

TECHNICAL MEMORANDUM

TO: CUI Family Trust

FROM: Ian M. Cole, PE
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PROJECT: PRS CUI Family Subdivision, Preliminary Onsite Wastewater System Design
Marin County, California

DATE: December 12, 2024

Introduction and Purpose

CUI Family Trust is proposing a Tentative Tract Map (TTM) to develop the approximately 82.3-acre site referred to as the PRS CUI Family Subdivision (PRS Subdivision). The PRS Subdivision is located adjacent to the unincorporated town of Point Reyes Station, California. It is bound by Point Reyes–Petaluma Road to the south, Highway 1 to the west, rural residential properties to the north, and open pasture to the east (Project Area). The Project Area consists of four contiguous parcels identified as Assessor Parcel Numbers (APNs) 119-050-04, 119-050-05, 119-140-03, and 119-140-09. The majority of the Project Area is undeveloped and consists of pasture.

The TTM represents a residential community comprised of 37 single-family residential homes. The wastewater generated by the proposed development will be managed by individual onsite wastewater systems (OWSs). This technical memorandum includes a summary of the steps needed to determine the feasibility of installing OWSs on each proposed lot, an overview of the preliminary OWS design, and an analysis of the estimated wastewater flows generated by the proposed project.

Soils Testing Plan and Coordination

As of the submission of the initial TTM application, a soil profile study and percolation testing has yet to be formally conducted. A soil profile study will be scheduled after comments from the County have been received on the initial TTM application submittal. This will help to ensure that the test locations are conducted in the most relevant locations in the Project Area, which will help both with the accuracy of the results and with the speed of the overall project. Upon completion of the soil profile study, the results along with a plan for completing percolation testing will be submitted to the County for review. The plan may recommend a reduced number of percolation tests than what is typically required based on evidence that the soils in certain areas of the Project Area are similar. The work will be done in accordance with Section 500 of the County Standard System Regulations.

Wastewater Application Rate Assumptions

Based on the results of recent informal soils testing, along with data collected from the U.S. Department of Agriculture Soil Conservation Service, the soils within the Project Area are predominantly loam, clay loam and clay underlain by weathered and fractured sandstone. Given the potential for encountering a low permeable soil such as clay at the site, a conservative wastewater soil application rate of 0.2 gallons per day (gpd) per square feet (sf) was used determine the preliminary sizes of the OWS dispersal areas.

Based on the preliminary design, certain proposed lots were found to not have sufficient area to support a primary and replacement area sized based on the wastewater soil application rate of 0.2 gpd/sf. It is anticipated that this will be resolved in the next TTM application submittal and after formal soils testing has been completed.

Estimated Wastewater Flow and Absorption Area

In accordance with the County's requirements, the design flow for residential buildings is 150 gpd per bedroom, with a 30 percent reduction available if low flow plumbing fixtures are installed. For the proposed development, NexGen has applied this design flow and accounted for the 30 percent reduction where low-flow fixtures are utilized.

The development includes both affordable housing and regular homes. There are five affordable housing lots, each with three bedrooms, while the remaining lots each contain four bedrooms. Based on the design flow calculations and the 30 percent reduction:

- For the affordable housing lots, the absorption area is calculated to be 1,575 square feet per lot.
- For the regular housing lots, the absorption area is 2,100 square feet per lot.
- The preliminary sizing of the primary and replacement dispersal areas on the site is based on these calculations.

Cumulative Impact Assessment and Groundwater Monitoring

Since the PRS Subdivision is proposing to subdivide the property into more than three lots, a cumulative impact assessment will be required in accordance with Section 807 of the County Alternative System Regulations. The purpose of the assessment is to identify the potential cumulative impacts that could result from the installation of the OWSs. It is anticipated that the cumulative impact assessment will include groundwater mounding and nitrogen loading analyses.

The groundwater mounding analysis will require wet weather groundwater testing. This will be accomplished by installing monitoring wells at specified locations in the Project Area. The monitoring will be conducted throughout the wet season and will continue for the duration of the season or longer if unusually heavy spring rainfall occurs. The data collected will provide critical information on groundwater levels and help ensure that the design accommodates any changes during this period.