



UNITED AUBURN INDIAN COMMUNITY TRIBAL SCHOOL SANITARY SEWER STUDY

Prepared For: UAIC

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I. INTRODUCTION

As part of the proposed UAIC School project a new six inch (6") sanitary sewer is being proposed to serve the site and connect to the existing South Placer Municipal Utility District Standard sewer system south west of the site.

This report has been prepared to calculate the sanitary sewer flows generated from the proposed UAIC site and to determine if there is sufficient capacity in the existing six inch (6") South Placer Municipal Utility District sanitary sewer downstream of the UAIC site to serve the subject property

II. Design Criteria

The design criteria as found in the South Placer Municipal Utility District Standard Specification and Improvement Standards for Sanitary Sewers approved and ordered effected on November 13, 2009 was used to determine flows from the service areas.

III. Service Areas

The overall service area used for this report showing the sewer system affected by the proposed school site was derived from the SPMUD facility maps. A Copy of the shed map is enclosed with this report (Figure 1)

Service Area 1: UAIC School Site.

The proposed school site is planned as an elementary school campus with a community educational and cultural center. The anticipated population of the school is comprised of approximately 100 elementary students and 75 adults/staff.

For the purposes of these calculations a capita of 250 was used to account for the special events and to ensure flows used in the calculations will be higher than normal, daily use.

Service Area 2: Existing Lemos Ranch Subdivision

The existing Lemos Ranch Subdivision, located west of the proposed UAIC school site consists of 55 single family detached residential units and is being served by a six inch (6") sanitary sewer.

Service Area 3: Existing Residential South

There are currently 22 existing residential lots, located south of the proposed UAIC school site served by the existing sanitary sewer downstream of the school site. In accordance with current law each of the residential lots is allowed 2 units. For the purposes of the calculations 2 units per lot were assumed resulting in 44 single family detached residential units. The area is currently being served by a six inch (6") sanitary sewer.

Service Area 4: Existing Lot West of Lemos Ranch

There is a six inch (6") sewer line stubbed to the North end of the lot thru the Lemos Ranch Subdivision. The 6.3 acre lot is zoned general commercial and there is a single family detached home located on the property with a detached garage and separate structure used for fruit and vegetable sales.

If the 6.3 acre lot were to be developed under the general commercial zoning the existing six inch (6") sewer line would not be adequate. This is true for almost all of the six inch (6") in Lemos Ranch Subdivision and all the subsequent sewer lines downstream of Lemos Ranch. As the sewer stub and sewer line in Lemos Ranch subdivision is only six inch (6") main, it is assumed that the stub to the north end of the lot was only intended for the existing residential home. The calculations within this report assume 2 residential units (one for the main house and 1 for the sales building) from the existing lot West of Lemos Ranch and that an alternate sewer service will have to be developed for the lot should it redevelop as a commercial project.

IV. Conclusion

The calculations found in Appendix A show that the existing six inch (6") sanitary sewer downstream of the proposed UAIC school site has adequate capacity to serve the proposed school site.

Figure 1 – Sanitary Sewer Shed Map

APPENDIX A – Sanitary Sewer Capacity Calculations



Appendix A
UAIC Sewer Calculations:

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The following calculation is completed in accordance with Section 3 of the SPMUD Standard Specifications & Improvement Standards for Sanitary Sewer, dated November 13, 2009. Refer to Figure 1 for the layout of the sewer shed area. This map includes SPMUD manhole numbering and locations.

Average Daily Flow Calculations

Area 1 - UAIC

Per SPUD Standards for an elementary school development, calculate total flow as 25 gal/capita/day.

Total Capita= 250 People
Average Flow = 250 people x 25 gal/capita/day = **6,250 gal per day** or 0.006 MGD

Area 2-Existing Lemos Ranch Subdivision

Per SPMUD Standards for Single Family Residential, calculate average flow as 100 gal per person per day. Assume 4 people per unit.

Total units= 55 units
Average Flow = 55 Units x 4 People/unit x 100 gal/person/day = **22,000 gal per day** or 0.022 MGD

Area 3-Existing Residential South of UAIC

Per SPMUD Standards for Single Family Residential, calculate average flow as 100 gal per person per day. Assume 4 people per unit. Zoning for the area allows 2 units per lot.

Total units= 22 lots x 2 units per lot= 44 units
Average Flow = 44 Units x 4 People/unit x 100 gal/person/day = **17,600 gal per day** or 0.018 MGD

Area 4 - Single Family Residence West of Lemos Ranch

Per SPMUD Standards for Single Family Residential, calculate average flow as 100 gal per person per day. Assume 4 people per unit. There is an existing residence and outbuilding on the lot, assume 2 units per lot.

Total units= 1 lot x 2 units per lot= 2 units
Average Flow = 2 Units x 4 People/unit x 100 gal/person/day = **800 gal per day** or 0.001 MGD

Peak Flow Calculations

Allowable 6" sanitary sewer pipe capacity per Section 3 of the SPMUD Standard Specifications & Improvement Standards for Sanitary Sewer, dated November 13, 2009. 0.220 MGD

Existing flow in 6" sewer at manhole # N14-010 from existing Areas 2, 3 & 4

Average Flow = 0.040 MGD
Peaking Factor from SPMUD Std. Dwg. No. 2 = 3.7
Existing Peak Flow at manhole # N14-010 (Areas 2 thru 4 only) **0.149 MGD**

Proposed flow in 6" sewer leaving project site from project site Area 1 only

Average Flow = 0.006 MGD
Peaking Factor from SPMUD Std. Dwg. No. 2 = 4.0
Proposed Peak Flow leaving project site (Area 1 only) **0.025 MGD**

Combined flow (Existing Area 2 thru 4 & project site Area 1) in 6" sewer at manhole # N14-010

Average Flow = 0.047 MGD
Peaking Factor from SPMUD Std. Dwg. No. 2 = 3.7
Combined Peak Flow at manhole # N14-010 (Areas 1 thru 4) **0.173 MGD** < 0.22 MGD