BROCHURE 4

Technical Advisory Committee

Pro/Con Analysis

Los Osos Wastewater Project

San Luis Obispo County
Department of Public Works

Noel King, Department Director
Paavo Ogren, Project Director

Project Website: http://www.slocounty.ca.gov/PW/LOWWP.htm

TAC Core Values

- Affordability
- Environmental Stewardship
- Flexibility
- Sustainability
- Community
- Controllability

Read the TAC's Pro/Con Report

The report is available at the following locations:

- Los Osos Library
- LOCSD Office
- SLO County Public Works Department (781-5252)
- Project Website: http://www.slocounty.ca.gov/PW/LOWWP.htm

Email Project Comments: http://www.slocounty.ca.gov/PW/LOWWP.htm

TAC Letter to the Board of Supervisors

August 6, 2007

On March 20, 2007, your board appointed us to the newly formed Los Osos Wastewater Project Technical Advisory Committee with the direction to "as its 'First Priority', (make) recommendations on the Pros and Cons of the 'Viable Project Alternatives' developed by the Department of Public Works and consultants that comprise the 'Project Team'."

The TAC was divided into three subcommittees in order to create a comprehensive and unbiased pro/con analysis on the major elements of a wastewater system. The Engineering and Water Resource committee focused mainly on the technical aspects of the sewer components as they relate to the special circumstances in Los Osos. The Environmental committee concentrated on the effects each component would have on our community ecosystem, both during construction and on an ongoing basis. The Financial committee carefully reviewed the costs associated with building and operating each component and the associated financial risks.

Since our inception, the thirteen members of this committee have met several times each week, both in public session and as individual committees, to analyze and critique both the Rough Screening Report and the Fine Screening Report submitted to us by the Project Team. Utilizing our own experience and the input that we have received from the community in public meetings, we have produced this report and submitted it to the Board of Supervisors on August 14th, 2007.

After being introduced to the project with presentations by the Project Team on the Potential Viable Project Alternatives Rough Screening Analysis, the TAC concentrated on how we would conduct our pro/con analysis. As a first step we adopted Core Values that we felt needed to be addressed in any project for Los Osos. Although each working committee would approach their analysis with a different emphasis, common core values would focus deliberations on what we believed were the basic issues.

Affordability of any project is one of the major concerns (and probably the most important) to the community. The Prohibition Zone demographics include middle to low income households and a sizable monthly payment could become a major burden for them.

Los Osos, with its location on sand dune ESHA and adjacent to the bay is rich in biodiversity and archeological sites; therefore impacts on its environment must be carefully weighed.

With Los Osos currently in a Level III severity state for water and the tremendous impact a wastewater project will have on the basin, it became apparent that, although the wastewater issue and water issue were intended to be separate, there is no practical way of accomplishing that.

In addition to the financial impacts of the project there needs to be consideration given to other community issues, such as construction disturbances, site location, and individual property landscape impacts.

The TAC also felt that it was important for the community to have the ability to control its future destiny and minimize the effects of third party influences.

With these issues in mind, the TAC adopted a list of core values (see left) and the associated major criteria.

Each of the working committees then identified their specific criteria, which they used to evaluate each of the component alternatives presented (see center spread).

The TAC made every effort to take a comprehensive and unbiased approach in this analysis. All full meetings of the TAC were open to the public and the TAC carefully considered the many and varied public comments. We also recognize the concerns of many citizens regarding the assumptions and cost figures used in the draft Fine Screening; however, the purpose of this pro/con analysis was to make a broad "big-picture" comparison of the various components that make up a project. We trust that further investigation and value engineering will clarify assumptions that impact sizing and cost.

The following pages are a summary of the TAC pro/con analysis and a comparison of costs for the components of the wastewater system (the complete pro/con analysis is available in the report).

We appreciate being given this opportunity to serve our community and support the Board of Supervisor's efforts and decision-making process. We will continue to serve as directed.

TAC Members

Chair

William Garfinkel

- Retired business manager for industrial operations Rockwell Automation
- LOCAC member (2005–present)
- Vice-Chair of Land Use Sub-Committee
- Chair of Community Outreach Sub-Committee

Vice Chair

Rob Miller

- B.S. Civil Engineering
- Registered Civil Engineer
- LOCSD District Engineer (1999–present)

Eng/Water Resources

Bob Semonsen

- Bachelor of Architecture
- Owner of Bob Semonsen Assoc.
- LOCSD Board Member (2004)
- LOCAC Member (1990–2002)
- County Citizens Trans. Advisory Committee Member (present)
- Former member of LOCSD WW Committee

Environmental

David Dubbink

- Ph.D. Urban Planning
- Director of David Dubbink Assoc.
- Retired Professor of City and Regional Planning (Cal Poly, SLO)
- (Appointed August 7, 2007)

Finance

George A. Call

- Retired business owner for financial and estate planning (Call Company)
- Chartered Financial Consultant

Eng/Water Resources

John Brady

- M.S. Environmental Engineering
- Registered Civil Engineer
- U.S. Patent holder
- Redistricting Advisory Committee Member (2002) San Luis Coastal School District
- Water Quality Engineer Golden State Water Co.

Environmental

Daniel Berman

- B.A. Marine Biology
- Program Director (Morro Bay National Estuary Program)

Finance

James E. Furman

- Retired business executive for several water and wastewater industry companies:
  - Phase Metrics (Vice-President)
  - Eco Resources (President and C.E.O.)
  - Baker Hughes Process Technologies (President)
  - Wemco (President)

Eng/Water Resources

Russell A. Westmann

- Ph.D. Civil Engineering
- Registered Civil Engineer
- Registered Mechanical Engineer
- Retired Professor and Associate Dean (UCLA School of Engineering)
- Civil Engineering Lecturer (Cal Poly, SLO)

Environmental

Maria M. Kelly

- B.S. Liberal Studies
- Legal Assistant at Environmental Law Firm
- LOCSD Board candidate (2006 - first runner-up)

Finance

Rob R. Shipe

- Business owner of Absolute Janitorial
- Former member of LOCSD Septic Management Sub-Committee (2006)
- LOCSD Board candidate (2006)
- CDO settlement agreement with Regional Water Quality Control Board

Eng/Water Resources

John Fouche

- M.S. Civil and Environmental Engineering
- Registered Civil Engineer
- Senior Transportation Engineer (Caltrans)
- LOCSD Board Vice-President (2005–2006)

Environmental

Marshall E. Ochylski

- Masters, Landscape Architecture
- J.D. Law
- Licensed Landscape Architect
- Attorney-at-Law Specializing in CEQA compliance

Finance

Karen J. Venditti

- B.A. Sociology
- Retired senior loan officer (Washington Mutual)
- California Insurance License
- Series 66 California Securities License
- Chair - LOCSD Adhoc Grants Committee (2006)

*Blue text: wastewater experience

TAC Pro/Con Analysis Criteria*
(arranged by wastewater project components)

Effluent Disposal/ Water Resources Options

Engineering & Water Resources

- Level of control over disposal options, multi-faceted approach that does not depend on 3rd parties
- Cost of various disposal options
- Retain water in the basin for sustainability and increased yield
- Seawater intrusion mitigated
- Water Purveyors input and acceptance
- Stakeholders input and acceptance
- Energy

Environment

- Construction disturbance
- Impact on biological resources
- Community impact
- System failure
- Land use compatibility
- Surface water quality
- Effluent quality
- Aquifer recharge
- Saltwater intrusion

Financial Risk Factors

- Construction risks associated with archeological and biological impacts
- Costs relating to system failure risks
- Cost of achieving groundwater balance
- Cost of potential repairs resulting from natural disasters (earthquake, flood)
- Risk of inflated costs and uncertainty of 3rd party handling and/or participation

Treatment Technology Options

Engineering & Water Resources

- Flexibility of treatment process to meet future needs and regulations
- Demonstrated reliability of process
- Effect of process on bio-solids production
- Cost consideration, replacement, operation and maintenance
- Energy

Environment

- Construction disturbance
- Impact on biological resources
- Community impact
- System failure
- Impact on archaeological resources
- Energy use

Bio-Solids Treatment & Disposal Options

Engineering & Water Resources

- Maintain control of disposal process
- Flexibility of bio-solid process and disposal
- Nuisance assessment of bio-solids process and disposal
- Cost of process facilities, operations and maintenance, and ultimate disposal
- Energy

Environment

- Volume
- Class
- Community impact
- Traffic

Financial Criteria

Capital Costs:

- Land acquisition
- Construction costs
- Road impacts
- Cost for individual hook-up
- Cost of future upgrades
- Potential environmental mitigation costs

Operations & Maintenance Costs:

- Energy requirements
- Labor, materials, overhead
- Cost of solids handling/ disposal
- Projected schedule for repairs, replacements, and maintenance

Funding Factors:

- Eligibility for best financing (rate, terms, engineering constraints, flexibility, timing)
- Grant eligibility, attractiveness
- Conducive to 3rd party financial participation
- Potential for revenue generation

Treatment Plant Site Options

Engineering & Water Resources

- Sufficient in size to meet environmental and potential future expansion needs
- Minimize fluid transport costs
- Minimize land costs, to include environmental mitigation costs
- Site conditions with regards to constructability

Environment

- Construction disturbance
- Community impact
- Impact on biological resources
- System failure risk
- Impact on archaeological resources
- Land use compatibility
- Growth Inducement

Collection System Options

Engineering & Water Resources

- Life cycle costs
- Design life
- Property impact for both private and public properties
- Reliability of System
- Environmental impact of system
- Infiltration and inflow potential
- Energy

Environment

- Construction disturbance
- Impact on biological resources
- Community impact
- System failure risk
- Impact on archaeological resources

* The criteria illustrated in this brochure were adopted by the Technical Advisory Committee to evaluate pros and cons of Community wastewater options.

Project Components Analyzed

Sites
- East of town sites
- Cemetery
- Giacomazzi
- Branin
- Tri-W

Treatment
- Oxidation Ditch
- BIOLAC
- Facultative Ponds
- MBR

Collection
- Gravity
- STEP/STEG

Bio-Solids
- Sub-Class B
- Digested and/or Heat Dried Class B
- Composted Class A
- Facultative Ponds

Disposal
- Spray Fields
- Cemetery Reuse
- Agricultural Reuse
- Agricultural Exchange
- Broderson

Executive Summary of Pro/Con Analysis on Project Components

Sites

The advantages of the out-of-town sites (Cemetery, Giacomazzi, Branin, which are adjacent to each other, as well as others) are that a larger site provides greater flexibility in treatment and bio-solid technologies, and allows for alternative energy, regional solutions, future expansion and upgrades. They are in close proximity to agriculture for future water exchange and spray fields and/or wetlands that could be utilized as possible disposal options. They are also distant from community centers and have a lower land acquisition cost. The disadvantages are the additional costs for piping wastewater from the collection area and the return of effluent to the community groundwater basin, and the sites are in the vicinity of a low density residential area.

The advantages of the Tri-W site are that it is central to the collection system and close to the Broderson leach field. However, its downtown location (near library, church, community center) and the high density residential area require that the most expensive treatment technology site improvements and odor controls be employed, Also, there are higher traffic impacts to the community with the hauling of bio-solids offsite and the importation of materials. It has high construction costs, annual O&M, and land value, along with the largest carbon footprint. Its small size limits flexibility for future expansion or upgrade.

Effluent Reuse/Disposal

Since the groundwater basin is the sole source of water supply, the way treated wastewater effluent is managed will have a major influence on the sustainable yield of the basin in terms of both volume and quality.

It appears that no one disposal option can provide benefits of seawater intrusion mitigation and accommodate the full requirements of the wastewater system - it will require an array of options to accomplish both. Broderson should be part of any project in order to assure maximum recharge of the aquifer.

Due to the cost of land acquisition as well as water lost to the groundwater basin, disposal at spray fields are best viewed as a start-up plan and emergency discharge option. In lieu of purchasing spray field property and installing associated transmission pipelines, the purchase of agricultural land within the basin provides a water supply benefit, and may not result in a higher total project cost.

Treatment Technologies

With tertiary and denitrification treatment included, Oxidation Ditch, BIOLAC, and Facultative Ponds are very similar in construction costs and annual O&M. BIOLAC has lower capital costs than Oxidation Ditch, but they both have similar footprints and results. With Gravity collection they require a larger footprint and may cause greater impact on biological and archeological resources.

The advantages of Facultative ponds are that they have the lowest energy usage, and they minimize costs relating to solids treatment and handling. The disadvantage is that ponds require a larger footprint.

The advantage of MBR is that it produces the highest quality of effluent, allowing for greater flexibility in disposal options. It also requires the smallest footprint, which makes it feasible to enclose all aspects of the process. The disadvantages of MBR are that it is the most expensive technology, both in capital costs and annual O&M, and requires the highest energy usage.

Collection Systems

The advantages of Gravity are that it has lower annual O&M costs and it has less impact on individual properties. The greatest concerns of Gravity are that it has higher capital costs and has greater impacts of construction, i.e. trenching up to 23 feet, dewatering, and longer street closures. There is also a greater potential for infiltration of groundwater and inflow of storm water (I/I). Gravity collection will have permanent impacts due to lift stations and manhole maintenance. Also, Gravity collection results in significantly higher bio-solids handling at the treatment facility.

The advantages of STEP/ STEG are that it has lower capital costs; it provides primary treatment in the septic tank, thereby reducing the costs associated with solids; has less road impacts due to smaller pipe and shallow trenching or directional drilling; and may reduce the risk of archeological impacts and resultant delays. The greatest concerns are with higher annual O&M costs, and impacts on individual properties, both during construction and ongoing, including pumping of septic tanks with attendant odor and traffic.

Solids Treatment and Disposal

While Sub-Class B solids require the lowest capital costs, they have the highest risk for disposal costs and more stringent regulations in the future. Composted Class A bio-solids have the highest capital costs and annual O&M, but offer greater sustainability, flexibility, controllability, and are environmentally friendly.

Facultative ponds offer the least amount of solids generation and handling.

Pros and Cons

The TAC's Pro/Con Report includes tables of the Pros and Cons of each component alternative. These are presented in the executive summary of the report. The body of the report contains more detailed analysis developed by each of the working groups (Engineering/Water Resources, Environmental and Finance).

Read the TAC's Pro/Con Report

The report is available at the following locations:

- Los Osos Library
- LOCSD Office
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- Project Website: http://www.slocounty.ca.gov/PW/LOWWP.htm

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

Questions & Answers

Q: How many pump stations may be required for gravity or STEP collections systems?

A: A gravity system would have approximately 20 pump stations. They would be 10–12 ft in diameter and 10–15 ft deep. A STEP system would not have pump stations as there would be approximately 4,700 small pumps, one at each house in the system.

Q: How big are the excavations for STEP tanks?

A: A 1500 gallon STEP tank is 5 ft diameter by 10 ft long. The tanks would be buried 2–5 ft deep and 1–2 ft of clearance would be needed around the tanks. They would be placed in the front yard of each property, and the length, width and depth of the excavation would be approximately 13 ft x 8 ft x 8 ft.

Q: What are the depths for gravity trenches?

A: The average trench depth would be approximately 10 ft, 97% of trenches would be about 14 ft or less, and the deepest trenches would be about 23 ft. These trenches would be in the roadway.

Q: How do we know that the County will select the least expensive collection system?

A: On August 14th, 2007 the County Board of Supervisors established policy direction which will allow private industry contractors to competitively bid for construction of either a gravity or STEP system. Rather than basing the decision on estimates, the collection technology will be selected after we prepare the public draft Environmental Impact Report, after receiving responses from a Community-wide survey on your project preferences and after we have received firm, contractual commitments from private industry contractors.

Email Project Comments: http://www.slocounty.ca.gov/PW/LOWWP.htm

Office Hours

Bruce Gibson
Supervisor, District 2
San Luis Obispo County
Board of Supervisors

Los Osos Office Hours:
2nd & 4th Thursdays
4-5 pm
Sea Pines Lodge
1945 Solano Street, Los Osos
(Subject to change)

Legislative Assistant
Contact: Cherie Aispuro
(805) 781-5450

Technical Advisory Committee

Bill Garfinkel, Chair

The TAC has completed their Pro/Con analysis of the community options for a wastewater project. They will continue to meet on a regular basis over the next 12 months, leading up to the community advisory survey. Please check the project website for the TAC calendar; or call Cherie Aispuro.

Website Access to Board Items

Tuesday Meetings of the
Board of Supervisors:
2:05 Public Comment on the project
www.slocounty.ca.gov