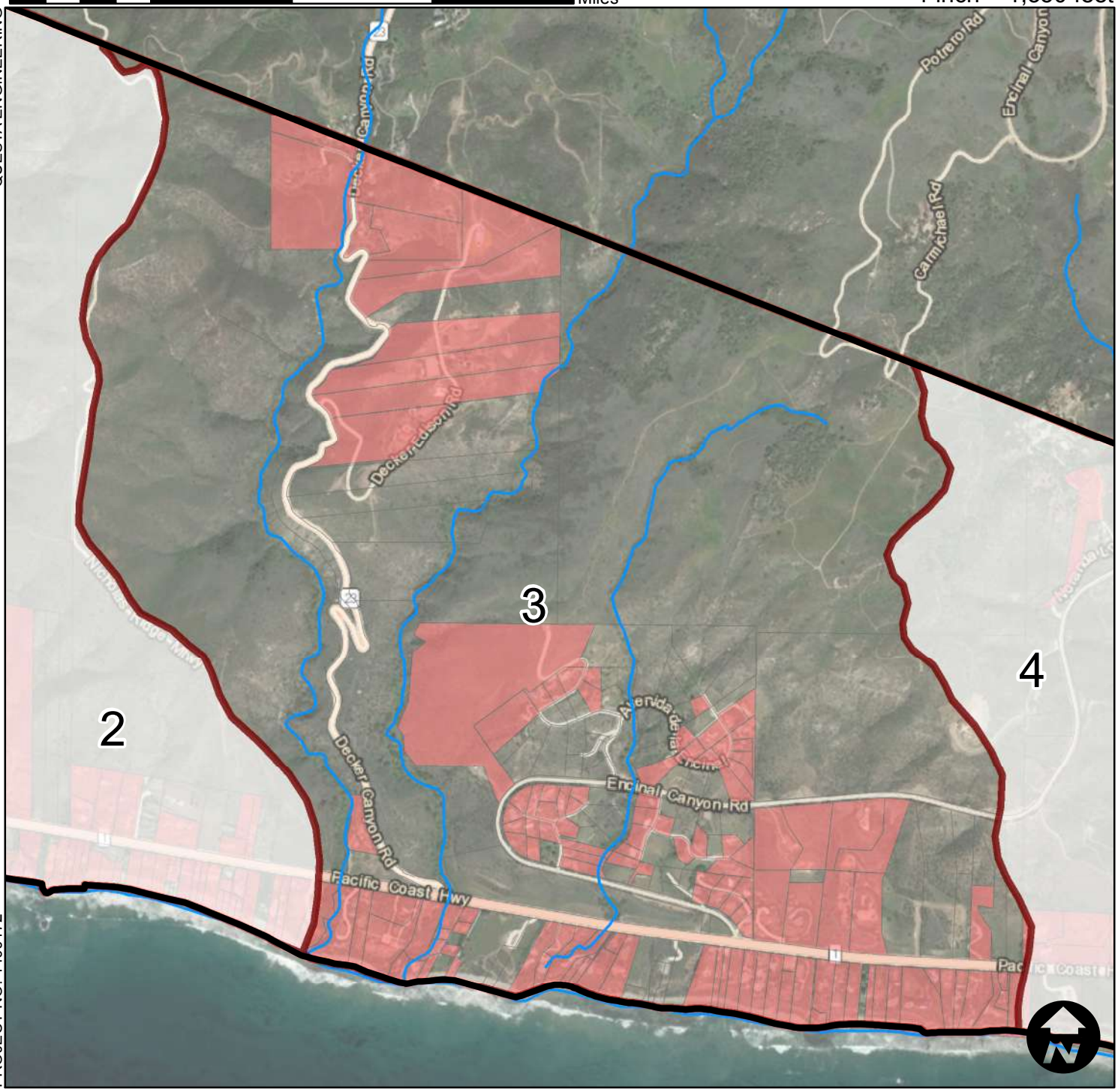
Watershed 2

LEGEND

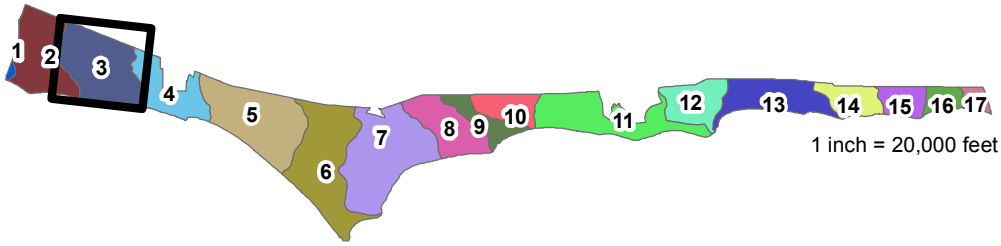
- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Los Alisos Canyon

Watershed 3

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

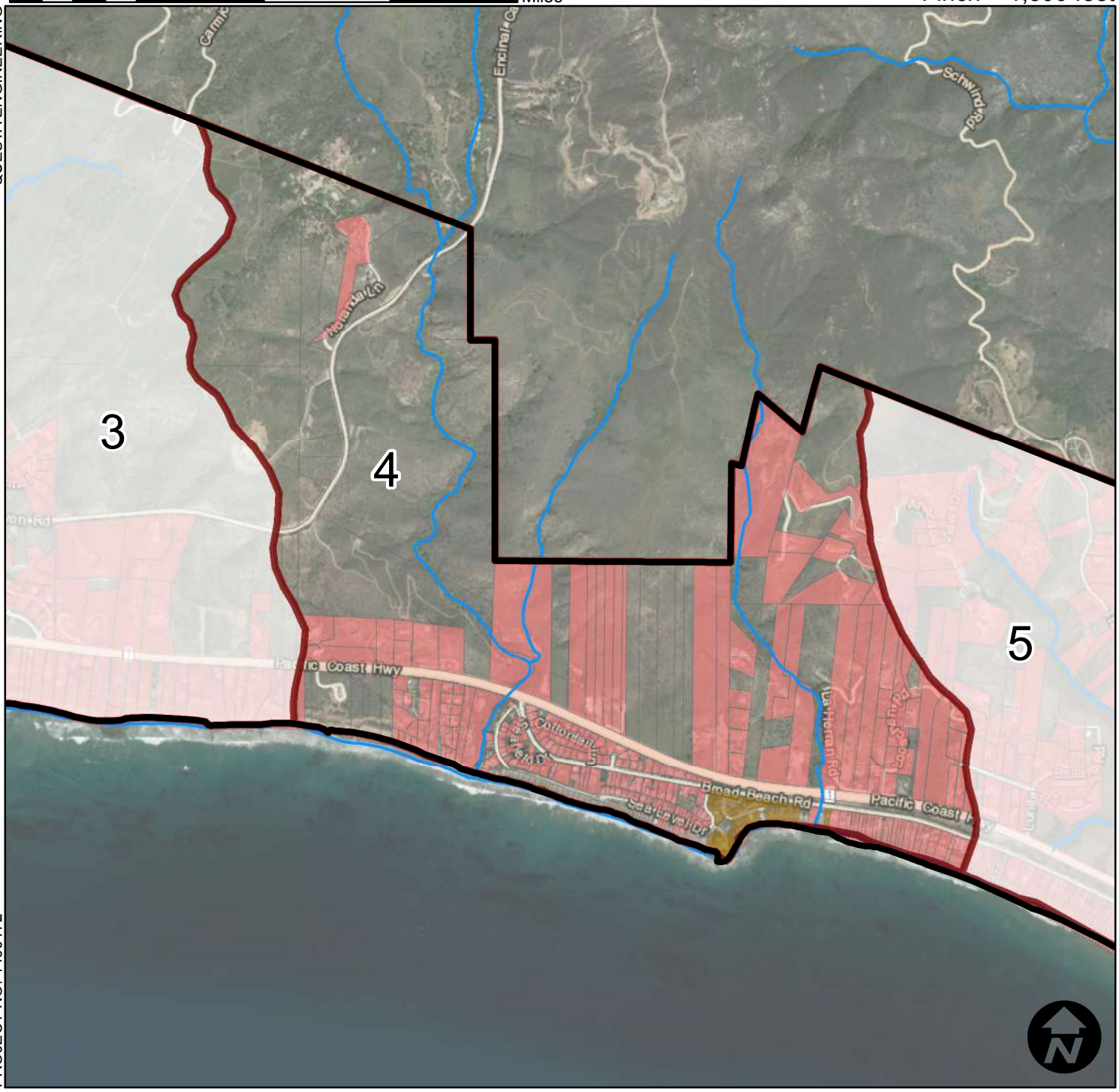
- Developed
- Package Treatment Plant
- Vacant

0 0.125 0.25 0.5 0.75 1 Miles

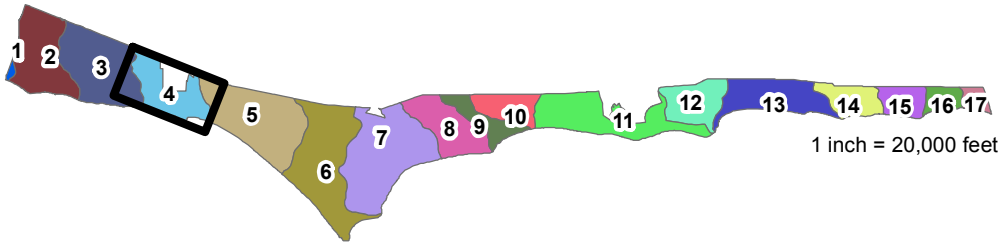
1 inch = 1,500 feet

QUESTA ENGINEERING

PROJECT NO. 1400172



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Encinal Canyon

Watershed 4

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

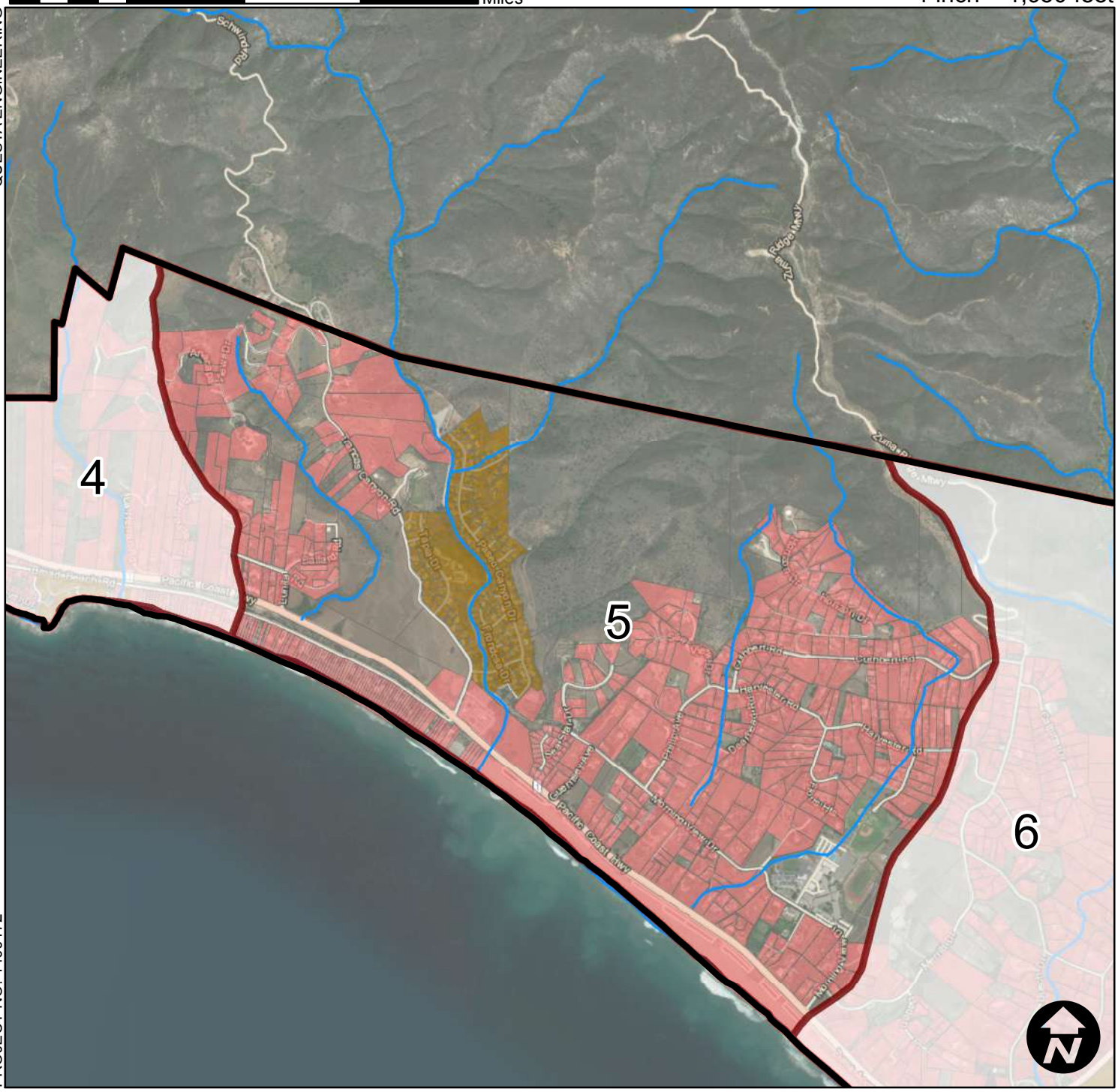
- Developed
- Package Treatment Plant
- Vacant

0 0.15 0.3 0.6 0.9 1.2 Miles

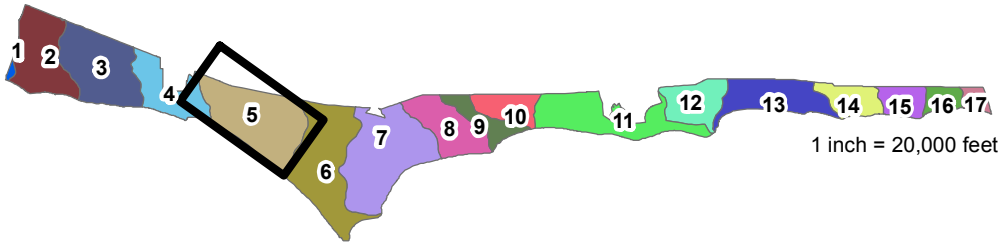
1 inch = 1,950 feet

QUESTA ENGINEERING

PROJECT NO. 1400172



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Trancas Canyon

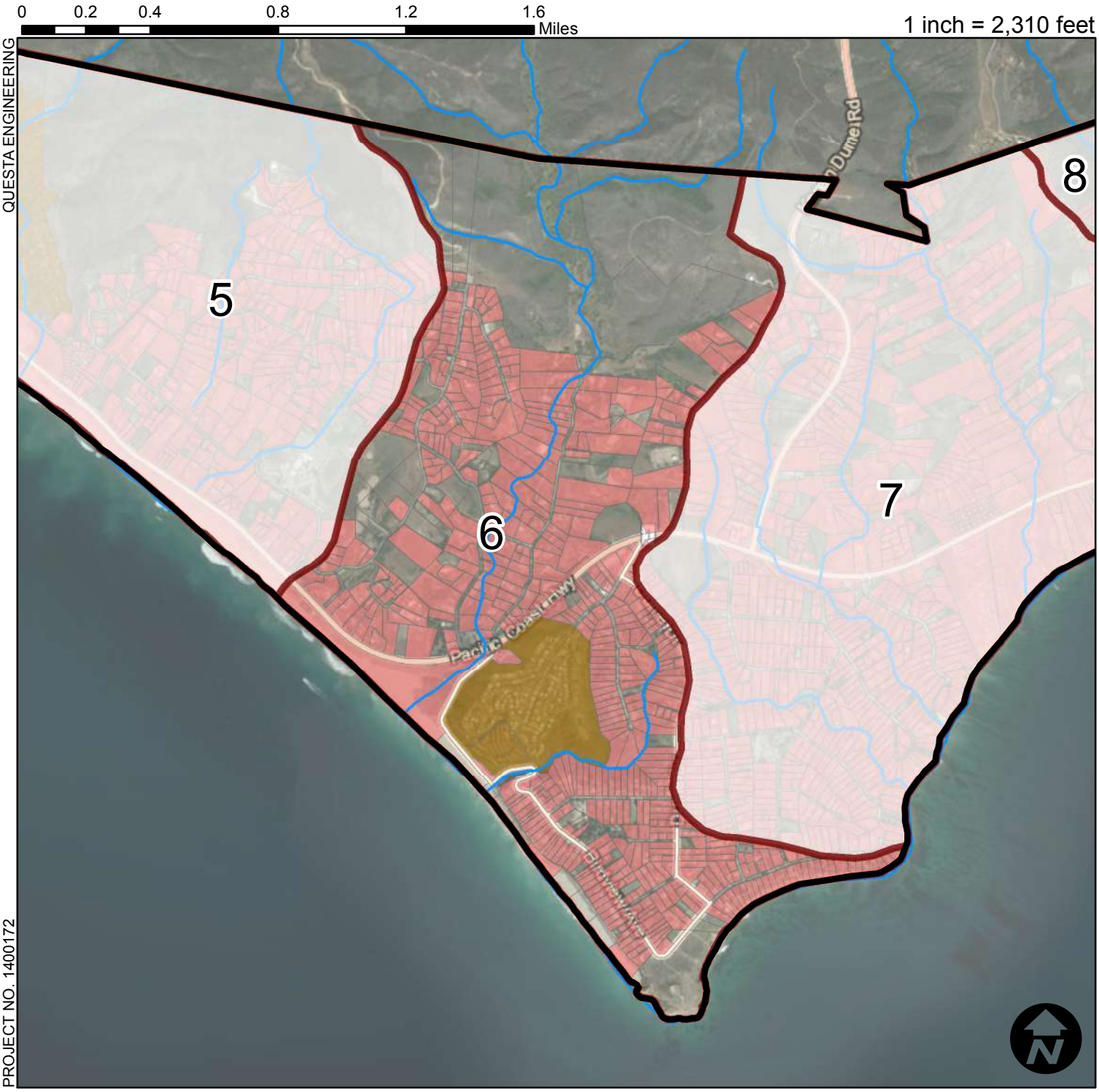
Watershed 5

LEGEND

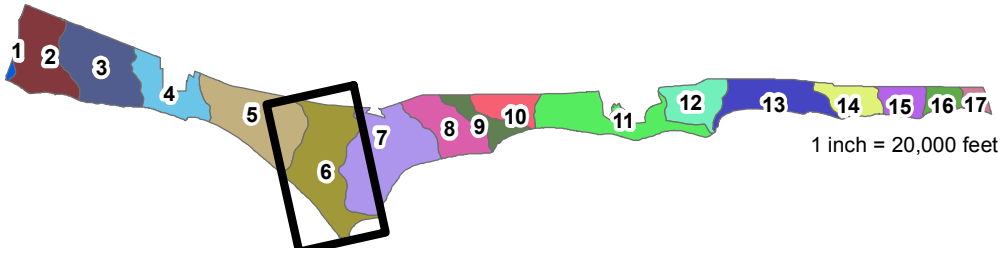
- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Zuma Canyon

Watershed 6

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

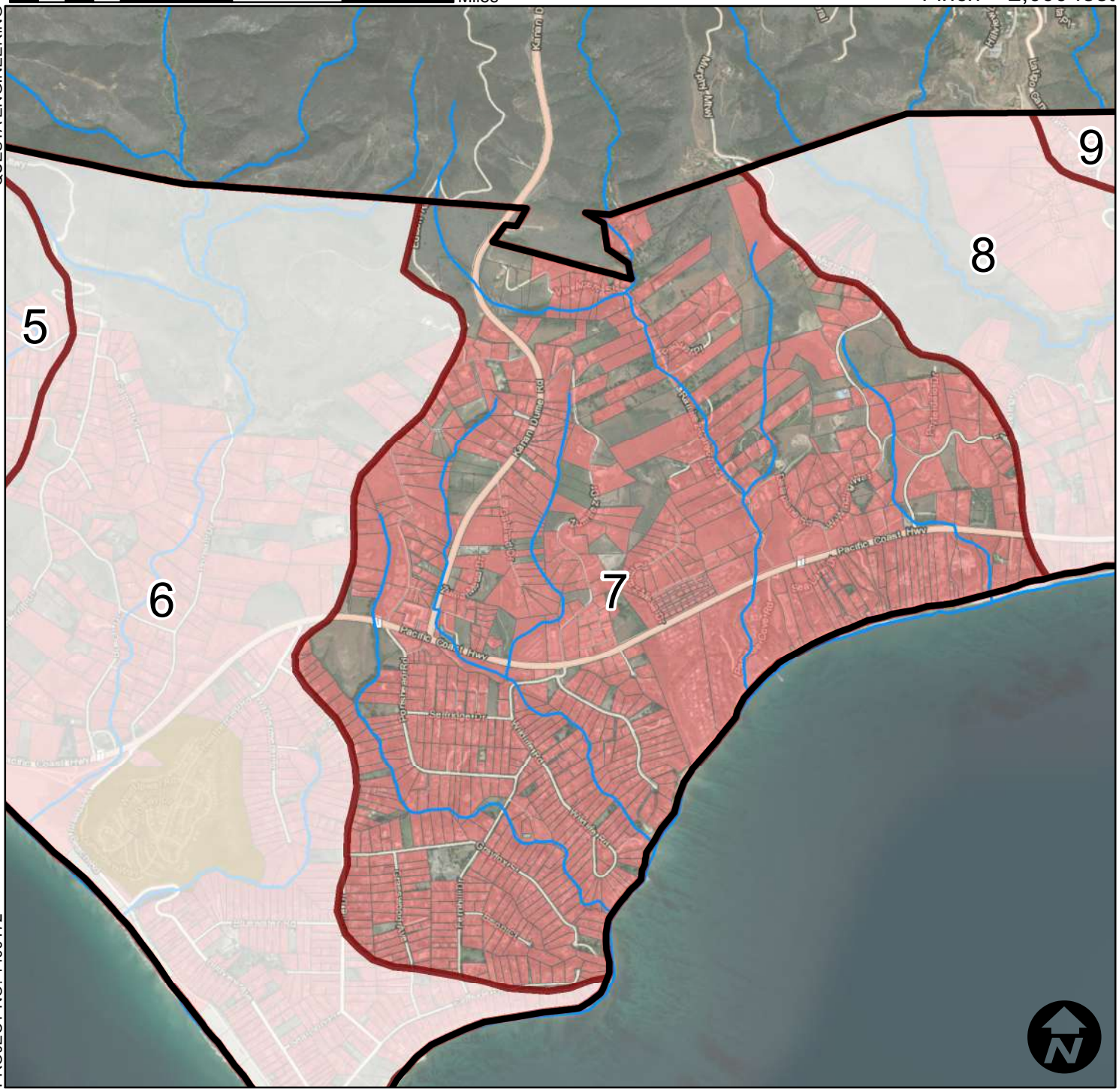
- Developed
- Package Treatment Plant
- Vacant

0 0.15 0.3 0.6 0.9 1.2 Miles

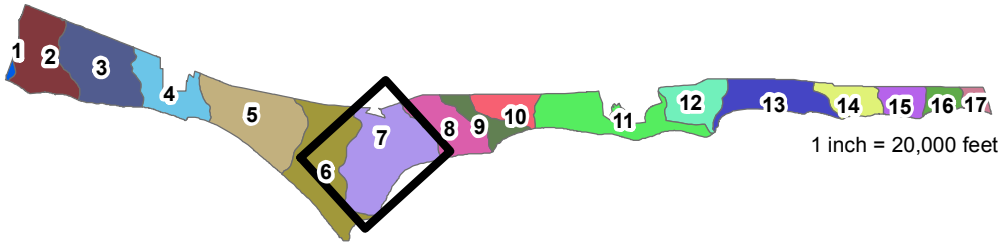
1 inch = 2,060 feet

QUESTA ENGINEERING

PROJECT NO. 1400172



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Ramirez Canyon

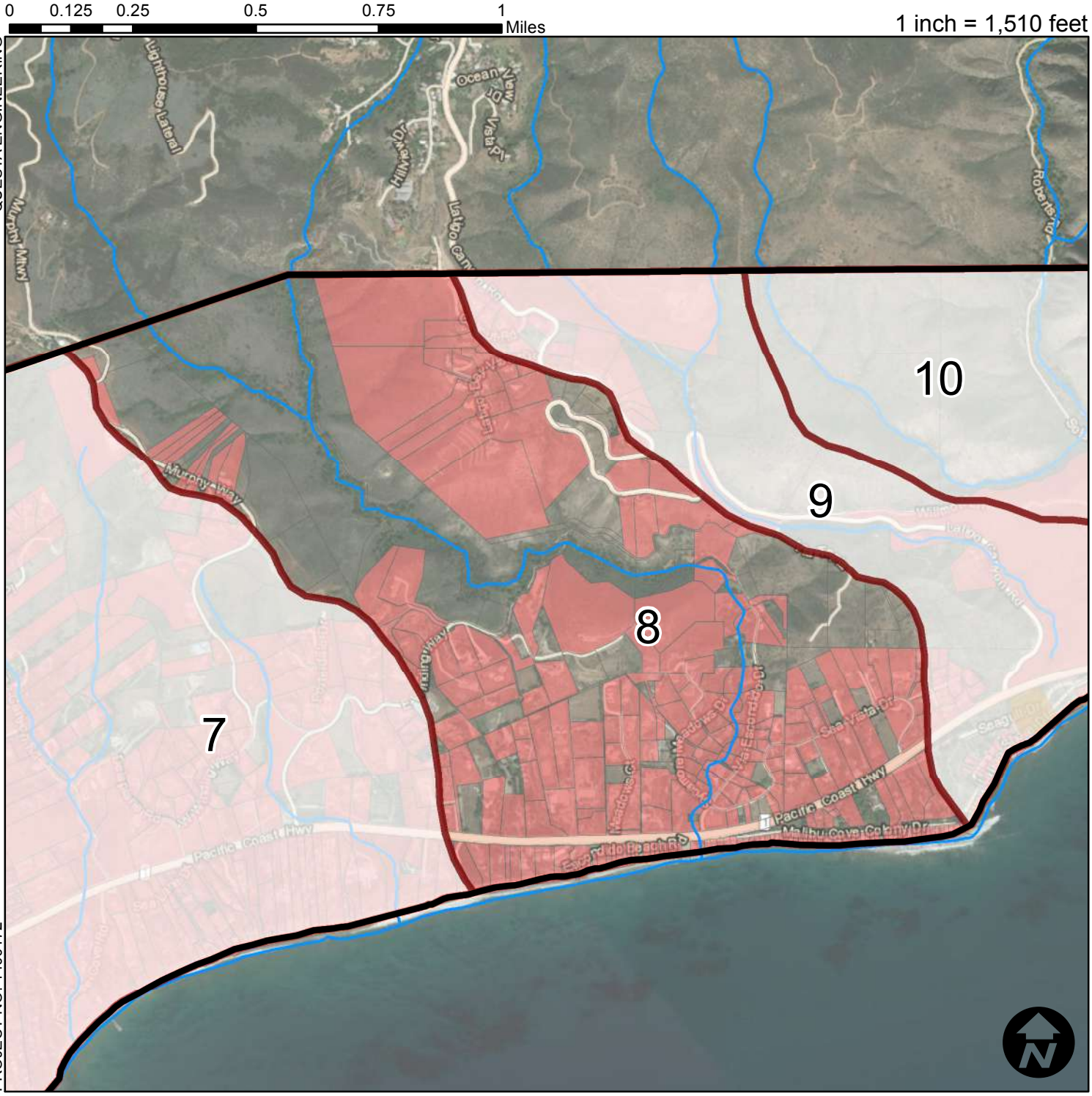
Watershed 7

LEGEND

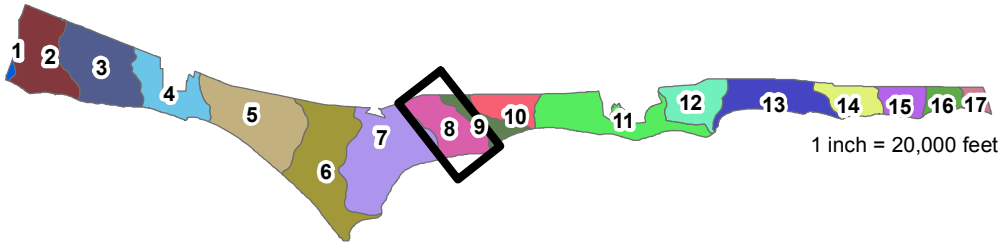
- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Escondido Canyon

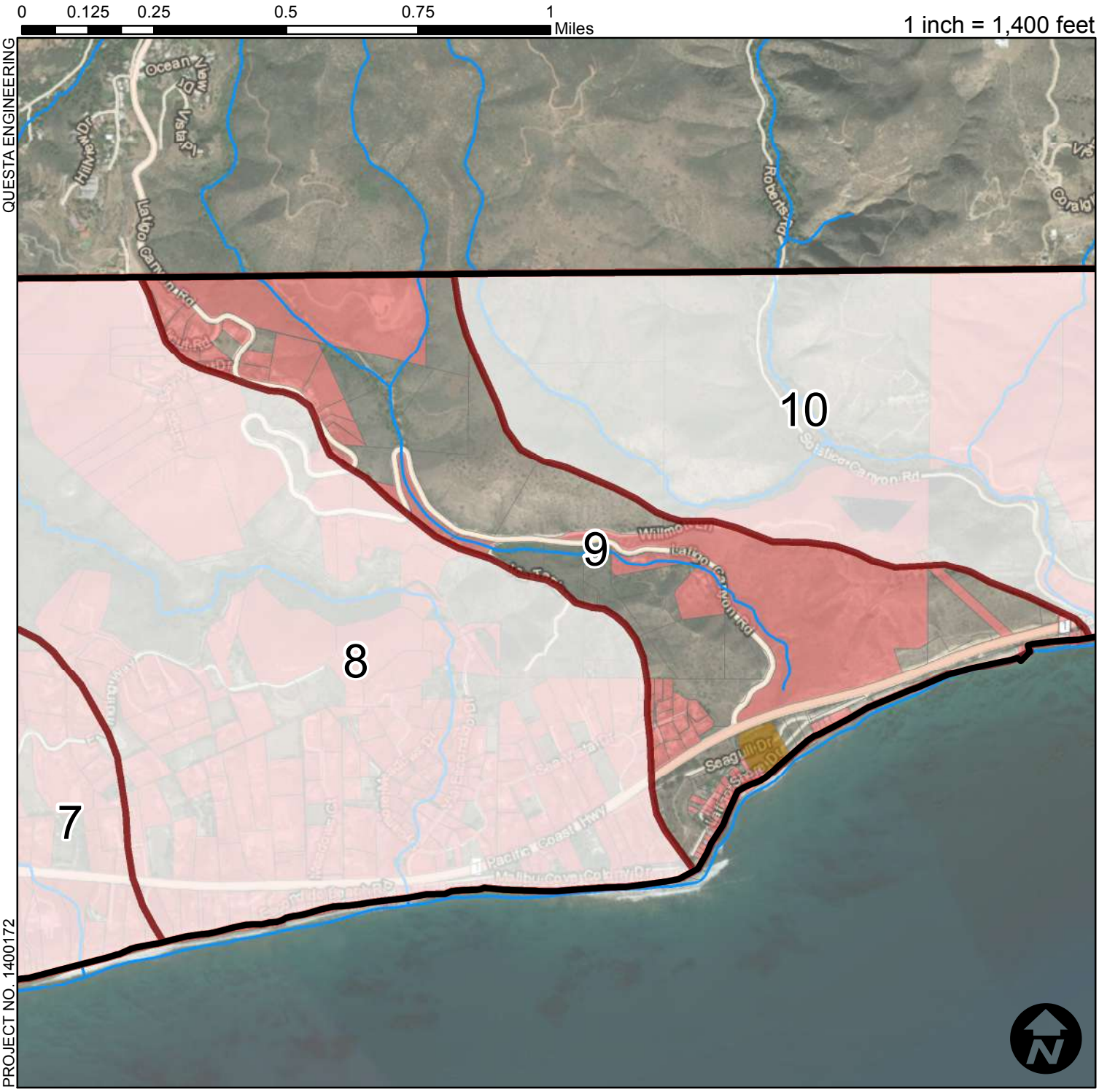
Watershed 8

LEGEND

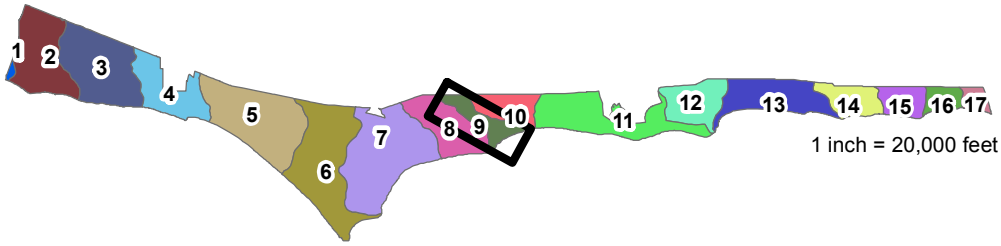
- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Latigo Canyon

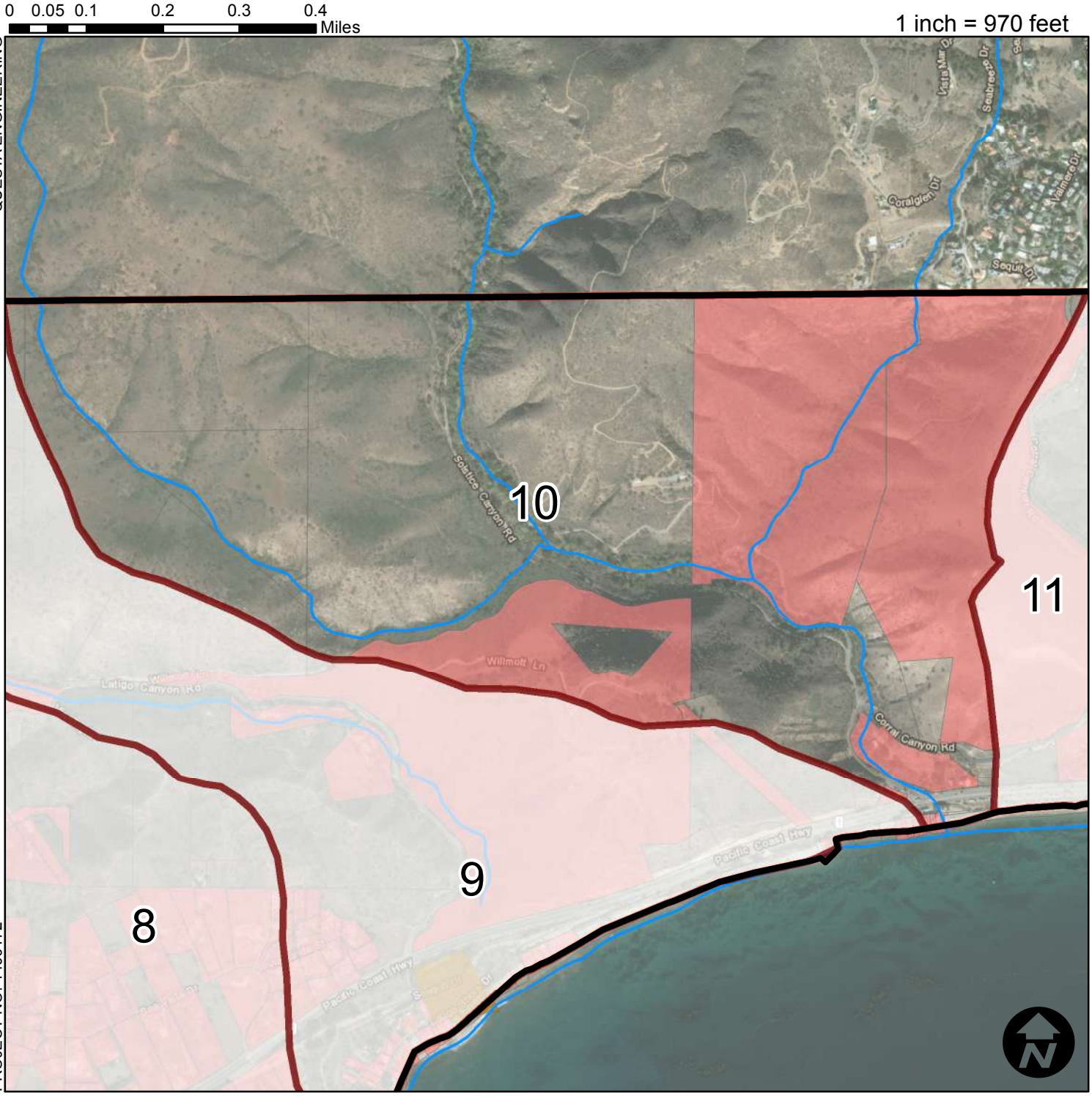
Watershed 9

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



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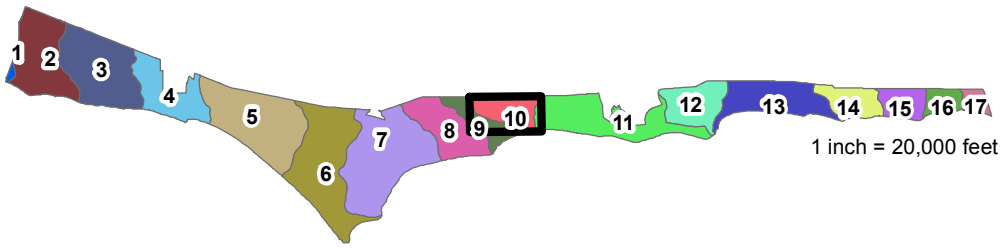


LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant

Solstice Canyon

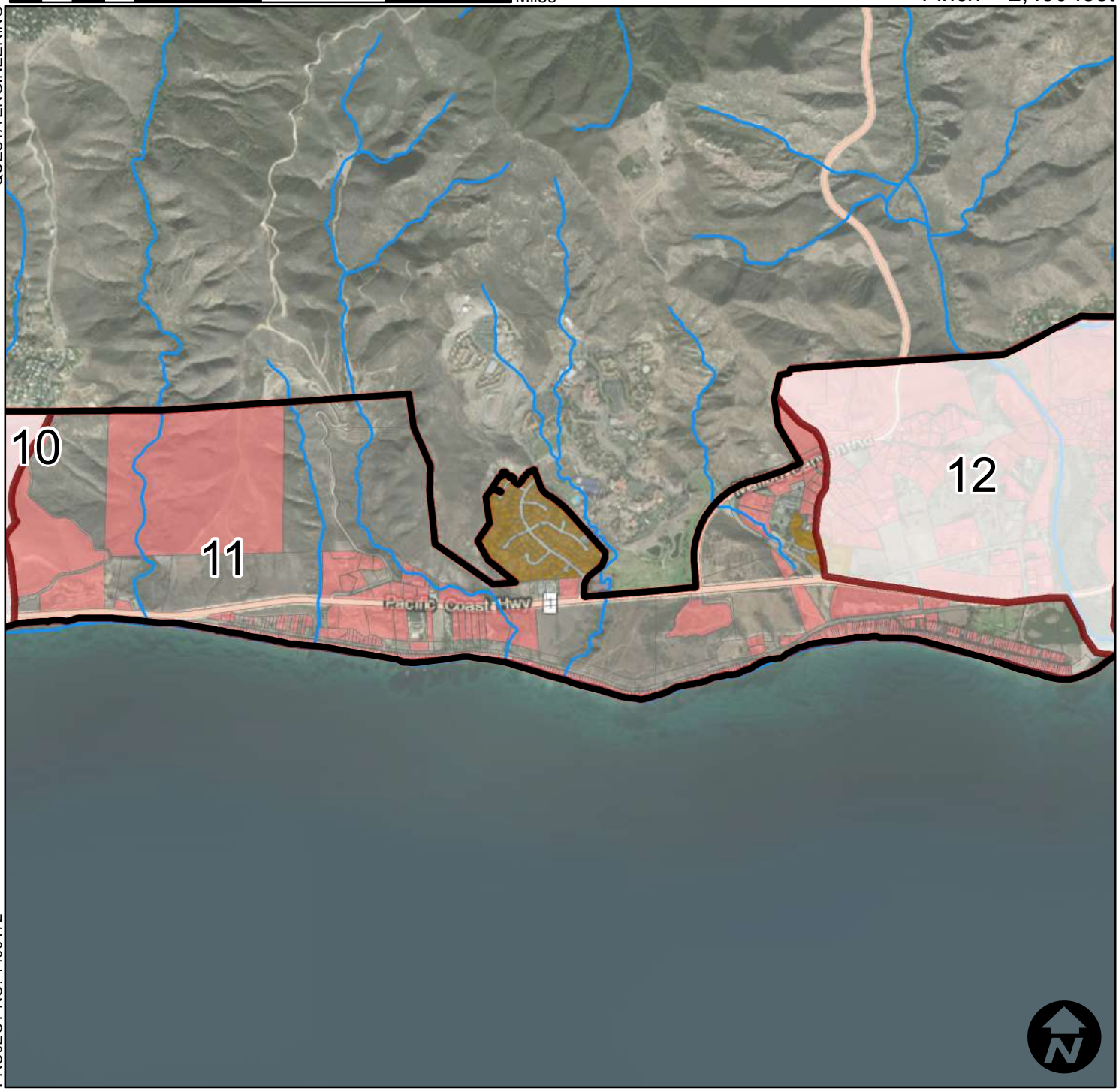
Watershed 10

0 0.2 0.4 0.8 1.2 1.6 Miles

1 inch = 2,430 feet

QUESTA ENGINEERING

PROJECT NO. 1400172



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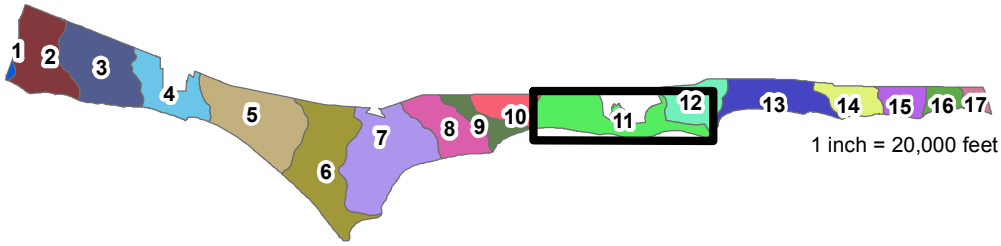


Corral Canyon

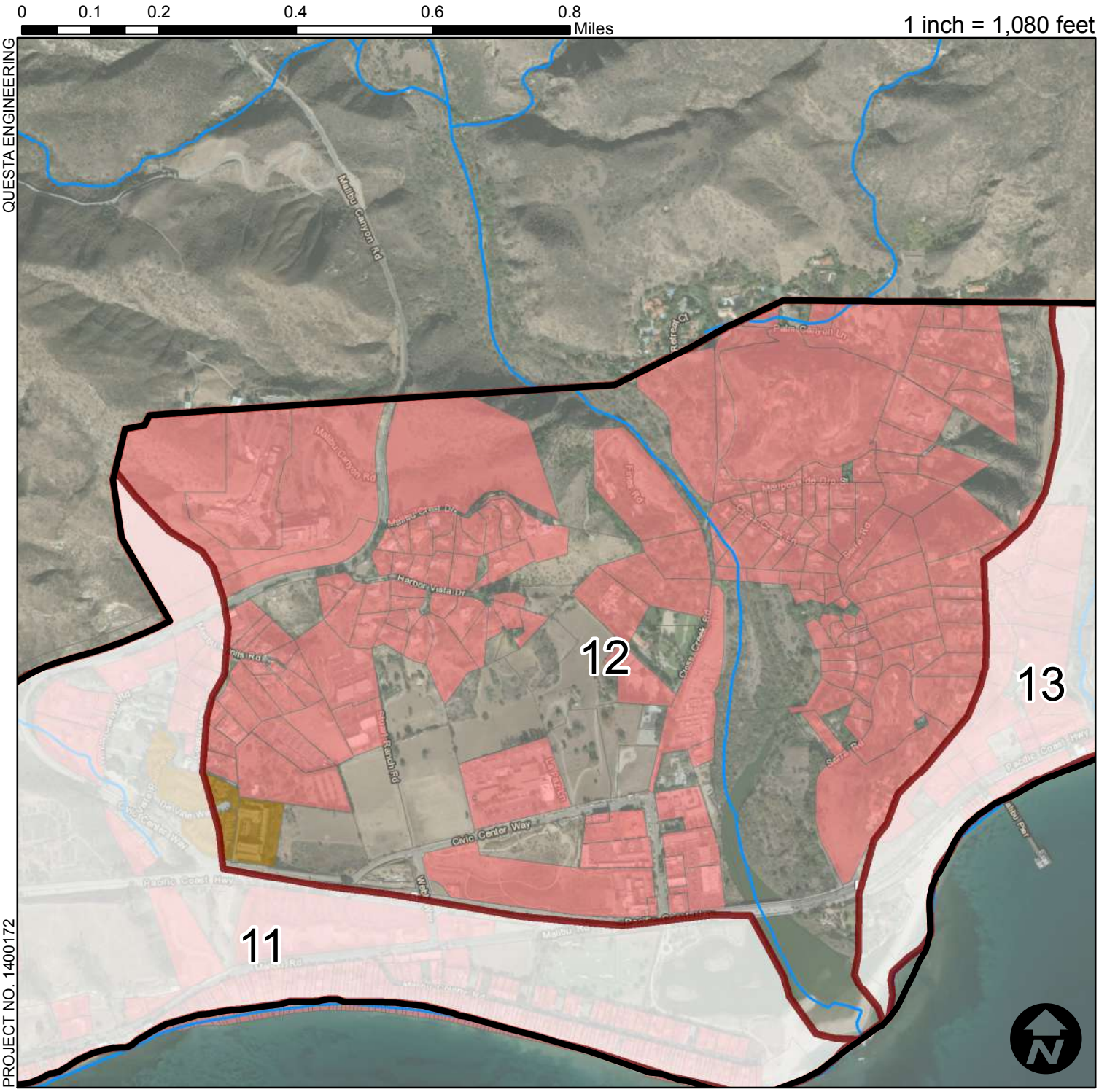
Watershed 11

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



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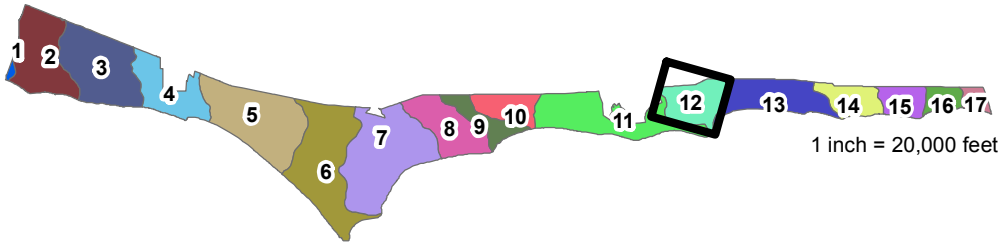


Malibu Creek

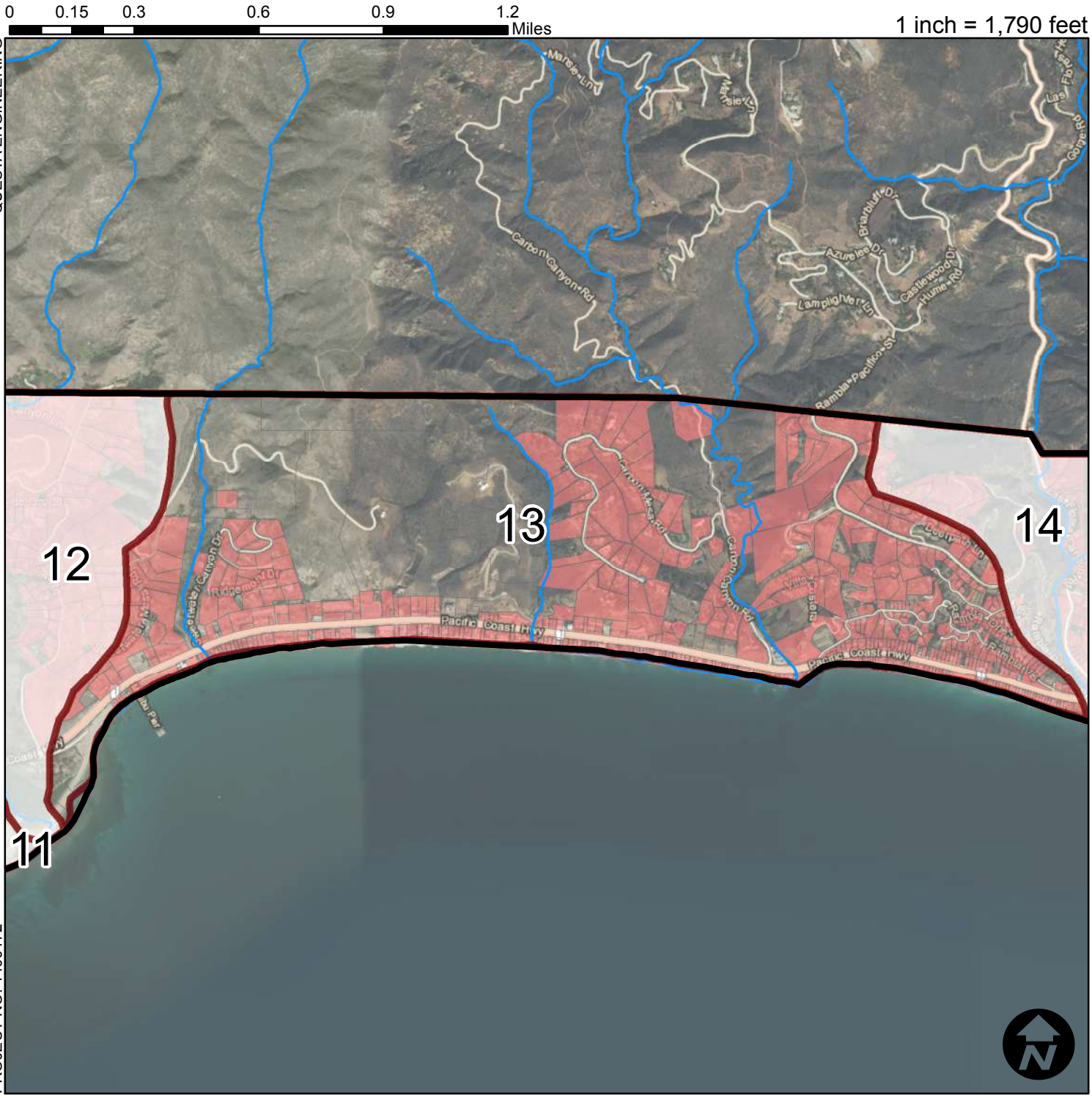
Watershed 12

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



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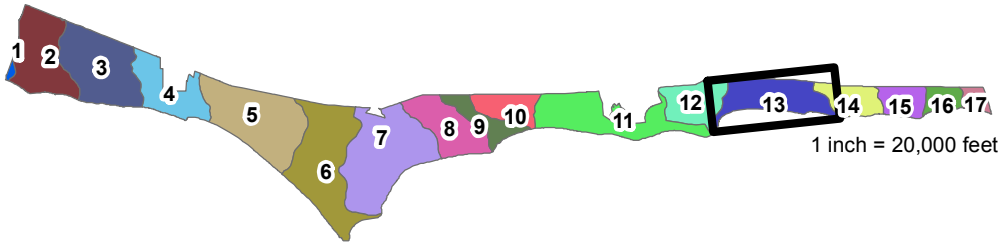


Carbon Canyon

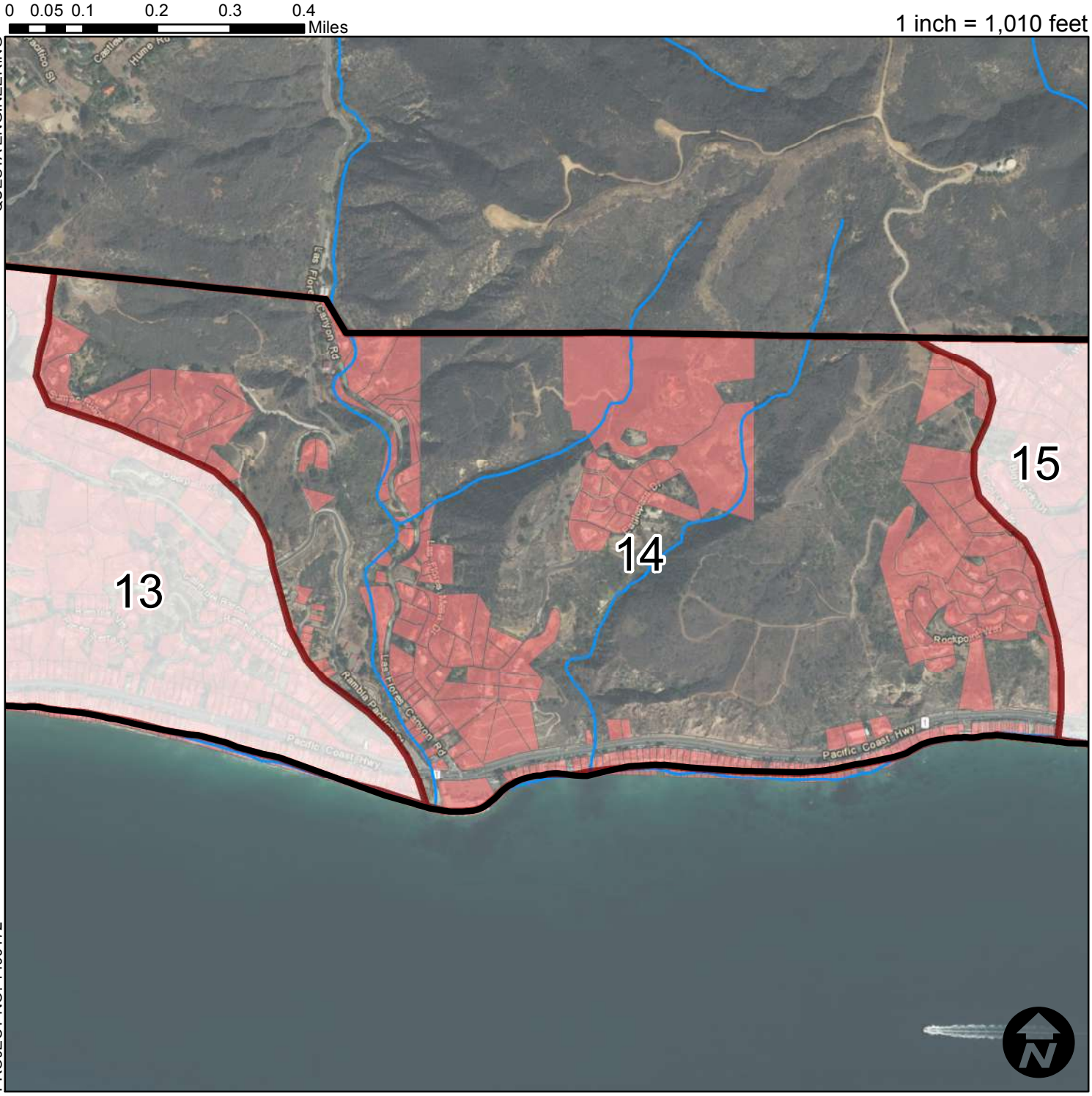
Watershed 13

LEGEND

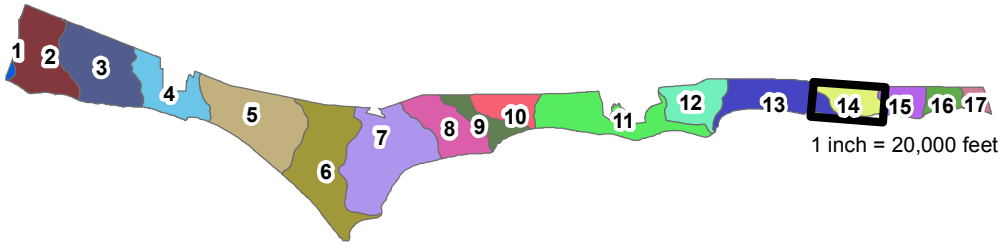
- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Las Flores Canyon

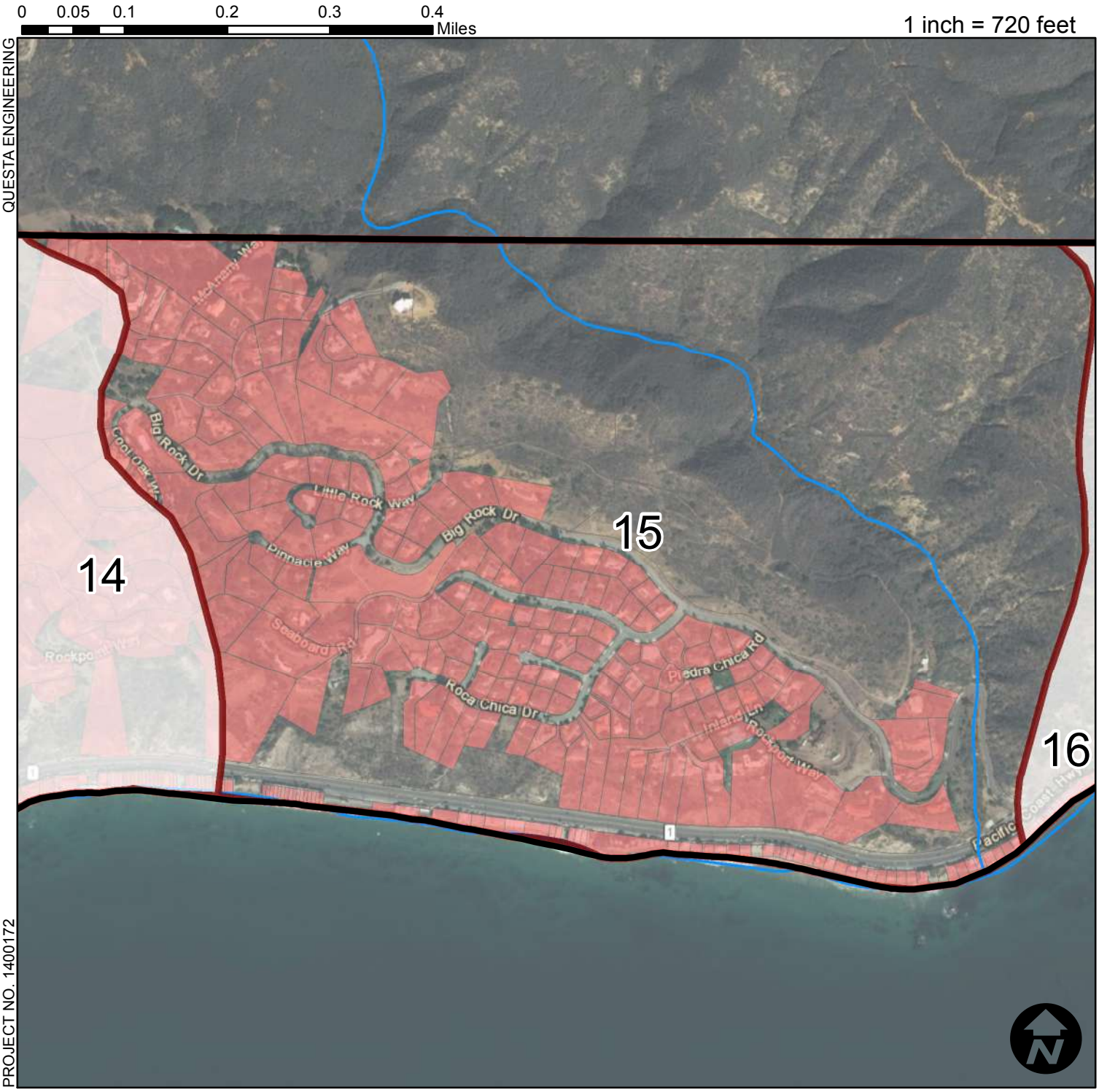
Watershed 14

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



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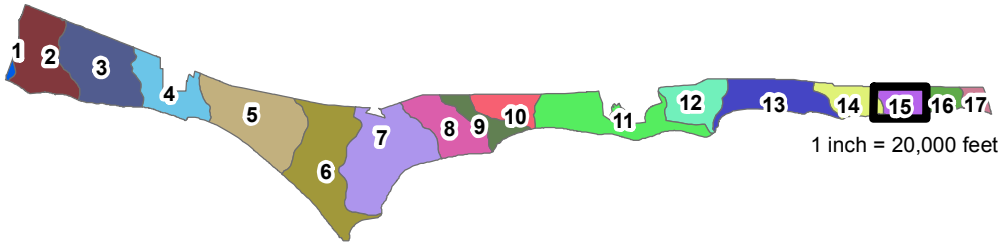


Piedra Gorda Canyon

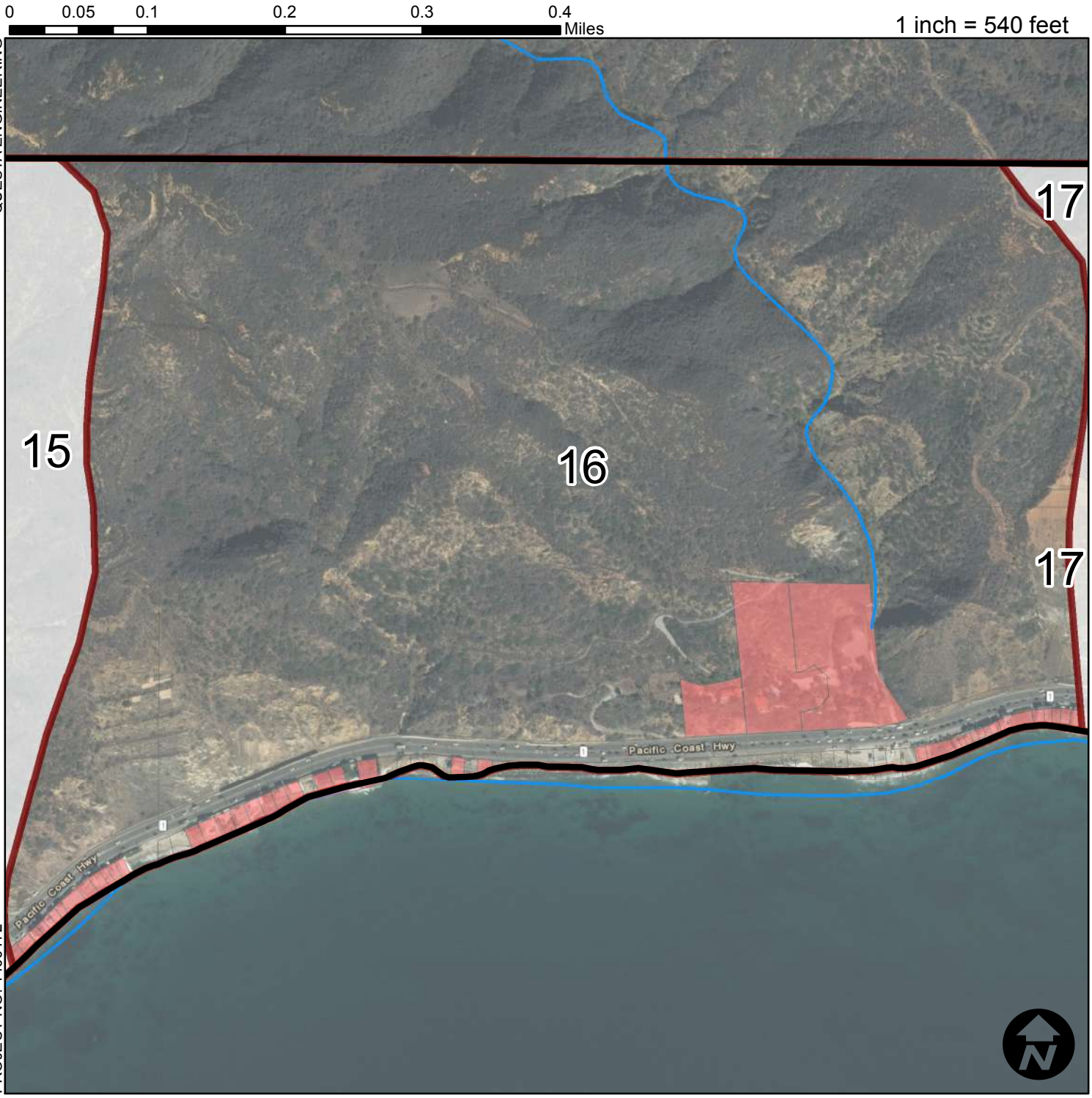
Watershed 15

LEGEND

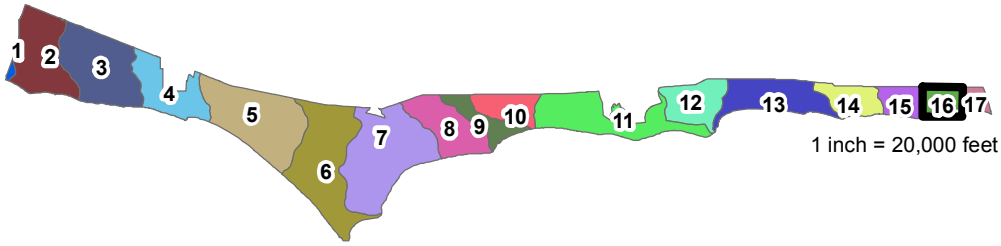
- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Pena Canyon

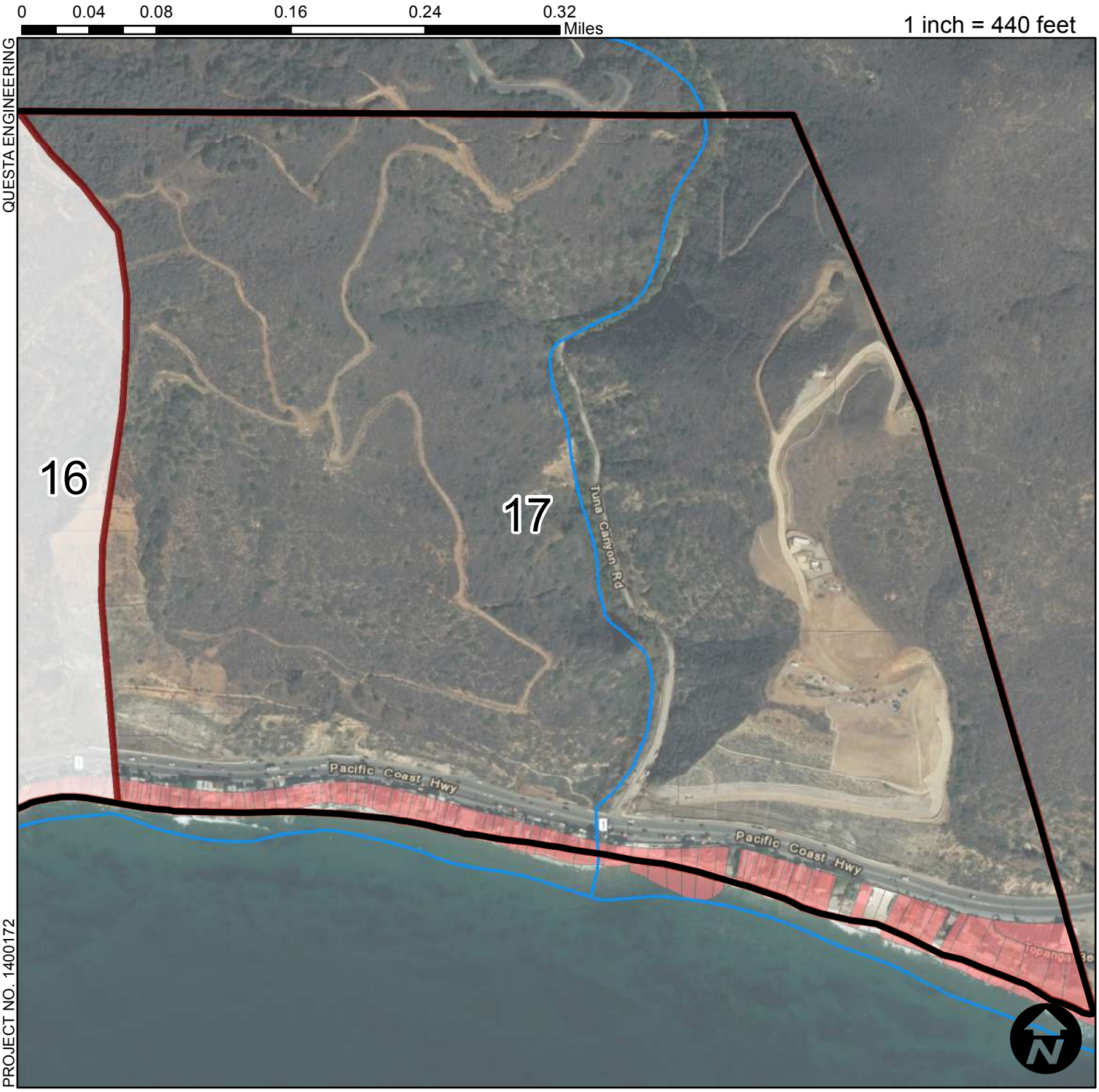
Watershed 16

LEGEND

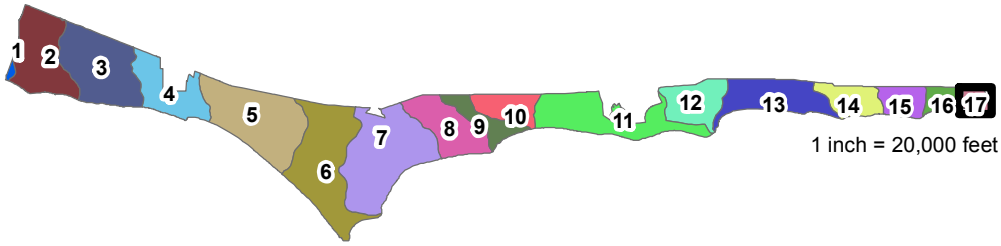
- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant



DEVELOPMENT WITHIN MALIBU SUBWATERSHEDS



Tuna Canyon

Watershed 17

LEGEND

- Malibu City Boundary
- Watershed Boundary
- NHD Flowlines

Parcels

- Developed
- Package Treatment Plant
- Vacant

Appendix C

City of Malibu Onsite Wastewater Ordinance (Malibu Municipal Code)

ORDINANCE NO. 435

AN ORDINANCE OF THE CITY OF MALIBU DETERMINING THE PROJECT IS CATEGORICALLY EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT AND ADDING CHAPTER 15.40, REGULATION OF ONSITE WASTEWATER TREATMENT SYSTEMS, CHAPTER 15.42, TECHNICAL STANDARDS FOR ONSITE WASTEWATER TREATMENT SYSTEMS, AND CHAPTER 15.44 OPERATING PERMITS FOR ONSITE WASTEWATER TREATMENT SYSTEMS TO TITLE 15 OF THE MALIBU MUNICIPAL CODE, AMENDING CHAPTER 5.38, REGISTERED PRACTITIONER PROGRAM AND CHAPTER 15.12, PLUMBING CODE, DELETING CHAPTER 15.14, ONSITE WASTEWATER TREATMENT SYSTEMS, AND REPEALING ORDINANCE NOS., 321, 360 AND 421

The City Council of the City of Malibu does ordain as follows:

SECTION 1. General

A. Section 15.12.050 (A)(B)(C)(D)(E) of Chapter 15.12 (Amendment to Plumbing Code) is hereby deleted from Title 15 (Buildings and Construction) of the Malibu Municipal Code.

B. Chapter 15.14 (On-Site Wastewater Treatment Systems) is hereby deleted from Title 15 (Buildings and Construction) of the Malibu Municipal Code.

SECTION 2. Amendments to Chapter 15.40

Chapter 15.40 is hereby added to Title 15 (Buildings and Construction) of the Malibu Municipal Code to read as follows:

Chapter 15.40 Regulation of Onsite Wastewater Treatment Systems

15.40.010 Purpose and Applicability.

The purpose of this chapter is to establish standards for the siting, design, installation, operation and maintenance of onsite wastewater treatment systems (OWTS) within City of Malibu. The standards are adopted in compliance with the City's Local Coastal Program (LCP) and Local Implementation Plan (LIP) to protect the overall quality of coastal waters and resources within the City of Malibu, prevent the creation of health hazards and nuisance conditions, and serve as a long-term solution for safe and effective wastewater treatment and disposal.

This chapter is applicable to all existing, new, and replacement OWTS in the City of Malibu, regardless of design flow, strength, or other state or local regulatory requirements. This chapter is consistent with the plans, policies, and standards of the California State Water Resources Control Board (State Water Board) and the Los Angeles Regional Water Quality Control Board (Regional Water Board); specifically the State Water Board's Statewide OWTS Policy and the Regional Board's Basin Plan.

15.40.020 Definitions.

For purposes of this chapter, the following terms shall have the following meanings:

"Administrative Authority" means the Building Official of the city or the City Environmental Sustainability Director's designee.

"Advanced onsite wastewater treatment system (AOWTS)" means an OWTS designed to provide supplemental wastewater treatment that meets advanced treatment standards as accepted by the Administrative Authority, including secondary treatment and/or disinfection. The system, or system component, provides enhanced treatment, over that which would be provided by a conventional system, producing an effluent quality that meets a predetermined performance standard in accordance with the Statewide OWTS Policy, prior to effluent dispersal into the ground.

"Basin Plan" means a "Water Quality Control Plan" as defined in Division 7 (commencing with Section 13000) of the California Water Code. Basin plans are adopted by each Regional Water Quality Control Board, approved by the State Water Board and the Office of Administrative Law, and identify surface water and groundwater bodies within each Region's boundaries and establish, for each, its respective beneficial uses and water quality objectives.

"Bedrock" means the rock, usually solid, that underlies soil or other unconsolidated, surficial material.

"Beneficial Uses" means those qualities in waters of the State that may be protected against quality degradation that include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; esthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife and other aquatic resources or preserves.

"Certificate holder" means the person who is appropriately registered as an onsite wastewater treatment system practitioner with the City.

"Certification" means the successful completion of course work and testing by a third party entity as evidence by a certificate of completion.

"Cesspool" means a lined or partially lined underground pit into which raw household wastewater is discharged and from which the liquid seeps into the surrounding soil. New and modifications to existing cesspools are prohibited in the City of Malibu.

"City" means the City of Malibu, California.

"Code" means the Malibu Municipal Code.

"Community system" means an OWTS that provides for the collection, treatment and dispersal of wastewater from three or more individual residences under separate ownership.

"Conventional onsite wastewater treatment system" means an onsite wastewater treatment system comprised of a two-compartment septic tank for primary treatment and dispersal in leaching trenches, leaching beds, leaching chambers, or seepage pits. Effluent will flow to the trenches by gravity, or may be pumped to the dispersal system.

"Cumulative impacts" means the persistent and/or increasing effect of an OWTS on the environment resulting from the density and nature of its discharges in relation to the assimilative capacity of the local

environment. Examples include, but are not limited to: (a) nitrate or salt additions to ground water or surface water; and (b) rise in groundwater levels ("mounding of the water table") that interferes with the performance of an OWTS, causes drainage problems or results in other adverse hydrological or soil conditions affecting public health, water quality or public safety.

"Dispersal system" means a soil-based system containing a series of trenches, beds, subsurface drip lines, seepage pits, or other approved method for subsurface infiltration and absorption of wastewater effluent, and includes all component parts, such as piping, valves, filter material, chambers, dosing pumps, siphons and other appurtenances.

"Domestic wastewater" means wastewater from everyday living activities with a measured strength less then high-strength wastewater and is the type of wastewater normally discharged from plumbing fixtures, appliances and other household devices including, but not limited to toilets, bathtubs, showers, laundry facilities, dishwashing facilities, and garbage disposals. Domestic wastewater may include wastewater from commercial buildings such as office buildings and retail stores, or from industrial facilities where the domestic wastewater is segregated from the industrial wastewater. Domestic wastewater does not include wastewater from industrial processes or recreational vehicle dump stations, as defined in the California Plumbing Code.

"Domestic well" means a groundwater well that provides water for human consumption and is not regulated by the State Water Resources Control Board.

"Effluent" means sewage, water or other liquid, partially or completely treated in its natural state, flowing out of a septic tank, supplemental treatment unit, dispersal system, or other OWTS component.

"Failure" means the ineffective treatment and/or dispersal of wastewater resulting in the surfacing of raw or inadequately treated sewage effluent, and/or the degradation of surface or groundwater quality. An OWTS is considered to be in a state of failure if one or more of the following conditions occur: (1) backup of sewage into the building(s) served by the system as a result of overload and/or clogged soil absorption system; (2) discharge of sewage onto the surface of the ground or waters of the state; (3) the static liquid level in the distribution box is above the outlet invert; or (4) the septic tank or related components require pumping three or more times during any 180 day period.

"Graywater" means wastewater, exclusive of blackwater or industrial waste, deposited into a plumbing drainage system or exiting directly from wastewater generating appliances. It includes, but is not limited to, wastewater discharges from washing machines, bathtubs, showers, bathroom washbasins, and laundry tubs.

"Groundwater" means water below the land surface that is at or above atmospheric pressure.

"High-strength wastewater," means wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) greater than 300 milligrams-per-liter (mg/L) or of total suspended solids (TSS) greater than 330 mg/L or a fats, oil, and grease (FOG) concentration greater than 100 mg/L prior to the septic tank or other OWTS treatment component.

"Holding tank" means a watertight receptacle used to collect and store wastewater prior to it being removed from a property by means of vacuum pumping and hauling, or other approved method.

"Impaired water bodies" means those surface water bodies or segments thereof that are identified on a list approved first by the State Water Board and then approved by US EPA pursuant to Section 303(d) of the federal Clean Water Act.

"Local Agency Management Program (LAMP)" is a program plan required by the State OWTS Policy for oversight of OWTS by local agencies.

"Leachfield" or "leach trenches" means the dispersal area used for disposal of septic tank effluent through a non-water-tight artificial structure, conduit, or porous material by downward or lateral drainage, or both, into the surrounding permeable soil.

"Licensure" means the obtainment of the appropriate state of California licensing as a contractor, a registered civil engineer, a registered professional geologist, or a registered environmental health specialist.

"Malibu Onsite Wastewater Treatment Systems Manual" (Malibu OWTS Manual) means the document developed, maintained and amended, as needed from time-to-time, by the City of Malibu containing the guidelines for implementation of onsite wastewater treatment system regulations.

"New construction" means the construction of a new building for which a certificate of occupancy is required. New construction shall not include replacement or repair of an existing building that has been totally or partially destroyed or demolished, provided there is: (1) no increase in wastewater design flow overall for the building, (2) no increase in the design flow above the existing approved capacity to any OWTS for the building, (3) no increase in the number of dwellings or dwelling units, (4) no increase in the number of bedrooms in any dwelling or dwelling unit, and (5) no increase in drainage fixture units.

"Official Inspection Form for OWTS" means the approved report form to be completed by all city-approved onsite wastewater treatment system inspectors for the inspection of any OWTS.

"Onsite wastewater treatment system" or "OWTS" means a system, or series of systems, of pipes, tanks, trenches, seepage pits and other components used for the collection, treatment and subsurface dispersal of wastewater. This term is synonymous with private sewage disposal systems, as used in the California Plumbing Code. OWTS do not include "graywater" systems pursuant to Health and Safety Code Section 17922.12.

"Operating permit" means the administrative document issued by the Administrative Authority authorizing the initial and/or continued use of an OWTS in conformance with the provisions of this code.

"Operation, monitoring, and maintenance (OM&M)" means regular inspection, monitoring, and service provided to onsite wastewater treatment systems to ensure the system is properly functioning and to ensure their long-term viability.

"OWTS Construction Permit" means a permit issued by the city for the installation or renovation of an OWTS per Sections 15.40.060 and 15.40.160.

"OWTS Design Report" means a supporting report for an OWTS prepared by a qualified professional summarizing the results of soils analysis and/or percolation tests including but not limited to: soil conditions, characteristics and estimated permeability, depth of zones of saturation, depth to bedrock, surrounding geographic and topographic features, direction of ground contour and % slopes, distances to drainages, water bodies and potential for flooding.

"Percolation test" means a method of testing water absorption of the soil. The test is conducted with clean water and test results may be used in the design and sizing of the dispersal system.

"Permit" means a document issued by a local agency that allows the installation and use of an OWTS, or waste discharge requirements or a waiver of waste discharge requirements that authorizes discharges from an OWTS.

"Person" means any individual, corporation, association, firm, organization, partnership or company.

"Plumbing fixture unit" means an expression in quantity of scale in terms of the load producing effects of an OWTS. Fixture unit values shall be determined as defined in the California Plumbing Code.

"Pollutant" means any substance, as listed in a Basin Plan that alters water quality of the waters of the State to a degree that it may potentially affect the beneficial uses of water.

"Pressure distribution" means a method of wastewater dispersal employing a pump or automatic dosing siphon and distribution piping with small diameter holes or perforations spaced uniformly along its length; it is used to achieve equal distribution of wastewater within a dispersal field.

"Public water system" is a water system regulated by the California Department of Public Health or a Local Primacy Agency pursuant to Chapter 12, Part 4, California Safe Drinking Water Act, section 116275 (h) of the California Health and Safety Code.

"Public water well" is a groundwater well serving a public water system. A spring which is not subject to the California Surface Water Treatment Rule (SWTR), CCR Title 22, sections 64650 through 64666 is a public well.

"Qualified professional" means an individual licensed or certified by a State of California agency to design and practice as a professional for work related to OWTS, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For purposes of performing site evaluations, soil scientists certified by the Soil Science Society of America area are considered qualified professionals.

"Regional Board" means the California Regional Water Quality Control Board – Los Angeles Region.

"Registered OWTS designer" means a person approved by the city to perform site evaluations and design OWTS who meets the requirements for registration as specified in this chapter.

"Registered OWTS inspector" means a person approved by the city to inspect the condition and operation of onsite wastewater treatment systems who meets the requirements for registration in this chapter.

"Registered OWTS installer" means a person approved by the city to install onsite wastewater treatment systems who meets the requirements for registration as specified in this chapter.

"Registered OWTS operation, monitoring, and maintenance (OM&M) specialist" means a person approved by the city to perform operation, monitoring, and maintenance assessments and routine maintenance who meets the requirements for registration as specified in this chapter.

"Registered OWTS residuals manager (pumper)" means a person approved by the city to pump septic tanks, wastewater treatment tanks, and pump chambers who meets the requirements for registration as specified in this chapter.

"Registered OWTS practitioner" means a person approved by the City to perform OWTS design, siting, installation, inspection, operation and maintenance, and management of wastewater residuals within the City of Malibu who meets the requirements for registration as specified in this chapter.

"Registration" means the successful completion of course work and testing by a third party entity as evidenced by a certificate of completion as required by this chapter.

"Repair of OWTS" means alteration of an existing OWTS component, tank replacement or installation of a designated future dispersal area.

"Renovation of OWTS" means installation of a new or additional OWTS component, or dispersal area.

"Replacement OWTS" means an OWTS (1) that has its treatment capacity expanded, (2) where the dispersal system is expanded or replaced, or (3) where components of the system are repaired and/or replaced.

"Sanitary sewer" means a system for collecting residential or municipal wastewater and directing the collected wastewater to a treatment works prior to dispersal.

"Seepage pit" means a vertically drilled or dug excavation, four to six feet in diameter, either lined with concrete cylinders or gavel-filled, that receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal into the surrounding soil.

"Septic system" also known as OWTS, means an onsite wastewater treatment system designed to treat and dispose of sewage. A typical septic system consists of a tank that receives waste from a residence or business and a system of leach trenches/bed or a seepage pits for disposal of the liquid effluent that remains after decomposition of the solids by bacteria in the tank.

"Septic tank" means a watertight, covered receptacle designed for primary treatment of wastewater and constructed to: (1) receive the discharge of sewage from a building sewer; (2) separate solids from the liquid; (3) digest organic matter by anaerobic bacterial action; (4) store digested solids; and (5) clarify wastewater for further treatment with final subsurface discharge.

"Sewage" means wastewater as defined in section 5410(a), California Health and Safety Code.

"Site" means the land area occupied, or proposed to be occupied, by a building or buildings served by an OWTS, including any designated future expansion area.

"Site evaluation" means an assessment of the characteristics of the site sufficient to determine its suitability for an OWTS that meets the requirements of this code. Site evaluations shall be conducted in accordance with procedures and criteria established in the Malibu OWTS Manual.

"Soil" means the naturally occurring body of porous mineral and organic materials on the land surface, which is composed of unconsolidated materials, including sand-sized, silt-sized, and clay-sized particles mixed with varying amounts of larger fragments and organic material.

"Soil absorption system" means a soil-based effluent dispersal system typically containing a bed or trenches with clean gravel and a system of piping through which treated sewage may seep into the surrounding soil for further treatment and disposal.

"State Board" means the State Water Resources Control Board.

"Stream" means flowing water identified as blue lines on USGS 7.5 minute quad topography maps.

"Subsurface drip dispersal" means a method for releasing treated wastewater to the soil for final treatment and dispersal via small diameter flexible plastic tubing manufactured with emitters spaced uniformly along its length; the drip field is designed and installed such that the drip tubing is installed in the shallow surface soils, typically 9 to 12 inches below finished grade.

"Supplemental treatment" means any onsite wastewater treatment system or system component providing additional treatment to ensure the effluent meets a predetermined performance requirement prior to discharge into the dispersal field. Supplemental treatment includes secondary treatment with physical and biological processes and/or tertiary treatment with a finishing process such as disinfection to a higher quality of effluent.

"SWRCB OWTS Policy" also referred to as Statewide OWTS Policy means the Water Quality Control Policy for Siting, Design, Operation and Maintenance of Onsite Wastewater Treatment Systems adopted by the State Water Resources Control Board on June 19, 2012.

"Technical Standards" means the criteria for the design and construction of various types of onsite wastewater treatment and effluent disposal systems detailed in chapter 15.42 of this Title.

"TMDL" is the acronym for "total maximum daily load" as defined in section 3030(d) (1) of the Clean Water Act, which requires each state to establish a TMDL for each impaired water body to address the pollutant(s) causing the impairment. In California, TMDLs are usually adopted as Basin Plan amendments and contain implementation plans detailing how water quality standards will be attained.

"Unstable land mass" means land prone to subsidence, erosion, or mass land movement as indicated by historical landslide events, published maps or reports, or evidence of characteristics such as surface rupture, scarps, creep or other irregularities in ground slope conditions.

"Wastewater" means sewage that is designated as "blackwater" and/or "graywater."

1. "Blackwater" means wastewater contaminated with human wastes, generally originating from toilets. It includes, but is not limited to, wastewater discharges from water closets, toilets, urinals, kitchen sinks, food preparation sinks, or other similar fixtures alone or in combination with other wastewater.

2. "Graywater" means wastewater, exclusive of blackwater or industrial waste, deposited into plumbing drainage system or exiting directly from wastewater generating appliances. It includes, but is not limited to, wastewater discharges from washing machines, bathtubs, showers, bathroom washbasins, and laundry tubs. Kitchen sinks shall be considered blackwater for the purposes of this chapter.

"Waste discharge requirements" or "WDR" means an operation and discharge permit issued for the discharge of waste pursuant to section 13260 of the California Water Code.

"Water body" means a body of water in a natural or man-made area within which water flows. Water bodies include but are not limited to creeks, groundwater, ocean and tidal waters, rivers, streams, springs, seeps and watercourses.

"Watercourse" means a drainage channel with bed and banks within which water flows either perennially, ephemerally or intermittently, including overflow channels contiguous to the main channel. A watercourse may be either a natural or man-made channel. For purposes of this chapter, watercourse also includes water bodies such as ponds, lakes, marshes and seasonal wetlands.

15.40.030 Connection to Sanitary Sewer.

A. No OWTS Construction Permit shall be issued for the installation, alteration or repair of any OWTS on any lot for which a connection to a sanitary sewer is available.

1. Connection to the sanitary sewer is considered available when the property is located within two hundred (200) feet of an approved available sanitary sewer.

2. The connection to the sanitary sewer must be in the most direct manner possible provided a right-of-way and any necessary approval from the appropriate sewer authority is first obtained.

B. On properties within two hundred (200) feet of an approved available sanitary sewer where an OWTS exists, connection to the available sanitary sewer will be required at the time of system failure or when major repair, septic tank replacement, or an addition to the OWTS is required or proposed.

15.40.040 General Requirements.

A. OWTS Required. Unless it is connected to the sanitary sewer, a building's sewer must be connected to an OWTS in accordance with the provisions of this chapter. The type of OWTS shall be determined on the basis of location, topography, soil porosity and groundwater level, and shall be designed to receive all sewage from the property. The Administrative Authority shall be permitted to grant exceptions to the technical requirements of this code for good cause provided such exceptions are the minimum necessary and equivalent protection of the environment is maintained.

B. Quantity and Quality. Where the quantity or quality of the sewage is such that OWTS cannot be expected to function satisfactorily for commercial, agricultural and industrial plumbing systems; for installations where appreciable amounts of industrial or indigestible wastes are produced; for occupancies producing abnormal quantities of sewage or liquid waste; or where grease interceptors are required by other parts of this code, the method of sewage treatment and disposal shall be first approved by the Administrative Authority.

C. Capacity. No property shall be improved in excess of its capacity to properly absorb sewage effluent by the means provided in this chapter. Exception: The Administrative Authority shall be permitted to, at its discretion, approve an alternative system.

D. Building Permit. Where there is insufficient lot area or improper soil conditions for sewage disposal for the building or land use proposed, no building permit shall be issued and no OWTS shall be permitted unless approved by the Administrative Authority. No building permit shall be issued until engineering data and test reports satisfactory to the Administrative Authority have been submitted and approved. No expansion of the existing number of bedrooms and/or drainage fixture units shall be permitted where the size of the existing OWTS does not accommodate the expanded bedrooms/fixture units as shown in Table 15.42.050.

E. Additional Requirements. The Administrative Authority may require compliance with additional requirements than those contained herein, where such additional requirements are essential to maintain a safe and sanitary condition.

F. Alternative Systems. Alternative systems shall be permitted to be used on a case-by-case basis by permission of the Administrative Authority if it is satisfied such system will produce continuous and long-range results at the proposed site which are equivalent to, and not less than, those from systems which are specifically authorized by this chapter. This authorization shall be based on extensive field and test data from conditions similar to those at the proposed site, or such additional data as necessary to provide the required assurance. Alternative systems shall adhere to the requirements for advanced onsite wastewater treatment systems contained in this chapter.

G. Health and Safety. OWTS and such system(s) components shall be sited, designed, installed, operated and maintained, in a manner where sewage, impure water or any other matter or substance will not discharge upon the surface of the ground, become injurious or dangerous to health or will empty, flow, seep, or drain into or affect any stream within the City of Malibu. Any OWTS that does not comply with all provisions of this chapter is a public nuisance.

15.40.050 OWTS Requirements for Buildings

A. Commercial Buildings and Multiple Family Dwellings– AOWTS Required.

1. Buildings. Commercial buildings and multiple family dwellings that are newly constructed, or renovated, shall have an AOWTS unless otherwise approved by the Administrative Authority for good cause.

2. OWTS. Conventional onsite wastewater treatment systems that are replaced, renovated, or repaired, shall be upgraded to AOWTS, unless otherwise approved by the Administrative Authority for good cause.

3. Alarm System. Existing OWTS serving commercial buildings and multiple family dwellings must be equipped with an alarm system approved by the City that will be triggered when high water levels are detected in the septic tank and/or dispersal area so that any discharge from the treatment system to the dispersal area will be stopped until the treatment system malfunction is rectified. The alarm system shall include an audible and visual alarm located within the building served by the system with off-site telemetry to the maintenance provider.

B. Residential Buildings – OWTS Inspection .

1. Buildings. Prior to the approval of plans for building permit issuance for the renovation of a detached single family residential building that will increase drainage capacity, such as the addition of bedroom equivalents or changes to the plumbing system, the existing OWTS shall be inspected by a registered OWTS inspector using the City's official inspection form for OWTS and a new Operating Permit must be obtained.

2. OWTS. If an OWTS inspection reveals the condition of the existing OWTS is "not passing" per the OWTS inspection guidelines, renovation or repair of the OWTS must be included within the scope of the building renovation project

15.40.055 Standards, Guidelines and Onsite Wastewater Treatment Systems Manual.

A. The Administrative Authority shall issue administrative standards and guidelines, including policies, procedures and technical details, to carry out the purposes of this chapter. The guidelines, including policies and procedures, shall be compiled in a separate document referred to as the Malibu OWTS Manual.

B. The Administrative Authority shall provide a reasonable process for the affected public and OWTS practitioners to provide input in connection with its development of the Malibu OWTS Manual.

15.40.060 Permits Required for OWTS

The following permits are required for any OWTS.

A. OWTS Construction Permit. An OWTS Construction Permit is required to install a new or replacement OWTS, or to modify an existing OWTS. An OWTS Construction Permit shall be issued if the OWTS meets the requirements of this chapter, the MMC, and the Malibu OWTS Manual.

B. Coastal Development Permit. A Coastal Development Permit as required by Chapter 18 of the Local Implementation Plan of the Malibu Local Coastal Program.

C. OWTS Operating Permit. An OWTS operating permit is required as specified in Chapter 15.44 of this code to operate an OWTS.

15.40.070 Siting Criteria

In order to obtain an OWTS Construction Permit, any new or replacement OWTS must comply with the minimum siting criteria contained in Chapter 15.42, Technical Standards for Onsite Wastewater Treatment Systems and the following requirements. Repair of any lawfully existing OWTS, where no expansion or intensification of use is proposed, shall conform to these requirements to the greatest extent practicable as determined by the Administrative Authority.

A. Flood Hazard Areas. OWTS shall be located outside of flood hazard areas.

Exception: Where suitable sites outside of flood hazard areas are not available, disposal systems shall be permitted to be located in flood hazard areas on sites where the effects of inundation, under conditions of the design flood, are minimized.

B. Location on Property Served. No onsite wastewater treatment system, or part thereof, shall be located on any other property other than the property where the building or structure served by such onsite wastewater treatment system is located, nor shall any onsite wastewater treatment system or part thereof be located in a location that does not comply with the minimum distances indicated in Table 15.42.030(E).

However, the use of all or part of another property for an onsite wastewater treatment system or part thereof, where secondary sewage effluent treatment, or better, is provided, shall be allowed when proper cause, transfer of ownership, or change of boundary not in violation of other requirements has been first established to the satisfaction of the Administrative Authority. The instrument recording such action shall constitute an agreement with the Administrative Authority which shall clearly state and show that the areas so joined or used shall be maintained as a unit during the time they are so used. Such agreement shall be recorded in the office of the County Recorder as part of the conditions of ownership of said properties, and shall be binding on all heirs, successors, and assigns to such properties. A copy of the instrument recording such proceedings shall be filed with the Administrative Authority.

C. 100% Reserve Area. A reserve area with sufficient dispersal capacity for at least 100 percent of the design wastewater flow shall be identified and set aside for future repair, expansion or replacement of the primary dispersal field. No division of the lot, grading, erection of structures or other site alteration shall be permitted where it impairs the future utility of the designated reserve area. Exceptions may be granted by the Administrative Authority for good cause.

15.40.080 Cumulative Impacts.

Cumulative impact analysis evaluating the potential impact of the proposed OWTS on groundwater level and quality (i.e., effects of groundwater mounding, nitrate loading and fecal/pathogen contamination), quality of nearby surface drainages (i.e., nitrate loading and fecal/pathogen contamination), and slope stability shall be required for the following development projects:

A. Individual OWTS with design flow greater than 1,500 gallons per day (gpd);

B. Land divisions;

C. OWTS for any commercial development;

D. Any lot which involves two or more OWTSs within 100 feet of each other with a combined capacity of over 1,500 gpd;

E. OWTS for multi-family residential developments;

F. OWTS classified as a "community" system, serving multiple property owners;

G. OWTS which the City or Regional Water Board identified as presenting a potential threat to surface water or groundwater beneficial uses; and

H. OWTS located within the contributing recharge area of known nitrate groundwater problems.

Cumulative impact analyses shall be conducted in accordance with guidelines prescribed in the Malibu OWTS Manual and shall be included as an element of the OWTS design report for the proposed project application.

15.40.090 OWTS Components.

A. Conventional OWTS. A conventional OWTS shall, at a minimum, consist of a septic tank and subsurface dispersal system for absorption and leaching of the effluent into the soil. The septic tank and subsurface effluent dispersal system must be so constructed as to meet the requirements prescribed by the accompanying technical standards of this chapter and guidelines contained in the Malibu OWTS Manual.

B. Advanced OWTS. An AOWTS shall be designed, constructed and operated in accordance with applicable standards and criteria prescribed in this chapter and Malibu OWTS Manual.

C. Septic Tank. Watertight septic tanks shall be used for primary treatment of wastewater before discharge of effluent to an approved dispersal system. Septic tanks shall be designed to provide a minimum retention time of at least 24 hours, with one-half to two-thirds of the tank volume reserved for sludge and scum accumulation, with sizing determined for each application in accordance with the technical standards contained in the chapter and guidelines prescribed in the Malibu OWTS Manual.

D. Effluent Dispersal System. Conventional dispersal methods approved for use in City of Malibu shall consist of gravel-filled leaching trenches/bed and existing lawfully permitted seepage pits, sized, designed and installed in accordance with the accompanying technical standards and guidelines prescribed in the Malibu OWTS Manual.

E. Supplemental Treatment. Supplemental treatment is required for the following types of development, wastewater sources, or site constraints:

1. In connection with any new or replacement OWTS utilizing seepage pits;

2. Beachfront development;

3. Commercial development;

4. Restaurants;

5. Multi-family residences;

6. Rapid [<5 minutes per inch (mpi)] or slow (>60 mpi) soil percolation;

7. Shallow soil depth (<5 feet below leach trench/bed bottom);

8. In connection with any OWTS utilizing alternative dispersal methods;

9. Mitigation of failed OWTS or other documented water quality impacts, as determined by the Administrative Authority;

10. Where imposed as a condition of the Coastal Development Permit;

11. Other circumstances deemed necessary by the Administrative Authority for protection of public health and water quality in accordance with this chapter.

F. Alternative Dispersal Methods. Alternatives to conventional leaching trenches/beds may be used to overcome certain soil, slope and other site limitations. Examples of such alternatives include pressure distribution and subsurface drip dispersal methods, which have the advantage of providing broad, uniform distribution of wastewater throughout the dispersal field area for improved soil absorption and enhanced uptake and treatment of percolating effluent. Where used, alternative dispersal systems shall be designed, constructed and operated in accordance with applicable technical standards contained in this chapter and guidelines prescribed in the Malibu OWTS Manual.

15.40.100 Operation and Maintenance Requirements.

A. Manual. Every OWTS shall at all times be maintained and operated in a sanitary condition and state of good repair. An Operation and Maintenance Manual for each AOWTS installation shall be provided by the OWTS designer and/or the OWTS installer, with a copy provided to the Administrative Authority and to the system owner. Final approval of system installation shall be contingent upon confirmation by the Administrative Authority that required Operation and Maintenance Manual has been provided.

B. Covenant. A covenant running with the land shall be executed between the City of Malibu and the holder of the fee simple absolute as to the subject real property and recorded with the City of Malibu Recorder's Office. Said covenant shall serve as constructive notice to any future purchaser of the property that the onsite wastewater treatment system serving the subject property is an advanced/alternative method of sewage disposal. The Owner, will promise, covenant and agree to and with the City of Malibu that the alternative private sewage disposal system constructed and installed on the subject property shall be properly maintained and repaired, and shall be renovated, modified or abandoned at the option of the City of Malibu should said alternative private sewage disposal system fail in the future to perform in accordance with its design specifications and, in the reasonable opinion of the City of Malibu, such renovation, modification, or abandonment is needed to achieve performance consistent with those specifications or to avoid significant adverse consequences.

15.40.110 Shoreline Protection Devices.

The Administrative Authority shall require the following before a an OWTS Construction Permit is issued for any new or replacement OWTS on any parcel adjacent to the Pacific Ocean:

A. Buildings permitted to be constructed, or remodeled, on beachfront property shall have adequate and properly designed shoreline protection devices, or other approved structural protection from wave action for all portions of the OWTS. Approved Coastal Engineering Reports shall be required to determine the need and extent of this protection.

B. Owners or possessors of real property with buildings constructed on beachfront property with an existing OWTS to be renovated, or repaired, shall have adequate and properly designed shoreline protection devices, or other approved structural protection from wave action, as deemed acceptable by the Administrative Authority, for all portions of the OWTS. An approved Coastal Engineering Report shall be required to determine the need and extent of this protection.

C. Owners or possessors of real property with buildings constructed on beachfront property with an existing OWTS damaged by storm, tide, or wave action shall have adequate and properly designed shoreline protection devices, or other approved structural protection from wave action for all portions of the OWTS. An approved Coastal Engineering Report shall be required to determine the need and extent of this protection.

D. Issuance of Permit. Upon review of the application and compliance with all of the requirements contained in this section and all other applicable laws, rules, and regulations, the Administrative Authority shall issue a construction permit for the installation of shoreline protection devices, or other protective structures required, imposing those conditions and restrictions necessary, and setting a time limit for the completion of the installation of shoreline protection devices, or other protective structures required.

E. Noncompliance and Right of Entry

1. Upon expiration of the time limit established in the permit, including such additional time as may have been granted by the Administrative Authority upon further application, if the installation of the shoreline protection devices, or other protective structures required, has not been accomplished, the Administrative Authority may take all reasonable actions to install the shoreline protection devices, or other protective structures required, upon the real property for which the permit was issued. The Administrative Authority shall have the right of entry upon the owner's or possessor's real property to the extent necessary to effect the installation. A failure, refusal, or neglect of the owner or possessor of the real property to comply with the provisions of the permit for the installation of the bulkhead, or other protective structures required, within the period of time set by the Administrative Authority shall be considered a violation of this section, subjecting the owner or possessor of the real property to the penalties and remedies provided in this code.

2. The actual cost incurred by the Administrative Authority in taking the above action, including the cost of equipment, labor (including the cost of City of Malibu consultants and employees), administrative, and other indirect costs shall be charge assessed against the real property benefited, and shall be added to the annual property taxes next levied upon the real property and shall constitute a lien upon the real property in the same manner and to the same extent as does

the tax lien securing the annual real property taxes, and may be collected and enforced in the same manner as secured ad valorem property taxes.

15.40.120 Holding Tanks.

A. All holding tanks are hereby declared a public nuisance and are prohibited, except for the following instances as approved by the Administrative Authority:

1. If it is necessary to use a holding tank temporarily to abate a nuisance or health hazard caused by a failing OWTS; or

2. If, for a publicly-owned nonresidential facility (e.g., public park or campground), it is necessary to allow such installation for the protection of public health, safety or welfare, where installation of an OWTS is not feasible and a holding tank is determined by the Administrative Authority to provide the safest and most acceptable method of sewage disposal.

B. Where exceptions are granted and holding tank(s) approved, an OWTS Operating Permit issued by the Administrative Authority (per Chapter 15.44 of this code) will be required, which will provide for approval of the tank pumper, maintenance schedule, tank/sewage level monitoring, and reporting requirements.

15.40.130 Cesspools Prohibited.

Cesspools are declared to be a public nuisance and are not authorized for use in the City of Malibu. Upon discovery, cesspools shall be abated in accordance with the provisions of this chapter and in a manner approved by the Administrative Authority.

15.40.140 Submittal of OWTS Plans.

A. No person may install, construct, alter, repair, or replace any OWTS without first submitting plans to the Administrative Authority for approval and obtaining an OWTS Construction Permit pursuant to the requirements of this code and Malibu OWTS Guidelines. Plans shall include:

1. OWTS Design Report including a project description and the supporting basis of design;

2. Percolation / Infiltration / Soil Classification Report;

3. OWTS Supporting Geology Report;

4. Architectural plans;

5. Plumbing fixture unit worksheet;

6. OWTS plot plan drawn to scale showing the location of the OWTS, all structures, water supply lines or wells, paved areas and lot lines;

7. Details of construction necessary to ensure compliance with the requirements of this chapter, including quality, kind and grade of materials, equipment, construction, workmanship, and methods of assembly and installation, as applicable; and

8. Other information as required by the Administrative Authority and specified in the Malibu OWTS Manual.

15.40.150 Review and Approval of OWTS Plans.

If, after review, the Administrative Authority determines that the proposed OWTS complies with the terms of this chapter, Technical Standards (Chapter 15.42) and the Malibu OWTS Manual, and will not be injurious to the public health and water quality, he or she shall approve or conditionally approve the application. Such approval may be made subject to such conditions as the Administrative Authority deems necessary to ensure compliance with this code and protect the environment. Any change in the OWTS plans after the issuance of an OWTS Construction Permitmust be approved by the Administrative Authority before being implemented. Failure to obtain approval from the Administrative Authority will invalidate the permit.

15.40.160 OWTS Construction Permit, Installation Inspection, and Approval.

A. A written OWTS Construction Permit shall be obtained from the Administrative Authority prior to the construction, reconstruction, relocation, or alternation of any OWTS.

B. No person may install, construct, alter, enlarge, reconstruct, replace, improve, recondition or repair an OWTS unless the person possesses a general engineering contractor's license (Class A), or a Class C-42 sanitation system contractor's license from the Contractors State License Board of the State of California.

C. In the case of a conventional OWTS, the property owner may construct or repair an OWTS on his/her own property, provided persons hired by the owner to do the subject work do so in compliance with provisions of this section, are qualified to perform such work, and an OWTS Construction Permit is obtained.

D. OWTS must be installed in accordance with the plans approved by the Administrative Authority.

E. Inspection(s) of each OWTS installation shall be made by the Administrative Authority to ensure compliance with all applicable requirements of this code and the Malibu OWTS Manual. In the event the Administrative Authority determines there has been an improper installation, a stop-work order may be posted on the jobsite. Before any further work is done on an OWTS where a stop-work order has been posted, clearance from the Administrative Authority must be obtained before work may continue.

F. An as-built drawing shall be completed by the OWTS designer or contractor upon completion of the OWTS installation, and, prior to the final approval of the OWTS Construction Permit, a copy of these plans shall be supplied to the Administrative Authority and the system owner before the OWTS is operated.

15.40.170 Abandoned OWTS.

Any OWTS, or component thereof, that has been abandoned or discontinued from use for a period of six months, or to which no waste or waste discharge pipe from a plumbing fixture is connected, shall be decommissioned in accordance with the following requirements:

A. Permit required. An OWTS Construction Permit and approval must be obtained from the Administrative Authority to abandon the OWTS.

B. Plugged and Capped. An abandoned building, sewer, or part thereof, shall be plugged or capped in an approved manner within 5 feet of the property line.

C. Fill Material. A cesspool, a septic tank, or a seepage pit shall have the sewage removed therefrom, disposed of in an appropriate manner and be completely filled with earth, sand, gravel, concrete, or other approved material.

D. Filling Requirements. The top cover or arch over a cesspool, septic tank, or seepage pit shall be removed before filling, and the filling shall not extend above the top of the vertical portions of the sidewalls or above the level of any outlet pipe until the cesspool, septic tank, or seepage pit has been inspected by the Administrative Authority. After such inspection, the cesspool, septic tank, or seepage pit shall be filled to the level of the top of the ground.

E. Owner. No person owning or controlling any cesspool, septic tank, or seepage pit on the premises or private property of such person or in any public street, alley, or other public property shall fail, refuse, or neglect to comply with the provisions of this section.

F. Permittee. Where OWTS are abandoned subsequent to connecting any premises to a replacement OWTS or sanitary sewer, the permittee making the connection shall fill all abandoned OWTS in accordance with the above requirements within 30 days from the time of connecting to the replacement OWTS or sanitary sewer, or as otherwise specified by the Administrative Authority for good cause.

G. Excavation. No excavation related to an abandoned OWTS shall be left unattended at any time unless the permittee shall have first installed a suitable and adequate barricade to ensure public safety.

15.40.180 Administration.

A. Denial, Suspension or Revocation of OWTS Approvals and Permits.

The Administrative Authority may deny, suspend or revoke any OWTS Construction Permit or approval issued under provisions of this chapter whenever the permit is issued in error or on the basis of incorrect information supplied by the applicant on which the permit approval was based, or if the Administrative Authority determines that in any other way the permittee is acting in violation of State law, the provisions of this chapter, or the conditions of the permit.

B. Abatement.

1. Any existing OWTS in a state of failure or which, based on inspection or evaluation by the Administrative Authority, is considered a hazard to safety or health by reason of inadequate

maintenance, dilapidation, or obsolescence is hereby declared to be a public nuisance and shall be abated by repair or rehabilitation per order and adequate notice from the Administrative Authority.

2. Failing OWTS, as defined in Chapter 15.40.020, must be brought into substantial compliance with this chapter. If not corrected within a time designated by the Administrative Authority, the Administrative Authority may order or cause corrections to be made and bill the property owner for the costs and may place a lien on the property for the abatement costs. The Administrative Authority may also order the premises to be vacated if no safe manner of abatement is possible.

C. Appeals.

Any applicant may appeal the decision of the Administrative Authority in denying, suspending or revoking the OWTS Construction Permit or in relation to an abatement order. The appeal shall be made to the Board of Appeals by submitting to the Administrative Authority a completed application for appeal and the appropriate fees as specified in the current resolution approved by the City Council establishing fees for services. The appeal application must be submitted within ten (10) calendar days from the date of the Administrative Authority's decision to deny, suspend or revoke the permit. The Board of Appeals may reject, affirm or modify the Administrative Authority's decision.

D. Violations.

No person, firm or corporation that is purchasing or that owns, controls, leases, lets, hires or occupies any lands, premises or habitations in the City of Malibu shall construct, reconstruct, place or suffer or permit to exist thereon any installation referred to in Chapters 15.40, 15.42, 15.44, in violation of any of the provisions hereof or to perform any act or suffer or permit any act to be performed in violation of any of the provisions hereof.

E. Penalty.

Any person, firm or corporation who does any act declared unlawful in this chapter or who violates or contributes in any way to the violation of any of the provisions of this chapter shall be deemed guilty of a misdemeanor. Every violation of any of the provisions of this chapter shall be construed as a separate offense for each day during which such violation continues.

SECTION 3. Amendments to Chapter 15.42

Chapter 15.42 is hereby added to of Title 15 (Buildings and Construction) of the Malibu Municipal Code to read as follows:

Chapter 15.42 Technical Standards for Onsite Wastewater Treatment Systems

15.42.010 Purpose.

These technical standards provide criteria for the design and construction of onsite wastewater treatment and disposal technologies and components, in order to obtain an OWTS Construction Permit.

15.42.020 Definitions.

Definitions established in Section 15.40.020 (Chapter 15.40) of the Malibu Municipal Code shall apply to this chapter.

15.42.030 OWTS Siting Criteria.

Any new or replacement OWTS shall comply with the following requirements. Repair of any lawfully existing OWTS, where no expansion or intensification of use is proposed, shall conform to these requirements to the greatest extent practicable as determined by the Administrative Authority.

A. Soil Depth. For conventional OWTS discharging septic tank effluent, minimum depth of soil beneath the bottom of the dispersal field shall be 5 feet for leaching trenches/beds and 10 feet for seepage pits. Where advanced treatment is provided, minimum soil depth for leaching trenches/beds may be reduced to 3 feet. Where advanced treatment and subsurface drip dispersal methods are used, minimum soil depth may be reduced to 2 feet below the drip line.

B. Vertical Separation to Ground Water. For new conventional OWTS discharging septic tank effluent, minimum vertical separation between the bottom of the dispersal system and seasonal high groundwater level shall depth be 5 feet for leaching trenches/ beds and 10 feet for seepage pits. For advanced OWTS where supplemental treatment is provided, minimum groundwater separation for leaching trenches and beds may be reduced to 3 feet. For advanced OWTS where supplemental treatment and either pressure distribution or subsurface drip dispersal methods are used, minimum depth to groundwater may be reduced to 2 feet below the trench/bed or drip line, as applicable. Determination of compliance with the above groundwater separation requirements shall account for any projected water table rise as determined through groundwater mounding analysis, where applicable (see Section 15.40.090).

C. Soil Percolation. For conventional dispersal trenches/beds the soils shall have a demonstrated percolation rate in the range of 5 to 60 minutes per inch (mpi). Absorption rates for seepage pits must not be less than .83 gallons per square foot and must include supplemental treatment. Horizontal dispersal systems (trenches, beds, drip) in soils with percolation rates in the range of 1 to 5 mpi (fast percolation) must have supplemental treatment and pressure distribution. Soils with percolation rates of 60 to 120 mpi (slow percolation) are only permissible for effluent disposal with advanced OWTS that includes supplemental treatment and subsurface drip dispersal. The applicable percolation test method is described in the Malibu OWTS Manual.

D. Ground Slope. No soil absorption fields shall be located on slopes greater than 45%. Conventional gravity trench leachfields shall not be installed on slopes greater than 30%. Soil absorption fields located on slopes between 30 and 45% shall be designed to address critical factors of soil depth, restrictive horizons, soil permeability, application rates and dispersal methods. Siting of effluent dispersal systems on slopes greater than 10% shall be evaluated to assess possible impacts of lateral migration of effluent. The evaluation results, along with an evaluation of slope stability, shall be submitted for review and approval.

E. Horizontal Setbacks. Minimum horizontal setback distances from various site features to OWTS components shall be as listed in Table 15.42.030(E).

Table 15.42.030(E)
Minimum horizontal setback distances for OWTS (feet)

Site Feature	Building Sewer	Septic Tank	Dispersal Trench or Bed	Seepage Pit
Buildings or strucutures[1]	2	5	8	8
Property line	Clear[2]	5	5	8
Water supply wells				
Domestic	50[3]	150	150	150
Public	50[3]	150	150[4]	200[4]
Springs	-	50	100	100
Streams				
General (from top of bank)	50	100	100	150
Between 1,200'-2,500' of a public water intake[5]	-	-	200	200
Within 1,200' of a public water system intake[5]	-	-	400	400
Reservoirs				
General	50	100	200	200
Within 1,200' of a public water supply intake[5]	-	-	400	400
Ocean waters (from mean high tide line)[6]	-	50	100	100
Storm drainage pipe[7]		5	50	50
Cut bank or embankment	-	10	4 x h[8]	4 x h[8]
Unstable land mass[9]		100	100	100
Trees	-	10	-	10
Seepage pit	-	5	5	12
Dispersal trench or bed	-	5	4	5
Distribution box	-	-	5	5
Onsite domestic service line	1[10]	5	5	5
Pressure public water main	10[11]	10	10	10

[1] Including porches and steps, whether covered or uncovered, breezeways, roofed porte cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures and appurtenances.

[2] See California Plumbing Code, Section 321.3

[3] Drainage piping shall clear domestic water supply wells by not less than 50 feet. This distance shall be permitted to be reduced to not less than 25 feet where the drainage piping is constructed of materials approved for use within a building.

[4] 200' for trench or seepage pit 10'deep; 2-yr microbial travel study required for seepage pit >20' deep within 600 feet of public water well, per Statewide OWTS Policy Section 9.4.10.3.

[5] For areas tributary to and upstream of water supply intake; setback distance measured from high water mark. Exceptions allowed per Statewide OWTS Policy, as follows: (a) for replacement OWTS, comply to the maximum extent practicable and incorporate supplemental treatment unless the Administrative Authority finds no impact or significant threat to water source; (b) for new OWTS on pre-existing lot of record (pre-May 13, 2013), comply to maximum extent practicable and incorporate supplemental treatment for pathogens per sections 10.8 and 10.10 of Statewide OWTS Policy as detailed in the Malibu OWTS Manual.

[6] Systems that provide supplemental (secondary or tertiary) effluent treatment prior to discharge to the subsurface effluent dispersal systems are not required to meet these minimum horizontal setback requirements provided that no parts of the OWTS are, at any time, submerged or exposed to direct contact with these surface water bodies. In the case of beachfront developments and redevelopments, the OWTS shall, to the maximum extent feasible, be located at the farthest point from the Ocean on a parcel to avoid the construction of protective structures such as sea walls and shoreline protection devices.

[7] Where publicly owned storm drainage pipes run across a property rendering it impossible to meet these minimum horizontal setback requirements, the effluent dispersal system is allowed to be located within 50 feet of the pipes provided that these pipes are positioned vertically higher than the bottom of the effluent dispersal system or the applicant demonstrates that the pipes are sealed so that there is no possibility for shallow groundwater to infiltrate the storm drain.

[8] h equals the height of cut or embankment, in feet. Where a California Certified Engineering Geologist and/or Registered Geotechnical Engineer finds and states in writing that the stability of the fill or cut bank will not be compromised by a shorter horizontal separation and that a shorter horizontal separation will not result in sewage effluent daylighting, a shorter horizontal setback for the effluent dispersal system can be used per the said geologist's recommendation.

[9] Setback distance may be reduced in accordance with recommendations provided in a geotechnical report prepared by a civil engineer or professional geologist and addressed in the OWTS Design Report and accompanying geotechnical report.

[10] See California Plumbing Code, Section 720.0

[11] For parallel construction; for crossings, approval by the Health Department shall be required.

F. Flood Hazard Areas. Disposal systems shall be located outside of flood hazard areas.

Exception: Where suitable sites outside of flood hazard areas are not available, disposal systems shall be permitted to be located in flood hazard areas on sites where the effects of inundation under conditions of the design flood are minimized.

15.42.040 OWTS Site Evaluation.

For all locations where an OWTS is proposed to be installed, site evaluations per the OWTS Manual shall be conducted prior to issuance of an OWTS Construction Permit to verify conformance with applicable soils, groundwater, horizontal setbacks, ground slope and other requirements as prescribed in Chapter 15.40 and Chapter 15.42 of the Malibu Municipal Code. In addition, the following reports and tests shall be submitted.

A. OWTS Design Report. The permit application for a new or replacement OWTS installation shall include an OWTS Design Report prepared by a qualified professional. The report shall summarize and integrate the results of supporting geotechnical soils analyses and/or percolation tests, system design specifications and site limitations and special characteristics, as per the technical standards.

B. Supporting Geology Report. Site evaluation methods shall include soil profiles, borehole and test pit logs, slope stability report if applicable, and other exploratory tests, as necessary, to verify adequate

depth and permeability of soil, soil thickness, and vertical separation between dispersal field and groundwater for both primary and reserve dispersal areas. Information in the report shall include but not limited to: soil conditions, characteristics and estimated permeability, depth of zones of saturation, depth to bedrock, surrounding geographic and topographic features, direction of ground contour and % slopes, distance to drainages, water bodies and potential for flooding. Soils classification testing shall be conducted in accordance with the technical standards contained in this code and guidelines provided in the Malibu OWTS Manual and the results expressed in United States Department of Agriculture classification terminology including descriptions of both soil texture and soil structure. Soils classification for engineering properties shall be conducted by a California Registered Geotechnical Engineer or a California Registered Civil Engineer in the environmental/geotechnical field.

C. Percolation / Infiltration Testing. Percolation tests shall be conducted by a California Registered Geologist, a California Registered Geotechnical Engineer, a California Registered Civil Engineer, or a California Registered Environmental Health Specialist. Where the Administrative Authority has been provided adequate evidence to demonstrate suitable soil conditions and groundwater separation, testing requirements may be waived.

D. Land Division. For new divisions of land, soil profiles, percolation tests and groundwater determinations will be required on every parcel unless the Administrative Authority determines, on a case-by-case basis, that such testing is not necessary due to the availability of sufficient information to demonstrate conformance with applicable siting criteria for all proposed OWTS locations.

15.42.050 Wastewater Design Flows.

A. General. Daily wastewater flow estimates shall be established by the registered OWTS designer for use in design, evaluation and monitoring of all OWTS. Flow rates are used for sizing treatment unit capacity and sizing of the dispersal system.

Single Family Residences and Second Units. Wastewater flows used for design of OWTS treatment capacity for single family residences and second units shall be based on the number of bedrooms in accordance with criteria in Table 15.42.030(B)-1. The flow is calculated as 300 gallons per day for the first bedroom (master) and 150 gallons per day for each additional bedroom. The design flows for a primary residence and secondary dwelling unit shall be determined independently, regardless of whether the flows are treated separately or combined in a single OWTS.

Table 15.42.050(B)-1.
Wastewater Design Flows for OWTS Treatment Units Serving
Single Family Residences and Second Units

No. of Bedrooms	Design Flow (gal/day)
1 (Master bedroom)	300
2	450
3	600
4	750
5	900

6	1050
>6	+ 150 per bedroom

B. Multiple Dwelling Units. Wastewater flows used for the design of OWTS for multiple residential units shall be based on the number of dwelling units in accordance with criteria in Table 15.42.030(B)-2. The flow is calculated as 300 gallons per day for the first bedroom (master) and 150 gallons per day for each additional bedroom.

Table 15.42.050(B)-2.
Wastewater Design Flows for OWTS Treatment Units Serving
Multiple Dwelling Units

No. of Dwelling Units (1 bedroom each)*	Design Flow (gal/day)
2	600
3	900
4	1200
5	1500
6	1800
7	2100
8	2,400
9	2,700
10	3,000
>10	+300 per unit

*Extra bedrooms add 150 gallons each.

C. Commercial Uses. Wastewater flows used for design of OWTS for uses other than residential shall be estimated based on the projected activities, occupancy and facilities, using wastewater generation guidelines provided in Table 15.42.030(B)-3. For facilities not listed in Table 15.42.030(B)-3 the wastewater design flow shall be estimated based on either: (a) appropriate literature references (e.g., US EPA) for the type of facility proposed; or (b) documented wastewater flow monitoring data for a comparable facility. Additionally, the Administrative Authority may consider adjustment to the criteria listed in Table 15.42.030(B)-3 for specific facilities based upon documented wastewater flow monitoring data. In all cases, the design proposal shall include sufficient technical information to support the proposed design flow estimate. Notwithstanding the above, minimum design flow for any OWTS shall not be less than 150 gpd.

Table 15.42.050(B)-3.
Estimated Sewage/Waste Flow Rates

Type of Occupancy	Design Flow (gallons per day)
Airports	
- Per employee	15
- Per passenger	5
Auto washers	Per equipment mfg.
Bowling alleys, snack bar only (per lane)	75
Camps (per person)	
- With central comfort station	35
- With flush toilets, no showers	25
- Day camps, no meals served	15
- Summer and seasonal	50
Churches, sanctuary, religious halls (per seat)	
- without kitchen	5
- with kitchen waste	7
Dance halls (per person)	5
Day care (per patron, employee)	15
Factories and industrial buildings (per employee)	
- no showers	25
- with showers	35
- cafeteria, add	5
Hospitals	
- per bed	250
- kitchen waste only (per bed)	35
- laundry waste only (per bed)	5
Hotels, no kitchen waste (per bed x 2)	60
Institutions (per person)	
- resident	75
- nursing home	125
- rest home	125
Laundries, self-service	
- minimum 10 hours per day (per wash cycle)	50
- commercial	Per manufacturer
Motel (per bed space)	
- no kitchen	50
- with kitchen	60
Offices (per employee)	20

Table 15.42.050(B)-3.
Estimated Sewage/Waste Flow Rates

Type of Occupancy	Design Flow (gallons per day)
Parks	
- mobile homes (per space)	250
- picnic parks, toilets only (per parking space)	20
- Recreational vehicles (per space)	
• without water hook-up	75
• with water and sewer hook-up	100
Restaurants – cafeterias	
- per seat	50*
- per employee	20
- toilet (per customer)	7
- kitchen waste (per meal	6
- add for cocktail lounge (per customer)	2
- kitchen waste – disposable service (per meal)	2
Schools	
- staff and office (per person)	20
- elementary students (per student)	15
- intermediate and high (per student)	20
• with gym and showers,	5
• with cafeteria, add	3
- boarding, total waste (per person)	100
Service station, toilets	3
- for 1st bay	1000
- add for each additional bay	500
Stores	
- per employee	20
- public restrooms, add per 10 ft^2 of floor space	1
Swimming pools, public (per person)	10
Theaters	
- auditoriums (per seat)	5
- drive-in (per space)	10

*Number of seats shall be determined based on 15 square feet per seat in service area

D. Flow Equalization. Flow equalization is the process of controlling the rate of wastewater flow through an OWTS by providing surge capacity storage and timed-dosing of the incoming flow. It allows peak surges in wastewater flow (e.g., from a weekend event) to be temporarily stored and metered into the treatment system and/or dispersal field at a relatively even ("average") rate over an extended number of days (e.g., during the subsequent week). This process may be used for commercial and multi-family systems as recommended by the OWTS designer.

15.42.060 Alternative Design.

Special design measures will be required for high strength wastewater and other instances where it is determined by the Administrative Authority that the quantity and/or quality of wastewater poses unusual treatment or disposal challenges not addressed by conventional or advanced treatment methods. These systems shall be subject to review and approval by the Administrative Authority on a case-by-case basis. Examples include, but are not limited to:

A. Installations where appreciable amounts of industrial or indigestible wastes are produced;

B. Occupancies producing abnormal quantities of sewage or liquid waste;

C. Where grease interceptors are required by the California Plumbing Code; or

D. As required by the Regional Water Quality Control Board.

15.42.070 Septic Tank Requirements.

A. General. New and replacement OWTS septic tanks shall be limited to those approved by the IAPMO or designed by a California registered civil engineer to meet structural design standards acceptable to the Administrative Authority, and their installation shall be according to the manufacturer's instructions.

B. Capacity. The liquid capacity of all septic tanks shall conform to Table 15.42.050 as determined by (a) the number of bedrooms or dwelling units and (b) the number of plumbing fixture units, whichever is greater. The minimum total capacity of a septic tank shall be at least 1500 gallons.

Table 15.42.070. Septic Tank Capacity

Single Family Dwellings/Second Dwelling units # of Bedrooms	Multiple Dwelling Units (1 bedroom each)	Maximum Drainage Fixture Units	Minimum Septic Tank Capacity[4] (gallons)
1 or 6[1]	2-3 units	33	1,500
-	4	45	2,000
-	5	55	2,225
-	6	60	2,500
-	7	70	2,750
-	8	80	3,000
-	9	90	3,250
-	10[2]	100[3]	3,500

Notes:
[1] Additional bedrooms, 150 gallons each
[2] Additional dwelling units, 250 gallons each
[3] Additional fixture units over 100, 25 gallons per fixture unit
[4] Septic tank sizes in this table include sludge storage capacity and the connection of domestic food waste disposal units without further volume increase.

C. Plans. Plans for septic tanks shall be submitted to the Administrative Authority for approval. Such plans shall show dimensions, reinforcing, structural calculations, and such other pertinent data as required.

D. Design. Septic tank design shall be such as to produce a clarified effluent consistent with accepted standards and shall provide adequate space for sludge and scum accumulations.

E. Compartments. Septic tanks shall have not less than two compartments unless otherwise approved by the Administrative Authority. The inlet compartment of any septic tank shall be not less than two-thirds of the total capacity of the tank, nor less than 1000 gallons liquid capacity. The secondary compartment of a septic tank shall have a capacity of not less than 500 gallons and a capacity not exceeding one-third of the total capacity of such tank.

F. Access Manholes. Access to each septic tank shall be provided by at least two (2) manholes twenty-four (24) inches (610 mm) in minimum diameter. One (1) access manhole shall be located over the inlet and one (1) access manhole shall be located over the outlet. Wherever a first compartment exceeds twelve (12) feet (3658 mm) in length, an additional manhole shall be provided over the baffle wall. Septic tanks shall have the required manholes accessible by extending the manhole openings to grade in a manner acceptable to the Administrative Authority.

G. Pipe Opening Sizes. The inlet and outlet pipe openings shall not be larger in size than the connecting sewer pipe. The vertical leg of round inlet and outlet fittings shall not be less in size than the connecting sewer pipe nor less than 4 inches (102 mm). A baffle-type fitting shall have the equivalent cross-sectional area of the connecting sewer pipe and not less than a 4 inch (102 mm) horizontal dimension where measured at the inlet and outlet pipe inverts.

H. Pipe Extension. The inlet and outlet pipe or baffle shall extend 4 inches (102 mm) above and not less than 12 inches (305 mm) below the water surface. The invert of the inlet pipe shall be at a level not less than 2 inches (51 mm) above the invert of the outlet pipe.

I. Free Vent Area. Inlet and outlet pipe fittings or baffles and compartment partitions shall have a free vent area equal to the required cross-sectional area of the house sewer or private sewer discharging therein to provide free ventilation above the water surface from the disposal field or seepage pit through the septic tank, house sewer, and stack, or other approved vent, to the outer air.

J. Sidewalls. The sidewalls shall extend not less than 9 inches (229 mm) above the liquid depth. The cover of the septic tank shall be not less than 2 inches (51 mm) above the back vent openings.

K. Partitions and Baffles. Partitions or baffles between compartments shall be of solid, durable material and shall extend not less than 4 inches (102 mm) above the liquid level. The transfer port between compartments shall be a minimum size equivalent to the tank inlet, but in no case less than 4 inches (102 mm) in size, shall be installed in the inlet compartment side of the baffle so that the entry into the port is placed 65 percent to 75 percent in the depth of the liquid. Wooden baffles are prohibited.

L. Effluent Filter. New and replacement OWTS septic tanks shall be designed to prevent solids in excess of three-sixteenths (3/16) of an inch in diameter from passing to the dispersal system. Septic tanks

that use a NSF/ANSI Standard 46 certified septic tank effluent filter at the final point of effluent discharge from the OWTS and prior to the dispersal system shall be deemed in compliance with this requirement.

M. Structural Design. Septic tanks shall be constructed of solid durable materials not subject to excessive corrosion or decay and shall be watertight. The structural design of septic tanks shall comply with the following requirements:

1. Each such tank shall be structurally designed to withstand all anticipated earth or other loads. Septic tank covers shall be capable of supporting an earth load of not less than 500 pounds per square foot (lb/ft^2) (2441 kg/m2) where the maximum coverage does not exceed 3 feet (914 mm).

2. In flood hazard areas, and in areas where the groundwater elevation is above the tank bottom, tanks shall be anchored to counter buoyant forces. The vent termination and service manhole of the tank shall be not less than 2 feet (610 mm) above the design flood elevation or fitted with covers designed to prevent the inflow of floodwater or the outflow of the contents of the tanks during conditions of the design flood.

3. Traffic Rated Tanks. Septic tanks must be structurally designed to withstand all anticipated earth or other loads. Septic tanks located in traffic areas, including driveways, shall be designed to a minimum H20 traffic ratings as established by the American Association of State Highway Transportation Officials.

N. Materials. The materials used for constructing a septic tank shall be in accordance with the following:

1. Materials used in constructing a concrete septic tank shall be in accordance with applicable standards in the California Plumbing Code, Table 1401.1.

2. Septic tanks constructed of alternate materials may be approved by the Administrative Authority where in accordance with approved applicable standards. Wooden septic tanks shall be prohibited.

O. Prefabricated Septic Tanks. Prefabricated septic tanks shall comply with the following requirements:

1. Manufactured or prefabricated septic tanks shall comply with approved applicable standards and be approved by the Administrative Authority.

2. Independent laboratory tests and engineering calculations certifying the tank capacity and structural stability shall be provided as required by the Administrative Authority.

P. Water-tightness Testing Requirements. All new septic tank installations and modifications to existing septic tanks shall undergo water-tightness testing as follows:

1. New Tanks. For new tank installations, the testing shall be done with the access risers in place and the inlet and outlet pipes plugged. The tank shall be filled with water to a level

extending a minimum of two (2) inches into the risers, and monitored for a minimum 1-hour period, with no measurable drop in the water level.

2. Existing Tanks. For existing tanks, the tank shall be filled with water to a level even with the invert of the outlet pipe, and monitored for a 1-hour period, with no measurable drop in water level. However, in cases where there the groundwater level is known or estimated to rise above the level of the outlet pipe during any time of the year, the water-tightness test shall be conducted following the procedure for new tank installations; i.e., by filling the tank with water into the risers.

15.42.080 Commercial or Industrial Special Liquid Waste Disposal.

A. Interceptor. Where liquid wastes contain excessive amounts of grease, garbage, flammable wastes, sand, or other ingredients that affect the operation of a OWTS, an interceptor for such wastes shall be installed as designed by the OWTS designer

B. Installation. Installation of such interceptors shall comply with the applicable sections of the California Plumbing Code, and they shall comply with the siting requirements for septic tanks contained in this code. The Administrative Authority may require and approve additional more restrictive standards.

C. Sampling Box. A sampling box shall be installed when required by the Administrative Authority.

D. Design and Structural Requirement. Interceptors shall be of an approved design and include at least two (2) compartments unless otherwise approved by the Administrative Authority for good cause. Structural requirements shall be in compliance with the applicable requirements for septic tanks, per Section 15.42.070 of this chapter.

E. Location. Interceptors shall be located as close to the source of waste as possible and be accessible for servicing. Manholes for servicing shall be at grade level and be gastight.

F. Waste Discharge. Waste discharge from interceptors may be connected to a septic tank or other OWTS component or be disposed into an approved separate disposal system.

G. Sizing and Design Criteria. Systems shall be designed based on wastewater flow rates from Table 15.42.050 (B) 3 of this code and applicable sections of the California Plumbing Code.

15.42.090 Supplemental Treatment.

A. General.

1. Supplemental treatment to provide secondary (or better) effluent quality may be provided by (1) site-specific application of sanitary engineering principles/methods (e.g. intermittent sand, aerobic bioreactors with clarifiers) and/or (2) proprietary treatment units.

2. Propriety treatment units cover a category of manufactured or “package” systems specifically developed for residential and other small-scale sewage treatment applications. Most

proprietary designs currently available fall into the following categories: (1) aerobic treatment units (ATUs); (2) media filters; and (3) fixed-film activated sludge units.

3. Disinfection units are an example of a supplemental treatment component providing tertiary treatment, but only have applicability with secondary (or better) effluent quality produced by a supplemental treatment unit per (2) above.

4. Effluent from supplemental treatment units may be discharged to an approved type of dispersal system, including conventional and pressure distribution trenches or beds, chamber systems, subsurface drip dispersal fields, seepage pits, or combinations thereof.

5. Supplemental Treatment may be required as part of an advanced protection management program in conformance with Statewide OWTS Policy Section 10.9 and 10.10.

B. Design Requirements.

1. General. The OWTS designer and OWTS installer shall follow the proprietary manufacturer's design, installation, construction, and operations procedures, as applicable. All supplemental treatment systems shall be operated in compliance with applicable design requirements particular to the type of system, the facility served, and the site conditions in compliance with the manufacturer requirements.

2. Tanks and Components.

a. All tanks shall be structurally sound, watertight, operate in such a manner as to not create odors or vector attraction, be properly vented, and have a functional baffle(s).

b. All components of the system shall be functional, in good working order, and shall meet the design requirements for the specific site conditions and application for which they are approved.

c. Proprietary treatment units and components shall be structurally sound, free from defects, be watertight, and not create odor or vector attraction nuisance. The unit shall be operated in accordance with the approved manufacturer and certification/listing organization standards.

C. Sizing and Design Criteria.

1. Design Wastewater Flow. Sizing and design of supplemental treatment units shall be based on the projected wastewater flow for the building or facility being served, determined in accordance with wastewater flow requirements contained in this code.

2. Tanks. Sizing and design of tanks shall be in accordance with the structural and volumetric capacity requirements of this code. All tanks housing a proprietary treatment unit shall be structurally sound, water-tight and capable of withstanding anticipated loads and buoyant forces, as applicable.

3. Controls. Control panels shall be designed and configured in such a manner that, in the event of a treatment unit malfunction, an alarm system will be triggered and discharge from the treatment system to the dispersal field will be interrupted until the treatment unit malfunction is rectified. At a minimum, the alarm system shall include an audible and visual alarm at building served by the system.

4. Emergency Storage Provisions. Where a supplemental treatment unit is used in conjunction with a non-gravity fed dispersal system, the system shall provide emergency storage capacity equal to at least the daily wastewater flow (in gallons) or provide an audible and visible alarm with a telemetry connection to the Registered Maintenance Provider..

5. Compliance with Manufacturer Requirements. The design shall follow the proprietary manufacturer's design, installation, construction, and operations procedures, as applicable.

15.42.100 Conventional Disposal Fields (Leaching Trenches and Beds).

A. General. The construction dimensions of the subsurface sewage effluent disposal area of an onsite wastewater treatment system shall be based on soils analysis and/or percolation tests. Soils analysis shall be conducted by a licensed soils engineer and the results expressed in United States Department of Agriculture classification terminology. Percolation tests shall be conducted by a California Registered Professional Geologist, a California Registered Civil Engineer, or a California Registered Environmental Health Specialist. Specific methodologies for these tests are provided in the Malibu OWTS Manual and design criteria listed below.

B. Sizing and Design Criteria.

1. Minimum Effective Absorption Area. The minimum effective absorption area required shall be sufficient for absorption of the daily quantity of liquid waste discharging into the dispersal system, determined by either (1) the required septic tank capacity in gallons (liters), and/or (2) the estimated daily waste/sewage flow, whichever is greater.

2. Absorption Capacity. The absorption capacity of disposal trenches and beds shall be based on the effective absorption area and the percolation characteristics of the underlying and surrounding soil, as determined from results of field percolation testing and design criteria. Present and future dispersal areas must be tested.

3. Effective Absorption Area. The effective absorption area of a disposal trench shall normally be calculated as the bottom width. Sidewall area in excess of the required 12 inches (305 mm) and not exceeding 36 inches (914 mm) below the leach line shall be permitted to be added to the trench bottom area where computing absorption areas.

4. Leaching Beds. Where leaching beds are permitted in lieu of trenches, the area of each such bed shall be not less than 50 percent greater than the requirements for trenches. Perimeter sidewall area in excess of the required 12 inches (305 mm) and not exceeding 36 inches (914 mm) below the leach line shall be permitted to be added to the trench bottom area where computing absorption areas.

5. Leaching Chambers. Leaching chambers shall be sized on the bottom absorption area (nominal until width) in square feet with no reduction in sizing less than 30%.

C. Construction. Disposal fields shall be constructed in accordance with Table 15.42.100. Disposal fields shall not be installed in uncompacted fill.

Table 15.42.100.
General Disposal Field Requirements

Item	Minimum	Maximum
Number of drain lines per field	1	-
Length of each line	-	100 feet
Bottom width of trench	18 inches	36 inches
Spacing of lines, center-to-center	6 feet	-
Depth of earth cover of lines	12 inches	-
Grade of lines	Level	3 inches per
Filter material under drain lines	121 inches	100 feet
Filter material over drain lines	2 inches	-

D. Distribution Lines. Distribution lines shall be constructed of perforated ABS pipe, perforated PVC pipe, or other materials approved by the Administrative Authority, provided that sufficient openings are available for distribution of the effluent into the trench area.

E. Grade Board. A grade board staked in the trench to the depth of filter material shall be utilized when the distribution line is constructed of material which will not maintain alignment without continuous support.

F. Distribution Boxes. Where two or more drain lines are installed, an approved distribution box of sufficient size to receive lateral lines shall be installed at the head of each disposal field. The inverts of outlets shall be level, and the invert of the inlet shall be not less than 1 inch (25.4 mm) above the outlets. Distribution boxes shall be designed to ensure equal flow and shall be installed on a level concrete slab in natural or compacted soil.

G. Laterals. Laterals from a distribution box to the disposal field shall be approved pipe with watertight joints. Multiple disposal field laterals, where practicable, shall be of uniform length.

H. Connections. Connections between a septic tank and a distribution box shall be laid with approved pipe with watertight joints on natural ground or compacted fill.

I. Spacing.

1. Minimum spacing between trenches or leaching beds shall be not less than 4 feet (1,219 mm) plus 2 feet (610 mm) for each additional foot (305 mm) of depth in excess of 1 foot (305 mm) below the bottom of the drain line.

2. Distribution drain lines in leaching beds shall be not more than 6 feet (1829 mm) apart on centers, and no part of the perimeter of the leaching bed shall exceed 3 feet (914 mm) from a distribution drain line.

3. When seepage pits are used in combination with disposal fields, the filter material in the trenches shall terminate at least five (5) feet (1524 mm) from the seepage pit excavation.

J. Surface Covering. Disposal fields, trenches, and leaching beds shall not be paved over or covered by concrete or a material that is capable of reducing or inhibiting a possible evaporation of sewer effluent. Exceptions may be approved by the Administrative Authority for site with sand soil type and alternate ventilation design.

K. Joints. Where necessary on sloping ground to prevent excessive line slope, leach lines or leach beds shall be stepped. The lines between each horizontal section shall be made with watertight joints and shall be designed so each horizontal leaching trench or bed shall be utilized to the maximum capacity before the effluent shall pass to the next lower leach line or bed. The lines between each horizontal leaching section shall be made with approved water-tight joints and installed on natural or unfilled ground.

L. Dosing Tanks. Where approved by the Administrative Authority, dosing tanks used in conjunction with an OWTS may be used. Automatic syphon or dosing tanks shall be installed when required or as permitted by the Administrative Authority.

15.42.110 Seepage Pit Requirements.

A. General. The construction dimensions of the subsurface sewage effluent disposal area of an onsite wastewater treatment system utilizing seepage pits shall be based on soils analysis and percolation tests. Soils analysis shall be conducted by a licensed soils engineer and the results expressed in United States Department of Agriculture classification terminology. Percolation tests shall be conducted by a licensed geologist, a licensed soils engineer, a licensed civil engineer, or a California Registered Environmental Health Specialist. Specific methodologies for these tests are provided in the Malibu OWTS Manual and design criteria listed below.

B. Sizing and Design Criteria.

1. Effective Absorption Area. The effective absorption area of any seepage pit shall be calculated as the excavation sidewall area in square feet (ft^2) below the inlet, excluding impermeable soil zones where identified during field exploration.

2. Absorption Capacity. The absorption capacity of seepage pits shall be based on the effective absorption area per Effective Absorption Area requirements and the percolation characteristics of the surrounding soil, as determined from results of field percolation testing and design criteria. Present and future dispersal areas must be tested.

3. Minimum Effective Absorption Area. The minimum effective absorption area required shall be sufficient for absorption of the daily quantity of liquid waste discharging into the dispersal

system, based on either (1) the required septic tank capacity in gallons (liters), and/or (2) the estimated daily waste/sewage flow, whichever is greater.

4. Multiple Pits and Disposal Combinations. The minimum required absorption area may be provided in one or more seepage pits or in combination with other dispersal methods, e.g., trenches, beds or subsurface drip dispersal.

C. Multiple Installations. Multiple seepage pit installations shall be served through an approved distribution box. Distribution boxes shall have their locations permanently marked with a steel post, concrete marker or other durable material. Additionally, each distribution box shall have an inspection riser of white PVC or concrete of at least eight (8) inches in diameter. The inspection riser shall allow inspection access to the distribution box. Each riser shall terminate with an approved screw type cap.

D. Construction. Each seepage pit shall be circular in shape and shall have an excavated diameter of not less than four (4) feet (1,219 mm). Approval shall be obtained prior to construction for any pit having an excavated diameter greater than six (6) feet (1,829 mm). Seepage pits shall not be installed in uncompacted fill.

E. Spacing.

1. Minimum horizontal spacing between seepage pits shall be 12 feet, measured from sidewall to sidewall.

2. When seepage pits are used in combination with disposal fields, the filter material in the trenches shall terminate at least five (5) feet (1524 mm) from the seepage pit excavation.

F. Lining. Seepage pits may be constructed in one of two ways, as follows:

1. An eight (8) inch (204 mm) white, or other similar approved color, sewer pipe of approved material shall be installed true and plumb in the center of the seepage pit excavation extending from the bottom of the seepage pit excavation to the inlet depth. The sewer pipe shall have one (1) inch (25.5 mm) holes drill each 120 degrees of the sewer pipe circumference at twelve (12) inch (306 mm) intervals on center minimum for the entire length of the sewer pipe to the inlet depth. The sewer pipe shall then extend watertight to grade and shall be capped with an approved screw type, accessible cap. The void between the sewer pipe and the seepage pit excavation shall then be filled with clean stone, gravel, or similar filter material acceptable to the Administrative Authority, varying in size from the three- fourths (3/4) inch to two and one-half (2-1/2) inches (19.1 mm to 64 mm).

2. Pre-cast concrete circular sections approved by the Administrative Authority may be used. The void between the pre-cast circular sections and the seepage pit excavation shall have a minimum of six (6) inches (152 mm) of clean three-fourths (3/4) inch (19.1 mm) gravel or rock filter material. An approved type one or two piece reinforced concrete slab cover shall be installed on top of the pre-cast concrete circular sections. Each such cover shall have twenty- five hundred (2,500) pounds per square inch (17,238 kPa) minimum compressive strength shall be not less than five (5) inches

(127 mm) thick and shall be designed to support an earth load of not less than four hundred (400) pounds per square foot (19.2 kPa). Each such cover shall be provided with an eight (8) inch (204 mm) minimum inspection hole and shall be coated on the underside with an approved bituminous or other nonpermeable protective compound. An eight (8) inch (204 mm) white, or similar approved color, sewer pipe of approved material shall be installed true and plumb extending watertight from the cover inspection hole to grade and shall be capped with an approved accessible cap.

G. Sidewall. A seepage pit shall have a minimum side- wall of 10 feet (3048 mm) below the inlet.

H. Cover. The cover/cap of a seepage pit shall be constructed and located as follows:

1. Approved-type one or two-piece reinforced concrete slabs of not less than 2,500 lb/in^2 (1,757,674 kg/m^2) minimum compressive strength, not less than 5 inches (127 mm) thick, and designed to support an earth load of not less than 400 pounds per square foot (lb/ft^2) (1,953 kg/m^2). Each such cover shall be provided with a 9 inch (229 mm) minimum inspection hole with plug or cover and shall be coated on the underside with an approved bituminous or other nonpermeable protective compound.

2. Cap depth of the seepage pit (distance from the surface of the ground to the top of the effective portion of the seepage pit) shall be specified by the Engineering Geologist and incorporated as part of the OWTS design.

I. Inlet Fitting. An approved vented inlet fitting shall be provided in the seepage pit so arranged as to prevent the inflow from damaging the sidewall.

Exception: Where using a one- or two-piece concrete slab cover inlet, the fitting shall be permitted to be a one-fourth bend fitting discharging through an opening in the top of the slab cover. On multiple seepage pit installations, the outlet fittings shall comply with Section H-1 above.

15.42.120 Pressure Dosed Leaching Beds and Trenches.

A. General. Pressure distribution systems are a variation of a conventional disposal field system that use a pump and small-diameter pressure piping to achieve broad, uniform distribution of wastewater throughout the dispersal field for improved soil absorption and better treatment of percolating effluent. Pressure distribution can be used in conjunction with rock-filled trenches or leaching chamber dispersal fields, receiving either septic tank effluent or secondary/tertiary effluent from a supplemental treatment unit. Pressure distribution is not used with seepage pits. Specific methodologies for siting and design of these systems are provided in the Malibu OWTS Manual and the design criteria listed below.

B. Applications. Pressure distribution may be incorporated in any leaching trench/bed disposal field, and is required for the following situations:

1. Areas with ground slopes between 30% - 45%, in conjunction with supplemental treatment;

2. Areas with percolation rates of less than 5 mpi or greater than 60 mpi, in conjunction with supplemental treatment;

3. Beachfront properties;

4. To allow reduction of minimum vertical separation to groundwater (below trench bottom) from 5 feet to 3 feet or 2 feet for beachfront properties, in conjunction with supplemental treatment;

5. For large flow systems, e.g., with dispersal field lengths exceeding 500 lineal feet;

6. Disposal fields with non-uniform lateral lengths or irregular (non-rectangular) shapes; and

7. Situations as may be determined necessary due to site-specific soil, geology or other conditions.

C. Siting Criteria.

1. Setbacks. Horizontal setback requirements for pressure distribution trench systems shall be those applicable to conventional dispersal fields.

2. Vertical Separation Requirements.

a. Depth to Groundwater. Minimum depth to seasonal high groundwater for pressure distribution trench systems, as measured from trench bottom, shall be three (3) feet.

b. Soil Depth. Minimum depth of soil, as measured from trench bottom to impermeable soil or rock, for pressure distribution trench systems shall be three (3) feet.

3. Percolation Rate. Average percolation rate for pressure distribution trench systems shall be within the range of 1 mpi to 120 mpi, as determined in accordance with standard percolation requirements for conventional dispersal trenches.

4. Ground Slope. Maximum ground slope in areas used for pressure distribution systems shall be 45 percent. An evaluation of the disposal area shall be included in a slope stability report.

D. Sizing and Design Criteria.

1. Wastewater treatment. Pressure distribution trench systems may be used for dispersal effluent that has received supplemental treatment (secondary or better), using an approved advanced treatment system.

2. Sizing. Pressure distribution trench systems shall be sized by percolation rates in the same manner as conventional dispersal trenches, according to requirements in this code and the Malibu OWTS Manual.

3. Pressure Dosing. Septic tank effluent shall be applied to the pressure distribution trench system by pressure dosing, utilizing a pump system or automatic dosing siphon. The pressure distribution system shall be designed in accordance with accepted engineering practices to achieve, at a minimum:

a. Uniform dosing of wastewater effluent throughout the system of pressure distribution trenches;

b. Adequate flow rate, screening of effluent and suitable piping network to preclude solids accumulation in the pipes or clogging of discharge orifices;

c. Suitable access provisions for inspection, testing and adjustment of the pressure distribution system; and

d. Dosing volume to achieve minimum of 3 to 5 doses per day at design flow conditions.

4. Pump System or Dosing Siphon. The pump system or dosing siphon, as applicable, shall be: (a) appropriate for sewage applications; (b) of the size and type to meet hydraulic design requirements consistent with engineering practice; and (c) designed and constructed in accordance with pump system/dosing siphon requirements provided in the Malibu OWTS Manual.

E. Construction and Materials.

1. Dispersal Trenches. Pressure distribution trenches shall conform to the same design and construction requirements as conventional trench requirements contained in this code, with the exception that the piping system shall consist of pressure piping rather than gravity piping and non-uniform lateral lengths and non-uniform disposal field dimensions shall be permitted.

2. Pressure Distribution Piping.

a. Pressure-Rated Pipe Material. All pipe, fittings and valves shall be pressure-rated PVC pipe, minimum 150 psi.

b. Solvent Welded. All joints in the pressure piping system shall be solvent welded.

c. Pipe Sizing. All pressure distribution pipes and fittings, including transport lines, manifolds, laterals and valves, must be adequately sized for the design flow, and shall be designed to minimize frictional losses to the maximum extent practicable.

d. Thrust Blocks. Concrete thrust blocks, or equivalent restraint, shall be provided at sharp changes in piping directions.

e. Shut-off Valves. The distribution lateral for each trench shall be fitted with a shut-off valve to adjust or terminate the flow to individual trenches. This valve may be either a ball or gate valve, and shall be located in a utility/valve box.

f. Lateral End Riser. The end of each lateral shall be fitted with a 90^{o} long sweep to facilitate line cleaning and hydraulic testing. The end riser pipe shall also be fitted with a ball valve and/or threaded end cap or plug, housed in a valve box.

15.42.130 Subsurface Drip Dispersal.

A. General.

Subsurface drip dispersal is a method for disposal of treated wastewater that uses special drip tubing designed for use with wastewater. The dripline is placed 9 to 12 inches below ground surface and makes use of the most biologically active soil zone for distribution, nutrient uptake and evapotranspiration of the wastewater. A drip dispersal system is comprised of small-diameter (½" to 1") laterals ("driplines"), spaced 24 inches apart, with small-diameter emitters (1/8") located at 12 to 24 inches on-center along the dripline. Effluent is conveyed under pressure to the laterals, with timed doses. Prior to dispersal the effluent requires supplemental treatment.

B. Applications.

Subsurface drip dispersal may be incorporated into the OWTS design for the following situations:

1. Areas with ground slopes between 30% - 45%.

2. Areas with percolation rates of less than 5 mpi or greater than 60 mpi;

3. To allow reduction of minimum vertical separation to groundwater (below trench bottom) from 5 feet to 3 feet;

4. To allow reduction of horizontal setbacks as approved by the Administrative Authority; and

5. Situations as may be determined necessary due to site-specific soil, geology or other conditions with approval from the Administrative Authority.

C. Siting Criteria.

1. Setbacks. Horizontal setback requirements for drip dispersal systems shall be those applicable to conventional dispersal fields, as specified in this code or as otherwise approved by the Administrative Authority.

2. Vertical Separation Requirements.

a. Depth to Groundwater. Minimum depth to seasonal high groundwater for drip dispersal systems, as measured from the dripline, shall be two (2) feet.

b. Soil Depth. Minimum depth of soil, as measured from bottom of dripline to impermeable soil or rock, for drip dispersal systems shall be five (5) feet, unless otherwise approved by the Administrative Authority.

3. Ground Slope. Maximum ground slope in areas used for drip dispersal systems shall be 45 percent. An evaluation of the disposal area shall be included in a slope stability report.

D. Sizing and Design Criteria.

1. Wastewater Treatment.

a. Wastewater effluent discharged to any drip dispersal system shall be treated with an approved supplemental treatment system, in accordance with applicable sections of this code.

b. All drip dispersal systems shall include a filtering device capable of filtering particles larger than 100 microns; this device shall be located downstream of the supplemental treatment system.

c. Additional requirements may be assigned in connection with criteria for use in Advanced Protection Management Areas.

2. Dripfield Sizing.

a. Wastewater Design Flow. Drip dispersal systems shall be designed to accept the design wastewater flow for the building or facility being served, determined in accordance with wastewater flow requirements contained in section 15.42.050.

b. Wastewater Application Rates. Wastewater application rates used for sizing drip dispersal fields shall be based on either (1) soil percolation rate determined in accordance with methods described in the Malibu OWTS Manual or (2) soil classification with hydraulic loading rates found in the 2002 USEPA Manual as depicted in Table 15.42.100. In applying these criteria, the wastewater application area refers to the ground surface area encompassed by the drip dispersal field.

c. Dripfield Area. Minimum sizing of the dripfield area shall be equal to the design wastewater flow divided by the applicable wastewater application rate from the section above.

d. Drip Emitter Coverage. For sizing purposes, effective ground surface area used for drip field sizing calculations shall be limited to no more than 4.0 square feet per drip emitter. For 200 lineal feet of dripline with emitters at 2-foot spacing would provide a total of 100 emitters (200/2) and could be used for dispersal to an effective area of up to 400 ft^2 (100 emitters x 4 ft^2/emitter). Conversely, if wastewater flow and percolation/soils design information indicate the need for an effective area of 1,000 ft^2, the dripline design and layout would have to be configured to provide a minimum of 250 emitters spaced over the required 1,000 ft^2 of dispersal area.

e. Dripfield Zones. Dripfields may be divided into multiple zones which may be located in different areas of a site, as desired or needed to provide the required dripfield size. A single continuous dripfield area is not required. However, any areas proposed for drip dispersal shall be supported by field observations and measurements to verify conformance with soil suitability and other site requirements. Differences in soil conditions and percolation characteristics from one zone to another may require the use of correspondingly different wastewater application rates and dripfield sizing for each zone.

Table 15.42.130.

Wastewater Application Rates for Subsurface Drip Dispersal Fields
(Adapted from 2002 USEPA Manual Table 4.3)

Soil Texture	Structure	Application Rate (gpd/sf)
Gravelly coarse sand & coarser	Loose or cemented	0.0
Clay, sandy or silty clay silt loam	Weak or massive Massive	0.0 0.0
Sandy clay loam, clay loam or silty clay loam	Massive	0.0
Sandy clay, clay or silty clay	Moderate to strong	0.2
Sandy clay loam, clay loam or silty clay loam	Weak	0.2
Sandy clay loam, clay loam or silty clay loam	Moderate to strong	0.4
Sandy loam, loam or silt loam	Weak	0.4
Sandy loam, loam or silt loam	Moderate to strong	0.6
Fine, very fine, loamy fine and very loamy fine sand	Not Applicable	0.8
Coarse, single grain sand	Not Applicable	1.2

3. Pressure Dosing. Secondary-treated effluent shall be delivered to the dripfield by pressure, employing a pump system and timed dosing. The pressure distribution system shall be designed in accordance with accepted engineering practices and manufacturer recommendations for drip dispersal systems to achieve, at a minimum:

   a. Uniform dosing of treated effluent;

   b. An adequate dosing volume and pressure per manufacturer's guidelines;

   c. Adequate flow rate, final filtering of effluent and suitable piping network to preclude solids accumulation in the pipes and driplines or clogging of discharge emitters;

   d. A means of automatically flushing the filter and driplines at regular intervals; and

   e. Suitable access provisions for inspection, testing and adjustment of the dripfield and components.

   f. As applicable, additional requirements for design and construction of pressure distribution piping systems specified for "Pressure Distribution Systems" in this code shall also apply.

E. Construction and Materials.

1. Dripline Material. Dripline shall be manufactured and intended for use with secondary quality wastewater, with minimum 45 mil tubing wall thickness, bacterial growth inhibitor(s), and means of protection against root intrusion.

2. Dripfield Layout. The bottom of each dripline row shall be level and parallel to the slope contour.

3. Dripline Depth. The dripline depth shall be installed at a minimum depth of twelve (12) inches below grade and must be continuously covered by a minimum depth of twelve (12) inches of soil/mulch. Deeper placement of driplines may be considered on a case-by-case basis.

4. Length of Individual Driplines. The maximum dripline length shall be designed in accordance with accepted engineering practices and in accordance with the manufacturer's criteria and recommendations.

5. Line and Emitter Spacing. Line and emitter spacing shall be designed as appropriate for soil conditions, slope, and contour. There shall be a minimum spacing of 12 inches between emitters and no emitter shall be located less than 12 inches from the supply and return manifolds.

15.42.140 Beachfront OWTS.

A. General. All proposed OWTS on beachfront properties shall be designed and installed in accordance with this code and City Coastal Engineering requirements and shoreline protection requirements. Beachfront development that includes new OWTS or expansion of existing OWTS shall include secondary treatment with disinfection of effluent prior to discharging to any subsurface disposal system. Seepage pits shall not be allowed unless otherwise approved by the Administrative Authority for good cause.

B. Siting Criteria.

1. Setbacks. Horizontal setback requirements for beachfront OWTS shall be the same as those applicable to conventional dispersal fields as specified in this code and criteria contained in the Malibu OWTS Manual, or as otherwise approved by the Administrative Authority for good cause.

2. Vertical Separation Requirements.

a. Depth to Tidal Water and soil. The bottom of any leach trench or drainfield shall have a minimum of two (2) feet temporary (seasonal) clearance and four (4) feet (annual average) permanent clearance above the mean high tide elevation, saturated zone or impervious soil or rock as applicable.

b. Depth to Groundwater. Minimum depth to seasonal high groundwater, as measured from trench bottom, shall be five (5) feet or as otherwise approved by the Administrative Authority for good cause.

C. Sizing and Design Criteria. The dispersal system shall be sized and designed in the same manner as pressure distribution systems, according to requirements in this code and the Malibu OWTS Manual. Effluent dispersal/disposal capacity shall be based on sand category design, for hydraulic loading.

1. Wastewater treatment. Beachfront development that includes new OWTS or expansion of existing OWTS shall include secondary treatment with disinfection of effluent.

2. Shoreline protection devices. For new OWTS or expansion of existing OWTS, all system components shall be protected from tidal and wave uprush action by a shoreline protection device adequately designed and engineered by a State of California licensed Civil Engineer specializing in Coastal Engineering. Existing shoreline protection devices must provide protection greater than or equal to current coastal engineering standards or shall be modified to meet this code. The minimum horizontal distance between and portion of the OWTS and shoreline protection device, including returns shall not be less than five (5) feet, or as otherwise approved by the Administrative Authority for good cause.

3. Vertical clearance. The space above the OWTS shall have a minimum of six (6) feet vertical clearance to the bottom of any structural element including any cover such as stucco or wood siding. The required clearance shall be maintained overall system components and shall extend horizontally to the open ocean side of the building with no obstructions other than shoreline protection devices.

4. Access. No portion of the OWTS shall be located under any portion of any structure whether covered or uncovered except as approved in conformance with criteria contained in the OWTS Manual or by the Administrative Authority for good cause. OWTS shall have adequate access and clearances for the purposes of system maintenance and repair without the removal of any permanent structures, landscaping or other similar obstructions to access the system.

15.42.150 Construction and Inspection.

A. General. Construction and inspection of OWTS shall comply with the following:

1. Applicable provisions of the Malibu Municipal Code related to inspections for construction permits shall be required. Approved OWTS plans shall be required to be available for review at the construction site during inspections.

2. System components shall be labeled to identify the manufacturer. Septic tanks or other components of the OWTS shall have the rated capacity permanently marked on the unit.

3. Septic tanks and other components of the OWTS shall be installed as required by the Administrative Authority and manufacturer requirements.

4. The dispersal system shall be installed at the same location and depth as shown on approved plans.

5. Construction inspections by the project engineering geologist and OWTS designer shall be conducted as required by the qualified professional, as defined in Malibu Municipal Code chapter 5.38, or Administrative Authority.

6. Flow Test. As part of the inspection a flow test shall be performed through the system to the point of effluent disposal. All lines and components shall be watertight as applicable. Capacities, required air space, fittings and performance requirements shall comply with the provisions set forth in these standards.

B. Leach Trenches / Beds. Filter Material. Before placing filter material or drain lines in a prepared excavation, all smeared or compacted surfaces shall be removed by raking to a depth of one (1) inch (25.4 mm) and the loose material removed. Clean stone, gravel, slag, or similar material acceptable to the Administrative Authority, varying in size from three fourths (3/4) inch to two and one-half (2-1/2) inches (19.1 mm to 64 mm) shall be placed in the trench to the depth and grade required by this section. Drain pipe shall be placed on the filter material in an approved manner. The drain lines shall then be covered with filter material to the minimum depth required by this section and covered with material approved by the Administrative Authority to prevent closure of voids with earth backfill. No earth backfill shall be placed over the filter material until after inspection and acceptance.

Exception: Plastic leaching chambers approved by the Administrative Authority may be used in lieu of pipe and filter material. Chamber installations shall follow the rules for disposal fields, where applicable, and shall conform to manufacturer's installation instructions.

C. Seepage Pits.

1. Seepage pits shall be located in accordance with the approved plot plan or as otherwise approved by the Administrative Authority for good cause.

2. All seepage pits shall be fed through effluent laterals which are connected to a distribution box. No seepage pits shall be installed in series.

3. Filter material, when used, is to be two (2) to two and one half (21/2) inch washed gravel. The filter material should not contain fine materials. The installer must demonstrate the gravel is washed by submittal of documentation from supplier or other approved means. Failure to comply may result in rejection of the seepage pit installed.

4. The effluent line installed within the seepage pit shall be a minimum eight (8) inch white (or similar approved color) PVC schedule 40 or SDR 35 piping installed true and plumb. The effluent line shall have holes drilled each 120 degrees of the pipe circumference at 12" on center minimum for the entire length of the seepage pit below the inlet. The riser will extend flush with the surrounding ground or above and shall not be diminished in size. The riser shall be capped with an approved cap and must remain accessible at all times.

5. Lined seepage pits shall be allowed when approved by the Administrative Authority and comply with Section H 701.0 of the California Plumbing Code.

D. Pressure Distribution Trench Systems. At a minimum, inspection of the pressure distribution trench system installation shall include the items listed below. This is in addition to inspection work required for a supplemental treatment system, if used. Joint inspection by the OWTS designer, contractor, and Administrative Authority may be required.

1. Pre-construction inspection where the construction staking or marking of the supply and return piping, pump system and appurtenances is provided and construction procedures discussed;

2. Water tightness of septic tank and dosing (pump) tank;

3. Pipe or drip field layout, piping materials and installation, and all associated valves and connections;

4. Hydraulic testing of the pressure pipe system;

5. Functioning and setting of all control devices; and

6. Final Inspection to verify that all construction elements are in conformance with the approved plans and specifications, and operation and maintenance guidelines/manual are provided to owner.

E. Drip Dispersal Systems. At a minimum, inspection of the drip dispersal system installation should include the items listed below. This is in addition to inspection work required for a supplemental treatment system, if used. Joint inspection by the OWTS designer, contractor, and Administrative Authority may be required.

1. Pre-construction inspection where the construction staking or marking of the drip lines, supply and return piping, pump system and appurtenances is provided and construction procedures discussed;

2. Water tightness of septic tank and dosing (pump) tank;

3. Drip field layout, piping materials and installation, and all associated valves and connections;

4. Hydraulic testing of the drip system;

5. Functioning and setting of all control devices; and

6. Final Inspection to verify that all construction elements are in conformance with the approved plans and specifications, erosion control has been completed; and operation and maintenance guidelines/manual are provided to owner and Administrative Authority.

F. Tanks. Septic tanks and other OWTS vessels shall be filled with water to flow line and piping as applicable prior to requesting inspection. Seams or joints shall be left exposed (except the bottom), and the tank shall remain water-tight.

G. Supplemental Treatment Units. The following minimum inspections prior to commencing construction or covering any elements of the system shall be required. Joint inspection by the OWTS designer, OWTS installer, and Administrative Authority may be required.

1. Pre-construction inspection where the construction staking or marking of the treatment unit is to be placed and installation procedures are discussed;

2. Testing of the treatment unit:

a. Function and setting of all control devices and alarms.

b. Water-tightness of septic tank, treatment tank(s), and dosing tank, as applicable.

3. At final inspection completion and acceptance form signed/stamped by the OWTS designer, OWTS installer, OWTS operation and maintenance provider attesting that the treatment unit has been installed and is operating in conformance with design specifications shall be provided.

SECTION 4. Amendments to Chapter 15.44

Chapter 15.44 is hereby added to of Title 15 (Buildings and Construction) of the Malibu Municipal Code to read as follows:

Chapter 15.44 Operating Permits for Onsite Wastewater Treatment Systems

15.44.010 Purpose.

The purpose of the onsite wastewater treatment system inspection and permitting program is to assist property owners with management of their OWTS by, establishing consistent requirements that assure appropriate operation and maintenance of these systems, and to protect public health and safety, the environment, and water quality. This preventative program will assist in allowing OWTS to be a part of a long-term solution to one of the city's basic public health and environmental quality needs: safe and effective wastewater treatment and disposal.

15.44.020 Definitions.

Definitions established in Section 15.40.020 (Chapter 15.40) of the Malibu Municipal Code shall apply to this chapter.

15.44.030 OWTS Operating Permit Requirement.

A. Any person owning real property served by an onsite wastewater treatment system (OWTS) shall be responsible for: (1) obtaining all inspections and permits required by this chapter; (2) ensuring the continued maintenance and proper functioning of the OWTS; and (3) ensuring any necessary repairs, modifications or upgrades to the OWTS are timely completed and made fully operational. For purposes of this chapter, "person" shall have the same definition as set forth in Malibu Municipal Code Chapter 17.02.060.

B. Properties not Currently Served by an OWTS. Any applicant proposing a development project that includes the construction of a new OWTS on real property not currently served by an OWTS shall be required to apply for and obtain an operating permit for the OWTS. Application for the operating permit shall be concurrent with the application or referral to the environmental health specialist for the proposed development project. An operating permit shall be issued for the new OWTS when the system is determined to be functioning properly and is approved by the city of Malibu. A certificate of occupancy for the development project shall not be issued until a valid operating permit is secured.

C. Properties Currently Served by an OWTS. The owner of real property served by an existing OWTS shall be required to apply for and obtain an operating permit for the OWTS in each of the following circumstances:

1. With any application by the owner (or owner's agent) for a permit to repair, alter, modify, replace, renovate, or relocate the existing OWTS. The application for the operating permit shall be concurrent with the application for any required development permit, or concurrent with the application for environmental health approval when a development permit is not required. An operating permit will be issued when the work is complete and the system has been determined to be functioning in compliance with all applicable requirements.

2. With any application by the owner (or owner's agent) for any alteration, modification, remodel, or repair of any structure on the property that involves the addition of plumbing fixture units or results in any increase in the load to the existing OWTS. The application for the operating permit shall be concurrent with the application for any required development permit, or concurrent with the application for environmental health approval when a development permit is not required. An operating permit will be issued when the work is complete and the system has been determined to be functioning in compliance with all applicable requirements.

3. Prior to any "purchase" or "change in ownership" (as those terms are defined in Division 1, Part 0.5, Chapter 2 of the Revenue and Taxation Code) of real property served by an OWTS for which there is no valid, unexpired operating permit. If an inspection of the OWTS prior to a purchase or change in ownership reveals that the OWTS is in need of any repair, modification, upgrade or replacement, the property owner may proceed in accordance with the point of sale OWTS inspection and permitting procedures set forth in Section 15.44.070.

4. All owners of real property improved with the following uses shall apply for and obtain an operating permit for the OWTS serving the property:

a. Restaurant uses.

b. All commercial uses other than restaurants.

c. Multifamily uses and condominiums.

5. When any content of an OWTS has spilled onto the surface of the ground or into any building served by the OTWS, the owner of the real property served by the OWTS, authorized representative, or the company pumping the OWTS must submit a Septage Pumping Report of the pumping activity

to the City within 24 hours of pumping the OWTS. Upon receipt of the Septage Pumping Report, the City shall send, via certified mail, written notice to the both the address where the OWTS is located as well as the registered property owner of the property containing the OWTS. This written notice shall state the reason for the notice as well as the requirements of this Chapter.

An application for a new or updated operating permit for the OWTS serving the property shall be submitted within ten (10) calendar days from the date of the City's notice. The application shall include an OWTS physical inspection, with the results of the inspection documented on the City's official inspection form for OWTS. If the required inspection of the OWTS reveals that the OWTS is in need of any repair, modification, upgrade or replacement, the property owner must take corrective measures and obtain all necessary permits to ensure that the OWTS is made fully operational.

6. When any content of an OWTS has been pumped out, whether completely or partially, three (3) or more times during any 180 day period, the owner of the real property served by the OWTS, authorized representative, or company pumping the OWTS must submit a Septage Pumping Report(s) to the City within 24 hours of a pumping OWTS. Upon receipt of the Septage Pumping Report, the City shall send, via certified mail, written notice to both the address where the OWTS is located as well as the registered property owner of the property containing the OWTS. This written notice shall state the reason for the notice as well as the requirements of this Chapter.

If the required inspection of the OWTS reveals that the OWTS is in need of any repair, modification, upgrade or replacement, the property owner must take corrective measures and obtain all necessary permits to ensure that the OWTS is made fully operational. If a permit is required for the corrective measures, an application for a new or updated operating permit shall be submitted within ten (10) calendar days from the date of the City's notice.

An owner of the real property served by the OWTS may apply for an exemption from the requirement to obtain an operating permit per this section when it can be clearly demonstrated the pumping activity undertaken is unrelated to the soundness or operational capability of the OWTS.

D. Transfer of Operating Permit. Operating permits are issued to the owner of the real property served by the OWTS. Within thirty (30) days of any change in ownership of real property served by an OWTS for which there is a valid and unexpired operating permit, the purchaser/transferee of the real property must file a "Notice of Change in Ownership for Operating Permit" with the city to ensure that the operating permit is transferred into the name of the new owner.

E. For purposes of this chapter, homeowners associations will be considered the owner of the real property for condominiums and townhouses.

F. All onsite wastewater treatment systems serving commercial and multifamily uses are subject to specific or general wastewater discharge requirements/permits as established and issued by the Los Angeles County Regional Water Quality Control Board.

G. If an inspection of the OWTS occurs after any of its contents have spilled onto the surface of the ground or into any building served by the OTWS or if an inspection occurs after OTWS has been pumped

three (3) or more times during any 180 day period and the inspection reveals that, due to its failure status, the OWTS is in need of any repair, modification, upgrade or replacement, the property owner must obtain a new or updated operating permit.

If an OWTS is already the subject of an operating permit, an updated permit must be obtained within 30 days of the City's written notice unless a compliance agreement is entered into by the property owner and the City extending this 30-day deadline. If a property owner fails to comply with this section, the City may revoke or suspend the operating permit in accordance with the provisions of section 15.44.080 of this code.

If an OWTS is not the subject of an operating permit, an operating permit must be obtained within 30 days of the City's written notice unless a compliance agreement is entered into by the property owner and the City extending this 30 day deadline. Failure to comply within 30 days of the City's written notice shall be punishable pursuant to Section 15.44.100 of this code.

H. Conditions are required for an operating permit when the OWTS cannot be maintained in accordance with this code, in conjunction with development permits, as part of the approval for an alternative OWTS, or as otherwise directed by the Administrative Authority for good cause. Conditions include but are not limited to alternate renewal period, monitoring, sampling, and pumping.

15.44.040 Renewal of OWTS Operating Permits.

A. Operating permits for an OWTS serving commercial or multifamily uses shall be valid for two years from the date of issuance unless sooner revoked by the administrative authority pursuant to this chapter.

B. Operating permits for advanced onsite wastewater treatment systems serving single-family uses shall be valid for three years from the date of issuance unless sooner revoked by the administrative authority pursuant to this chapter.

C. Operating permits for conventional onsite wastewater treatment systems serving single-family uses shall be valid for five years from the date of issuance unless sooner revoked by the administrative authority pursuant to this chapter.

D. The owner of real property served by an OWTS is responsible for the timely renewal of the operating permit. It shall be a violation of this chapter for an owner of real property served by an OWTS to allow an operating permit to lapse for a period longer than thirty (30) days unless the property owner has entered into a compliance agreement with the city for any necessary repairs, upgrades or modifications to the OWTS.

15.44.050 OWTS Inspection and Operating Permit Criteria.

A. An operating permit will not be issued to a property owner until the OWTS has been inspected by a city-approved OWTS inspector and found to be operating in compliance with the City's Guidelines for the Inspection of Onsite Wastewater Treatment Systems in the Malibu OWTS Manual and with any applicable conditions previously stipulated for the system.

B. All inspections required by this chapter shall be conducted by a city-approved OWTS inspector in accordance with the guidelines.

C. The results of any inspection required by this chapter shall be reported to the administrative authority by the OWTS inspector on the official inspection form for onsite wastewater treatment systems.

D. The administrative authority shall establish and approve the guidelines for the inspection of onsite wastewater treatment systems and the official inspection form for onsite wastewater treatment systems and any amendments thereto.

E. It shall be a violation of this code to falsify, misrepresent, or fraudulently alter or manipulate a system inspection form.

15.44.060 Approval of OWTS Inspectors.

A. All OWTS inspections required by this chapter must be performed by a registered onsite wastewater treatment system inspector certificate holder. Registration of OWTS inspectors is governed by Malibu Municipal Code Chapter 5.38.

B. The city of Malibu shall maintain a list of all currently approved OWTS inspectors. A copy of the list may be obtained by any person upon request.

15.44.070 Point of Sale/Renewal of Operating Permit OWTS Inspection and Permitting Procedures.

A. Certificates of Inspection. If an inspection of the OWTS prior to a renewal, purchase or change in ownership reveals that the OWTS is in need of any repair, modification, upgrade or replacement, the property owner may request a certificate of inspection from the city in lieu of obtaining an operating permit prior to renewal or completion of the purchase or change in ownership. A certificate of inspection shall only be issued when a compliance agreement binding the owner to a time schedule for any required repairs, upgrades, or replacements has been executed by the owner of the real property served by the OWTS and the administrative authority or his or her authorized agent. Any compliance agreement entered into for purposes of this chapter must include terms binding all future owners and assigns of the real property served by the OWTS and, in order to put future owners and assigns on notice of the obligations contained in the compliance agreement, the owner of the real property served by the OWTS must record the compliance agreement with the City within 3-5 business days after its execution. The compliance agreement shall incorporate any interim measures governing the operation of the OWTS deemed appropriate by the system inspector and/or the administrative authority. In the event that a property owner fails to secure an operating permit or a certificate of inspection prior to a purchase or a change in ownership, it shall be incumbent upon the successor in interest/transferee/purchaser to secure an operating permit for the OWTS within one hundred eighty (180) days of the effective date of purchase or change in ownership.

B. Operating Permits. The city shall issue an operating permit when: (1) all required repairs, modifications, replacements, and/or upgrades identified in the official inspection form and the compliance agreement have been completed to the satisfaction of the administrative authority and in accordance with

all required permits and approvals; and (2) the property owner has satisfied all of the owner's obligations set forth in the compliance agreement.

15.44.080 Revocation of Operating Permit.

A. Grounds. The administrative authority may revoke or suspend an operating permit if the property owner is found to be in violation of any condition(s) of the permit or if the property owner is found to be in violation of any applicable requirements of the Los Angeles County Health Department, the Los Angeles Regional Water Quality Control Board, or this code.

B. Procedure. If the administrative authority has reason to believe that grounds for revocation or suspension of an operating permit exist, the administrative authority shall notify the property owner by certified mail to the address of the real property served by the OWTS. The notice shall be deemed effective upon the date of mailing. The property owner shall have fifteen (15) calendar days from the date of the notice to request an administrative hearing. If a timely request for an administrative hearing is received, the administrative authority shall conduct the hearing not less than fifteen (15) or more than sixty (60) calendar days from the date the hearing is requested. Written notice of the date, time and location of the hearing must be provided to the property owner at least fifteen (15) calendar days before the hearing date. The property owner may present oral and written evidence at the hearing. The administrative authority shall issue a written decision within fifteen (15) calendar days of the close of the hearing.

C. Appeals. The property owner may appeal the revocation or suspension of the operating permit by the administrative authority to the building board of appeals in accordance with Section 112 of the building code.

15.44.090 Operating Permit Fees.

The amount of the fees for an application for an inspection, the issuance of an operating permit, the issuance of a certificate of inspection, and the preparation of a compliance agreement shall be established by resolution of the city council. The amount of the fee charged for further evaluation by city staff, as required by the inspection report, shall be established by resolution of the city council.

15.44.100 Violations.

Every person violating any provision of this chapter is guilty of a misdemeanor. Upon conviction thereof he or she shall be punishable by a fine not to exceed one thousand dollars ($1,000.00) or imprisonment not to exceed six months, or by both such fine and imprisonment. The imposition of such penalty for any violation shall not excuse the violation or permit it to continue. Each day that a violation occurs shall constitute a separate offense.

SECTION 5. Amendments to Chapter 5.38

Chapter 5.38 of the Malibu Municipal Code (City Registration of Onsite Wastewater Practitioners) is hereby amended to read as follows in its entirety:

Chapter 5.38 Practitioner Registration Program for Onsite Wastewater Treatment Systems

5.38.010 Purpose.

The increased complexity of onsite wastewater treatment systems (OWTS), changes in treatment technology, and the need to protect groundwater and watershed areas make it essential that qualified professionals design, install, maintain and operate, and manage wastewater residuals of these systems and to create uniform requirements for these professional practitioners.

Registration of practitioners will establish an administrative framework and standards for practitioners in the field of onsite wastewater treatment system design, siting, installation, inspection, operation and maintenance, and residuals management. This program is an essential part of the local agency management program for enforcement of the Statewide OWTS Policy and State Water Resources Control Board's Regional Water Basin Plan.

5.38.020 Definitions.

For purposes of this chapter, the following words and terms have the following meaning:

"Certificate holder" means the person who is appropriately registered as an onsite wastewater treatment system practitioner with the city.

"Certification" means the successful completion of course work and testing by a third party entity as evidence by a certificate of completion.

"Conventional onsite wastewater treatment system" means an onsite wastewater treatment system comprised of a two-compartment septic tank for primary treatment and dispersal in leaching trenches, leaching beds, leaching chambers, or seepage pits. Effluent will flow to the trenches by gravity, or may be pumped to the dispersal system.

"Licensure" means the obtainment of the appropriate state of California licensing as a contractor, a registered civil engineer, a registered professional geologist, or a registered environmental health specialist.

"Malibu Onsite Wastewater Treatment Systems Manual" (Malibu OWTS Manual) means the document developed, maintained and amended, as needed from time-to-time, by the City of Malibu containing guidelines for implementation of onsite wastewater treatment system regulations.

"Onsite wastewater treatment system" or "OWTS" means a system, or series of systems, of pipes, tanks, trenches, seepage pits and other components used for the collection, treatment and subsurface dispersal of wastewater. This term is synonymous with private sewage disposal systems, as used in the California Plumbing Code. OWTS do not include "graywater" systems pursuant to Health and Safety Code Section 17922.12.

"Operating permit" means the administrative document issued by the Administrative Authority authorizing the initial and/or continued use of an OWTS in conformance with the provisions of this code.

"Operation, monitoring, and maintenance (OM&M)" means regular inspection, monitoring, and service provided to onsite wastewater treatment systems to ensure the system is properly functioning and to ensure their long-term viability.

"Person" means any individual, corporation, association, firm, organization, partnership, or company.

"Registered OWTS designer" means a person approved by the city to perform site evaluations and design OWTS who meets the requirements for registration as specified in this chapter.

"Registered OWTS inspector" means a person approved by the city to inspect the condition and operation of onsite wastewater treatment systems who meets the requirements for registration in this chapter.

"Registered OWTS installer" means a person approved by the city to install onsite wastewater treatment systems who meets the requirements for registration as specified in this chapter.

"Registered OWTS operation, monitoring, and maintenance (OM&M) specialist" means a person approved by the city to perform operation, monitoring, and maintenance assessments and routine maintenance of OWTS who meets the requirements for registration as specified in this chapter.

"Registered residuals manager (pumper)" means a person approved by the city to pump septic tanks, wastewater treatment tanks, and pump chambers having met the requirements for registration as specified in this chapter.

"Registration" means the successful completion of course work and testing by a third party entity as evidenced by a certificate of completion.

"Site evaluation" means an assessment of the characteristics of the site sufficient to determine its suitability for an OWTS to meet the requirements of this code. Site evaluations shall be in accordance with procedures and criteria established in the Malibu OWTS Manual.

"Supplemental (advanced) treatment OWTS" means any additional treatment, so that the effluent meets a predetermined performance requirement prior to discharge of effluent into the dispersal field.

"Wastewater" means sewage that is designated as "blackwater" and/or "graywater."

1. "Blackwater" means wastewater contaminated with human wastes, generally originating from toilets. It includes, but is not limited to, wastewater discharges from water closets, toilets, urinals, kitchen sinks, food preparation sinks, or other similar fixtures alone or in combination with other wastewater.

2. "Graywater" means wastewater, exclusive of blackwater or industrial waste, deposited into plumbing drainage system or exiting directly from wastewater generating appliances. It includes, but is not limited to, wastewater discharges from washing machines, bathtubs, showers, bathroom washbasins, and laundry tubs. Kitchen sinks shall be considered blackwater for the purposes of this chapter.

5.38.030 Applicability.

This chapter shall apply to all OWTS within the city regardless of design flow, strength, or other state or local regulatory requirements.

5.38.040 City Registration of OWTS Practitioners.

A. Registered Wastewater Residuals Management Requirements (OWTS Pumpers).

1. It is unlawful for any person to engage in wastewater residuals removal (pumping) from any septic tank, distribution box, dispersal area; including, but not limited to, leach fields and seepage pits, a chemical or portable toilet, or the removal of any other accumulations of sewage, without first having obtained a registered wastewater residuals management certificate from the city.

2. Upon pumping any septic tank, distribution box, dispersal area, including but not limited to leach fields and seepage pits, a chemical or portable toilet, or the removal of any other accumulations of sewage, pumpers shall complete a "septage pumping report" (Report), using a reporting format prescribed by the city. All septage pumping reports shall be submitted to the city on a monthly basis on or before the 15th of the following month. The city may request specific reports seeking additional information which shall be provided within three business days. At any time any septic tank, distribution box, dispersal area, including but not limited to leach fields and seepage pits is pumped three or more times during any one hundred (180) day period or when pumping is required to eliminate the discharge of septage or effluent onto the ground or into a structure, such activity shall be reported to the city within twenty-four (24) hours in a "septage pumping report."

3. Any person seeking registered status with the city as a registered wastewater residuals management entity (pumper) shall file and maintain a current mailing address with the city, and shall agree that correspondence and notices may be sent to the stated addresses from the city. Address verification and correspondence and notice agreement shall be filed with the city on the OWTS practitioner address form.

4. Requirements for initial registered wastewater residuals management (pumper) registration and for the re-registration when the registration has lapsed without renewal shall include the following:

a. The pumper shall demonstrate to the city that the vehicles used to pump and transport septage meet the following requirements:

i. Are registered with the state of California Department of Motor Vehicles; and

ii. Are registered with the county of Los Angeles Department of Public Health and/or Ventura County Environmental Health Division and maintained in full compliance with all of their requirements; and

iii. All outer contact surfaces and fittings shall be kept in a clean and sanitary condition while stored or in transit; and

iv. All discharge valves shall be in good repair, free from leaks and fitted with water-tight caps; and

v. The name of the operating person shall be prominently displayed on the sides of any pump tank vehicle.

b. The pumper shall provide the city with a list of all proposed authorized disposal sites that will be used for the deposition of any septage or holding tank wastes for approval by the city. The specific site used for each pumping shall be indicated on the septage pumping report per Section 5.38.040(A)(2).

c. The pumper applicant shall successfully complete a written and/or field examination of the applicant's knowledge of residuals handling principles and the rules, regulations, laws, and ordinances affecting public health and safety with respect to the pumping and disposal of OWTS residuals. The examination may be administered by the city or by a third party approved by the city. Satisfaction of this requirement shall be demonstrated to the city by certification of successful completion of the examination.

5. Requirements for pumper registration renewal shall include the following:

a. The pumper shall renew the registration prior to the date of the registration's expiration;

b. The pumper shall provide the city with an opportunity to inspect pump vehicles and demonstrate compliance with the requirements of this section; and

c. The pumper shall demonstrate to the city a minimum annual attendance of three hours of educational courses approved by the city. Acceptable educational courses must have a curriculum associated with the pumping, handling, and disposal of OWTS residuals. Six hours of the required class time may be averaged over two consecutive years, and may be demonstrated to the city by certification of course completion provided by the instructor, sponsor, or institution of said educational course.

6. Pumper registration shall remain valid for two consecutive years and may be renewed. A pumper's registration shall not be transferable.

B. Registered Onsite Wastewater Treatment System Installer Requirements (OWTS Installer).

1. It is unlawful for any person to engage in the construction, alteration, repair or modification of an OWTS within the city of Malibu, without first obtaining a registered OWTS installer certificate from the city.

2. Any person seeking registered status with the city as an OWTS installer shall file and maintain a current mailing address with the city, and shall agree that correspondence and notices may be sent to the stated addresses from the city. Address verification and correspondence and notice agreement shall be filed with the city on the OWTS practitioners address form.

3. Requirements for initial registered OWTS installer registration and for re-registration when the registration has lapsed without renewal shall include the following:

a. The registered OWTS installer applicant shall successfully complete a written and/or field examination of the applicant's knowledge of OWTS principles and the rules, regulations, laws, and ordinances affecting public health and safety with respect to the

installation of OWTS. The examination may be administered by the city or by a third-party entity approved by the city. Satisfaction of this requirement shall be demonstrated to the city by certification of successful completion of the examination; and

b. The registered OWTS installer applicant shall provide verification to the city of the applicant's state of California contractor's license status as a Class A (general engineering contractor) or Specialty C-42 (sanitation system contractor) licensed in accordance with the provisions of the California Business and Professions Code; and

c. The registered OWTS installer applicant shall provide sufficient evidence to the city demonstrating a minimum of two years' experience in the installation of OWTS. Acceptable evidence includes the time in possession of a valid California contractor's license as described in subsection (B(3)(b), or by providing documentation evidencing employment with a registered installer for a period of time not less than two years.

4. Requirements for registered OWTS installer certificate renewal:

a. The OWTS installer shall renew the registration prior to the date of the registration's expiration; and

b. The OWTS installer shall demonstrate to the city a minimum annual attendance of four hours of educational courses approved by the city. Acceptable educational courses must have a curriculum associated with the function, design, and construction of advanced and/or conventional OWTS. Eight hours of the required class time may be averaged over two consecutive years, and may be demonstrated to the city by certification of course completion provided by the instructor, sponsor, or institution of said educational course.

5. OWTS installer registration shall remain valid for two consecutive years and may be renewed. An OWTS installer's certificate shall not be transferable.

C. Registered Onsite Wastewater Treatment System Designer Requirements (OWTS Designer).

1. It is unlawful for any person to engage in the design of conventional and/or advanced OWTS or portions thereof, including site evaluation, within the city of Malibu, without first obtaining a registered onsite wastewater treatment system designer certificate from the city.

2. Unless pre-empted by state law, statutes, or regulations, the following registered and/or licensed professionals shall be eligible to apply to the city for registration as anOWTS Designer:

a. California Registered Civil Engineer;

b. California Registered Professional Geologist;

c. California Registered Environmental Health Specialist.

3. Unless such a requirement is preempted by state law, statutes, or regulations, and notwithstanding subsection (C)(2) of this section, other qualified persons may be considered, on a

case-by-case basis, for registered OWTS designer status when their education, knowledge and experience is determined by the city to provide an equivalent basis for registration and all other requirements of this section are met. Equivalency in education, knowledge and experience shall be determined by the city as follows:

a. Provisional Registration. An applicant for registration as an OWTS designer that meets all the requirements of this section other than those requirements specified in subsection (C)(2) of this section, shall be provisionally registered by the city when evidence is provided demonstrating a minimum of two years' experience actively designing advanced OWTS under the supervision of a city registered system designer or California Registered Professional Engineer;

b. Full Registration. A provisionally registered OWTS designer that meets all the requirements of this section other than those requirements specified in subsection (C)(2), shall be fully registered by the city when five or more advanced OWTS designs have been submitted to the city and the OWTS construction of these designs has been overseen by the provisionally registered OWTS designer in a manner that demonstrates to the city competency in the discipline of supplemental treatment system design and compliant onsite wastewater treatment system installation control.

4. Any person seeking registered status with the city as a registered OWTS designer shall file and maintain with the city a current mailing address, and shall agree that correspondence and notices may be sent to the stated addresses from the city. Address verification and correspondence notice agreement shall be filed with the city on the onsite wastewater treatment system practitioner address form.

5. Requirements for initial registered OWTS designer application and for re-registration when the registration has lapsed without renewal shall include the following:

a. The registered OWTS designer applicant shall provide documentation to the city of the applicant's current licensure and/or registration status as required in subsection (C)(2); and

b. The registered OWTS designer applicant shall successfully complete a written and/or field examination to assure knowledge of OWTS principles and the rules, regulations, laws, and ordinances affecting the public health and safety with respect to the design of OWTS. The examination(s) may be administered by the city or by a third-party entity approved by the city; and

c. The registered OWTS designer applicant shall provide verification to the city of either:

i. The demonstration of successful completion of a third-party training program for OWTS design, and/or operating, monitoring, and maintenance administered by a third-party entity approved by the city, or

ii. Documentation of two years' experience working with a city registered designer.

6. Requirements for registered OWTS designer certification renewal shall include the following:

a. The registered OWTS designer shall renew the registration prior to the date of the certificate's expiration; and

b. The registered OWTS designer shall demonstrate to the city an ongoing minimum annual attendance of eight hours of classes approved by the city dealing with subject matter related to application, design, and construction of OWTS. Sixteen (16) hours may be averaged over two consecutive years. Attendance may be demonstrated to the city by certification of completion provided by the instructor or sponsor of said educational activity.

7. Registered OWTS designer certificates shall remain valid for two consecutive years and may be renewed. A registered OWTS designer's certificate shall be nontransferable.

D. Registered Operation, Monitoring, and Maintenance (OM&M) Specialist Requirements.

1. It is unlawful for any person to engage in the operating, monitoring, and maintenance of any OWTS within the city of Malibu, without first having obtained a registered operation, monitoring, and maintenance (OM&M) specialist certificate from the city.

2. Registered OM&M specialists shall complete a maintenance record form for each monitoring and/or maintenance operation conducted on an OWTS. The maintenance record form shall be provided to the city within fifteen (15) days of the completion of the monitoring and/or maintenance operation performed.

3. Registered OM&M specialists shall provide notification to the city within fifteen (15) days of any termination of service.

4. Any person seeking registered status with the city as a registered OM&M specialist shall file and maintain a current mailing address with the city, and shall agree that correspondence and notices may be sent to the stated addresses from the city. Address verification and correspondence and notice agreement shall be filed with the city on the onsite wastewater treatment system registered practitioner address form.

5. Requirements for initial registered OM&M specialist application and for re-registration when the registration has lapsed without renewal shall include the following:

a. The registered OM&M specialist applicant shall successfully complete a written examination and certification by a third-party entity approved by the city or, in the event that a third-party entity is not available, successful passage of a written examination provided by the city, demonstrating the applicant's knowledge of OWTS principles and the rules, regulations, laws, and ordinances affecting the public health and safety with respect to OWTS; and

b. The registered OM&M specialist applicant shall provide verification to the city of at least one of the following:

i. A minimum of two years' experience providing operational oversight and maintenance of advanced OWTS within the city evidenced by maintenance contracts,

ii. A minimum of two years' experience working with a registered OM&M specialist, or

iii. A minimum two years' experience working as a registered OWTS designer, or

iv. A letter of reference from a recognized manufacturer of supplemental treatment system equipment attesting to the applicants qualifications to operate and maintain advanced OWTS.

6. Requirements for OM&M specialist certificate renewal shall include the following:

a. The OM&M specialist shall renew the registration prior to the date of the registration's expiration;

b. The OM&M specialist shall demonstrate to the city a minimum annual attendance of eight hours of classes dealing with subject matter related to application, design, construction, operation, monitoring, and/or maintenance of OWTS provided by an approved third-party entity. Sixteen (16) hours may be averaged over two consecutive years, and may be demonstrated to the city by certification of completion provided by the instructor or sponsor of said educational activity.

7. OM&M specialist registration shall remain valid for two consecutive years and may be renewed. An OM&M specialist's certificate shall not be transferable.

E. Registered Onsite Wastewater Treatment System Inspector Requirements (OWTS Inspector).

1. It is unlawful for any person to engage in the inspection of an OWTS within the city of Malibu without first obtaining a registered onsite wastewater treatment system inspector certificate from the city.

2. Any person seeking registered status with the city as a registered OWTS inspector shall file and maintain a current mailing address with the city, and shall agree that correspondence and notices may be sent to the stated addresses from the city. Address verification and correspondence and notice agreement shall be filed with the city on the onsite wastewater treatment system practitioner address form.

3. Requirements for initial registered OWTS inspector registration and for re-registration when the registration has lapsed without renewal shall include the following:

a. The registered OWTS inspector applicant must be a California Certified Engineering Geologist, a California Registered Professional Geotechnical Engineer, a California Registered Civil Engineer, a California Registered Environmental Health Specialist, or a California licensed contractor with an A or C-42 license. The applicant must maintain this status in good standing with the issuing entity and in accordance with the provisions of the California Business and Professional Code. A valid copy of the registration and/or license shall be provided to the city with the application. The registration and/or licensure must be maintained at all times and a current copy must be on file with the city; and

b. The OWTS inspector applicant must attend OWTS inspection training presented by the city for the understanding and use of the city's official inspection form for OWTS and the City's "Guidelines for the Inspection of OWTS"; and

c. The OWTS inspector applicant shall pass an examination prepared and administered by the city of Malibu or a third-party entity approved by the city. The OWTS inspector exam shall be designed to establish the fitness of the applicant for certification to assess the condition and function of OWTS and to determine whether maintenance, repair, or replacement of system components is necessary to bring the system into compliance with current city guidelines for OWTS. Evidence of successful completion of the examination shall be provided to the city with the application; and

d. The OWTS inspector applicant shall be required to maintain his or her accreditation with the city approved training entity according to that entity's specific guidelines. City accreditation shall be renewed every two years.

4. Requirements for Inspector Registration Renewal.

a. The OWTS inspector shall renew the registration prior to the date of the registration's expiration; and

b. The OWTS inspector shall demonstrate to the city a minimum annual attendance of four hours of educational courses approved by the city. Acceptable educational courses must have a curriculum associated with the function, design, construction, and inspection of advanced and/or conventional OWTS. Eight hours of the required class time may be averaged over two consecutive years, and may be demonstrated to the city by certification of course completion provided by the instructor, sponsor, or institution of said educational course.

5. Registered OWTS inspector certificate shall remain valid for two consecutive years and may be renewed. An inspector's certificate shall not be transferable.

5.38.050 City Review and Oversight.

A. A certificate holder's registration may be suspended by the city for a period not to exceed ninety (90) days for incompetency, negligence, misrepresentation, or for failure by the certificate holder to comply with any other requirement of this chapter. The city shall serve the certificate

holder with a notice of registration suspension by certified mail, return receipt requested, or by an express delivery service requiring confirmation of receipt. Service of notice shall be effective upon mailing. The notice shall state, in writing, the reasons for which the registration is subject to suspension and shall advise the certificate holder that the suspension will become effective fifteen (15) calendar days from the date of service, unless a written request for administrative review is filed with the city following the procedure specified in subsection D of this section.

B. A certificate holder's registration may be revoked by the city for a period of one year for serious or repeated violations of any of the requirements of this chapter. The city shall serve the certificate holder with a notice of registration revocation by certified mail, return receipt requested, or by an express delivery service requiring confirmation of receipt. Service of notice shall be effective upon mailing. The notice shall state, in writing, the reasons for which the registration is subject to revocation and shall advise the certificate holder that the revocation will become effective fifteen (15) calendar days from the date of service, unless a written request for administrative review is filed with the city following the procedure specified in subsection D of this section.

C. Any certificate holder whose registration has been revoked may not reapply until one year has elapsed from the date of revocation and shall be required to take the written examination again prior to issuance of a new certificate.

D. Administrative Review.

1. Any certificate holder whose registration is subject to suspension or subject to revocation by the city may file a request for administrative review. The request must be in writing and filed with the city on or before the fifteenth (15th) calendar day following service of the city's notice of suspension or revocation. The request for administrative review must state both the legal and factual bases in support thereof, and must include at a minimum the requested modification(s), if any, of the notice together with a summary of the issues, facts and legal authorities to be raised at the hearing. In the absence of a timely filed request that complies fully with the requirements of this section, the findings of the city contained in the notice shall be deemed true and correct.

2. Upon timely receipt of a request for administrative review that complies with the requirements of this section, the city shall refer the matter to an administrative hearing officer to conduct a hearing. The administrative hearing officer shall be selected pursuant to the protocol set forth in that document entitled the "City of Malibu Administrative Hearing Officer Program for Onsite Wastewater Treatment System Practitioners" on file in the office of the city clerk. Notice of the hearing shall be sent by certified mail, return receipt requested, or by express delivery service requiring confirmation of receipt of the certificate holder filing the request for the administrative hearing. The notice shall state the date, time and place of the hearing which in no event shall be sooner than ten (10) calendar days from the date of the mailing, unless otherwise agreed to by the requesting party and the city.

3. Any administrative hearing conducted under this section need not be conducted according to technical rules relating to evidence and witnesses. Any relevant evidence shall be admitted if it is the type of evidence on which responsible persons are accustomed to rely

in the conduct of serious affairs, regardless of the existence of any common law or statutory rule that might make improper the admission of the evidence over objection in civil actions.

4. The administrative hearing officer shall issue a written decision that shall include findings to support the decision. The hearing officer shall issue his or her decision within fifteen (15) calendar days after the hearing is concluded. The hearing officer may extend this time to thirty (30) calendar days at his or her discretion. The written decision is final upon the date it is mailed by first-class mail, postage prepaid, including a copy of the certificate of mailing to the certificate holder.

5.38.060 Fees.

The amount of the fees for an application for all registered OWTS practitioners shall be established by resolution of the city council.

5.38.070 Violations.

In addition to any criminal, civil or other legal remedy established by law that may be pursued to address violations of the Municipal Code, violations of the provisions of this chapter are subject to the administrative penalty provisions of Chapter 1.10.

SECTION 6. Environmental Review

This Ordinance was assessed in accordance with the authority and criteria contained in the California Environmental Quality Act (CEQA), the State CEQA Guidelines (the Guidelines), and the environmental regulations of the City. The City Council hereby finds that under Section 15061(b)(3) and Section 15308 of the State CEQA Guidelines, this Ordinance is exempt from the requirements of CEQA because it can be seen with certainty that the provisions contained herein would not have the potential for causing a significant effect on the environment as it reorganizes current regulations and implements new regulations and procedures to protect the environment from faulty, failing or improperly designed or constructed OWTS.

SECTION 7. Severability

If any section, subsection, subdivision, sentence, clause, phrase, or portion of this Ordinance or the application thereof to any person or place, is for any reason held to be invalid or unconstitutional by the final decision of any court of competent jurisdiction, the remainder of this Ordinance shall remain in full force and effect.

The City Council hereby declares that it would have passed this ordinance and each section, subsection, phrase or clause thereof irrespective of the fact that any one or more sections, subsections, phrases, or clauses be declared unconstitutional.

SECTION 8. Repeal

The City Council hereby repeals Ordinance No. 321, Ordinance No. 360, and Ordinance No. 421.

SECTION 9. Certification

The City Clerk shall certify the adoption of this ordinance.

PASSED, APPROVED AND ADOPTED this 27th day of August 2018.

RICK MULLEN, Mayor

ATTEST:

HEATHER GLASER, City Clerk
August 27, 2018

APPROVED AS TO FORM:

CHRISTI HOGIN, City Attorney

I CERTIFY THAT THE FOREGOING ORDINANCE NO. 435 was passed and adopted at the Regular City Council meeting of August 27, 2018, by the following vote:

AYES:	5	Councilmembers:	La Monte, Peak, Rosenthal, Wagner, Mullen
NOES:	0		
ABSTAIN:	0		
ABSENT:	0		

HEATHER GLASER, City Clerk
(seal)

ONSITE WASTEWATER TREATMENT SYSTEMS

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Appendix D

City of Malibu Onsite Wastewater Treatment Systems Manual (OWTS Manual)

Onsite Wastewater Treatment System Manual

Siting, Design, Installation, and Operation Guidelines

July 23, 2018

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Introduction

The City of Malibu (City) is committed to the advancement of efficient and protective use of onsite wastewater treatment systems (OWTS), previously referred to as septic systems, for the majority of the City's wastewater infrastructure. An OWTS consists of a septic tank(s) that receives wastewater from a building and discharges the effluent into a subsurface dispersal area, consisting of a leachfield or seepage pit. There are two basic categories of OWTS, conventional and advanced treatment. Design of a properly functioning OWTS is based on several factors including the type of use (residential or commercial), number of bedrooms, wastewater plumbing fixture units, wastewater flow, wastewater strength, type of soils and infiltration rate. Details on the design features and processing of OWTS permits are included in this manual.

All properties within city limits are located in the coastal zone as defined in the California Coastal Act and are subject to the policies, standards and provisions of the City's Local Coastal Plan. The purpose of the City's Wastewater Program is to ensure that the proper siting, design, installation, operation, maintenance and monitoring of OWTS will reduce impacts and protect coastal water and resources within the City. Regulations for OWTS are contained in the Malibu Municipal Code Chapters 5.38, 15.40, 15.42 and 15.44, provisions in this Manual and the Statewide OWTS Policy.

Wastewater discharges must also be consistent with the rules and regulations contained in the California Water Code and the California Water Resources Control Board Basin Plan which includes the local Los Angeles Regional Water Quality Control Board, through Waste Discharge Requirements, waivers and other regulations that apply to OWTS.

This manual should only be used as a guide. It is intended to assist OWTS applicants to prepare appropriate applications and supporting documents; and to inform OWTS owners of the care and maintenance of their system. The manual is subject to occasional updates and revisions. For specific questions regarding OWTS requirements or policies, please contact Environmental Health staff at Malibu City Hall, 23825 Stuart Ranch Road, 90265. Program information and the manual are also available online at www.malibucity.org.

Conventional Onsite Wastewater Treatment Systems

A Conventional OWTS consists of a standard septic tank and a leach field or existing seepage pit with all OWTS components designed and constructed in conformance with the provisions of Malibu Municipal Code (MMC) and Local Coastal Plan/Local Implementation Plan (LCP/LIP). Conventional OWTS may be used in limited situations where there are no requirements for enhanced wastewater treatment such as non-beachfront property with effluent absorption rates strictly conforming to MMC and LCP/LIP requirements.

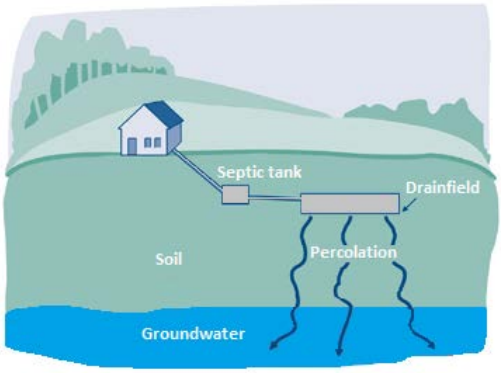


Illustration of a Conventional OWTS with leachfield

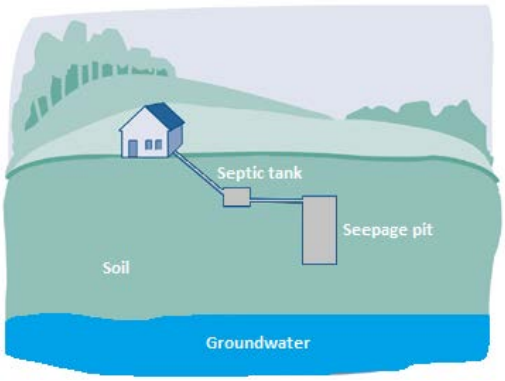


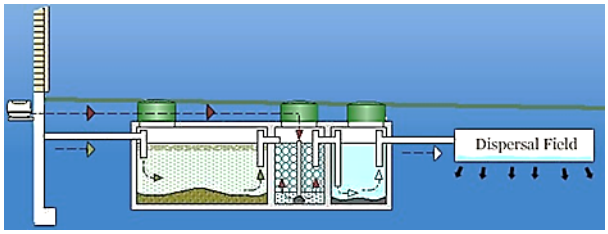
Illustration of a Conventional OWTS with seepage pit

Advanced Onsite Wastewater Treatment Systems

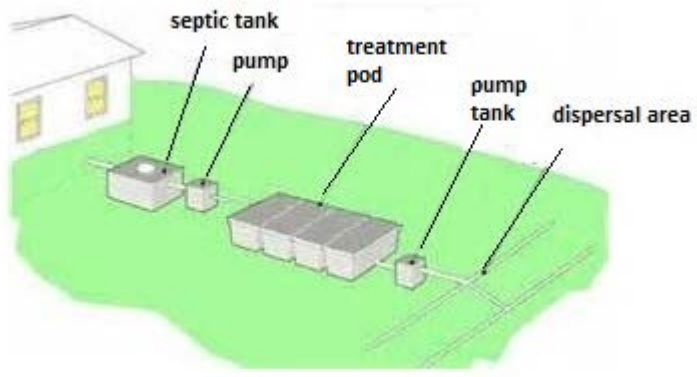
Advanced onsite wastewater treatment systems (AOWTS) are alternate systems that provide an enhanced level of wastewater treatment using secondary treatment and disinfection. AOWTS are required for development projects that utilize a new/replaced OWTS with any of the following attributes:

- A beachfront property location
- Discharge into one or more seepage pits
- Discharge into a non-conforming disposal field (i.e., drip dispersal, fast/slow percolation)
- Systems with setback reductions

An advanced OWTS may be used to compensate where certain features of the system are nonconforming to the specified requirements. The MPC and LCP/LIP specify those situations in which an alternate system may be used, subject to approval by the Administrative Authority (i.e. City of Malibu Environmental Sustainability Department). Special requirements for wastewater systems serving commercial and multifamily properties should be discussed with Environmental Health staff. The Los Angeles Regional Water Quality Control Board may establish additional requirements for commercial, multifamily, high flow, and/or non-domestic waste discharges.



Example of an Advanced OWTS with components located within the tank



Example of an Advanced OWTS with components located outside of tank

Section I
Environmental Health Submittal Requirements

All development projects in the City of Malibu (City) are potentially subject to some level of Environmental Health review. Environmental Health reviews are performed to ensure that proposed uses of new or existing onsite wastewater treatment systems (OWTS) are compliant with applicable regulatory requirements and are protective of public health and the natural environment.

Generally, Environmental Health performs its review in two stages: conformance review and Building Plan Check. Conformance review is performed to evaluate project feasibility for the Planning Department. Conformance approval is evidenced by a blue conformance stamp on the OWTS plot plan and a list of conditions that must be addressed to obtain Environmental Health final approval. Building Plan Check is the final review stage, where the project construction drawings are evaluated to determine satisfaction of the requisite conditions of approval. Environmental Health final approval is issued when the conditions have been met and is evidenced by a red stamp on the OWTS plot plan and a red stamp on the construction drawings.

Simple projects that do not have an effect on a property's existing OWTS may be reviewed at the counter during public counter hours. Projects where there is a known or a significant potential for the proposed building or development activity to affect the property's existing OWTS through increased loading from sanitary drainage or through encroachment on regulated setback distances, or where there is no existing OWTS, are subject to more extensive review to determine conformance with various City standards. These standards include the Malibu Municipal Code (MMC) incorporating portions of the current edition of the California Plumbing Code and Local Coastal Program/Local Implementation Plan (LCP/LIP).

Environmental Health review fees are charged to applicants in accordance with the current fee schedule adopted by the Malibu City Council. Environmental Health submittal requirements for major categories of building and development projects are clarified in the sections which follow:

A. Installation of future dispersal areas and tank replacements
B. Building additions, remodels and auxiliary structures;
C. New onsite wastewater treatment systems; and
D. Subdivisions and lot line adjustments.

Submittals for projects that do not fit neatly into one or more of these major categories should be discussed with Environmental Health staff.

A. Installation of Future Dispersal Areas and Tank Replacements

All OWTS shall be provided with sufficient land area for 100% future expansion area for the dispersal system. If previous approval of the OWTS included a designated 100% future expansion area shown on a plot plan, that area may be used for installation of a replacement dispersal area. An inspection report by a City Registered Practitioner, plot plan, approval by the City Geologist and corresponding fee must submitted to Environmental Health staff for approval prior issuance of a Building Safety permit. If previous approval of the OWTS did not include a designated 100% expansion area, an application for a new OWTS must be submitted to the City.

Any building expansions beyond the current footprint of the existing structure or addition of any new detached structures, such as swimming pools, spas, patio, decks, stairs, walls or any permanently constructed structures, will require demonstration of feasibility to install a100% future expansion area, regardless of whether the proposed renovation will increase the design flow or demand greater capacity than the existing OWTS.

A Coastal Development Permit will not be required for the replacement of a failed septic tank provided the following conditions are met. An inspection report by a City Registered Practitioner must be submitted to Environmental Health and a permit issued by Building Safety. The capacity of the new tank may not be increased unless the capacity of the existing failed tank is less than 1,500 gallons. The proposed new tank shall then be allowed to increase in capacity to 1,500 gallons only to meet the minimum code standard for the City. No other increase shall be authorized. Alternate locations or tank sizes must be approved by City Environmental Health or Administrative Authority.

B. Building Additions – Remodels – Auxiliary Structures

The project application must include information on sewage disposal in accordance with the MMC and LCP/LIP. For additions or remodels to existing buildings, Environmental Health will review the plan to determine whether the project is eligible for continued use of the existing sewage disposal system, or whether a new or expanded sewage disposal system is required. In general, repair, maintenance or cosmetic remodel such as painting, new flooring, changing out fixtures, doors or windows, will not require an upgrade to the OWTS. More extensive remodeling including addition of bedrooms and/or bathrooms, additional plumbing, expansion of footprint, may require further review of the OWTS capacity and location. Information required for Environmental Health review of these projects is listed in the following sections:

1. OWTS Design Report (as applicable)

An OWTS design report prepared by a City Registered Designer may be required to demonstrate whether the wastewater load from the project will be within the design capacity of the existing OWTS. Where the sewage treatment capacity of the existing OWTS is exceeded by the proposed project, in terms of the proposed number of bedrooms, drainage fixture units, or other specified uses, a new OWTS conforming to the requirements of the MPC and LCP/LIP must be proposed.

2. OWTS Plot Plan

The OWTS plot plan is used to demonstrate conformance with setback distances between new structures and new or existing OWTS components. Applicants shall submit an 11x17 OWTS plot plan showing all existing improvements, proposed improvements, property lines, easements, and existing and/or proposed onsite wastewater treatment systems (including future expansion dispersal areas). The OWTS plot plan must demonstrate conformance with the minimum requirements of the MMC and LCP/LIP. The building sewer and all points of connection between structures containing plumbing fixtures and the existing septic system(s) must be shown on the 11x17 OWTS plot plan. The OWTS plot plan must be dated and drawn to scale with at least one copy of the required plot plan showing necessary features of the OWTS leaving a 5" left margin clear to provide space for a City-applied legend.

3. Bedroom and Fixture Unit Worksheet

Using the worksheet provided by the City, list the type and number of all existing and proposed plumbing fixtures and bedrooms to be used in the new or remodeled building. A bedroom equivalent is considered a room that is not a core room (living room, family room, kitchen, dining room), which is enclosed and is in proximity to a full bathroom. The plumbing fixture worksheet must include a complete count of Drainage Fixture Unit Values as per the Drainage Fixture Unit values in the current edition of the California Plumbing Code. The worksheet shall be certified by an Architect, Civil Engineer, Environmental Health Specialist, or an "A", "C-42", "C-36" Contractors License. See the Bedroom and Fixture Unit Worksheet in Section IV of this Manual.

4. Project Drawings

During the conformance review stage project drawings typically include conceptual plans submitted to Planning Department. These drawings are generally submitted on large format paper and may include architectural plans, OWTS plans, concept grading plans, and landscape plans.

The architectural plans must include existing and proposed floor plans that clearly show all bedrooms (or bedrooms equivalents) and plumbing fixtures in the residence, regardless of the proposed scope of work. Architectural floor plans are reviewed by Environmental Health to determine the type of occupancy, the number of bedrooms (for residential buildings), and the type and number of drainage fixture units.

Architectural site plans and grading plans are reviewed to determine boundaries for code required OWTS setbacks to structures, property lines, and potential effluent interceptors or "daylighting" risks at certain down slope changes in grade and retaining walls. Landscape plans are reviewed to check code required setbacks from certain OWTS components to landscape elements such as trees. Structural plans are reviewed in situations where the code required setbacks between the OWTS and structures are not met and alternate systems are used with approval of City Building Safety staff.

5. Supplemental Requirements for Spatially Constrained Lots

The MMC stipulates that all OWTS must be so designed such that additional seepage pits or subsurface drain fields, equivalent to not less than one-hundred (100) percent of the required

original system, will be permitted to be installed when the original system can no longer absorb all the sewage. No division of the lot or erection of structures on the lot shall be made if such division or structure impairs the usefulness of the 100 percent expansion area. No property shall be improved in excess of its capacity to properly absorb sewage effluent by the means provided in the plumbing code or an approved alternate OWTS system.

When proposed development encroaches onto exiting OWTS layout (including dedicated future expansion area), or into required setbacks, it may become necessary to establish a new dedicated future expansion area for dispersal of OWTS effluent. If so, this necessitates demonstrating the feasibility of using the proposed expansion area for sewage disposal. The feasibility may be documented using percolation tests and engineering geology reports as detailed in Sections II.F and G. In some cases spatial constraints also preclude attainment of all code required setbacks between the OWTS and buildings or structures; requirements applicable to these situations are shown in Section II.H Reductions in Regulated Setback Distances.

6. Environmental Health Conformance Review Fee

A fee in accordance with the current fee schedule as adopted by City Council Resolution must be paid to the City of Malibu for the Environmental Health planning-stage Conformance Review of the OWTS design.

C. New Onsite Wastewater Treatment Systems

A Coastal Development Permit (CDP) must be obtained by the Planning Department for all new OWTS. Environmental Health performs a two-stage review of all projects proposing a new OWTS. Conformance Review is the first-stage review and is completed when the applicant demonstrates the feasibility of the project in support of Planning Department requirements. The second Environmental Health review occurs during Building Plan Check stage. When the Building Plan Check review is completed successfully, Environmental Health issues final approval, which is a required condition for the applicant to obtain construction permits. Environmental Health final approvals are required for all OWTS plans, building plans, and grading plans.

1. Conformance Review

For all new OWTS, the following items must be submitted for review and approval by Environmental Health prior to completion of a Conformance Review:

- **Architectural Plans.** If the project does not include structural revisions then a reference set of plans is acceptable. The architectural plans must show the entire structure, including all bedrooms, bathrooms, and kitchen. The floor plans must also show all existing and proposed drainage fixture units.

- **OWTS Plot Plan.** A plot plan drawn to scale must be submitted showing a conceptual plan for an OWTS design meeting the minimum requirements of the current MMC for a private sewage disposal system The OWTS plot plan must be drawn to scale. Technical requirements for this drawing are detailed in Section II.B.

- **OWTS Preliminary Design Report.** A preliminary design report and plan drawings must be submitted to demonstrate the feasibility of the proposed project with respect to conformance with the MMC and LCP/LIP. Technical requirements for this report are detailed in Section II.E.

- **Soils Analysis/Percolation Test Report.** The location and dimensions of any proposed subsurface sewage effluent disposal system must be based on a percolation test report and/or soils analysis report that is performed for the express purpose of providing information to be used for design of an onsite wastewater treatment system. Specific requirements for this report are detailed in Section II.F.

- **Supporting Geology/Soils Report.** A report from the project geologist and/or soils engineer must be submitted which contains specific engineering geologic data pertinent to the OWTS design. The report, or a report section(s) within a larger report whose scope may also cover building and site design topics, must be drafted for the express purpose of providing information to be used for design of an onsite wastewater treatment system. Specific requirements for this report are detailed in Section II.G.

- **Coastal Engineer Report (beachfront property only) (AOWTS).** A Wave Uprush Report prepared by a Coastal Engineer must be submitted as to necessity of a bulkhead/seawall, and the location and design of any existing, or proposed bulkhead/seawall, intended to protect any existing, or new onsite wastewater treatment system. Requirements for this report are detailed in Section II.I. The City Coastal Engineer must sign and stamp all beachfront AOWTS plans prior to Environmental Health final approval.

- **Reductions in Regulated Setback Distances as applicable (AOWTS).** All proposed reductions in setbacks from the onsite wastewater treatment system to structures or other features less than those shown in MMC Chapter 15.42 must be supported by letters from the project consultants. The wastewater plans and the construction plans must be specifically referenced in all certification letters. The construction plans for all structures and/or buildings with reduced setback must be approved by City Building Safety prior to Environmental Health final approval. The architectural and/or structural plans submitted for Building Safety Plan Check must detail methods of construction that will compensate for the reduction in setback (e.g., waterproofing, concrete additives). For complex waterproofing installations, submittal of a separate waterproofing plan may be required. All plans must show the location of onsite wastewater treatment system components in relation to those structures from which the setback is reduced, and the plans must be signed and stamped by the architect, structural engineer, and geotechnical consultants (as applicable).

- **Environmental Health Conformance Review Fee.** A fee in accordance with the current fee schedule as adopted by City Council Resolution must be paid to the City of Malibu for the Environmental Health planning-stage Conformance Review of the OWTS design.

2. Final Approval Building Plan Check

Prior to final approval (Building and Safety plan check stage), the following items must be submitted for Environmental Health review and approval:

- **Architectural Plans.** If the project does not include structural revisions then a reference set of plans is acceptable. The architectural plans must show the entire structure, including all bedrooms, bathrooms, and kitchen. The floor plans must also show all existing and proposed drainage fixture units.

- **Final OWTS Plot Plan.** A final plot plan must be submitted showing an OWTS design meeting the minimum requirements of the MMC, and the LCP/LIP, including necessary construction details, the proposed drainage plan for the developed property, and the proposed landscape plan for the developed property. The OWTS plot plan must be drawn to scale. Requirements for this drawing are detailed in Section II.B.

- **OWTS Final Design Report and System Specifications.** A final design report, plan drawings, and system specifications must be submitted as to AOWTS design basis and all components (i.e. alarm system, pumps, timers, flow equalization devices, backflow devices) proposed for use in the construction of the proposed alternative onsite wastewater system. The AOWTS final design drawings and calculations must be signed and stamped (where applicable) by a California-registered Civil Engineer, a Registered Environmental Health Specialist, or a professional geologist who is responsible for the design. Requirements for this report are detailed in Section II.E.

- **City Geologist/Project Geologist.** City Geologist and Geotechnical Engineer final approval of the plans is required.

- **City Coastal Engineer Approval (beachfront property only/AOWTS).** City Coastal Engineer and project coastal engineer final approval of the AOWTS plan shall be submitted. Approval must be evidenced by an appropriate City stamp and wet signature.

- **Reductions in Regulated Setback Distances as applicable (AOWTS).** All proposed reductions in setbacks from the onsite wastewater treatment system to structures or other features less than those shown in MMC Chapter 15.42 must be supported by letters from the project consultants. The wastewater plans and the construction plans must be specifically referenced in all certification letters. The construction plans for all structures and/or buildings with reduced setback must be approved by City Building Safety prior to Environmental Health final approval. The architectural and/or structural plans submitted for Building Safety Plan Check must detail methods of construction that will compensate for the reduction in setback (e.g., waterproofing, concrete additives). For complex waterproofing installations, submittal of a separate waterproofing plan may be required. All plans must show the location of onsite wastewater treatment system components in relation to those structures from which the setback is reduced, and the plans must be signed and stamped by the architect, structural engineer, and geotechnical consultants (as applicable).

- **City Planning Approval.** City Planning Department final approval of the AOWTS plan shall be obtained.

- **Proof of Ownership.** Proof of ownership of subject property must be submitted.

- **Operations & Maintenance Manual (AOWTS).** An operations and maintenance manual specified by the AOWTS designer must be submitted and must be the same operations and maintenance manual provided to the owner and/or operator of the alternative onsite wastewater disposal system.

- **Maintenance Contract (AOWTS).** A maintenance contract executed between the owner of subject property and a City Registered Operations and Maintenance Practitioner possessing current registration status. Only an original "wet signed" contract will be accepted.

- **Covenant for AOWTS and Maintenance (AOWTS).** A covenant running with the land must be executed between the City of Malibu and the holder of the fee simple absolute as to subject real property and recorded with the Los Angeles County Recorder's Office. Said covenant must serve as constructive notice to any future property assigns for value that the onsite wastewater treatment system serving subject property is an alternative method of onsite wastewater disposal pursuant to the MMC. Said document must be provided by City Environmental Health staff. Please submit a certified copy issued by the Los Angeles County Recorder after the document has been recorded.

- **Covenant to Forfeit 100% Expansion Effluent Disposal Area (AOWTS.** A covenant running with the land must be executed by the property owner and recorded with the Los Angeles County Recorder's Office. Said covenant must serve as constructive notice to any successors in interest that (1) the private sewage disposal system serving the development on the property does not have a 100% expansion effluent dispersal area (i.e., replacement disposal field(s) or seepage pit(s)) and (2) if the primary effluent dispersal area fails to drain adequately, the City may require remedial measures including, but not limited to, limitations on water use enforced through an operating permit and/or repairs, upgrades or modifications to the private sewage disposal system. The recorded covenant must state and acknowledge that future maintenance and/or repair of the private sewage disposal system may necessitate interruption in use of the private sewage disposal system and, therefore, any building(s) served by the private sewage disposal system may become non-habitable during any required future maintenance and/or repair. Said document must be provided by City Environmental Health staff. Please submit a certified copy issued by the Los Angeles County Recorder after the document has been recorded.

- **Environmental Health Building Plan Check Review Fee.** A fee in accordance with the current fee schedule as adopted by City Council Resolution must be paid to the City of Malibu for the Environmental Health building-stage review of the OWTS design.

- **Operating Permit Application and Fee.** An application must be made to the Environmental Sustainability Department (Environmental Health office) for an OWTS operating permit. An operating permit fee in accordance with the current fee schedule as adopted by City Council Resolution must be submitted with the application paid to the City of Malibu.

D. Subdivisions and Lot Line Adjustments

Requirements for subdivisions and lot line adjustments with respect to sewage disposal are set forth in the MMC and LCP/LIP. The MMC stipulates that when there is insufficient lot area or improper soil conditions for adequate sewage disposal no building permit will be permitted. MMC Chapter 18 contains specific requirements for demonstrating the feasibility of using OWTS as the method of sewage disposal on each lot where land is divided. A designated area for the OWTS must be established using the same site evaluation procedures as are required for new OWTS (percolation/infiltration tests, soil classification, OWTS design/layout, and supporting geology). For lot line adjustments, the new property boundaries must preserve the integrity of the OWTS for each lot, including designated expansion/replacement areas for effluent dispersal.

Submittal requirements for subdivisions and lot line adjustments include an OWTS plot plan showing each lot, the existing and proposed lot lines, the existing and proposed OWTS with expansion/replacement areas designated for effluent dispersal. Existing OWTS must be documented using Environmental Health records (City or County Environmental Health approvals). All new designated areas for OWTS, and/or new areas for expansion/replacement of existing OWTS, must be supported by percolation/infiltration tests, soil classification, OWTS design/layout, and supporting geology reports.

Section II
Specifications for OWTS Plans and Reports

Plans and reports submitted in support of applications for new OWTS must contain specific information needed by the Environmental Health reviewer. Information pertaining to the system design normally spans the disciplines of environmental health sciences, engineering geology, and plumbing systems design. Accordingly, a design team comprising an OWTS designer, a percolation testing professional, and an engineering geologist is typically assembled for the purposes of assembling all data necessary for the submission. The role of the OWTS designer is to produce a design report and plan which meet the requirements of the MMC and LCP/LIP, and which also demonstrate the designer's consideration of supporting data contributed by the site evaluation (percolation/infiltration/soil analysis) and the engineering geologist report.

A. Electronic Format Submittals

The City has implemented a paperless office system to reduce paper use, increase efficiency and provide a more effective way for the city and clients to interact. Only electronic submittals will be accepted for project review. Environmental Health may require the submittal of paper copies of specific documents such as maps and plot plans to assist in the review process.

All reports and documents with associated maps and cross-sections must be submitted on a single CD in PDF format. Environmental Health reviews and correspondence will be provided to the applicant electronically including "Conformance" and "Final" reviews.

The following items must be included in the submittal:

- Applicant's email address
- Minimum of 10 font size
- Reports must be wet stamped and wet signed by the corresponding consultants
- Include a stamped and signed Electronic Signature Form for each report
- CD clearly labeled with project address, Assessor's Parcel Number, name and address of consultant preparing the report and space to add the Project number (e.g. Planning File: XX-XXX)

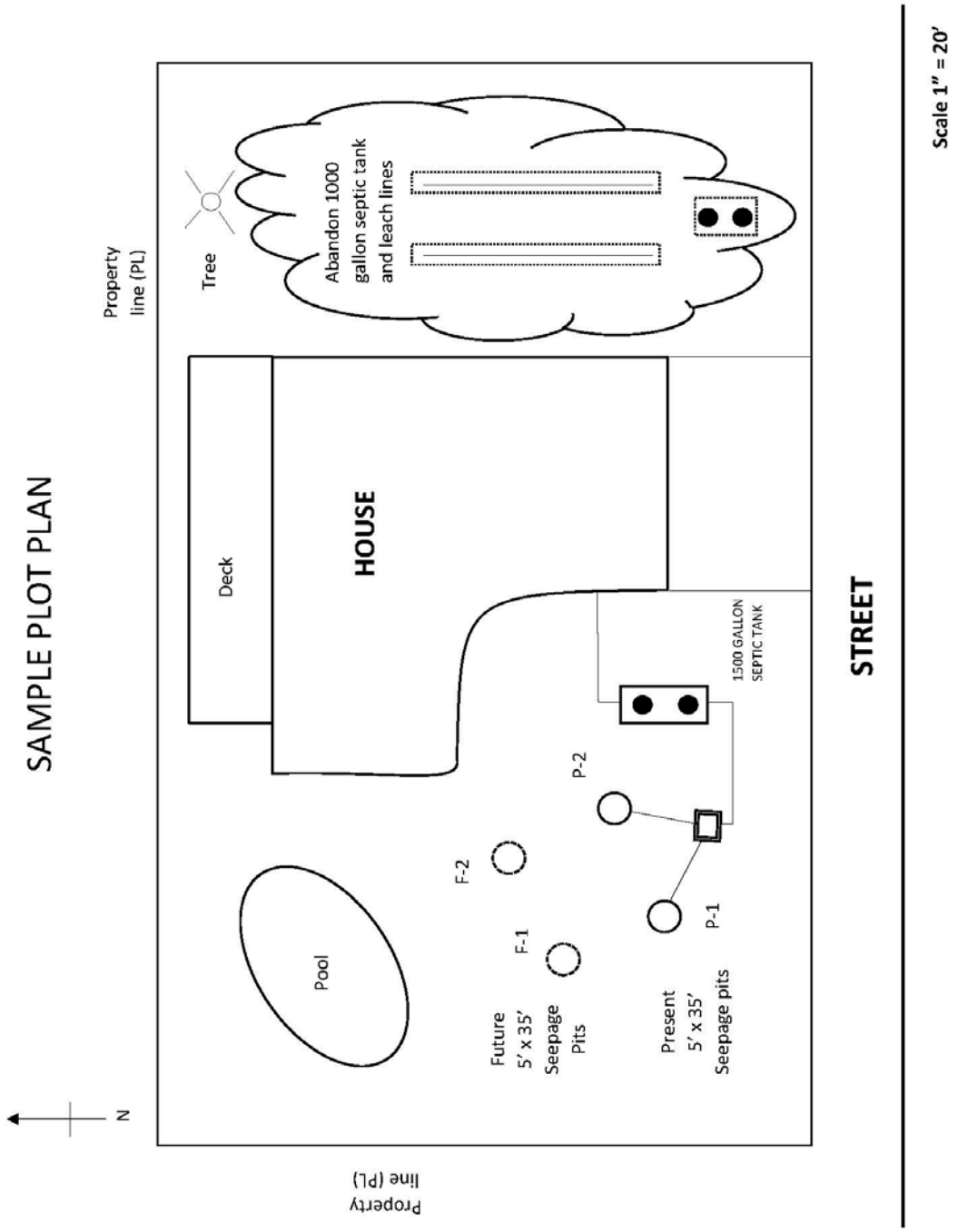
B. OWTS Plot Plan

A plot plan drawn to scale, wet stamped and signed by the City Registered Designer must be submitted showing an OWTS design meeting the minimum requirements of the current OWTS regulations in the Malibu Municipal Code, OWTS Manual standards and Statewide OWTS Policy. For AOWTS, the design must specify equipment capable of providing tertiary treatment (i.e., secondary treatment with disinfection). At least one copy of the plot plan showing essential features of the OWTS must fit on an 11" x 17" sheet leaving a 5" left margin clear to provide space for a City-applied legend on approvals. If the plan scale is such that more space is needed to clearly all necessary setbacks, supplemental sheets may be provided.

If more space is needed to clearly show OWTS details and/or to provide construction documents for the OWTS installer (and general contractor for coordination of plans), large format sheets may also be provided. The maximum acceptable size for large format sheets is 17" x 22" (i.e., ANSI "C" size).

The following items must be included on the plot plan:

- Scale of the plot plan
- Property boundaries
- Location of percolation tests
- Components of existing and proposed OWTS including future expansion area
- Location of any water wells
- All existing and proposed structures clearly labeled
- All paved areas, including driveways, patios, walkways, sports courts and other similar appurtenances
- Drainage and watercourses
- Easements
- North arrow
- Water lines
- Trees


SAMPLE PLOT PLAN
Property line (PL)
Tree
Abandon 1000 gallon septic tank and leach lines
Deck
HOUSE
1500 GALLON SEPTIC TANK
P-2
F-2
F-1
P-1
Pool
Future 5' x 35' Seepage Pits
Present 5' x 35' Seepage pits
STREET
Property line (PL)
N
Scale 1" = 20'

C. OWTS Drawings

Large format sheets of the proposed OWTS construction drawings are required to show OWTS details including all system components, construction features and any reduced setbacks. The drawings also provide construction documents for the OWTS installer and general contractor for coordination of the plan approval. The drawings must be submitted to Environmental Health for final approval prior to Building Safety approval and issuance of construction permit. The maximum acceptable size for large format sheets is 17" x 22" (i.e., ANSI "C" size).

D. Construction Drawings (beachfront properties)

For all OWTS installations beneath buildings on beachfront property, a cross section must be drawn to-scale to show the relative locations and elevations of all AOWTS components, overhanging building frame elements (beams, floor boards, and joists; per structural plans), the proposed rock scour blanket (if any), the top and bottom of the proposed drainfield, design beach profile (per the coastal engineer), groundwater and bedrock (per the supporting geology report), and the bulkhead or seawall (per the coastal engineer). For each of these items the finished elevations with reference to architectural plans, Coastal Engineering Report, bulkhead (or seawall) plans, and the OWTS supporting geology report must be provided. The reference datum for all elevations (NGVD1929 or NAVD88) must be shown. All supporting technical reports must be referenced.

Shoreline protection devices shall be made waterproof as determined by the project engineer and City Coastal Engineer, and shown on the plan in accordance with the criteria contained in the OWTS Manual.

E. OWTS Design Reports

For conformance review, a preliminary design report and plan drawings must be submitted so as to demonstrate the feasibility of the proposed project with respect to conformance with the MPC and LCP/LIP. The preliminary design drawings and calculations must be signed and stamped (where applicable) by a California-registered Civil Engineer, a Registered Environmental Health Specialist, or a professional geologist who is responsible for the design and is a City Registered Practitioner. The report must document the conceptual design basis for conformance with the OWTS final design requirements shown below.

During final plan check review, a final design report, plan drawings, and system specifications must be submitted including the OWTS design basis and all components (i.e. alarm system, pumps, timers, flow equalization devices, backflow devices) proposed for use in the construction of the proposed wastewater system. The OWTS final design drawings and calculations must be signed and stamped (as applicable) by a California-registered Civil Engineer, a Registered Environmental Health Specialist, or a professional geologist who is responsible for the design and is a registered practitioner with the City.

1. All OWTS Design Reports

The design report must include the following information:

- Document the required treatment capacity for the septic tank. The septic tank capacity must be specified in terms the number of bedroom equivalents and drainage fixture units. A bedroom equivalent is considered a room that is not a core room (living room, family room, kitchen, dining room), which is enclosed and is in proximity to a full bathroom. The drainage fixture unit count in conformance with values found in the California Plumbing Code must be clearly identified in association with the design treatment capacity. The report must include a Bedroom and Fixture Unit Worksheet available from the City. See Section IV of this Manual.

- The subsurface effluent dispersal system design acceptance rate be documented with respect to the methodology used for sizing the dispersal area or capacity, including translation of percolation/infiltration/soil classification data into dispersal system dimensions. For seepage pit sizing, 3 times the septic tank capacity as determined by drainage fixture units or 5 times the wastewater flow as determined by bedrooms, whichever is greater, is used to determine the required capacity.

- The basis for conforming to regulated vertical and horizontal setbacks also must be documented in the report (i.e., vertical separation distance to groundwater and horizontal separation distances to structures, other OWTS components, property lines, streams, wells, trees).

2. Advanced OWTS Design Report

In addition to the items listed above, for all advanced OWTS, the design report must contain the following information.

- Required treatment capacity for wastewater treatment and disinfection systems. The treatment capacity must be specified in terms of flow rate, gallons per day (gpd), and must be supported by calculations relating the treatment capacity to the number of bedroom equivalents, plumbing fixture equivalents, and/or the subsurface effluent dispersal system acceptance rate. The drainage fixture unit count must be clearly identified in association with the design treatment capacity, even if the design is based on the number of bedrooms. Average and peak rates of hydraulic loading to the treatment system must be specified in the final design.
- Description of proposed wastewater treatment and/or disinfection system equipment. State the proposed type of treatment system(s) (e.g., aerobic treatment, textile filter, ultraviolet disinfection); major components, manufacturers, and model numbers for “package” systems; and design basis engineered treatment systems.
- A summary of the supporting geology information and percolation test results for the subsurface effluent dispersal portion of the onsite wastewater disposal system. Describe the proposed type of effluent dispersal system (drainfield, trench, seepage pit, subsurface drip) as well as the system’s geometric dimensions and basic

construction features. Supporting calculations must be presented that relate the results of soils analysis or percolation/infiltration tests to the projected subsurface effluent acceptance rate, including any unit conversions or safety factors. Average and peak rates of hydraulic loading to the effluent dispersal system must be specified in the final design. The projected subsurface effluent acceptance rate must be reported in units of total gallons per day (gpd) and gallons per square foot per day (gpsf). Specifications for the subsurface effluent dispersal system must be shown to accommodate the design hydraulic loading rate (i.e., average and peak OWTS effluent flow, reported in units of gpd). The subsurface effluent dispersal system design must take into account the number of bedrooms, drainage fixture units, and building occupancy characteristics.

- All proposed reductions in setback from the onsite wastewater treatment system to structures or other items less than those shown in MMC Chapter 15.42 must be supported by discussion in the report and referenced on the OWTS plot plan.

F. Soils Analysis/Percolation/Infiltration Report

The location, and construction dimensions of any proposed subsurface sewage effluent disposal system must be based on a percolation/infiltration test report and/or soils analysis report that is performed for the express purpose of providing information to be used for design of an onsite wastewater treatment system. Percolation or infiltration tests must be conducted by a California Certified Engineering Geologist, a California Registered Civil Engineer, or a California Registered Environmental Health Specialist. Soils analysis must be conducted by a California Registered Professional Geotechnical Engineer, and the results must include descriptions of both texture (expressed in United States Department of Agriculture terminology) and structure in accordance with the United States Environmental Protection Agency (2002) Onsite Wastewater Treatment Systems Manual. All failed test locations must be described in the report. Please note only original "wet signature" documents are acceptable.

1. Leachfield

For conventional OWTS only standard percolation tests and soil classification reports are acceptable. For conventional leaching trenches or leaching beds percolations tests must be performed using either the percolation test method described in the United States Environmental Protection Agency's (US EPA) 1980 *Onsite Wastewater Treatment and Disposal Systems Design Manual* or the "Ryon method" as described in the Los Angeles County Environmental Health OWTS Guidelines.

Ryon Formula $A = \frac{T+6.24}{29} \times \frac{C}{2}$

Where A = Square feet of 3-foot wide trench dispersal area
T = Time in minutes for the 6 inches of water to drain
C = Proposed septic tank capacity

2. Drip Dispersal

The location and construction dimensions of the proposed subsurface drip dispersal system shall be based on both an infiltration or percolation test report and a soils analysis report. For each drip dispersal zone, at least two infiltration (or percolation) tests and two soils analysis tests must be performed at depth of the proposed infiltrative surface and within the layer of the soil profile (see supporting geology/soils requirements) that is most restrictive to effluent transmission. At the drip line elevation, one set of soil/infiltration tests are required per every 500 ft2 plan area; a minimum of two sets of soil/infiltration tests are required per zone; if limiting conditions are encountered below the drip line, then additional tests must be performed in the limiting horizon. The soil limiting condition must be assessed by test pit inspection extending to at least 5 feet below the drip line (the most limiting earth material must be tested for infiltration and classified by USDA or for weathered bedrock by an Engineering Geologist). The hydraulic loading rate shall be based on the most limiting of either: 1/10th the "passing rate" from an infiltration test performed using Orenco test kit for a period of at least 3 days or USEPA 2002 hydraulic loading rate (Table 4-3) with USDA soil classification of both texture and structure.

The soils analysis report shall be performed for the express purpose of providing information to be used for design of an onsite wastewater treatment system. Soils analysis shall be conducted by a California Registered Professional Geotechnical Engineer, and the results shall include descriptions of both texture (expressed in United States Department of Agriculture terminology) and structure in accordance with the United States Environmental Protection Agency (USEPA; 2002) Onsite Wastewater Treatment Systems Manual. If a predominantly clay soil texture is present (i.e., clay, sandy clay, or silty clay), then expansion index and plasticity index data shall be obtained and considered by the Geotechnical Engineer with respect to the effect of swelling, if any, on soil structure and soil permeability to effluent. All percolation/infiltration/soils analysis reports shall provide consideration of all test data with respect to recognized design tables for effluent dispersal system loading, and a recommended hydraulic loading rate must be provided. Additional requirements may be applied by the Environmental Health Administrator where critical conditions are encountered (e.g., additional soil swell tests, extended duration for infiltration tests, and/or increased number of soil classification and infiltration tests).

3. Seepage Pit

Each proposed present and future seepage pit must be bored and percolation tested. The test borehole shall be 2 feet in diameter and a minimum of 10 feet deep. The testing must be performed over a period of three consecutive days. Variations to the guidelines may be approved on a case-by-case basis by the City. Seepage pit percolation test procedures are detailed in Section IV.A (Seepage Pit Percolation Testing Policy).

G. Supporting Geology/Soils Report

Supporting Geology/Soils Report: A report from the project geologist and/or soils engineer must be submitted which contains the items listed below. The report (or report sections within a larger report whose scope also covers building and site design topics) must be performed for the express purpose of providing information to be used for design of an onsite wastewater treatment system. Please note only original "wet signature" documents are acceptable.

- **Geology/Soils Description.** Provide an analysis as to the natural soils and/or rock material located at the proposed subsurface sewage effluent dispersal area(s). For natural soils, United States Department of Agriculture soil texture triangle terminology must be used. For rock material, major geologic units and rock types must be described. Provide a soil profile extending from the base of the effluent dispersal system (i.e., infiltrative surface) to either the groundwater depth, or to the depth of the design boundary for effluent migration, whichever is most restrictive. For leaching bed or drip dispersal systems, the soil profile must be obtained from test pits/trenches (or borings) extending at least 5 feet below the base of the effluent dispersal system. Describe geological and geohydrological conditions at all effluent dispersal system design boundaries (see US EPA 2002).
- **Groundwater Statement.** The consultant shall state where (i.e., at what depth) in his/her professional opinion: (i) is the annual average groundwater level is beneath the location of the effluent dispersal system and (ii) the seasonal high groundwater level is beneath the location of the effluent dispersal system. Any indication of historical high groundwater (e.g., soil mottling) must be noted and considered. If groundwater is found during field exploration, then the consultant shall indicate where groundwater was found. The consultant shall also consider what effect, if any, the onsite wastewater dispersal system will have on groundwater (i.e., mounding, migration, daylighting) and describe the anticipated path of effluent in the subsurface.
- **Anticipated Path of Effluent.** Geologic cross sections(s) of the most critical slope must be provided which depict the proposed development, proposed wastewater treatment system, and anticipated paths of effluent. The project geologist and/or soils engineer shall provide sufficient geologic data to substantiate their conclusions regarding the effects of effluent on groundwater levels under the site, the potential for mounding of groundwater, and the potential for effluent to daylight on the ground surface. The supporting geologic discussion must include interpretations of geologic structure, stratigraphy (specifically, lithologic changes across the site that could affect hydraulic conductivities across the site), and discontinuities such as fractures, faults, clay seams, and joint systems.
- **Cap Depth Statement.** Provide a recommended cap depth for each proposed present and future seepage pit. The recommended cap depth must be referenced to existing grade at the time the boreholes were logged and tested for percolation capacity.

- **Stability Statement.** Addressing the current development proposal, the consultant shall unequivocally state whether the disposal of sewage effluent in the proposed subsurface dispersal areas on subject property will cause any instability either for the subject property or for any neighboring property.

H. Reductions in Regulated Setback Distances

All proposed reductions in setbacks from the onsite wastewater treatment system to structures or other features less than those shown in MMC Chapter 15.42 must be supported by letters from the project consultants. The wastewater plans and the construction plans must be specifically referenced in all certification letters. The construction plans for all structures and/or buildings with reduced setback must be approved by City Building Safety prior to Environmental Health final approval. The architectural and/or structural plans submitted for Building Safety Plan Check must detail methods of construction that will compensate for the reduction in setback (e.g., waterproofing, concrete additives). For complex waterproofing installations, submittal of a separate waterproofing plan may be required. All plans must show the location of onsite wastewater treatment system components in relation to those structures from which the setback is reduced, and the plans must be signed and stamped by the architect, structural engineer, and geotechnical consultants (as applicable).

- **Structures.** All proposed reductions in setback from the onsite wastewater treatment system to structures (i.e., setbacks less than those shown in MMC Chapter 15.42 must be supported by a letter from the project structural engineer and a letter from the project soils engineer (i.e., a Geotechnical Engineer or Civil Engineer practicing in the area of soils engineering). Both engineers must certify unequivocally that the proposed reduction in setbacks from the treatment tank and effluent dispersal area will not adversely affect the structural integrity of the onsite wastewater treatment system, and will not adversely affect the structural integrity of the structures for which the setback is reduced.

- **Buildings.** All proposed reductions in setback from the onsite wastewater treatment system to buildings (i.e., setbacks less than those shown in MMC Chapter 15.42 also must be supported by a letter from the project Architect, who must certify unequivocally that the proposed reduction in setbacks will not produce a moisture intrusion problem for the proposed building(s)). If the building designer is not a California-licensed Architect, then the required Architect's certification may be supplied by an Engineer who is responsible for the building design with respect to mitigation of potential moisture intrusion from reduced setback to the wastewater system; in this case the Engineer must include in his letter an explicit statement of responsibility for mitigation of potential moisture intrusion. If any specific construction features are proposed as part of a moisture intrusion mitigation system in connection with the reduced setback(s), then the Architect (or Engineer) must provide associated construction documents for review and approval during Building Safety Plan Check.

I. Coastal Engineering Report (beachfront property only)

A Wave Uprush Report by a coastal engineer shall be submitted as to necessity of a bulkhead/seawall, and the location and design of any existing, or proposed bulkhead/seawall, meant to protect any existing, or new onsite wastewater treatment system. The report must describe the design beach profile and beach scour line subject to significant storm events. Provide a cross section drawn to scale with a precise datum reference showing the design beach profile and the proposed location for a structural protection device. The beach scour line must be clearly labeled to facilitate development of an integrated cross section drawing showing geologic units and the anticipated path of effluent (fill, bedrock, beach sand). A copy of the report must be submitted to both Environmental Health and to the City Coastal Engineer. Only original "wet signature" documents are acceptable.

Section III
OWTS Management Program

The purpose of this program is to assist the City in protecting environmental quality by assuring that wastewater treatment and disposal is safe and effective. The program focuses on proper operation, maintenance and monitoring of OWTS. This is accomplished by requiring operating permits and inspections of OWTS as well as utilization of City Registered Practitioners.

A. Operating Permits

Operating Permits are issued for both conventional and advanced OWTS. Conventional OWTS do not require ongoing monitoring and maintenance. Advanced OWTS require regular monitoring and maintenance. A City Registered Maintenance Provider is required for all advanced OWTS. Failure to comply can result in the suspension or revocation of the existing Operating Permit.

An Operating Permit is required under the following circumstances:

- New OWTS
- Modification to existing OWTS
- Increase in wastewater loading or plumbing fixtures to existing structures
- Transfer in ownership of real property
- Commercial and multi-family structures

In order for Environmental Health to issue a new or renewal Operating Permit, an inspection of the OWTS must be completed by a Registered Practitioner indicating that the system passes the inspection criteria. The inspection report along with a fee in accordance with the City's current fee schedule must be submitted with the application. Any OWTS that does not pass the inspection process must be repaired or replaced in accordance with City Environmental Health requirements.

The renewal period for Operating Permits is based on the following type of system and proposed use:

- Residential conventional OWTS are valid for 5 years.
- Residential Advanced OWTS are valid for 3 years.
- Commercial and multi-family OWTS are valid for 2 years.

B. Registered Practitioner Program

The City Registered Practitioner Program was developed to provide consistent standards for the design, installation and maintenance of OWTS within city limits. Registration of the practitioners is verified by submittal of an application with proper credentials and coursework by the applicant. The registration is valid for 2 years and may be renewed with proper certification of educational requirements. Registered Practitioners include designers, installers, inspectors, maintenance providers and pumpers. A current list of Registered Practitioners is available on the website at www.malibucity.org.

Section IV
Policies and Procedures

A. Seepage Pit Percolation Test Policy
B. Beachfront OWTS Design Policy
C. Reduction in Setbacks Policy
D. Pump Stations Requirements
E. Non-Traffic Rated Tank Requirements
F. OWTS Tank Replacement Policy
G. Civic Center Prohibition Policy
H. Fixture Unit Worksheet

Section IV.A
Seepage Pit Percolation Test Policy

Seepage Pit Percolation Testing Policy

1. Seepage pit percolation tests shall be performed under the direction of a California Certified Engineering Geologist, a California Registered Professional Geotechnical Engineer, a California Civil Engineer, or a California Registered Environmental Health Specialist.

2. Seepage pit percolation test boreholes shall be 2 feet in diameter, and a minimum of ten feet deep below the capping depth/elevation. A seepage pit percolation test may be conducted in a legally constructed seepage pit with prior approval from City of Malibu Environmental Health. Percolation test boreholes, and/or seepage pits, shall be located by GPS or other means of accurate location on subject property.

3. Prior to percolation testing, each seepage pit percolation test borehole shall be examined by a California Certified Engineering Geologist. The project geologist shall write a supporting geology report, which shall be submitted with the percolation test report to City of Malibu Environmental Health. A supporting geology report including the following items must be prepared in coordination with the percolation test report (contact the City of Malibu to obtain a complete description of the supporting geology report requirements).
    a. Map showing the accurate locations of all test borings.
    b. Geologic log of the subsurface soil/rock strata found in all test borings.
    c. Recommended cap depth/elevation for each seepage pit.
    d. Statement of the depth/elevation of seasonal high groundwater.
    e. Discussion of the anticipated path of effluent with cross-section drawing(s).
    f. Statement in regard to the geologic stability of the work site, the property, and adjacent properties.

4. A groundwater boring shall be excavated within the immediate vicinity of the seepage pit percolation test borings, and observed by the project geologist to determine the existing groundwater level and the seasonal high groundwater level. The groundwater boring may be tested for percolation if properly backfilled and sealed 10 feet above the bottom of the boring (e.g., backfill with the material removed from the boring during drilling and seal by adding 1 ½ feet of dry Bentonite pellets, which are then hydrated for least 24 hours before beginning the percolation test). The minimum vertical separation between the bottom of any percolation test boring and seasonal high groundwater shall be 10 feet, or as required by the City of Malibu Plumbing Code for seepage pit construction.

5. Seepage pit percolation tests shall be performed over a period of three consecutive days. Metered/static head percolation test procedures shall be used for all tests. The percolation test meter used must have been calibrated for accuracy within the previous 12 months before the percolation test is conducted.

6. A minimum of two seepage pit percolation test boreholes shall be excavated on each site, one for the proposed active seepage pit, and one for the proposed future seepage pit dedication, as required by the City of Malibu Plumbing Code. If the percolation test results indicate the need for more than one active seepage pit, and/or if more than one future seepage pit is required,

then more percolation testing shall be conducted. All proposed active seepage pit locations, and all proposed future seepage pit locations, shall be tested to assess the water absorption capacity.

7. On the first day of the percolation test, the seepage pit percolation test borings shall be filled with clear water to the capping depth/elevation recommended by the project geologist so as to presoak the boreholes prior to performing water absorption measurements on the second day. If any seepage pit percolation test boring cannot be filled to the capping depth/elevation as a result of a rapid absorption rate, then the quantity of clear water introduced into the boring shall be determined at the discretion of the percolation test professional based on the minimum requirements of the project. After presoaking, no more water shall be introduced into the percolation test boreholes for a period of not less than 24 hours.

8. On the second day of the percolation test, prior to the beginning of metered water addition(s), the amount of water remaining in the percolation test boreholes following the presoak period shall be observed, and recorded as both: (a) the depth below existing grade to the free water surface and (b) the water column height above the bottom of the borehole. The depth/elevation of the free water surface in all percolation test boreholes must be recorded at both the beginning and the end of the 24 hour presoak period. Any borehole where, during this presoak period, the water surface does not drop at least 10 feet below the capping depth/elevation recommended by the project geologist shall be deemed to have failed the seepage pit percolation test. The accurate location(s) of all failed seepage pit percolation test boreholes must be provided on a map included as part of the percolation test report.

9. A 1-½ inch diameter water hose shall be the minimum size hose acceptable for use in filling boreholes for presoaking and percolation testing. A totalizing flow meter shall be used to record the quantities of water introduced into each borehole. For each test borehole, an initial meter reading shall be recorded prior to any water additions. Thereafter, the borehole shall be filled with clear water up to the capping depth/elevation recommended by the project geologist. Subsequently, the test borehole may be refilled with clear water (not to exceed the cap depth), as necessary, for a period not to exceed 8 hours beyond the initial filling. A meter reading and the time of day shall be recorded after each refill. The borehole total depth, and the minimum depth to the free water surface maintained in the borehole during the test, shall be reported. All depths shall be reported as depth below ground surface referenced to the ground surface elevation existing at the time of the test.

10. On the third day of the percolation test, the final depth/elevation of the free water surface remaining in all percolation test boreholes must be recorded. This final water level recovery measurement shall be taken no more than 24 hours after the beginning of the second day of testing. At this time the amount of water remaining in each borehole shall be recorded as both: (a) the depth below existing grade to the free water surface and (b) the water column height above the bottom of the borehole. Any borehole where, during this final recovery period, the water surface does not drop at least 10 feet below the capping depth/elevation recommended by the project geologist shall be deemed to have failed the seepage pit percolation test. The accurate location(s) of all failed seepage pit percolation test boreholes must be provided on a map that is included as part of the percolation test report.

11. For purposes of calculating daily water absorption capacity, the water volume remaining in the test boring (i.e., difference between the beginning water volume and a larger water volume remaining at the end of the presoak period, if any) shall be deducted from the water volume metered into the boreholes during the percolation test period. The net water volume absorbed between the beginning of metered water additions (on the second day) and the conclusion of the final recovery period (on the third day) shall be used to calculate the daily water absorption capacity in gallons per day and in gallons per square foot per day.

12. For purposes of private sewage disposal system design, it normally is acceptable to the City of Malibu Environmental Health office for the percolation test professional and/or system designer to mathematically scale the daily water absorption capacity obtained in a 2 foot diameter test borehole by the ratio of surface areas of a design seepage pit and the test borehole. [Note: the constructed seepage pit must use the same total depth/elevation, and same cap depth/elevation, as the corresponding test borehole.]

13. The percolation test report shall communicate the percolation test data in a manner easily understood by any reader. The percolation test report shall contain the following information:

    a. The dates on which the percolation test was conducted, i.e. the presoak date, the test date, and the final observation date.

    b. A map showing where the percolation test boreholes and the groundwater excavation(s) were located on subject property. The map shall be to scale, and easily readable; locations of the test borings on subject property may be determined by survey, GPS, or other means of reasonably accurate location.

    c. The dimensions of each percolation test borehole (i.e. the total depth/elevation of each borehole and the capping depth/elevation used for testing each borehole).

    d. If any percolation test borehole was backfilled prior to percolation testing, then the backfilling shall be noted, and the method of backfilling shall be noted.

    e. The percolation test data, including the times of day the percolation test holes were filled, and refilled, and the volume of water used for each fill, and refill.

    f. The observation of any groundwater level in any groundwater excavation.

    g. The percolation rate expressed in both gallons per day, and in gallons per square foot per day.

    h. Any other information deemed appropriate by the professional conducting the percolation test, or requested by the City of Malibu.

14. Variations to these guidelines may be approved on a case-by-case basis by City of Malibu Environmental Health as warranted by particular site conditions.

Section IV.B
Beachfront OWTS Design Policy

Onsite Wastewater Treatment System Design Requirements for Beachfront Properties

This policy applies to both Environmental Health and Building Safety reviews of onsite wastewater treatment system (OWTS) plans submitted in connection with any development and wastewater system renovation projects on beachfront properties. The General Requirements apply to all projects on beachfront property. The Ocean Side Requirements also apply where OWTS components are located either on the ocean side of the dwelling or underneath the dwelling. The Land (Street) Side and Side Yard Requirements also apply where OWTS components are located on any other portion of the property.

General Requirements

1. All proposed beachfront property OWTS designs shall be reviewed and approved by the Coastal Engineer consultant of record to verify conformance with the Wave Uprush Study recommendations. This approval shall be evidenced by the Coastal Engineering consultant's wet stamp and signature, and the City Coastal Engineering Division's approval stamp, on the final construction drawings. Coastal Engineering approval shall be obtained prior to final Environmental Health Approval.
2. All proposed OWTS shall be designed and installed in accordance with the requirements in the Malibu Municipal Code, Local Coastal Plan/Local Implementation Plan, and any other applicable building and planning regulations.
3. The bottom of any leach trench or drainfield shall have a minimum of two (2) feet temporary (seasonal/tidal) vertical clearance and four (4) feet permanent (annual average) vertical clearance above the mean high tide elevation, the potentiometric surface of unconfined seawater intruded into the saturated zone, or impervious soil or rock as applicable. The required elevation clearance shall be established by a survey and/or excavation.
4. The existing grade shall not be excavated or lowered to create a depression for the installation of the OWTS unless prior approval has been obtained from the Environmental Health Office.
5. Reductions of the horizontal distance in clear to buildings or structures, or adjoining property lines, as set forth in Malibu Municipal Code, Chapter 15.42, for the proposed location of leach trenches or drainfields may be considered. Refer to the City of Malibu's Reduction in Setback Policy.
6. Seepage pits shall not be allowed on beachfront property unless it can be demonstrated that spatial constraints preclude other dispersal methods. Seepage pits may be considered for the repair or replacement of an OWTS when seepage pits were previously approved and permitted. Seepage pits are not considered appropriate for new or expanded development. All seepage pits must be at least eight (8) feet horizontally from any structure, including retaining walls, seawalls, bulkheads, rock revetments, caissons, piles, and other similar structures. The seepage pit cap shall have a minimum 15 foot horizontal distance in clear to daylight and/or all hydrostatic pressure relief devices such as backdrains and subdrains.

No seepage pit shall extend within ten (10) feet of the permanent groundwater elevation, or to a depth where effluent may adversely impact the groundwater stratum.

Exception: The separation to permanent groundwater may be reduced by the Building Official when sufficient evidence of groundwater elevation is provided and tertiary treatment of the wastewater is provided.

7. OWTS shall have adequate access and clearances for the purpose of system maintenance and repair without the removal of any permanent structures, landscaping or other similar obstructions to access the system.

Ocean Side Requirements

1. No portion of the OWTS shall be located under any portion of any structure, whether covered or uncovered, including porches, patios, steps, breezeways, carports, walkways, driveways and other similar structures or appurtenances.

   Exception: Septic tanks and present and future dispersal areas, other than seepage pits, may be installed beneath a building which is constructed partially or totally on piles, caissons, or pilings when all of the conditions set forth in these Ocean Side Requirements have been met without exception.

   a. The area over any septic tank riser and the future or present dispersal area shall be exposed to the atmosphere without cover of any kind. Decks and walkways on grade may be considered, on a case by case basis, when they are completely removable and conforming to the City of Malibu's Reduction in Setback Policy.

   b. No septic tank shall be installed on the ocean side of any dispersal area unless tank hold downs are provided to counteract the buoyancy force.

   c. The space above any septic tank riser, present or future dispersal area, or other system component shall have a minimum of six (6) feet vertical clearance to the bottom of any structural element including any cover such as stucco or wood siding. Structural beams may project a maximum of two (2) feet into the required six (6) foot minimal vertical clearance provided they are spaced not less than four (4) feet on center horizontally center to center. The required six (6) foot minimum vertical clearance shall be maintained overall system components and shall extend horizontally to the open ocean side of the building with no obstructions other than a legally permitted shoreline protection device. Screening or other similar architectural coverings may be considered when such covers are readily removable and provide a minimum of 50% open space.

   d. The required space above any septic tank riser, present or future dispersal area, or other system component shall extend horizontally, unobstructed to the outside airspace and shall be provided on at least two sides above and adjacent to each portion of the OWTS in addition to the ocean side vertical clearance requirements of Section 1.c. The minimum unobstructed clearance to the outside airspace shall not be less than four (4) feet in any dimension with no encroachments. Screening or other similar architectural coverings may be considered when such covers are readily removable and provide a minimum of 50% open space.

e. Other configurations for the required ventilation for the area beneath buildings containing an OWTS installation, or components thereto may be considered when designed and engineered by a State of California Licensed Mechanical Engineer. Such plans must be submitted to City Building Safety for review, approval, and permitting. The approved plans shall clearly state the design intent (ventilation of a wastewater system located in an enclosed space) and must bear the license stamp of signature of the ventilation system designer.

2. For new OWTS, all system components shall be protected from tidal and wave uprush action by a shoreline protection device adequately designed and engineered by a State of California licensed Civil Engineer specializing in Coastal Engineering. Existing shoreline protection devices must provide protection greater than or equal to current coastal engineering standards or shall be modified to meet these standards. New shoreline protection devices shall be engineered and properly constructed to meet current coastal engineering standards as a minimum.

3. The minimum horizontal distance between any portion of the OWTS and the shoreline protection device, including returns shall not be less than five (5) feet measured horizontally. Reductions of the required setback may be considered, please refer to the City of Malibu's Reduction in Setback Policy.

4. There shall be a minimum fifteen (15) feet horizontal separation between any portion of the OWTS dispersal area and the maximum wave uprush scour line as determined by the consulting Coastal Engineer of record when a shoreline protection device is not otherwise required.

   Exception: The Coastal Engineering consultant may recommend a smaller separation distance based on an analysis of the beach scour profile.

5. Shoreline protection devices shall be made waterproof when a potential for the horizontal seepage of effluent from an OWTS dispersal area is determined by the City Coastal Engineer, City Geologist, or City Environmental Health Administrator. When weep holes are incorporated into the design of the shoreline protection device they shall be designed to retain all materials, including any effluent filter materials, behind the device. Weep holes shall be located below any known or anticipated scour elevation as determined by the consulting Coastal Engineer of record. When a shoreline protection devise is required to be waterproofed, the effective path of travel of the effluent dispersal at and below the shoreline protection devise shall be demonstrated by the OWTS designer in collaboration with the project Engineering Geologist.

6. A cross section shall be drawn to-scale to show the relative locations and elevations of all OWTS components, overhanging building frame elements (beams, floor boards, and joists; per structural plans), the proposed rock scour blanket (if any), the top and bottom of the proposed drainfield, design beach profile (per the coastal engineer), groundwater and bedrock with effective path of travel of the effluent (per the supporting geology report), and the shoreline protection device. For each of these items the finished elevations with reference to architectural plans, coastal engineering report, bulkhead (or seawall) plans, and the OWTS supporting geology report shall be provided. The reference datum

for all elevations (NGVD1929 or NAVD88) shall be shown. All supporting technical reports must be referenced.

Land (Street) Side and Side Yard Requirements

1. No portion of the OWTS shall be located under any portion of any structure, whether covered or uncovered, including porches, patios, steps, breezeways, carports, walkways, driveways and other similar structures or appurtenances.

   Exceptions: Septic tanks may be allowed to be sited beneath a driveway when the tank and/or a structural traffic rated slab have been engineered to support the weight of a least an H-20 axle load. The design of the traffic rated slab/tank system shall be performed by a State of California Licensed Civil or Structural Engineer. The traffic rated slab design shall be in conformance with any listing, certification, or recommendation of the septic tank manufacturer.

   Placement of leaching trenches or drainfields under a driveway may be acceptable when the installation area is completely within well draining native beach sand and the driveway material allows diffusion of sufficient quantities of oxygen into the dispersal zone (e.g., paver tiles set into sand).

2. Septic tanks, leach trenches and drainfields for present and future OWTS may be allowed to encroach into the horizontal distance in clear as required by the City of Malibu Plumbing Code when the structure is supported either partially or totally on caissons, piles, or pilings. Refer to the City of Malibu's Reduction in Setback Policy.

Section IV.C
Reduction in Setbacks Policy

Requirements for Reduction in Setbacks from Onsite Wastewater Treatment Systems to Buildings or Structures

This Policy applies to projects where a reduction in the required setback, as listed in Malibu Municipal Code Chapter 15.42, has been requested by the applicant. All proposed reductions in setbacks from the onsite wastewater treatment system (OWTS) to structures and/or other features listed in Malibu Municipal Code Chapter 15.42, must be supported by letters from project consultants as applicable.

All proposed reductions in setbacks from the onsite wastewater treatment system to structures or other features less than those shown in MMC Chapter 15.42 must be supported by letters from the project consultants. The wastewater plans and the construction plans must be specifically referenced in all certification letters. The construction plans for all structures and/or buildings with reduced setback must be approved by City of Malibu Building Safety prior to Environmental Health final approval. The architectural and/or structural plans submitted for Building Safety plan check must detail methods of construction that will compensate for the reduction in setback (e.g., waterproofing, concrete additives). For complex waterproofing installations, submittal of a separate waterproofing plan may be required. All plans must show the location of onsite wastewater treatment system components in relation to those structures from which the setback is reduced, and the plans must be signed and stamped by the architect, structural engineer, and geotechnical consultants (as applicable).

1. Structures – All proposed reductions in setback from the onsite wastewater treatment system to structures (i.e., setbacks less than those shown in Malibu Municipal Code, Chapter 15.42) must be supported by a letter from the project Structural Engineer and a letter from the project Soils Engineer (i.e., a Geotechnical Engineer or Civil Engineer practicing in the area of soils engineering). Both engineers must certify unequivocally that the proposed reduction in setbacks from the treatment tank and effluent dispersal area will not adversely affect the structural integrity of the onsite wastewater treatment system, and will not adversely affect the structural integrity of the structures for which the setback is reduced.

2. Buildings – All proposed reductions in setback from the onsite wastewater treatment system to buildings (i.e., setbacks less than those shown in Malibu Municipal Code, Chapter 15.42) also must be supported by a letter from the project Architect, who must certify unequivocally that the proposed reduction in setbacks will not produce a moisture intrusion problem for the proposed building(s). If the building designer is not a California licensed architect, then the required Architect's certification may be supplied by an Engineer who is responsible for the building design with respect to mitigation of potential moisture intrusion from reduced setback to the wastewater system; in this case the Engineer must include in the letter an explicit statement of responsibility for mitigation of potential moisture intrusion. If any specific construction features are proposed as part of a moisture intrusion mitigation system in connection with the reduced setback(s), then the Architect (or Engineer) must provide associated construction documents for review and approval during Building Plan Check.

Section IV.D
Pump Stations Requirements

Required Submittals for Pump Stations

For any pump station serving an onsite wastewater treatment system (OWTS), the OWTS designer shall specify the design capacities for the following pump station components with a supporting design basis.

Components	Specifications	Design Basis
Pump Vault	Height and diameter, manufacturer and model	Calculation Worksheet: fixture units, discharge rate, discharge volume, pump run time. Describe invert of inlet elevation, relative to bottom of vault.
Duplex Pumps	Manufacturer and model, run time, discharge, volume per cycle, electric power requirements	Pump curve with operating point shown by designer; calculation worksheet for total dynamic head; capacity of treatment and dispersal systems to accept forced discharge (flow impulse).
Floats	Manufacturer and model, installation heights	Worksheet showing discharge volumes, between actuation of “on” and “off” floats, design discharge rate, and pump run time.
Force Main	Check valve(s), shutoff valve(s), force main diameter, fittings, cleanouts.	
Control Panel	Manufacturer and model, electric power requirements	
Alarm System	Manufacturer and model	
Plot Plan	Show locations of all components (pump vault, force main, cleanouts, building sewer, control panel, audible alarm).	

Section IV.E
Non-Traffic Rated Tank Requirements

Required Submittals for Non-traffic Rated OWTS Tanks

These requirements apply to projects where the tank(s) associated with an OWTS are non-traffic rated and will be installed in a traffic area and/or covered by an impermeable surface, such as concrete. All OWTS plans for installation of non-traffic rated OWTS tanks in an area with vehicle traffic shall demonstrate that the installation conforms to the manufacturer's requirements for tank placement. For all OWTS tanks that are not traffic rated, structural plans for structural protection of the tank from traffic loads must be submitted for review and approval by City of Malibu Building Safety office. Structural calculations must accompany the plans submitted to Building Safety. For all tank installations within driveways with Fire Department turn around areas, the structural plans shall demonstrate capacity for H20 loading. Environmental Health will not issue final approval of the wastewater plans until Building Safety approves the structural plans.

Section IV.F
OWTS Tank Replacement Policy

Policy Regarding Replacement of a Failed Septic Tank Component from an Onsite Wastewater Treatment System

A Coastal Development Permit will not be required for the replacement of a failed septic tank provided the following conditions are met:

- The failure of the septic tank must be documented by a City of Malibu registered Onsite Wastewater Treatment System (OWTS) Inspector.
- The capacity of the new tank may not be increased unless the capacity of the existing failed tank is less than 1500 gallons. The proposed new tank shall then be allowed to increase in capacity to 1500 gallons only to meet the minimum code standard for the City. No other increase shall be authorized.
- Only the failed tank shall be replaced. No repair, modification, or expansion of any other component of the OWTS will be authorized.
- The replacement of the failed tank shall be in the same location as the existing tank, or adjacent to the existing tank.
- Operating Permit must be obtained upon completion of installation.

To obtain a permit to replace a failed septic tank, provide the following to the Deputy Building Official:

1. Two copies of an 11 x 17 site plan showing the location of all components of the existing OWTS components and the proposed location of the replacement tank;
2. Documentation from a registered OWTS Inspector evidencing the failed septic tank;
3. Applicable fee in accordance with the current city fee schedule.

Section IV.G
Civic Center Prohibition Policy

Policy for Environmental Health Review of Development Projects Within the Civic Center Prohibition Area

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) adopted Resolution No. R-4-2009-007, a Basin Plan Amendment to the State Water Code to "Prohibit On-Site Wastewater Disposal Systems in the Malibu Civic Center Area." The resolution became effective on December 23, 2010. On August 23, 2011 the State Board approved a Memorandum of Understanding (MOU) with the City. An amendment to the MOU was approved on February 2, 2017. Access the document online at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/Malibu/2017/2017MalibuMOUandResolution. The MOU establishes time frames and milestones for the City to achieve compliance with the Prohibition. The boundaries of the Malibu Civic Center Onsite Wastewater Disposal Prohibition Area are shown on Exhibit A attached.

The City policy for Environmental Health review of development projects proposed for properties located within the prohibition area is as follows.

Phase I and Phase II Areas

Vacant Land

All new onsite wastewater disposal system discharges are prohibited by the Regional Board through the Basin Plan Amendment with the exception of those projects identified in table 4-zz of the adopted resolution. These projects have been deemed entitled for a new Onsite Wastewater Treatment System (OWTS) by the Regional Board. All other new development projects that include a new sanitary waste discharge through a new OWTS will be referred to the Regional Board for concurrent approval with the development review by the City. Regional Board approval for a project's wastewater discharge must be obtained prior any development approvals or permits.

Developed Properties

The resolution prohibits effluent discharge from existing OWTS after September 30, 2018 for commercial properties and November 5, 2024 for residential properties. Resolution No. R-4-2009-007 states "This prohibition is not intended to prevent repairs and maintenance to existing septic/disposal systems, provided that repairs and maintenance do not expand the capacity of the system and increase flows of wastewater." The prohibition does not allow for any new discharges, except as mentioned above those projects identified on table 4-zz. An expansion of existing development may be authorized provided the proposal does not include a new discharge of sanitary waste. For residential occupancies, any increase in the number of existing bedrooms or plumbing drainage fixture units is considered a new discharge of sanitary waste. For nonresidential occupancies, any increase in the number of drainage fixture units, or intensity of use per the Malibu Plumbing Code, either voluntary or due to code compliance, is considered a new discharge of sanitary waste. The number of pre-existing bedrooms and/or drainage fixture units shall be demonstrated by the applicant using evidence of approved construction permits, or, in cases where the permit record is unclear, by record drawings certified (wet signed and stamped) by a licensed architect or civil engineer. Existing wastewater flows shall not be increased or exceed the capacity of the existing OWTS. Projects that do not involve a new waste discharge will be reviewed utilizing the same criteria as applied to projects outside the prohibition area.

Phase III Areas

Vacant Land

Same policy as for Phase I & II vacant land.

Developed Properties

Compliance with the bulleted items below shall demonstrate consistency with the Basin Plan Amendment and the protection of Public Health per the MOU.

Residential

Modification to existing residential structures may be allowed. Increases in the number of bedrooms and plumbing fixture units may be considered provided the following criteria are strictly adhered to:

- The property owner shall sign an acknowledgement stating they have read and understand the provisions of the Basin Plan Amendment and the MOU.
- All increased wastewater flows shall be limited to a maximum of 420 gallons per day or less as an estimated average residential flow. Flows shall be calculated utilizing United States Environmental Protection Agency mean daily per capita indoor use of 70 gal/persons/day. For purposes of this calculation, the first bedroom shall have a two person occupancy; each additional bedroom shall have single person occupancy. A room shall be considered a bedroom if it provides privacy and is in close proximity to a bathroom with a bathtub and/or shower fixtures.
- Existing OWTS with existing flows greater than 420 gallons per day may be considered provided the existing flow is not increased by the proposed modification.
- Any new fixtures shall be water efficient and meet current state low flow standards. Every effort to maximize water efficiency must be implemented.
- All expanded or new OWTS shall be designed to include filtration and disinfection to their existing or new OWTS in accordance with City regulations.
- All applicable City reviews, approvals, and permits must be obtained for any required OWTS alteration, repair, or replacement.

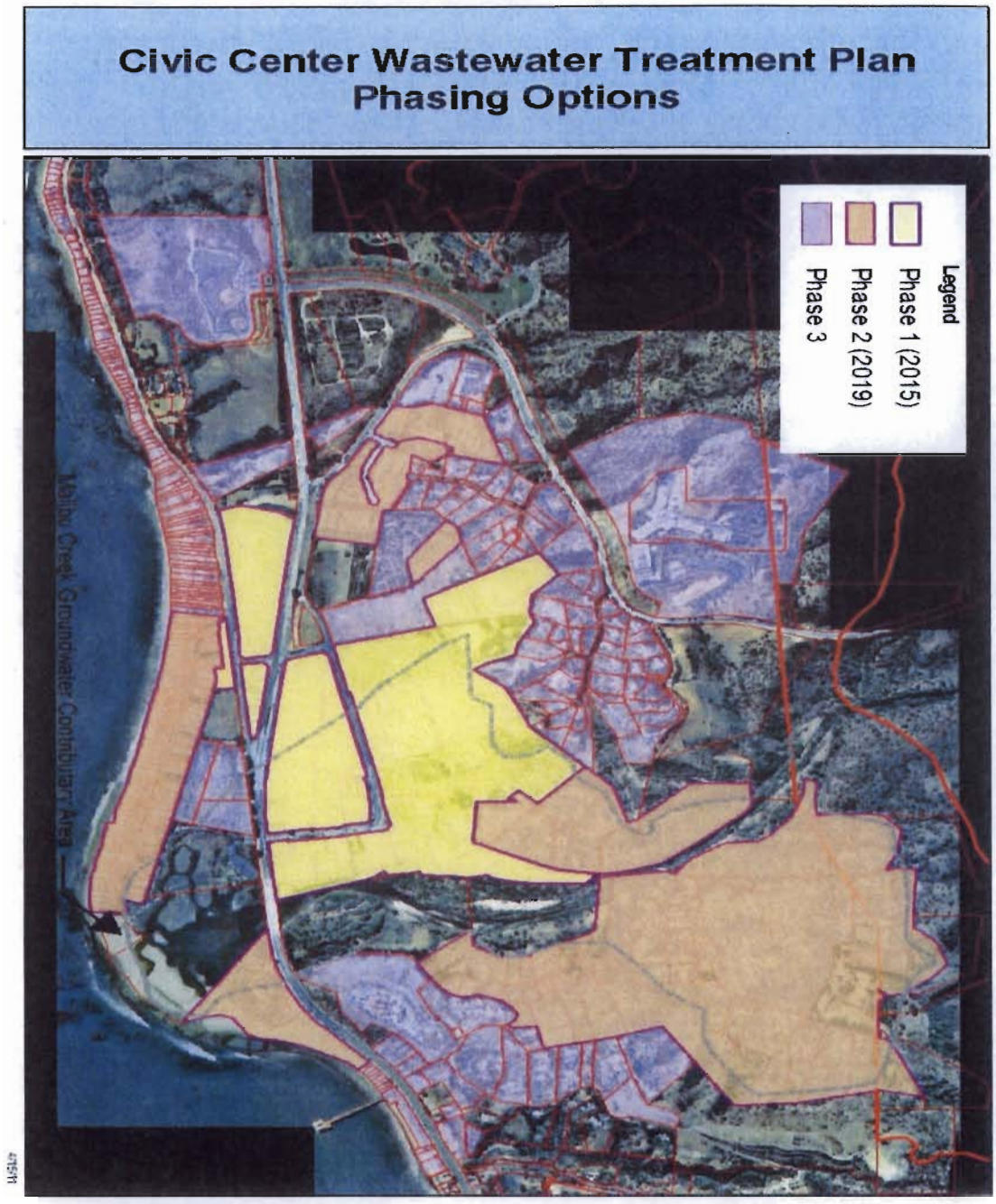
The City will consider the construction of a new replacement residential structure on a property where an existing residential structure will be demolished as an "existing residential structure".

Nonresidential

- The property owner shall sign an acknowledgement stating they have read and understand the provisions of the Basin Plan Amendment and the MOU.
- Existing wastewater flows shall not be increased or exceed the capacity of the existing OWTS. Engineering analysis of wastewater flows pre and post modification must be provided.

- Any new fixtures must be water efficient and meet current state low flow standards. Every effort to maximize water efficiency must be implemented such as the replacement of existing fixtures with new water efficient fixtures.
- All expanded or new OWTS shall be designed to include filtration and disinfection to their existing or new OWTS in accordance with City regulations.
- All applicable City reviews, approvals, and permits must be obtained for any required OWTS alteration, repair, or replacement.

EXHIBIT A: Boundary Map



Date: _____

_____
PROPERTY OWNER NAME - PRINT

_____
PROPERTY ADDRESS

I/We, certify I/We are the property owner(s) of the above stated address and further attest that I/We have read and fully understand the provisions of the Water Quality Control Plan Los Angeles Region, Resolution No. R4-2009-007, a Basin Plan Amendment to prohibit Onsite Wastewater Disposal Systems in the Malibu Civic Center Area (Basin Plan Amendment), and I/We further attest that I/We have read and understand the provisions of the Memorandum of Understanding (MOU) between the City of Malibu and the Regional Water Quality Control Board, Los Angeles Region and State Water Resources Control Board regarding phased implementation of the Basin Plan Amendment prohibiting Onsite Wastewater Disposal Systems in the Malibu Civic Center area (MOU). I/We further agree to abide by all requirements of both of these documents. Having read and fully understanding both documents, I/We hereby agree to hold harmless the City of Malibu for any matters relating to the Basin Plan Amendment or the MOU.

_____
_____
SIGNATURE DATE

ALL-PURPOSE ACKNOWLEDGMENT

Pursuant to Civil Code Section 1181

STATE OF CALIFORNIA
County of Los Angeles } SS

On _____, before me, Notary Public, personally appeared

_____, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under penalty of perjury under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
(Notary Public's signature in and for said County and State) (seal)

Section IV.H
Fixture Unit Worksheet

Onsite Wastewater Treatment System
Bedroom and Fixture Unit Worksheet

This worksheet shall be used to determine the existing fixture unit count and the proposed fixture unit count for all planned alterations to existing structures. Floor plans may be required to confirm both existing and proposed conditions. When a new OWTS system only is proposed, complete only the proposed column of the worksheet. The completed worksheet shall be certified by an Architect, Civil Engineer, Environmental Health Specialist, City of Malibu Registered Practitioner, or an "A", "C-42", "C-36" Licensed Contractor.

Date: _____ **Planning Division Reference Number:** _____

Applicant: _____ **Worksheet Certification by:**

Project Address: _____ _____
Print name Signature

Number of Bedrooms (Existing): _____

_____
Applicable California State License or Registration Type

Number of Bedrooms (Future): _____

_____
State License or Registration Number Expiration Date

Type of Plumbing Fixture	Existing Fixtures	+	Proposed Fixtures	=	Total Fixtures	x	Unit Value	=	Existing Fixture Units	Total Future Fixture Units
	"A"		"B"		"(A + B)"		"C"		"A x C"	"(A + B) x C"
Bathtub or Combination Bath/Shower		+		=		x	2	=		
Bidet		+		=		x	2	=		
Bar Sink		+		=		x	1	=		
Clothes Washer		+		=		x	3	=		
Dishwasher		+		=		x	2	=		
Laundry Sink		+		=		x	2	=		
Lavatory (Wash Basin)		+		=		x	1	=		
Kitchen Sink		+		=		x	2	=		
Shower (Single Head)		+		=		x	2	=		
Water Closet (Flush Toilet)		+		=		x	6	=		
Other (MPC Table 7-3)		+		=		x		=		
Other (MPC Table 7-3)		+		=		x		=		

TOTAL EXISTING FIXTURE UNITS

TOTAL FUTURE FIXTURE UNITS

Notes

*The fixture units listed on this form may not reflect the permitted number of fixture units on file with the City. Please consult with City staff to determine the approved number of fixture units for the building(s).

1. In completing this form, a room is considered a bedroom if it provides privacy, has an associated closet, and is in close proximity to a bathroom with bathtub and/or shower fixtures.
2. If an existing fixture is to be deleted from the project, indicate the fixture with a minus sign (-) next to the proposed fixture quantity in column "B".
3. For plumbing fixtures not shown in this table please refer to California Plumbing Code.