

Preliminary Engineer's Report

Marshall Phase 2 Community Wastewater System Assessment District

Marin County, California

Prepared for:

Marin County, California

Prepared by:

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October 13, 2011

**MARSHALL PHASE 2
COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT
MARIN COUNTY, CALIFORNIA**

ENGINEER'S REPORT

Under

DIVISION 12, CALIFORNIA STREETS AND HIGHWAYS CODE

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**MARSHALL PHASE 2
COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT**

ASSESSMENT

WHEREAS, on _____, the Board of Supervisors of the County of Marin (the “County”), State of California, under the Municipal Improvement Act of 1913 (the “Act”), adopted its Resolution of Intention to Make Acquisitions and Improvements (the “Resolution”) for the acquisition and/or construction of the public improvements (the “Improvements”) more particularly therein described in and for the County’s Marshall Phase 2 Community Wastewater System Assessment District (the “Assessment District”);

WHEREAS, the Resolution of Intention directed the undersigned to make and file a report presenting a general description of any works and appliances already installed and any other property necessary or convenient for the operation of the Improvements, plans and specifications for the proposed construction, estimate of costs, maps and descriptions of lands and easements to be acquired, and diagram and assessment of and upon the subdivisions of land within the Assessment District, to which Resolution and the description of the Improvements therein contained reference is hereby made for further particulars;

NOW, THEREFORE, the following assessment is made to cover the portion of the estimated cost of the Improvements and the costs and expenses incidental thereto to be paid by the assessments:

SUMMARY COST ESTIMATE

	(1) As Preliminarily <u>Approved</u>	(2) As Confirmed <u>And Recorded</u>	(3) As Modified <u>After Recordation</u>
Cost of Construction	\$ 878,000	\$ _____	\$ _____
Cost of Acquisitions	\$ 55,000	\$ _____	\$ _____
Incidental Expenses	\$ 344,000	\$ _____	\$ _____
TOTAL COST	\$ <u>1,277,000</u>	\$ _____	\$ _____
Estimated Contributions	\$ (827,000)	\$ _____	\$ _____
Estimated Earnings on Improvement Fund	\$ 0	\$ _____	\$ _____
BALANCE TO ASSESSMENT	\$ 450,000	\$ _____	\$ _____

I do hereby assess and apportion the Balance to Assessment of the Total Cost of the Improvements upon the several lots, pieces or parcels or portions of lots or subdivisions of land liable therefore and specially benefited thereby, and hereinafter numbered to correspond with the numbers upon the attached Assessment Diagram, upon each, severally and respectively, in accordance with benefits to be received by such subdivisions, respectively, from the Improvements, and more particularly set forth in the list hereto attached and by reference made a part hereof.

The assessment is made upon the several subdivisions of land within the Assessment District in proportion to the estimated special benefits to be received by the subdivisions, respectively, from the Improvements. As required by the Act, an Assessment Diagram is hereto attached showing the Assessment District and also the boundaries and dimensions of the respective subdivisions of land within the Assessment District as the same existed at the time of

the passage of the Resolution, each of which subdivisions having been given a separate number upon the Assessment Diagram.

Each subdivision of land assessed is described in the within Assessment Roll by reference to its parcel number as shown on the Assessor's Maps of the County for the fiscal year 2011-2012 and includes all of such parcel excepting those portions thereof within existing public roads or right of way to be acquired in these proceedings for public road purposes. For a more particular description of said property, reference is hereby made to the deeds and maps on file and of record in the office of the County Recorder of the County.

Notice is hereby given that serial and/or term improvement bonds to represent unpaid assessments and bear interest at the rate of not to exceed twelve percent (12%) per annum, or such higher rate of interest as may be authorized by applicable law at the time of sale of such bonds, will be issued hereunder in the manner provided by Division 10 of the Streets and Highways Code, the Improvement Bond Act of 1915, and the last installment of such bonds shall mature not to exceed 39 years from the second day of September next succeeding 12 months from their date.

Under the Resolution, the requirements of Division 4 of the California Streets and Highways Code shall be satisfied with Part 7.5 of Division 4, for which the following is presented:

1. *The total amount, as near as can be determined, of the total principal amount of all unpaid special assessments and special assessments required or proposed to be levied under any completed or pending assessment proceedings, other than for the Assessment District is:*

\$ 0

2. *The total amount of the principal sum of the special assessments (the "Balance to Assessment") proposed to be levied for the Assessment District is:*

\$ 450,000

3. *The total amount of the principal sum of unpaid special assessments levied against the parcels proposed to be assessed, as computed pursuant 1. above, plus the principal amount of the special assessment proposed to be levied for the Assessment District under 2. above is:*

\$ 450,000

4. *The total true value, as near as may be determined, of the parcels of land and improvements which are proposed to be assessed in the Assessment District, as determined by the full cash value of the parcels as shown upon the last equalized assessment roll of the County is:*

\$ _____

Dated: _____

Norman N. Hantzsche
Engineer of Work

**MARSHALL PHASE 2
COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT**

**ASSESSMENT ROLL
County of Marin
State of California**

ASMNT #	ASSESSOR'S PARCEL NUMBER	ASSESSMENT (\$)	OWNER NAME
1	106-050-17	20,930.23	Shore, Elizabeth M Tr
2	106-050-15	20,930.23	Winglewich, Donald L & Bannan, Margaret L Tr
3	106-050-05	125,581.40	Konatich, Anna M & Anton D Tr
4	106-050-19	20,930.23	Bailey, Patrick J & Okura, Stacia R
5	106-050-14	20,930.23	Edwards, Charles T & Kristi L
6	106-050-04	20,930.23	Gregg, Allen Tr
7	106-301-01	20,930.23	Casassa, Ronald L
8	106-301-02	52,325.5 8	Maffucci, Eugene J Tr et al Franklin, Jim & Ginger Mazzei, Walter & Mary Enmark, Lloydine
9	106-301-03	20,930.23	Carlson, Mark P & Christie
10	106-301-04	20,930.23	Carlson, Joan E Tr
11	106-301-05	20,930.23	Evans, Robert J Tr
12	106-301-07	20,930.23	Radabaugh, Stanley A & Diane L Tr
13	106-301-08	-	Domer, Roger L & Joanne M Tr
14	106-301-09	20,930.23	Koehl, Martina M Tr
15	106-301-10	20,930.23	Dutton, Caroline Tr
16	106-301-11	-	Aviel, Simon D & JoAnn B Tr
17	106-302-01	20,930.23	Magee, Tony & Carissa Brader
18	106-302-02	-	Le, My T
19	106-302-03	-	Emme, Linda
20	106-302-04	-	Emme, Linda
TOTAL ASSESSMENT		450,000.00	

**MARSHALL PHASE 2
COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT**

**NAMES AND ADDRESSES OF PROPERTY OWNERS
County of Marin
State of California**

ASMNT #	ASSESSOR'S PARCEL NUMBER	OWNER NAME	MAILING ADDRESS
1	106-050-17	Shore, Elizabeth M Tr	P.O. BOX 2748 SAN ANSELMO, CA 94979
2	106-050-15	Winglewich, Donald L & Bannan, Margaret L Tr	P.O. BOX 791 MARSHALL, CA 94940
3	106-010-05	Konatich, Anna M & Anton D Tr	P.O. BOX 242 POINT REYES STATION, CA 94956
4	106-050-19	Bailey, Patrick J & Okura, Stacia R	19020 ST RTE 1 MARSHALL, CA 94940
5	106-050-14	Edwards, Charles T & Kristi L	P.O. BOX 641 POINT REYES STATION, CA 94956
6	106-050-04	Gregg, Allen Tr	P.O. BOX 792 MARSHALL, CA 94940
7	106-301-01	Casassa, Ronald L	P.O. BOX 823 MARSHALL, CA 94940
8	106-301-02	Maffucci, Eugene J Tr et al Franklin, Jim & Ginger Mazzei, Walter & Mary Enmark, Lloydine	P.O. BOX 755 MARSHALL, CA 94940
9	106-301-03	Carlson, Mark P & Christie	P.O. BOX 2471 SAN FRANCISCO, CA 94126
10	106-301-04	Carlson, Joan E Tr	PO BOX 809 MARSHALL, CA 94940
11	106-301-05	Evans, Robert J Tr	P.O. BOX 788 MARSHALL, CA 94940
12	106-301-07	Radabaugh, Stanley A & Diane L Tr	P.O. BOX 816 MARSHALL, CA 94940
13	106-301-08	Domer, Roger L & Joanne M Tr	61 SAN RAFAEL AVE SAN ANSELMO, CA 94960
14	106-301-09	Koehl, Martina M Tr	602 ALAMEDA DE LAS PULGAS BELMONT, CA 94002
15	106-301-10	Dutton, Caroline Tr	980 CORBETT AVE SAN FRANCISCO, CA 94131
16	106-301-11	Aviel, Simon D & JoAnn B Tr	3199 GREENOAK CT SAN MATEO, CA 94403
17	106-302-01	Magee, Tony & Carissa Brader	P.O. BOX 575 POINT REYES STATION, CA 94956
18	106-302-02	Le, My T	18140 ST RTE 1 MARSHALL, CA 94940
19	106-302-03	Emme, Linda	P.O. BOX 708 MARSHALL, CA 94940
20	106-302-04	Emme, Linda	P.O. BOX 708 MARSHALL, CA 94940

MARSHALL PHASE 2 COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT

METHOD OF ASSESSMENT

GENERAL

Formation of the Assessment District provides the mechanism necessary to improve existing wastewater treatment and disposal systems for the community of Marshall for protection of public health and water quality of Tomales Bay. This is the second phase of wastewater facility improvements in the Marshall area. The first phase, covering improvements for the area known as the Marshall Mile, was completed in 2008. The proposed improvements for the Phase 2 area, similar to those already completed for Phase 1, will provide general benefits to the population of Marin County and other visitors to the Tomales Bay area, and will provide special benefits to the property owners within boundaries of the District. The District provides a mechanism for financing the costs of the special benefits. Grant contributions from the U.S. Environmental Protection Agency (EPA) and the California State Water Resources Control Board (SWRCB) provide funding for the general benefit contribution.

The proposed District is being formed under the authority of the Municipal Improvement Act of 1913, which requires that local agencies levy assessments according to the special benefit. The costs and expenses of the proposed improvements will be apportioned against the properties according to a formula that distributes the costs equitably in direct proportion to the estimated special benefits these parcels receive from the improvements.

BENEFIT

Considerations from Proposition 218

In November 1996, the voters of California approved Proposition 218, which added Articles XIII C and XIII D to the California State Constitution regarding new procedures and requirements for all assessments. With the enactment of these changes, the process for assessment district formation is as follows:

- Step 1. The local government determines whether property owners would receive a “special benefit” from the project or service to be financed by the assessment. “Special benefit” means “particular and distinct benefit over and above general benefits conferred on real property located in the district or the general public at large.” General enhancement of property value is not considered to be a “special benefit.”
- Step 2. Local government must use a professional engineer’s report to estimate the amount of special benefit landowners would receive from the project or service.
- Step 3. The local government must set individual assessment charges so that no property owner pays more than his or her proportional share of the total cost. This may require the local government to set assessment rates on a parcel-by-parcel basis.

- Step 4. Local governments must mail information regarding assessments to all property owners. Each assessment notice must contain a mail-in ballot for the property owner to indicate his or her approval or disapproval of the assessment.
- Step 5. After mailing the notices, the local government must hold a public hearing. At the conclusion of the public hearing the ballots must be tabulated, weighing them in proportion to the amount of the assessment each property owner would pay. For example, if property owner A would pay twice as much as property owner B, property owner A's vote would "count" twice as much as property owner B. The assessment may be imposed only if 50 percent or more of the weighted ballots support the assessment.

The State Constitution does not specify the method or formula that should be used to apportion the costs to properties in any special assessment district proceeding. That responsibility rests with the Assessment Engineer, who recommends the apportionment of costs based on an analysis of the special benefit to be received by each parcel from the proposed improvements.

The approval of the assessments rests with the Board of Supervisors, who makes their decision after hearing all testimony and evidence presented at a public hearing and reviewing the results of the assessment balloting process. If the majority of the assessment ballots submitted, weighted by assessment amount, are in opposition to the levy of the assessments, then the proceedings must be abandoned. If the majority of the assessment ballots submitted, weighted by the amount, are in support of the levy of the assessments, the Board of Supervisors may make the final determination on whether or not the assessment spread has been made in direct proportion to the estimated special benefits received by each parcel and they may form the District and levy the special assessment against the parcels therein.

Facilities Providing General Benefit

The community wastewater collection and treatment/disposal facilities to be constructed under the proposed project will provide general benefit as well as special benefit to the property owners within the District. General benefits will be in the form of improved water quality in Tomales Bay and reduction in the threat of bacterial contamination of recreational waters and shellfish harvesting areas in the project vicinity.

Tomales Bay is an impaired water body for pathogen levels (bacteria) and has been listed as such in accordance with Section 303(d) of the Federal Clean Water Act. Faulty onsite wastewater systems, especially for properties along the shoreline, have been identified as one of the potential sources contributing to the water quality impairment (San Francisco Bay RWQCB, "Pathogens in Tomales Bay Watershed - Total Maximum Daily Load". Basin Plan Amendment and Staff Report, July 2005). The proposed wastewater facility improvements have been developed specifically to reduce the bacterial contribution to Tomales Bay from onsite wastewater systems in the Marshall area, which will be of general benefit to the natural environment and to the local and general public who use and enjoy Tomales Bay for contact and non-contact recreation and for the shellfish grown and harvested in the area.

A specific methodology is not available for assigning financial value to the general public trust benefits provided by the project improvements. However, the grant funds, totaling an estimated \$827,000 contributed by the public agencies (EPA and SWRCB) for the planning and implementation of the project provide a reasonable measure of the public trust benefit that will be derived from the proposed wastewater improvements. The grants have been offered by the public agencies to offset a portion of the project costs because of the overall value provided by

the project. Accordingly, for the purposes of these proceedings, the value of the general benefits afforded by the project is estimated to be approximately \$830,000.

Facilities Providing Unique Special Benefit

The property owners within the Marshall Phase 2 Community Wastewater System project area will receive unique and special benefit from the proposed wastewater facility improvements. This benefit will be in the form of new collection piping and community wastewater treatment and disposal facilities to replace existing individual onsite wastewater systems.

The existing onsite wastewater systems are a source of public health and water quality concern due to: (a) their very close proximity to Tomales Bay and its sensitive shellfish resources; (b) the lack of suitable soil conditions and area for reasonable onsite upgrade and replacement; and, (c) evidence from sanitary surveys indicating past and continuing potential for system failures.

The proposed community wastewater system has been developed to provide an alternative to the continued use and maintenance of the existing onsite systems. The proposed community system will be effective in addressing public health and water quality concerns and will afford the individual property owners with sanitary facilities that comply with current state and local standards, as well as new requirements expected to be implemented statewide in the near future (commonly referred to as AB 885 regulations). The wastewater facility improvements will allow property owners to abandon existing onsite disposal wastewater systems (i.e., leachfields) and potentially to utilize the affected land area for other purposes. Also, once connected to the community wastewater system, property owners will be able to undertake home remodeling projects and potentially building additions that, under current policies, would not be possible without wastewater improvements comparable to those that will be provided by the proposed project. All of the above are unique and special benefits offered to the property owners within the Assessment District.

The estimated value of these unique and special benefits is \$450,000, or those project costs not covered by grants.

APPORTIONMENT FORMULA

Method for Allocating Costs

The wastewater system improvements for the proposed project fall into two major categories, On-lot Facilities and Common Facilities. The On-lot Facilities include the individual septic tanks, pumping systems, and pressure laterals that will provide primary sewage treatment and conveyance of septic tank effluent to the community wastewater collection system. The Common Facilities component of the project includes new wastewater collection piping throughout the Phase 2 area to connecting to the Phase 1 community wastewater site, along with improvements to the existing Phase 1 community wastewater system. The improvements to the existing wastewater facilities would include expansion of the system capacity to accommodate Phase 2 properties, through either: (a) installation of additional leaching trenches; or (b) addition of a secondary treatment system to improve the level of effluent quality, thereby increasing the effective capacity of the existing leachfield.

The On-lot Facilities under the project differ from one property to the next due to the particular location, type of property, existing septic system conditions and other factors. These facilities

will be financed by a combination of grant funds and, in some cases, from direct expenditures by individual property owners.

The Common Facilities will be financed by the Assessment District. The size and cost of the community collection and treatment/disposal facilities that comprise the Common Facilities are proportional to the amount of wastewater flow. All of the properties served by the system will utilize the same collection piping system that is sized to accommodate the expected peak flow generated by the properties in the service area. Similarly, the pumps, piping, treatment components, and leachfield that make up the community wastewater system are also sized to accommodate the expected peak wastewater flow from all of the contributing properties in the service area.

The wastewater design flows for the project were developed utilizing criteria contained in Marin County Sewage Disposal Regulations, pursuant to Code Chapter 18.06, in combination with other applicable sanitary engineering standards of practice. Marin County regulations include specific wastewater flow criteria for residential occupancies based on bedroom count along with a separate table of sewage flow estimation guidelines for non-residential buildings or activities.

Residential Properties. Under Marin County regulations, the number of bedrooms in a dwelling are used as the basis for estimating sewage flows and, in turn, sizing the wastewater disposal system. For wastewater system repair and replacement projects such as the proposed project, a unit flow value of 105 gallons per day (gpd) per bedroom is normally assigned to each bedroom to estimate the total flow. For the Marshall Phase 1 Community Wastewater system, a total bedroom count was determined for the entire service area, and then divided by the number of residential properties to arrive at an average value of 240 gpd per residential connection. This was found to compare favorably with typical residential sewage flow criteria used for sizing municipal wastewater systems, and was adopted as the standard flow criterion for all residential connections in the project service area. The same flow criterion of 240 gpd per residential connection will be applied to the Marshall Phase 2 project. Although it is known that residences in the service area vary somewhat in the number of bedrooms, it was determined that the homes are all relatively similar in size and character, typically 2 to 3 bedrooms each. Therefore, no attempt was made to undertake a house-by-house bedroom count to further differentiate the expected wastewater flow from each particular residence.

Based on the wastewater flow analysis, all residential properties are considered to receive unique and special benefits from the project to an equal degree, and therefore are assigned an equal assessment amount. Since the project is comprised predominantly of single-family residences, this uniform assessment amount was adopted as the base unit for the Assessment District, termed Equivalent Single Family Dwelling Unit, or ESD.

Multi-Residential Properties. There are two multi-residential parcels in the proposed Assessment District as discussed below.

- **APN 106-050-17.** This parcel zoned multi-family has two one-bedroom rental units. The total wastewater flow generated by these two units is judged to be equivalent to that from a 2 to 3-bedroom single family residence. Therefore, an equivalent assessment of 1.0 ESD would be appropriate for this parcel.

Recommendation: 1.0 ESD

- **APN 106-301-02.** This is an approximately 16,000-square foot parcel with five small residential structures and a workshop. The land is owned in common by several

different parties, and the buildings are owned independently. The approximate size and uses of the buildings are as follows:

- Building #1 - 800 ft² Primary Residence
- Building #2 - 400 ft² Second Unit (1 bedroom)
- Building #3 - 400 ft² Workshop
- Building #4 – 750 ft² Cottage (intermittent occupancy)
- Building #5 – 600 ft² Cottage (intermittent occupancy)
- Building #6 – 400 ft² Cottage (intermittent occupancy)

For purposes of wastewater facility improvements, the recommended design approach is for the buildings to be served by a common/cluster septic tank and effluent pumping system. The system will also incorporate flow equalization to spread-out the wastewater fluctuations that result from the periodic use of the three intermittently occupied cottages. For assessment purposes, Buildings #1, #2 and #3 (all under one ownership) can be treated the same as a single family residence, with an assessment of 1.0 ESD. The three intermittent-use cottages (Buildings #4, #5 and #6) are estimated to generate the wastewater flow equivalent to approximately half that of a single family residence, which would warrant an assessment of 0.5 ESDs per building, or 1.5 ESDs for the three buildings total. For comparison, in the Marshall Phase 1 project, an assessment of 0.5 ESDs was applied to the Harbor Master's cottage at the Marshall Boat Works. These three buildings are judged to be similar in size and, although they are known to be used very infrequently, they have the potential to generate wastewater flows of a similar volume periods during periods of occupancy. The total recommended assessment for the combined uses on this parcel is 2.5 ESDs.

Recommendation: 2.5 ESDs

Non-Residential Properties. The only non-residential property in the proposed Assessment District is Tony's Seafood Restaurant (**APN 106-050-05**), which has mixed uses. These uses include three small residences plus a restaurant, which operates only on weekends and holidays. Because of the intermittent and mixed uses on this property, the wastewater flows fluctuate daily and seasonally. The approach used to determine an appropriate assessment for this parcel was based on examining water use records for the facility. The water supply for the property is from a small public water system, which is monitored in accordance with State and County requirements. Water use records obtained for the 2010 calendar year showed the following:

- Maximum Day Water Use: 3,462 gallons
- Maximum Monthly Water Use (June): 45,616 gallons
- Total Annual Water Use: 389,500 gallons

The wastewater feasibility analysis for the Marshall Phase 2 wastewater project recognized that the intermittent restaurant activities at Tony's favor the installation of a flow equalization tank and pumping system to spread the weekend wastewater flows more evenly throughout the entire week, rather than to design for the peak daily (weekend) flow condition. Based on this proposed design approach, the maximum monthly water use data above provide the best gauge of expected wastewater flow from this property. Wastewater flow represents only a portion of total water use, since water used for irrigation, window washing and other outside uses does not end up as part of the wastewater flow. The percentage can range widely from 50 percent to more than 90 percent, depending on such things as the amount of irrigation uses and the time of year. At Tony's, landscape irrigation and other exterior water use activities are

very limited, and to be conservative (safe) we have estimated wastewater flow to represent potentially 95% of total water use. Therefore, using the 2010 water use data we have estimated the daily wastewater flow for Tony's during the maximum use period to be as follows:

- Ave Daily Wastewater Flow, Max Month = $(45,616 \text{ gal}/30 \text{ days}) \times (0.95) = \underline{1,445 \text{ gpd}}$

This daily wastewater flow is approximately equal to the combined flow from six (6) single family dwellings at 240 gpd per ESD. Therefore, the recommended assessment for this parcel is 6.0 ESDs

Recommendation: 6.0 ESDs

Exempt Properties. Several properties within the boundaries of the Assessment District will not be served by the proposed community wastewater improvements. These include: (a) two properties, located on the inland side of State Route 1, which will continue to utilize their own present onsite wastewater treatment and disposal systems; and (b) three undeveloped parcels. Because these properties will receive no unique and special benefit from the proposed wastewater system improvements, these properties will be considered "exempt" and will be assigned an assessment value of 0.0 ESDs. The parcels in this assessment category are:

APN 106-301-08
APN 106-301-11
APN 106-302-02
APN 106-302-03
APN 106-302-04

Basic Assessment Formula

For properties in the District the basic assessment formula is calculated as follows:

$$\text{Cost per ESD} = \text{Balance to Assessment} / \text{Total ESDs}$$

$$\text{Assessment per Parcel} = \text{ESDs per parcel} \times \text{Cost per ESD}$$

MARSHALL PHASE 2 COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT

DESCRIPTION OF IMPROVEMENTS AND PLANS AND SPECIFICATIONS

The Wastewater System Improvements for the Marshall Phase 2 Community Wastewater Project fall into two major categories, On-lot Facilities and Common Facilities, which are summarized below.

ON-LOT FACILITIES

The On-lot Facilities component of the project includes individual septic tanks, pumping systems, and pressure laterals that will provide primary sewage treatment and conveyance of septic tank effluent to the community wastewater collection system, which leads to the community wastewater treatment and disposal site.

- **Septic Tanks.** Watertight septic tanks will be required for each building or property. In some cases existing septic tanks will be retained and upgraded, and in other cases new tanks will be installed. All tanks will be equipped with watertight access risers.
- **STEP Units.** All properties will include a Septic Tank Effluent Pump (STEP) unit. The STEP unit includes a submersible effluent pump installed in a separate chamber following the septic tank or in the second compartment of the septic tank, along with associated electrical controls and float-activated switches. The STEP unit allows pumping of primary treated effluent to the common force main (see below) via a 1.25-inch diameter pressure lateral. The one commercial site, Tony's Seafood Restaurant, and one multi-residential property (APN 106-301-02), will each have a cluster STEP unit serving multiple buildings on the respective property. These cluster STEP units will include a duplex (two) pump system.

COMMON FACILITIES

The Common Facilities component of the project includes wastewater collection piping to convey septic tank effluent for tie-in to the existing community wastewater system; and (b) expansion of the capacity of the existing community wastewater system through either installation of additional leaching trenches or addition of a secondary treatment system.

- **Effluent Force Main.** Septic tank effluent from on-lot facilities will be collected in a small diameter effluent sewer force main. The force main will be about one-mile long, extending the full length of the Phase 2 Service Area, and will be installed within State Route 1 right-of-way along the west side of the roadway. The force main will consist of about 200 lineal feet of 2-inch diameter pipe, and approximately 5,100 lineal feet of 3-inch diameter pipe. It will be a continuous collection network leading from the STEP connection at each property to the community wastewater site.
- **Expand Existing Community System Capacity.** The wastewater flow from the Phase 2 area will be combined with the flow from the Phase 1 area for final treatment and disposal at the existing Marshall Community Wastewater system. The capacity of the existing system

will be expanded by one of two methods to accommodate the Phase 2 service area, as follows:

- **Leachfield Expansion.** For the leachfield expansion approach: (a) the existing lift station would be upgraded with the addition of a 5,000-gallon emergency storage tank; and (b) the existing pressure distribution leachfield would be expanded by adding approximately 1,725 lineal feet of trench, increase the capacity about 65%.

or,

- **New Secondary Treatment System.** For the secondary treatment approach, a new wastewater treatment system, consisting of an AdvanTex recirculating textile filter, would be installed to provide secondary level of treatment for the entire wastewater flow from both the Phase 1 and Phase 2 service areas. The treatment system is comprised of a series of fiberglass tanks containing textile filtration media, recirculation tank, piping pumps, and controls. The recirculation tank would consist of a 15,000-gallon buried tank and would also provide flow equalization to even-out the incoming wastewater load. No changes or additions to the existing leachfield system would be required with this approach because of the higher (secondary) level of treatment that would be provided prior to discharge to the soil.
- **Phase 1 Buy-in.** Connecting the Phase 2 service area to the existing Phase 1 community wastewater system will result in the Phase 2 area benefitting from certain improvements previously constructed and paid for as part of the Phase 1 wastewater project. These improvements include the acquisition of the land, the installation of the main lift station, piping, leachfield, control systems, fencing and appurtenances, and related implementation costs. Part of the Phase 2 project costs include the calculated pro-rata share of the costs for these existing improvements.

Reference is hereby made to the Feasibility Report – Marshall Phase 2 Wastewater Study for said assessments proceedings on file in the office of the Environmental Health Services Division of the County of Marin, said Feasibility Report being too bulky to be bound with this Engineer's Report.

**MARSHALL PHASE 2
COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT**

ASSESSMENT DIAGRAM

Reference is hereby made to the Assessment Diagram in and for said assessments proceedings on file in the office of the Environmental Health Services Division of the County of Marin, said Assessment Diagram being too bulky to be bound with this Engineer's Report.

**MARSHALL PHASE 2
COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT**

ANNUAL ADMINISTRATIVE ASSESSMENT

A proposed maximum annual administrative assessment shall be levied on each parcel of land and subdivision of land within the Assessment District to pay for necessary costs and expenses incurred by the District, and not otherwise reimbursed, resulting from the administration and collection of assessments, from the administration or registration of any bonds and reserve or other related funds, or both. The maximum assessment is authorized pursuant to the provisions of Section 10204(f) of the Act to not exceed one percent (1.0%) of the assessment originally levied. The exact amount of the administration charge will be established each year by the County Administrator. This annual assessment shall be in addition to any fee charged pursuant to Section 8682 and 8682.1 of the Streets and Highway Code.

The annual administrative assessment will be collected in the same manner and in the same installments as the assessment levied to pay for the cost of the works of improvement.

**MARSHALL PHASE 2
COMMUNITY WASTEWATER SYSTEM ASSESSMENT DISTRICT**

CERTIFICATES

1. On _____, 20__, the Assessment and Assessment Roll in this Engineer's Report, in the amounts set forth in Columns (1) of each, with the Assessment Diagram attached, was filed with me.

Clerk of the Board of Supervisors

2. On _____, 20__, by Resolution No. _____, the Assessment in this Engineer's Report, in the amounts set forth in Column (2) and the Assessment Diagram attached were confirmed and approved by the Board of Supervisors of the County of Marin.

Clerk of the Board of Supervisors

3. On _____, 20__, the Assessment in this Engineer's Report and the Assessment Diagram attached, all as confirmed and approved by the Board of Supervisors of the County of Marin were recorded in the office of the Director of the Community Development Agency of the County of Marin.

Clerk of the Board of Supervisors

4. On _____, 20__, A Notice of Assessment was recorded and the Assessment Diagram was filed in the office of the County Recorder of the County.

Clerk of the Board of Supervisors

5. On _____, 20__, a certified copy of the Assessment and Assessment Diagram were recorded in the Office of the Director of the Community Development Agency of the County of Marin.

Clerk of the County of Marin