CALIFORNIA COASTAL COMMISSION
CENTRAL COAST DISTRICT OFFICE
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060-4508
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APPEAL FROM COASTAL PERMIT DECISION OF LOCAL GOVERNMENT

Please Review Attached Appeal Information Sheet Prior To Completing This Form.

SECTION I. Appellant(s)

Name: Santa Lucia Chapter of the Sierra Club

Mailing Address: P.O. Box 15755 San Luis Obispo, CA 93406

City: San Luis Obispo, CA Zip Code: 93406 Phone: 805-543-8717

SECTION II. Decision Being Appealed

1. Name of local/port government:

County of San Luis Obispo

2. Brief description of development being appealed:

Los Osos Wastewater Project DRC2008-00103:
A sewer system serving the community of Los Osos, CA, including collection system, treatment plant, effluent disposal system, agricultural re-use program, water conservation program, and associated infrastructure.

3. Development's location (street address, assessor's parcel no., cross street, etc.):

Los Osos, CA

4. Description of decision being appealed (check one.):

☐ Approval; no special conditions

☒ Approval with special conditions:

☐ Denial

Note: For jurisdictions with a total LCP, denial decisions by a local government cannot be appealed unless the development is a major energy or public works project. Denial decisions by port governments are not appealable.

TO BE COMPLETED BY COMMISSION:

APPEAL NO: A-3-SLO-09-055

DATE FILED: October 19, 2009

DISTRICT: Central Coast

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5. Decision being appealed was made by (check one):

- ☐ Planning Director/Zoning Administrator
- ☒ City Council/Board of Supervisors
- ☐ Planning Commission
- ☐ Other

6. Date of local government's decision: September 29, 2009

7. Local government's file number (if any): DRC2008-00103

SECTION III. Identification of Other Interested Persons

Give the names and addresses of the following parties. (Use additional paper as necessary.)

a. Name and mailing address of permit applicant:

Paavo Ogren, Director
San Luis Obispo County Department of Public Works
County Government Center, Room 207
San Luis Obispo, CA 93408

b. Names and mailing addresses as available of those who testified (either verbally or in writing) at the city/county/port hearing(s). Include other parties which you know to be interested and should receive notice of this appeal.

(1) Don Bearden, 1411 7th Street Los Osos, CA 93402

(2) Steven Paige, 1554 Ninth Street Los Osos, CA 93402

(3) Vivian and Barry Branin, P.O. Box 540 Morro Bay, CA 93442

(4) Bruce Corelitz, 1920 Tapidero Ave Los Osos, CA 93402

(5) S.E. Acquisition of Los Osos Mortuary and Memorial Park, Inc.
DBA Los Osos Valley Memorial Park
C/O Andre, Morris & Buttery
1102 Laurel Lane
San Luis Obispo, CA 93401

(6) J.H. Edwards Company, P.O. Box 6070 Los Osos, CA 93412

(7) Piper Reilly, 691 Woodland Drive Los Osos, CA 93402

(8) Linde Owen, 1935 10th B Los Osos, CA 93402

(9) Keith Wimer, Los Osos Sustainability Group 1101 14th Street Los Osos, CA 93402

(10) Martha Goldin, P.O. Box 6007 Los Osos, CA 93412

(11) Elaine Watson , 1287 5th Street Los Osos, CA 93402

(12) Al Barrow, Coalition for Low-Income Housingm, 1250 4th Street B, Los Osos, CA 93402

(13) Chuck Cesena, 591 Ramona Ave. Los Osos, CA 93402

(14) Sarah Corbin, 809 Browns Valley Rd. Watsonville, CA 95076

SECTION IV. Reasons Supporting This Appeal

PLEASE NOTE:

- Appeals of local government coastal permit decisions are limited by a variety of factors and requirements of the Coastal Act. Please review the appeal information sheet for assistance in completing this section.
- State briefly **your reasons for this appeal**. Include a summary description of Local Coastal Program, Land Use Plan, or Port Master Plan policies and requirements in which you believe the project is inconsistent and the reasons the decision warrants a new hearing. (Use additional paper as necessary.)
- This need not be a complete or exhaustive statement of your reasons of appeal; however, there must be sufficient discussion for staff to determine that the appeal is allowed by law. The appellant, subsequent to filing the appeal, may submit additional information to the staff and/or Commission to support the appeal request.

The project as approved raises a number of LCP and Coastal Act conformance issues, primarily due to that fact that feasible alternatives that would result in the avoidance of impacts have been disregarded in favor of mitigation measures that allow impacts to occur, contrary to the intent of local coastal policies and CEQA.

Where mitigations are stipulated, the mitigation is often inadequate and could be supplemented or replaced by other measures or project alternatives that would substantially increase mitigation value. Because this project evolved rapidly over the spring and summer of 2009, it contains artifacts of its previous stage of planning, prior to reconfiguration and conditioning of the permit by the County Planning Commission. As a result, some project components, such as disposal of effluent at the Broderson site, are no longer necessary or serve to actively hinder the avoidance of impacts or adequate mitigation of impacts, and conformity with the LCP and the Coastal Act. The same is true of the project's lack of a 100% fusion welded collection system, and the proposed placement of lift stations in proximity to a National Estuary and State Marine Reserve and the threat of their release of raw sewage therein in the event of a leak or power failure.

The project fails to avoid or adequately mitigate potential significant impacts on coastal resources because it does not include a wastewater collection system that would result in the greatest protection against the release of partially treated or untreated wastewater, afford the greatest protection for the groundwater of the Los Osos basin, utilize the most cost-effective means to avoid impacts to cultural sites, avoid environmental impacts from deep trenching/dewatering, and enable the use of renewable energy sources. A pressurized effluent collection system and the mitigations it provides when placing and operating a wastewater treatment collection system in an environmentally sensitive area include monitored system pressure which catches ground leakage immediately, no negative effects or line flushing required despite aggressive conservation coupled with increased use of on-site graywater systems over time, and no surface spillage of raw sewage (black water plus solids) likely to ever contact the waters of the Estuary. Polyethylene pipe (STEP) has a higher degree of toughness, impact and fatigue resistance than PVC pipe (gravity), which can crack under impact (backhoe, earthquake). Additional impacts would be avoided by the reduced size and carbon footprint of a STEP plant (absence of grit and heavy non-biodegradable organics in STEP influent would allow designers to eliminate or downsize the front end of the plant), and the reduction of inflow & infiltration and reduced sludge handling (about 5% of the solids from a gravity plant) attendant on the selection of pressurized effluent collection system instead of a gravity collection system.

The EIR assumes replacement of 5000 septic tanks with STEP tanks. On-site testing of septic tank integrity may find that up to 75% of existing tanks would be suitable for use in a STEP-STEG system, avoiding on site and archaeological impacts, sludge hauling, GHG emissions, and dewatering, as compared to the impacts of a gravity system.

COA amendments

Condition of Approval 86 should be revised to state that the Estero Area Plan be amended "to incorporate a sustainable buildout target that indicates affirms [not "indicates"] that there is water available [insert: "in the basin"] to support such development without impacts to wetlands and habitats." The current wording invites growth-inducing imported water and hence continued pumping and increasing drawdown of the aquifers, with ultimate impacts to habitat.

Condition of Approval 97 places the reservation of treated effluent subsidiary to and at the mercy of the negotiated Interlocutory Stipulated Judgment process, which could significantly reduce the amount of treated effluent made available for environmental needs, and thereby the biological continuance of the habitat, contrary to ESHA Policy 2. The subordination of the uses of treated effluent to a future ISJ decision subverts all potential mitigation value, and should be stricken from this condition and the county required to incorporate the stipulated uses and percentages of reserved treated effluent into any ISJ agreement it enters into.

Condition of Approval 98 should be amended so that the "areas of high groundwater" are specified as needing to be clearly defined and based on a detailed analysis by the design-build teams of historic high groundwater elevations. The County's map of vulnerable pipelines (COA p. 3-169) compared with DEIR Appendix D graphic showing the extent of potential perched groundwater raises concern as to the validity of the County's mapping of vulnerable pipelines. In an extreme local precipitation scenario such as March 1995 when the month recorded a total of 18.3" and a one-day record of 8.8", there is little doubt that the perching clay layer would create transient groundwater levels at or near the ground surface for a number of weeks or months. Hence, "areas of high groundwater" should include the entire service area above the perching clay layer as well as areas susceptible to tidal action and sea level rise. Project construction and detection of high groundwater areas is likely to take place in low precipitation months. Winter precipitation is often higher than summer precipitation, and groundwater storage is not fully recharged in summer. Consequently, the water table is lower in the summer period. The disparity between the level of the winter and summer water table (the zone of intermittent saturation), wherein the water table will fluctuate in response to climatic conditions, underscores the need for a condition requiring a detailed analysis of historic high groundwater elevations, rather than relying on identification of such areas in the field during construction.

Archaeological resources

The FEIR states: "The concept that STEP directional drilling will not impact archaeological sites is wrong. The resources could potentially be impacted under any condition, the impacts to sites through directional drilling would be unknown as opposed to controlled excavations where the scientific information would be preserved" (FEIR 3-295). This misstates the issue. It would appear that controlled excavations can be done regardless of collection system technology.

If, however, a site is discovered when laying gravity pipe, it is likely that artifacts/remains will be photographed, removed, and the site then trenched and destroyed, as gravity lines must maintain grade.

STEP directional drilling can easily avoid a site and impacts to resources by going around it. In choosing the former procedure over the latter, the project is inconsistent with Coastal Plan Chapter 12, Policy 1: Protection of Archaeological Resources, and its requirement for avoidance over mitigation, and that all available measures be explored at the time of a development proposal to avoid development on important archaeological sites.

Inflow and infiltration (I/I)

The project must avoid the impacts of sewer overflows, and one of their primary causes, inflow and infiltration of groundwater and rainwater into sewer pipes. County's repeated assertions that a new bell & spigot gravity system is watertight at the time of installation are disproven by documented instances of high I/I found in new gravity systems, but, even if true, would be irrelevant to the necessity to describe and avoid or mitigate impacts to coastal resources over the full lifespan of the project.

The EIR assumes that infiltration of water into the collection system will occur during the rainy season in the amount of 310,000 gallons a day. (EIR I&I evaluation, 310,000 gpd /5,000 homes). In the context of the EIR's discussion of increasing I&I due to gradual loss of integrity and compaction of the seals of bell & spigot joints of a gravity sewer, the FEIR states that "fusion welded pipe joints are expected to maintain water tightness indefinitely" (3-10), a statement that only applies to the 5 miles of gravity pipe that are proposed to be fusion welded. Differential settlement and earth movement in the areas of pipe-to-concrete penetrations (manholes and lift stations) creates significant sources of infiltration in a gravity system. Infiltration and inflow will become increasingly likely throughout the rest of the system over time, to a far more significant degree, than the estimated I&I attendant on a 100 percent fusion-welded pressurized effluent system, requiring mitigations for an impact that could be avoided. Gravity sewers throughout the country are experiencing SSO's (sanitary sewer overflows) because of excessive I&I. It is likely that most of these systems experienced minimal problems during the initial service period. Given the design life of the system is 100 years, I/I could easily double the plant footprint if the tolerance for spills (collection area and at the plant) is zero. Ripley Pacific Co. determined that gravity collection was infeasible for Los Osos based on vulnerability of the system to both Ground Water Infiltration and Rainfall Induced I/I ("Los Osos Wastewater Management Plan Update," Ripley Pacific, 2006). To achieve a "zero-discharge" system, the ability to treat/store 100% effluent in all precipitation /groundwater scenarios is mandatory.

The potential risk posed by I/I appears to be much higher than the 300,000 gpd average I&I and 500,000 peak I/I cited for the project. The County has stated that the use of PVC pipe mitigates the I/I problems of gravity sewers, and that high rates of I/I have been the result of more primitive construction materials used historically that have decayed over many years. This claim cannot be supported. The issue is the risk of excessive I/I. The use of gasketed PVC, while possibly an improvement, is not an assurance that the risk of excessive I/I is mitigated. Sources for gravity sewer I/I include manhole covers, manhole grade rings, manhole joints, manhole pipe connections, clean-outs, lift station joints, lift station pipe connections, illegal connections and leaking fixtures.

A 2005 WEFTEC study tracking I/I relative to sewer age included 30 years of PVC system data and showed that I/I in PVC piped systems is tracking similarly to other previously used piping materials and increasing linearly relative to time. This study show that the risk of I/I in a PVC piped system remains an issue, and notes that the rates for I/I (particularly peak hour flow) are being understated.

The study "Rainy Day Calculations" (Kurtz, Ward, Ballard, Water Environment Federation, Sept. 2009)

looks at Tennessee gravity system I&I flow due to rain events, not groundwater, which are uniform in any location. I&I flows from 1" rainfall ranging from 4 to 10 times the base flow. The study topped out at 4.5 inches of 24-hour precipitation. Morro Bay data for March 1995 recorded a 24-hour precipitation of nearly nine inches. The inflow into the LOWWP from nine inches of rainfall would be extreme, and still would not include I/I from high groundwater.

The EPA has established 275 gpcd as the national average for gravity sewer inflow. This is the average wet weather flow found, not the peak wet weather flow. The LOWWP Flows & Loads memo developed flows based on a service area of 18,428 people. Multiplying 275 times 18,428 results yields an inflow rate of 5,067,700 gpd. This is rain-dependent I&I, representing the average hourly flow during a rain event observed with respect to the utilities surveyed. This does not necessarily represent the peak hourly flow observed. This number is far different from the 500,000 gpd suggested in the project's flows and loads calculation. If the peak inflow for a Los Osos gravity sewer flow could eventually rise to 5 million gallons per day, this is a level of I&I capable of depleting basin groundwater resources and causing Sanitary System Overflows. The County has not included this level of inflow in calculations of impacts from overflows or groundwater removed from the basin by the project.

In its selection of a collection system that risks the substantial removal of groundwater from the basin and sanitary sewer overflow through the phenomenon of I&I, the project does not conform with Coastal Plan Policy 7, requiring that the natural ecological functioning and productivity of wetlands and estuaries shall be protected, preserved and where feasible, restored; Coastal Plan Policy 35 requiring that vegetation which is rare or endangered or serves as cover for endangered wildlife shall be protected against any significant disruption of habitat value and development shall be designed to disturb the minimum amount possible of wildlife or plant habitat; and ESHA Policy 20 requiring riparian vegetation and the natural hydrological system and ecological function of coastal streams be protected and preserved.

The estimated I&I of a STEP system for Los Osos is a fraction of gravity collection I/I and would not impact the treatment plant, per the EIR:

"3.2 STEP Sewers: With new septic tanks where drains and runoff are diverted away from the area around the tank, the I/I presumably would be much lower than that estimated for a gravity collection system. The major source of I/I in a STEP sewer is the tank and the connection to the house. I/I into the tank will be retained there and will not immediately translate into peak flows to the treatment plant. Based on these factors, average I/I is estimated to be 0.1 mgd." (LOWWP Flows & Loads technical memo-final, 11/08.)

This estimated average is likely high as, over time, any STEP unit that shows high pump run time during rain events would be easily identified and on-lot repair, but even if one accepts 0.1 mgd I/I for STEP, this is a fraction of gravity I/I rates or "non-excessive" EPA values, even before factoring in pipes that become submerged.

In addition to I&I, root intrusion in gravity sewer pipes is a major cause of Sanitary System Overflows. Root intrusion potential for STEP would be zero for the pressurized portion of the system (STEP tank to treatment plant). The house sewer (foundation to STEP tank) is potentially vulnerable, but the easement or service tariff can require a setback for certain vegetation types. STEP tanks themselves are not prone to root intrusion since the concrete tank joint is usually above the water line and the tanks are watertight. Given that the only potential for root intrusion is the house sewer, and an occupied home with very little

monitored STEP discharge would indicate either a blocked house sewer or that the STEP tank itself was defective, any blockage would be limited to a single residence and quickly detected, with a relatively quick fix in a short segment of 4" sewer pipe on private property.

The county's stated intention to manage the excessive I&I of a gravity sewer through a future maintenance program constitutes a promise, funding permitting, to attempt to mitigate an impact that could be better and more realistically mitigated by means of the selection of a 100% fusion-welded pressurized effluent collection system, a permit condition which should be mandated by the project's proximity to creeks, wetlands and other ESHA, a National Marine Estuary, and a State Marine Reserve characterized by low tidal flushing.

Reduced flow

- The County does not address the impacts on water availability and conservation of a gravity-flow collection system due to its minimum scouring flow requirement and the costs of flushing a gravity system, which will require that a percentage of treated effluent that the Conditions of Approval have identified as reserved for environmental and agricultural needs instead be permanently set aside for flushing the lines of the gravity collection system. The County has not included this reduction in the calculations of total groundwater removed from the basin by the project, nor was it subtracted as a percentage of treated effluent that will be permanently dedicated to flushing sewer lines, and thereby removed from the total amount of effluent that was believed to be allocated as mitigation, reserved for environmental and agricultural needs via ag exchange and aquifer recharge, nor was there consideration of avoidance of this impact via the use of a pressurized effluent collection system. Avoidance of this impact could be achieved by the installation of a collection system that does not require flushing of the lines.

Dewatering

The project does not appear to conform with ESHA Policy 2 due to dewatering impacts from deep trenching, which neither the County nor the Planning Commission included in calculations of groundwater removed from the basin by the project. On 1/30/09, the regional Water Quality Control Board submitted a comment on the DEIR referencing the EIR's failure to adequately characterize the environmental impacts of the deep trenching of a gravity collection system vs. the shallow trenches of a STEP/STEG system. ("The County should expand on their environmental impact evaluations regarding trenching associated with the installation of the STEP/STEG system as described in proposed project alternative number 1. This description should discuss potential environmental impacts associated with dewatering activities as a result of deeper versus shallower trenching.") In response, the Final EIR compared the 8-foot depth of a STEP tank excavation with the average 8-foot depth of "75 percent of a gravity collection system."

On this basis, the EIR concluded "the construction dewatering requirements of the two systems, and consequently their associated environmental effects, appear to be similar in nature" (FEIR 3-47).

Presuming to analyze alternatives and their impacts simply by stating that those impacts "appear to be similar in nature" is clearly inadequate and does not compare the dewatering requirement for a STEP tank excavation and the dewatering effort required for laying a gravity pipe in a trench. A number of the gravity trenches not included in the "75 percent of a gravity collection system" excavated at a depth of 8 feet would range in depth up to 23 feet.

A gravity sewer must be installed in a dry excavation. The trench must be dry in order to:

- assure that the pipe has a proper foundation- allow for the laser level to transmit a beam through the pipe for maintaining pipe grade
- assure that the pipe trench is maintained in a safe condition for workers that are working at the base of the trench
- allow for proper installation rates for the contractor to remain profitable
- allow for inspection of the pipe as it is installed.

Accordingly, any pipe installed deeper than the prevalent water table will require dewatering. Depending on the height of the water table and soil type, well points can easily require several days to draw down the water table. Coarse sands are particularly difficult to dewater as the cone of influence from the dewatering can extend hundreds of feet beyond the excavation area.

Dewatering can create several impacts. The quantity of water removed to dewater a project can be substantial. Often the quantity of water discharged exceeds the ability of the existing stormwater system to convey the discharged flows away from the site. The discharge can include sediments, pollutants, naturally occurring sulfides and organics that may requires treatment prior to discharge. Dewatering can affect existing surface water systems as it draws down the naturally occurring water table. Dewatering can induce settlement under existing structures.

In a Salinas case study (North Davis sanitary sewer trunkline project, "Water & Wastes Digest," April 2001, Volume 41 Number 4), the length of gravity trenching dewatered was less than what must be dewatered in Los Osos. 120gpm pumps were placed in 100 wells and 12,000 gpm was pumped around the clock for 3 weeks before the crews could work in the trenches to lay the pipe. It takes 41 hours @ 12,000 gpm to pump 90 acre feet of groundwater, which is the amount of flows from individual septic tanks that currently mitigate seawater intrusion into the Los Osos deep aquifer. The project's mitigation measures are supposed to mitigate for and replace the loss of this 90 acre feet, but the full amount of this annual flow could be removed from Los Osos' groundwater in less than two days by gravity trench dewatering.

STEP tanks are normally above the water table, even in areas of a high water elevation. STEP tanks are normally installed in areas close to a home. Since there is normally 18" and 36" of elevation difference between the road and the lot grade, the tank elevation receives the benefit of the extra elevation. If there is water in the STEP excavation, it is normally limited to a few feet at most. Removing water from a small STEP tank excavation can usually be achieved with a sump in one corner of the excavation. This dewatering approach can normally remove water from a small excavation in a matter of minutes. It is tolerable for the tank to be placed in a slightly wet excavation.

Although the Los Osos groundwater basin has been certified at Level of Severity III, and dewatering could remove an amount of groundwater equivalent to or greater than the entire annual septic flow that protects the aquifer from seawater intrusion, the County has not quantified the impacts of dewatering, nor accurately characterized the difference in volume of dewatering between a STEP tank and a gravity pipe, nor calculated or mitigated for impacts to the groundwater table and stormwater system.

Shoreline structures

The project does not conform with Coastal Plan Policy 39: Siting of Shoreline Structures: Shoreline

structures, including piers, groins, breakwaters, seawalls and pipelines, shall be designed or sited to avoid and minimize impacts on marine habitats.

The FEIR states: "The proposed projects evaluated in the Draft EIR do not have proposed facilities that directly affect the Morro Bay State Marine Reserve" (FEIR 3-587), and that "...accidental releases could indirectly affect the Morro Bay State Marine Reserve; however, at this time, it is speculative regarding the level of impact because the location and size of the accidental spill would need to be known."

The first statement is in error, as pumps on the shore of the estuary and a central lift station on the midtown site, one-half mile uphill from a portion of the estuary characterized by low tidal flushing, would have significant potential to directly affect the SMR. The second statement is in error both because the impacts of a spill on the SMR would not be "indirect" nor may the County omit an identified impact to coastal resources because "the location and size of the accidental spill would need to be known." It is not necessary to precisely forecast the size or duration of a sewage spill into the estuary in order to determine that this impact would not conform with coastal watershed policies meant to maintain productivity of coastal waters. Moreover, the location of the proposed pumps on the shore of the estuary and the midtown lift station are known. The size of a spill in the event of the failure of the midtown centralized lift station, through which 100 percent of the project's wastewater would flow, is readily calculable over various time frames.

The EIR states that mitigation measures for sewage spills are in place and seeks to equate the impacts of a major spill of raw sewage with the impacts of some percentage of pollutants making their way into the estuary as a result of some percentage of local septic leachfields not functioning properly, resulting in inadequate filtration of effluent. These environmental impacts are not comparable -- essentially comparing seepage of near-primary treated effluent to a spill of raw sewage/solids -- and should be viewed in the context of multiple sewage spills from local central coast gravity-fed treatment plants over just the last five year. It may be presumed that all of these plants had mitigation measures in place, which failed.

The project has substituted mitigation of impacts without consideration of measures that would avoid those impacts. A permit condition requiring a collection system that does not require pumping stations on the shore of the SMR or a central lift station at the midtown site will avoid these impacts.

Energy/GHG

The project is inconsistent with Coastal Zone Framework for Planning policy 13, which requires support of the conservation of energy resources by land use and transit measures that reduce use of non-renewable resources such as petroleum. The County claims that a gravity collection system is more energy intensive but emits less GHG due to the absence of septic tank venting and less chemical production; that STEP/STEG is less energy intensive, but overall the process emits a large amount of GHG due to septic tanks and chemicals. (Carollo, June 2008)

The EIR failed to evaluate alternatives to chemical (methanol) use for denitrification of STEP effluent that would result in a significant reduction of GHG emissions and compared this to the GHG emissions of a gravity system.

AIPS ponding presents the prospect of methane capture. "Using this renewable resource of methane reduces the depletion of fossil fuels, and recycling the carbon dioxide produced by its combustion to

enhance microalgal growth further reduces the level of greenhouse gas emissions." (-"Methane Recovery in Advanced Integrated Ponding Systems: An Update," W. J. Oswald, F.B. Green, UC Berkeley, CIEE 1993). The EIR evaluated methane production solely as a negative impact, not as a beneficial means of reducing the project's fossil fuel energy use and GHG impacts, and thus did not fully analyze this project alternative.

Per the project Technical Memo on treatment alternatives, the project's Biolac/oxidation ditch would consume 1.0-1.2 million kWh per year. The energy requirements for an AIPS pond system range from 570-720 kWh per year.

Issues raised in a 5/27/09 letter to the Planning Commission from Michael Saunders, Compliance Program Manager, Orenco Systems, Inc., concerned construction-related GHG emissions and methane from vented STEP tanks. These comments note, with supporting data, that "the GHG Technical Memorandum included a methodology that appears to hide the magnitude and overall impacts" of construction-related GHG emissions of a gravity sewer, and identifies "inconsistency between the construction impacts and the methane STEP tank emissions. While the construction impacts were averaged over 30 years, septic tank emissions were derived from day one.... A real and immediate impact in the gravity sewer column was averaged, while a nonexistent impact from nonexistent STEP tanks was utilized in day one of the analysis." Orenco proposed a methane monitoring and mitigation strategy and concludes that "the elimination of any potential methane emission, partnered with a lower impact methodology for sludge handling would generate a significantly different outcome than the analysis completed by staff.... The EIR readily uses mitigation strategies for the very significant environmental impacts associated with gravity sewers. The EIR makes no effort to consider or document any mitigation strategy for a STEP option."

A GHG credit should be acknowledged for inorganic nitrogen fertilizer not produced due to use of non-denitrified effluent, the GHG penalty removed for the projected use of methanol in an unnecessary denitrification process for STEP effluent, and the 30-year averaging of immediate gravity sewer GHG construction impacts discarded in calculating STEP/gravity GHG emissions.

Broderson mitigation

Impacts to the significant habitat resources on the Broderson site – including the complete removal of Morro manzanita, Monterey spineflower, Blochman leafy daisy, Morro shoulderband snail, Morro Bay kangaroo rat, and monarch butterfly – should be avoided if feasible. The need for the use of the Broderson site, and the immediate and long term impacts its use entails, was reduced by permit conditions mandating tertiary treatment. The need has now been eliminated by the condition mandating the use of effluent in an ag exchange program with local growers, a condition which has also greatly improved on the seawater intrusion mitigation factor originally conceived of for Broderson disposal. As a result, the need for the Broderson site and all impacts to its significant resources now can and should be eliminated entirely, along with its considerable financial burden to residents, by instead expanding the seasonal storage ponds on the treatment plant site and adjacent acreage. This would accommodate the effluent currently planned for Broderson disposal, which would also make further ag exchange possible, thereby further improving mitigation for seawater intrusion via reduction of pumping of the deep aquifer. The likely underestimation of winter precipitation (in March 1995, Morro Bay recorded nearly 9" of rain in 24 hours) invites overflows and the likelihood that the disposition of more than 300,000gpd of the project's estimated winter effluent is unaccounted for. Storage pond capacity should be significantly expanded, with or without Broderson disposal.

Nitrate handling

The degradation of the estuary and Morro Bay wastershed from nitrate runoff is a chronic problem, and a leading cause of habitat damage in the area. The project can alleviate this damage by foregoing the denitrification of treated effluent made available to growers, who will be able to make use of the nitrogen content of the effluent to significantly reduce the use and over-use of synthetic nitrogen fertilizers, the source of nitrate runoff problems from local agricultural operations. Per the County's assertion that this cannot be done without denitrification due to excessive nitrate levels in treated effluent, following is the assessment of the water resources and reuse specialist who conceived, planned, managed, and completed the ag exchange project for the Monterey Regional Water Pollution Control Agency and has published several papers regarding this use of recycled water:

"The MRWPCA recycled water total nitrogen (TKN) runs from the low 30s to the low 40s mg/L (expressed as NO3). Most of it is usually nitrate and there is no effort to nitrify. Over the 12+ years that recycled water has been in constant use for irrigation of 12,000 acres of raw-eaten vegetables, farmers have found the nitrogen content of recycled water to be beneficial but not entirely adequate for their crops--partly because some supplemental well water is also in use as there is not enough recycled water for all of their needs. So, they supplement with chemical fertilizers as needed to maximize their yields. I see a parallel situation in Los Osos, i.e., no need for denitrification and no need to reduce nitrogen levels to any extent or by any means. Farmers will be delighted with the nitrogen levels in the recycled water (whether in the form of NO3 or NH4 or NH3 or NO2) and will probably find that they will need to add a fraction of the pounds/acre of N that they have traditionally applied to their crops when using well water. Denitrification is expensive and energy-intensive. Why remove nitrogen at great cost when it is an asset to the end user (farmers) for irrigation of vegetables and other high-N demanding crops? The only case in which nitrogen may be in excess of what the crops will take up is if the recycled water is applied at high (disposal) rates in a land application scheme without the benefit of a crop that would aggressively take up the nitrogen. Even grass is a big user of nitrogen--as in golf courses and other landscaping."
(- Dr. Bahman Sheikh, Distinguished Fellow, Center for Integrated Water Research, University of California, Santa Cruz , 4/22/09.)

Disposal, not re-use, was the end goal of the project prior to the permit condition for ag exchange. Nitrate removal methods that are necessary for STEP effluent and are high emitters of GHG are not necessary and are counterproductive if recycled water is to be used on crops. The provision of nitrate-rich effluent to growers would promote the sound management practice of reducing the amount of synthetic nitrogen-based fertilizers used by growers, currently causing pollution of the watershed and estuaries. Removing the requirement for denitrification will allow for the uptake of nitrates by crops with minimal need for supplementation with nitrogen fertilizer. The project's failure to do so is inconsistent with LCP ESHA policy 3 mandating restoration of damaged habitats as a condition of project approval when feasible; the provision of Coastal Plan Policy 7 requiring the natural ecological functioning and productivity of wetlands and estuaries be protected, preserved and where feasible, restored; and Estero Area Plan, Chapter 6, Section IV, A.1 through A.4, and its requirements to minimize water pollution by promoting sound land management practices; maintain, and where feasible, restore the quality and biological productivity of coastal waters, streams, wetlands, estuaries; and avoid impacts to watershed from runoff and pollution.

Sludge

Sludge production

Coastal Commission staff has urged the County to make "minimizing sludge production to the maximum extent practicable" a "high priority in the selection of collection and treatment technologies" (7/15/09 letter to Paavo Ogren from Dan Carl). The project does not minimize sludge production to the maximum extent practicable. The EIR notes that a STEP/STEG system for Los Osos would result in a 75 percent reduction in the amount of sludge produced by a gravity system. Todd Ecological Design Inc. estimates 0.5 lbs of sludge generated and 0.8Kwh of energy consumed per 1,000 gallons in a natural system model (trickling filter/wetland). This compares to 10 pounds of sludge generated, consuming 3.5 Kilowatt hours per 1,000 gallons with the project's currently selected activated sludge process. For a treatment system optimized for STEP collection, Orenco Systems estimates 0.1-.15 lbs. of biosolids production per pound of incoming BOD, in comparison to an activated sludge process producing approximately .75-.85 lbs. of biosolids per pound of incoming BOD.

The FEIR claims no greater impact of increased sludge volume because "There is no plan to apply sludge to land with the current proposal" (FEIR 3-904). This assertion is based on a County moratorium currently in place limiting land application of sewage sludge to 1500 cubic yards per year, with the balance sent to landfill. The moratorium on land application will expire in three years. Sludge from wastewater treatment plants includes industrial solvents, paint and chemical residues, detergents, soaps, cleaning solutions, antibiotics, antimicrobial soaps, antidepressants, heart medication, and other physiologically active drugs, heavy metals such as mercury, lead, and arsenic, from all of the citizens that use the municipal sewage system, all going through the wastewater treatment process. Many of these chemicals are left in the sludge. These substances are harmful to humans and wildlife, and many persist and build up in the environment, unable to be broken down by natural processes.

The County did not evaluate the relative impacts of the volume of sludge production in the event of land application, in comparison of the sludge output of gravity vs. pressurized effluent collection system, or in comparison of oxidation ditch treatment to facultative/AIPS ponds.

The project's oxidation ditch treatment plant increases biosolids impacts in its use of conventional sand filters, which would increase solids wasting. Microfilter tertiary, after seasonal storage, would add no chemicals to the system and waste solids would be returned to the front of the secondary plant, an "endogenous operation" – i.e. highly degradable, ultimately reducing waste solids to carbon dioxide and water in the presence of oxygen. Post-seasonal microfiltration adds no chemicals, so solids load from tertiary filters does not increase overall load. This process has not been required as mitigation of the impacts of sludge production, processing and hauling.

Economic effects

The project is inconsistent with Coastal Zone Framework for Planning 15: Economics, which requires pursuit of planning policies that balance economic, environmental, and social needs of coastal areas and considering the economic effects of land use planning decisions. This inconsistency is confirmed by the assessment of the US EPA, on its septic technologies website, which urges "full consideration of options to a traditional gravity sewer," which "smaller communities cannot afford," such as pressurized effluent collection systems consisting of: "shallowly buried plastic pipes, low-cost cleanouts instead of frequent/costly manholes, and a minimum number (if any) of lift stations. They have 40 years of successful experience in the US and worldwide (less I/I [inflow and infiltration], exfiltration, construction duration and disruption). Their management requirements are equal to or lower than

conventional gravity sewers (depending on the number of lift stations)." (www.epa.gov/owm/septic/pubs/septic_technologies.ppt)

Further, "Given the expense associated with sludge disposal, the role of onsite solids digestion [i.e. STEP interceptor tanks] may improve the economics of wastewater treatment, while the transport of clarified effluent in small diameter, watertight piping will reduce the cost of collection systems." (G. Tchobanoglous, "Water Reuse," 2007, p. 791).

The project's selection of the highest-cost collection system has been rendered further out of conformity with coastal policies by the requirement for fusion-welded gravity pipe and change orders for more fusion welding as needed in the field. The County has not disclosed an estimate of the cost of fusion-welding five miles of pipe, change orders in the field for same, and the implications for the collection system of the permit's conservation measures and increased graywater systems, i.e. impacts and costs of reduced flows and the prospect of a "blackwater" sewer, requiring pumping trucks and system flushing, and assess estimated costs of any necessary collection system redesign versus the cost of a pressurized effluent collection system. These impacts must be assessed against the cost of a system that consists of 100% sealed pipe by design.

"If a STEP/STEG collection system is selected it is anticipated that there will be minimal I/I since the system is sealed and under pressure. If a gravity collection system is selected, only a system that was constructed of fusion-welded PVC piping could be operated with as little I/I as a STEP/STEG system. However, fusion welded PVC sewers are a new technology with little long-term operating history, and can be significantly more costly to install than traditional bell-and-spigot gravity sewers" (Fine Screening Report, 2007, Carollo Engineers).

The project is further inconsistent with the CZ Framework for Planning policy in that the County has not considered the necessity of redesign of the gravity collection system prior to construction to accommodate the substantially reduced flow of 50gpd when the permit's condition mandating 25% reduction in water us is implemented, in concert with additional reduction in flows, conservatively estimated at 40%, that will occur as the area sees increasing use of graywater systems over time.

The project has not identified the comparative costs of STEP system line maintenance versus the cost of identifying and repairing sections of large, rigid pipe, which will have "more leaks and damage to pipe sections over time" than a STEP system, "especially when located below roads and buildings in developed urban areas" ("Water Reuse: Issues, Technologies and Applications," Takashi, Asano, et al, 2006, Metcalf & Eddy).

The project has not estimated the comparative costs of horizontal boring for both gravity and pressurized effluent collection pipes, having simply stated "This approach could be done for a gravity system as well as a pressurized system" (FEIR 3-596).

Based on previous estimates, it would likely be possible to fund the entire project from the initial Prop. 218 assessment if a STEP collection system were chosen (Los Osos Wastewater Management Plan Update, page 9; Ripley Pacific Co., 2006, www.losososesd.org/pdf/ripley_final_report_12.18.06.pdf). Currently, a second Prop. 218 assessment is contemplated to fund the sewering of undeveloped lots in the Prohibition Zone with a gravity collection system.

LID

Coastal Plan Chapter 9, Policy 11, requires preserving and maximizing groundwater recharge by retaining runoff on-site to the extent feasible to maintain in-stream flows and riparian habitats. The project does not thus mitigate impacts from the presence and function of the collection system because the County denies a nexus between the project's road impacts and LID mitigation measures, such as a demonstration project (a "complete" or "Green Street" project) that would address flooding, stormwater and mobility.

CEQA

The project is not consistent with the requirements of CEQA. As proposed, it is likely to result in significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A), which prohibits approval of a proposed development if there are feasible alternatives and feasible mitigation measures which would avoid or substantially lessen any significant adverse environmental effects which the project would have on the environment.

For the same reasons, the County-approved project does not adequately protect coastal agriculture and ESHA and is therefore inconsistent with the Coastal Act and LCP.

SECTION V. Certification

The information and facts stated above are correct to the best of my/our knowledge.

Karen Merriam
Signature of Appellant(s) or Authorized Agent

Date: October 15, 2009

Note: If signed by agent, appellant(s) must also sign below.

Section VI. Agent Authorization

I/We hereby authorize _____
to act as my/our representative and to bind me/us in all matters concerning this appeal.

_____
Signature of Appellant(s)

Date: October 15, 2009