Technical Memorandum Name: **Low Pressure Collection System, January 2008**
Commenter: **K. Wimer**
Comments Date: **February 14, 2008**
Responses Date: **Revised July 29, 2008**

The following comments were submitted in response to the above listed Technical Memorandum (TM). The TM was developed as part of the EIR process for the project, in order to help facilitate and broaden the discussion of project issues important to the community. The responses should be considered preliminary because the EIR process is not complete, and the information necessary to fully respond has not yet been developed. The project team is grateful to those citizens who took the time to review the TM and provide comments at this early stage in the process. The project team will endeavor to fully address the comments and concerns through the on-going project development process.

	Comment	Response
1	Page 19-6.0 Alternatives Analysis and 7.0 Summary—This TM suggests that future determinations regarding the hydraulics of a STEP/STEG system may add to STEP/STEG costs, and it uses Fine Screening cost estimates, including estimates for treatment and O&M, to make cost comparisons between the LPCS system and other systems. Further, it continues to point out that a combination gravity-low-pressure system is the most practical for Los Osos.	The design-build proposals will provide contractual commitments related to the total cost of construction of the collection system alternatives. The summary concludes that a hybrid gravity-low pressure system may be more practical than a dedicated low pressure system in Los Osos.
2	1) Since the number of pumps for a STEP/STEG system will more-than-likely go down, with 70% STEG units per the last project EIR/Report, why does the TM consistently suggest the hydraulics costs could go up?	Consideration of pumps required for all homes on a STEP system is a conservative estimate and is consistent with the most recent analysis of a STEP/STEG collection system for Los Osos, completed by the Ripley Pacific Company in 2006. While it is possible that a STEP system will not require separate pump stations, they may be required depending on the distance to, or elevation, of, the selected treatment plant location.
3	2) Why does this cost comparison consistently use 100% STEP (pump) systems in its cost and energy comparisons, when O&M and life-cycles costs will go down with fewer STEP units, and/or cluster STEP systems that serve 2-10 homes?	As discussed above, consideration of pumps for all homes on a STEP system is a conservative estimate and consistent with other analysis. Regarding STEP systems for a cluster of homes, it is not likely that cluster STEP/STEG systems would be approved by regulators, due to issues regarding owner responsibility for discharges to the system. SWRCB staff has indicated that low interest loans would not be made available for systems using cluster STEP/STEG systems. However, this condition may be negotiable, especially if there are few situations that require cluster systems. Moving forward with a system utilizing primarily cluster systems could pose substantial regulatory and financing risks.
4	3) Does the estimate for a STEP/STEG system, as compared to a LPCS system, include 100% nitrification and denitrification of STEP effluent; even though not all effluent	The issue of permit requirements for nitrogen limits is a separate issue from collection system technologies. However, a STEP collection system is expected to result in different treatment costs

	treatment and reuse options will require fully treating 100% of the flow—and, if so, why?	than a gravity or low pressure collection system (low pressure systems are expected to require the same treatment costs as gravity collection). Some treatment components will cost more, some less. These differences are estimated in the treatment chapter of the Fine Screening Report.
5	4) What is the approximate number of grinder pumps that will be needed for a combined gravity-low-pressure system?	Both previous projects (County system from 1998 and the CSD system from 2005) used a number of grinder pumps. The 2005 system had approximately 200 such pumps. The number of grinder pumps needed for a combined system is of course dependent on where in the community that technology could be best utilized. A value engineering analysis will identify areas where low pressure collection may be preferable to gravity due to high ground water, deep trenches, or other constraints. As work on the EIR progresses, it will be important to develop additional design details on this concept, especially if it would reduce costs and/or impacts.
6	5) What is the source for the energy estimates for the grinder pumps?	The revised TM assumes 2 horsepower grinder pumps which are less efficient than effluent pumps in a STEP system. The energy estimates have been updated in the revised TM.
7	6) Since most grinder pump systems use 2 HP systems, the LOWWP will most-likely use 2 HP pumps—correct?	Correct, the revised TM assumes 2 horsepower grinder pumps.
8	7) Will the grinder pumps require 240 watts or 120 watts connections?	A 2 hp grinder pump would require 240 V service.
9	Comments: Grinder pumps move a greater volume of material at a greater average velocity than STEP/STEG systems, and they must grind up the waste. Therefore, grinder pumps logically use more energy than STEP pumps, and the TM estimate (i.e., LPCS energy use equals a STEP/STEG system's) is likely inaccurate. Further, as the TM points out, a low-pressure system is more cost-effective than a gravity system in high relief terrain and in high ground-water areas, while it is preferred over conventional gravity systems for locations near bodies of water. Although these criteria seem to fit Los Osos perfectly, the TM, like the Fine Screening, continues to say that a combined gravity, low-pressure system is the "most practical" for Los Osos—without explanation. Experts point out that an LPCS system (or other sealed system—e.g., vacuum or STEP/STEG) is environmentally preferable for locations near bodies of water because of the likelihood that a conventional gravity system will either take in excessive inflow and infiltration (I/I) in high ground water and near bodies of water, or it will release raw sewage through leaks in the system (known as exfiltration) or overflows	The revised TM assume approximately twice the power is required for a grinder pump system, compared to a STEP system, due to less efficient pumps. A life-cycle cost analysis will compare the operations and maintenance, including electrical, costs of the collection systems put forward in the design-build proposals. The specific pumps (type and power) and piping configurations included in the proposals will allow for a more complete comparison of electrical demand. It is important to note that various collection systems under consideration (STEP, gravity, low pressure) all appear to have applications in Los Osos where that particular system is well suited. However, it also appears that no system is best suited for every individual situation in the community. There are low lying areas where pressure systems seem to have an advantage; on the other hand, there are areas where simple gravity systems appear more appropriate. The goal of the current process is to sort through these issues to generate the best overall system, given a multitude of issues. All of the collection systems proposed designed to collect wastewater and convey it to a treatment

	(known as sanitary sewer overflows—SSOs). The LOWWP will be near a State Marine Reserve and National Estuary and the CCWQCB has declared a Prohibition Zone in Los Osos due to evidence of pollution in the ground water and bay. These special conditions would seem to require a prudent response. i.e., consideration of only a fully-sealed gravity system, a LPCS or STEP/STEG system.	facility instead of discharging it to the environment. Each system also has the potential for leaks or spills which must be mitigated. Environmental review and permit requirements will help identify the risks and mitigation measures. It is important to continue the effort to quantify costs and impacts, not only to comply with State Law, but also to provide a fair comparison of all considerations: environmental, economic, regulatory, social, etc.
10	Also, a more careful analysis of energy use is needed, as it is required by AB 32 and a very important consideration for the future. So far, the project review has not provided the number of STEG units in a STEP/STEG collection system, which should lower the energy use and life-cycle cost estimates for STEP/STEG considerably. It also has not provided costs and energy estimates for STEP/STEG configuration in which one tank is installed for two or more homes, with tank placement in unused portions of the easement in Los Osos. (Note that much of the 80 and 60 feet street easements are unused in Los Osos, along with completely undeveloped street rights of way and undeveloped properties where group tanks might be located.)	Although it is important to support the goals of AB32 with any project proposed in Los Osos, AB32 should not be used to prohibit a solution to the current water quality issue. The EIR effort will not only identify the AB32 impact of various alternatives, but also put those impacts in the proper context with other environmental effects, as well as identify measures that cold be used to mitigate AB32 effects. Please review the response above regarding STEG systems and clustered STEP tanks. Also, note that tanks placed outside of private front yards are vulnerable to damage from being driven over by vehicles. Costs associated with stronger tanks have not been quantified yet. Other issues regarding the use of public right-of-ways (or the abandonment of portions to accommodate STEP tanks) could be substantial – and could include conflicts with existing utilities and utility easements, maintenance issues (cars parked over access portals).