



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.

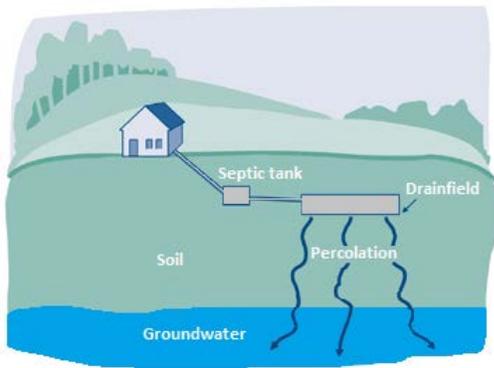


Illustration of a Conventional OWTS with leachfield

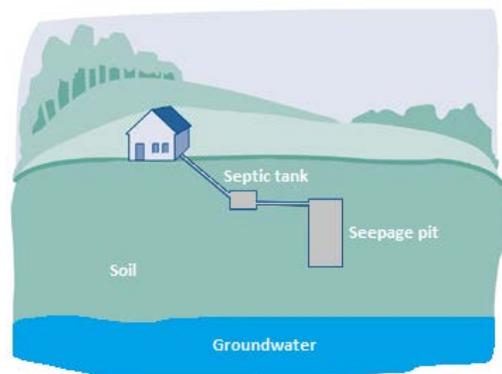


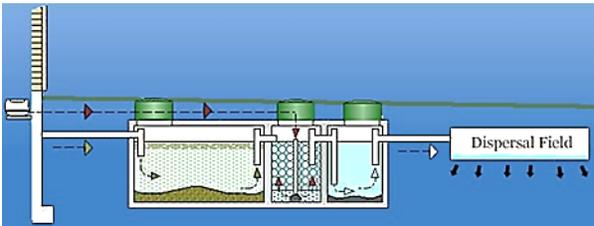
Illustration of a Conventional OWTS with seepage pit

Advanced Onsite Wastewater Treatment Systems

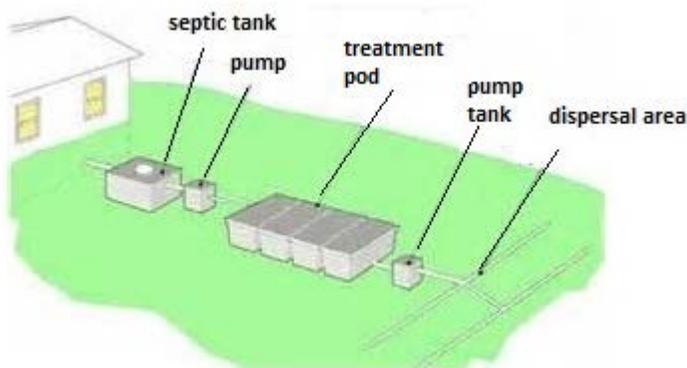
Advanced onsite wastewater treatment systems (AOWTS) are alternate systems that provide an enhanced level of wastewater treatment using secondary treatment and disinfection. AOWTS are required for development projects that utilize a new/replaced OWTS with any of the following attributes:

- 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 be 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 a 100% 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)

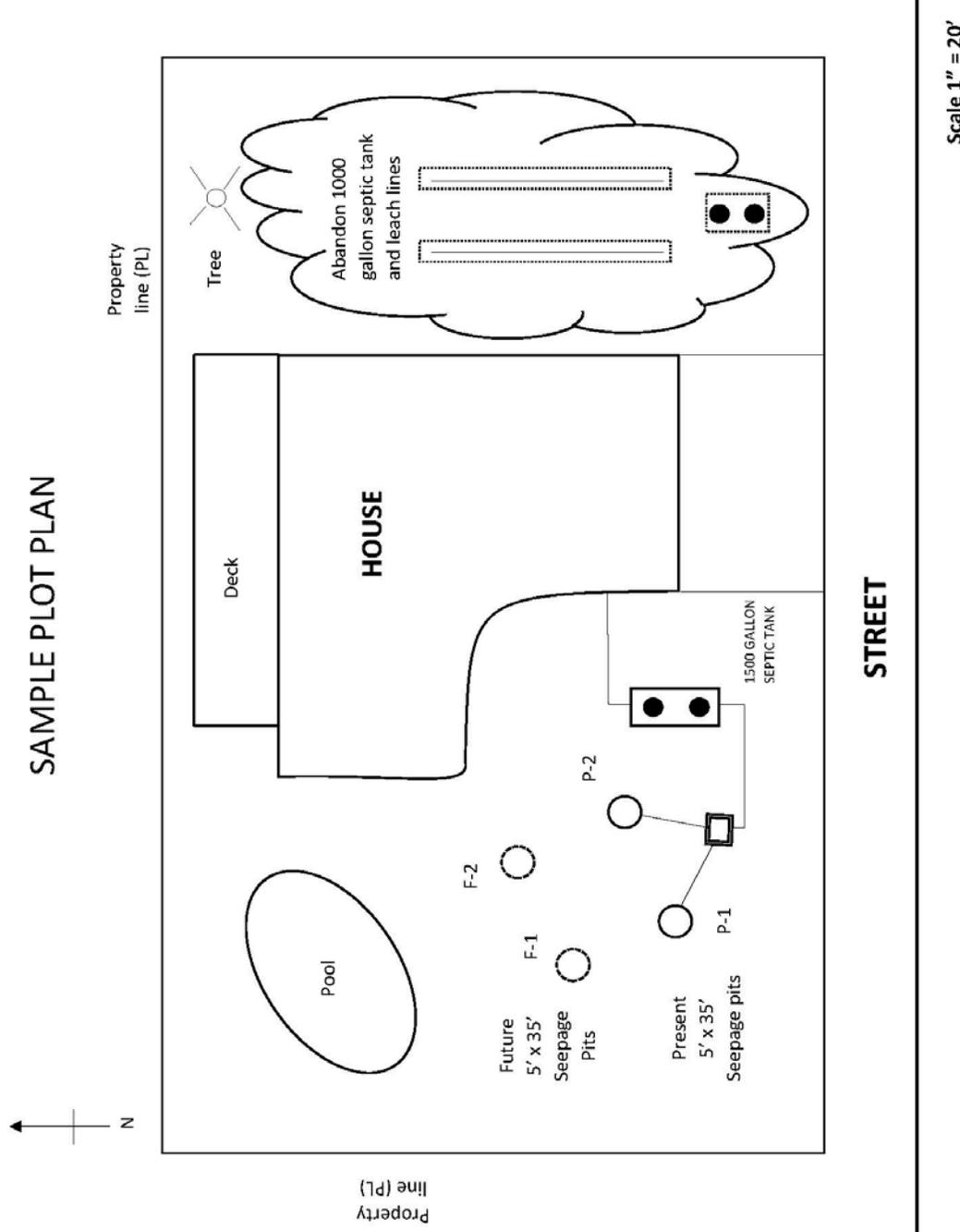
B. OWTS Plot Plan

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



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.

$$\text{Ryon Formula} \quad A = \frac{T+6.24}{29} \times \frac{C}{2}$$

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 Setback 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 two feet in diameter, and a minimum of 10 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 1½ 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 Malibu Municipal Code Chapter 15 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 Malibu Municipal Code Chapter 15. 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 1½ 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 eight 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 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 two 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 of record to verify conformance with the Wave Uprush Study recommendations. This approval shall be evidenced by the Coastal Engineering wet stamp and signature, and the City Coastal Engineering 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 OWTS 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 OWTS 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 OWTS 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 device is required to be waterproofed, the effective path of travel of the effluent dispersal at and below the shoreline protection device 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 OWTS Reduction in Setback Policy.



Section IV.C

Reduction in Setback Policy

Onsite Wastewater Treatment System Reduction in Setback Policy

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 H₂O 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.
- An 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/2017/2017_MalibuMOUandResolution. 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.

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"
Bathub 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.