Los Osos
Wastewater Project

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John Waddell
Project Engineer
788-2713
jwaddell@co.slo.ca.us

Genaro Diaz
Staff Engineer
781-5279
gdiaz@co.slo.ca.us

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

Project Status Report

County of San Luis Obispo

Department of Public Works

Paavo A. Ogren, Director

Project Approach

The County of San Luis Obispo and the Community of Los Osos have made large strides over the past two years towards fulfilling the long-standing obligation of removing septic systems from Los Osos. The Proposition 218 vote was approved by an overwhelming majority of property owners in 2007, the Draft Environmental Impact Report (DEIR) has been completed and public comments are posted to the project website, the Community Survey is enclosed, and contractors have submitted their Statements of Qualifications to begin the private industry competition through a design-build process for undertaking this crucial public works project. The purpose of this brochure is to let you know the status of where we are, and to remind you of what got us here. We know that some of the most pressing questions for the community will be the design and location of the facility, the schedule for completion, and how much each household will need to pay.

Decision Making

When the County was approached by Assemblyman Sam Blakeslee to work on the project, we knew, given the challenges in the community, that the most important aspect of the project was the process for making a sound decision. How would we study the technologies, how would we engage the community, and how would we, the County, make its project decisions?

The County has chosen to follow a set of rules for making decisions on the project. These rules have guided all actions of the County Project Team. While other agencies will influence the process, these are the principles that guide our progress. They are shown on the next page.

Guiding the Process

The County's process involves not only technical review of options but also guides the project through numerous regulatory and permitting agencies. We fully understand that obtaining support from these agencies is important to succeed and we recognize that they represent important interests that our state and nation expect to be covered. Some of the issues of other agencies relate directly to project efforts. Other issues are not a direct function of the project, but completing the wastewater project will be a significant effort in advancing solutions in other areas such as groundwater management, habitat conservation, and a new Local Coastal Plan. The checks and balances of the regulatory and legal requirement is, we know, an important principal of our

democracy, and we have fully engaged other agencies in all aspects of the project to seek its completion.

There are some things we know about the Los Osos project. There is no "perfect" place to put the treatment plant. No amount of scientific investigation will uncover the magic location for the wastewater project. Nevertheless, one still needs to be chosen.

Now the County is following a new path. It is carefully seeking the opinion of everyone through town hall meetings and community surveys. It is informing the public through regular publications, including technical memorandum and CEQA. It is relying on communication and openness, not technological confusion, to deliver infrastructure that is, yes, going to be disruptive during construction and expensive, but necessary. This is a modern approach to evaluating and developing a Public Works project, involving the community, for the benefit of the community.

Checks and Balances

Today's Public Works projects include multiple professional disciplines and numerous regulatory agencies. Engineering continues as a cornerstone for evaluating options,

In April of 2007, Congresswoman Lois Capps toured the estuary with Congressman Pete Visclosky of Indiana. Mrs. Capps was instrumental in obtaining a $35 million authorization in the Water Resources Development Act (WRDA). Mr. Visclosky is the Chair of the committee which appropriates funds from the WRDA.

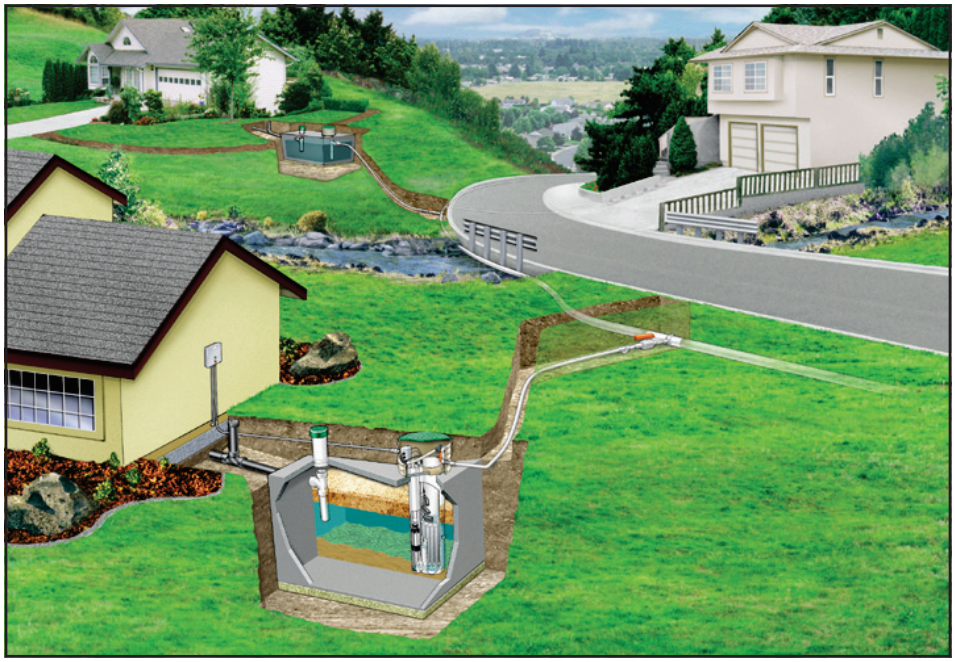
Guiding Principles

- ***The County's first obligation is to all of its citizens.*** Before accepting the responsibility (and liabilities) for the project, certain basic conditions must be satisfied. These are set forth in Assemblyman Sam Blakeslee's legislation, AB 2701. Still, in order to proceed, the County has committed extraordinary county-wide taxes and resources to get the project back on track.
- ***The property owners of Los Osos had to agree to pay for the project.*** One of the first orders of business was to hold a Proposition 218 vote. This vote passed by 80%, a similar majority the last time the owners were asked to pay, but with considerably higher assessments. The community has passed this important milestone, to which it need not return.
- ***No viable project option would be taken off the table.*** Every suggestion presented to the community and the County Project Team has been evaluated. Some have been analyzed in technical memoranda. The objective was to screen those options that could be permitted, funded and constructed without unnecessary further delays.
- ***The community would be heard.*** Through town hall meetings, community surveys and the Technical Advisory Committee. In addition, the Board of Supervisors has hosted regular project updates and Supervisor Gibson has held regular office hours in Los Osos, giving more attention to this project and this community than any previously.
- ***Environmental Analysis would be used to pick the frontrunner, not to justify a previously chosen project.*** Several alternatives would be analyzed at a full project level of detail. In this way, the decision makers would not be constrained by a single project, but would have the flexibility to choose from amongst the most viable alternatives.
- ***You can't please everybody.*** The reality of the Los Osos Wastewater Project is that its long-lasting controversies must be resolved. There is no perfect place to put it, it will be expensive, its affordability will be a significant challenge to many without state and federal assistance; yet the time to move forward is now.

but environmental needs, financial options, and respecting the purposes of regulatory agencies and legal requirements are also cornerstones of modern projects. To provide the best possible chance for a successful project, the Public Works Department established a number of procedures that made sure no one could predetermine the outcome.

- ***Technical Reports from experts.*** Numerous studies were commissioned to understand the technology and viability of wastewater alternatives. These included STEP/STEG (see text box), decentralized systems, on lot treatment, out of town conveyance and a comparison of greenhouse gas emissions and others.
- ***Permit Requirements.*** AB 2701 granted the County the capacity to pursue the project, but not the sole authority to determine its outcome. Permits from many agencies at all levels of government would be required for the project. Most notably, the California Coastal Commission holds the ultimate authority over the Coastal Development Permit. In order to avoid a successful appeal, the County is relying heavily upon the Commission's prior permit.
- ***Design-Build.*** The most important issues, including the type of collection system, would not rely solely on an engineer's recommendations, but would be open to private industry input and competition. Contractors have been invited to participate in a design-build process so that the private industry could also provide valuable and formal input and participation in the process. In contrast, the traditional approach of design-bid-build only seeks contractor participation after technologies have been selected and fully designed.
- ***CEQA.*** The EIR, or rather the cost and time required for the current version, will not be used as an excuse to further one project. The County understands the need to "Get It Right" and has made that commitment in the current effort. Several alternatives, studied at an equal level of detail, will be available for the decision makers.
- ***Water Resources.*** The County's wastewater project efforts are fully considering the existing groundwater litigation initiated by the community water purveyors. The Court's legal oversight ("Judicial Oversight") resulted in the approval of an "Interlocutory Stipulated Judgment" or "ISJ," which is leading to the development of a Basin Management Plan to ensure the long term sustainability of the community's water supply. This approach is also important to avoid the Prohibition Zone paying for 100% of cost for the BMP.

Effluent Sewers (STEP)



The tanks are approximately 14 feet long and 6 feet wide. Depending on depth of tanks, construction/ property impact may be approximately 24 feet in length and 16 feet in width.

Source: Orenco Systems Inc.

The collection system for the project could either be a hybrid gravity system, or a STEP/STEG system. Gravity is the conventional approach, using non-mechanical means (the force of gravity) to convey the wastewater, with occasional assistance from pumps and may include compatible technologies such as a low pressure or vacuum system in certain areas of the community. STEP/STEG stands for septic tank effluent pump/septic tank effluent gravity. A septic tank is excavated into every front yard and the liquid effluent is pumped to the treatment plant. A truck periodically pumps the solids from each tank and hauls those separately to the plant. These systems are more commonly found in rural areas where residences are widely separated.

Project Options

The County has not yet decided on the project. We have a frontrunner, but the process is not complete. The community has two important documents to consider and give their opinion on. The first is the Draft EIR and public comments, which are posted on the website.

Along with this update is the Community Survey. We hope that every citizen will lend his or her voice to the discussion about project preferences. The survey results will be tabulated and presented to the Board of Supervisors for their consideration while choosing which wastewater alternative to implement.

Project Options

A major goal of the decision making for the wastewater project was to maintain viable options as long as feasible through the process. The benefits of doing so include providing the community and decision makers with sufficient time to review alternatives leading up to the Draft EIR, and, to both formally and informally provide input and advice into the County efforts.

In getting to the Environmentally Superior Alternative; many possible projects and approaches were reviewed and subjected to an engineering Rough and Fine Screening process. This was the first step for the County's Project Team. They looked at all the prior efforts for the community's wastewater system and then turned to the industry to find newer technologies as well. One purpose of this effort was to initially decide what types of projects made sense for Los Osos to provide a sound basis for launching the Proposition 218 vote. It also gave the EIR team a point of departure for its own alternatives analysis.

Summary of Research & Analysis

- Searching the field for the widest selection of wastewater approaches
- Reviewing past efforts and studies
- Developing Technical Memoranda on serious options and issues
- Rough screening of the widest selection of approaches
- Fine screening with greater detail of analysis
- California Environmental Quality Act (CEQA) used to its full potential to consider multiple alternatives
- Outside professional and industry input
- Community input and surveys
- National Water Research Institute (NWRI) Independent Advisory Panel

Frontrunners

While no option is yet precluded, a specific set of alternative systems were chosen for full CEQA review in the DEIR and for the Board of Supervisors consideration. In addition, the Project Team is preparing an application for a Coastal Development Permit. This application is based largely on the findings of the DEIR, and the Environmentally Superior Alternative with "extended aeration" for treatment. By a narrow margin, the environmentally superior project was a hybrid of Alternative 4, which placed the treatment process on the Tonini parcel (off Turri Road), included gravity sewers, but replaced facultative ponds with extended aeration, and disposed of effluent with sprayfields at Tonini and percolation at Broderson.

The four alternatives identified in the DEIR are not the only options. Any of the six (6) alternatives identified by the National Water Research Institute (NWRI), an independent panel of experts, which are discussed next, can be implemented. In essence, since the DEIR evaluates options that "bracket" a wide range of environmental impacts, numerous options are available to implement. Likewise, starting work on the Coastal Development Permit (CDP) is needed to keep project efforts moving forward and to enhance our ability to pursue economic stimulus funds proposed by the federal government. The final consideration by the San Luis Obispo County Planning Commission on the CDP will only take place once the Final Environmental Impact Report is completed and ready for the Planning Commission to certify while considering the CDP. Consequently, we must still comply with all legal and regulatory requirements while fast-tracking some efforts like the CDP in order to enhance the project's ability to obtain stimulus funding.

A Peer Review by the National Water Research Institute (NWRI)

In order to have its work efforts reviewed by independent experts, the County hired the NWRI to examine the issues and resources, and make recommendations. One of the criticisms by NWRI of prior wastewater efforts was the attempt to try to solve too many community problems with the wastewater system. The NWRI focused their efforts on a system that would get the primary job done, without jeopardizing the community's need to solve the other problems as well, such as sea water intrusion.

NWRI's effort resulted in recommending that either gravity or STEP convey sewage to the Tonini site, where it can be treated, stored and spray irrigated. According to the panel, the advantage of the Tonini site was its ability to perform several of the necessary functions of the system. They felt that either STEP or gravity would be feasible, and believed that better cost estimates and community input would help shape final decisions.

The NWRI raised important questions concerning Broderson as a disposal site. Their biggest concern is that it might fall under stringent regulations of the California State Department of Public Health (DPH) as a water "recharge" project, and that those regulations would further delay wastewater project efforts. As a result of that sound advice, the Project Team met with representatives of DPH and the RWQCB to confirm that

Proposed Projects From the Draft EIR

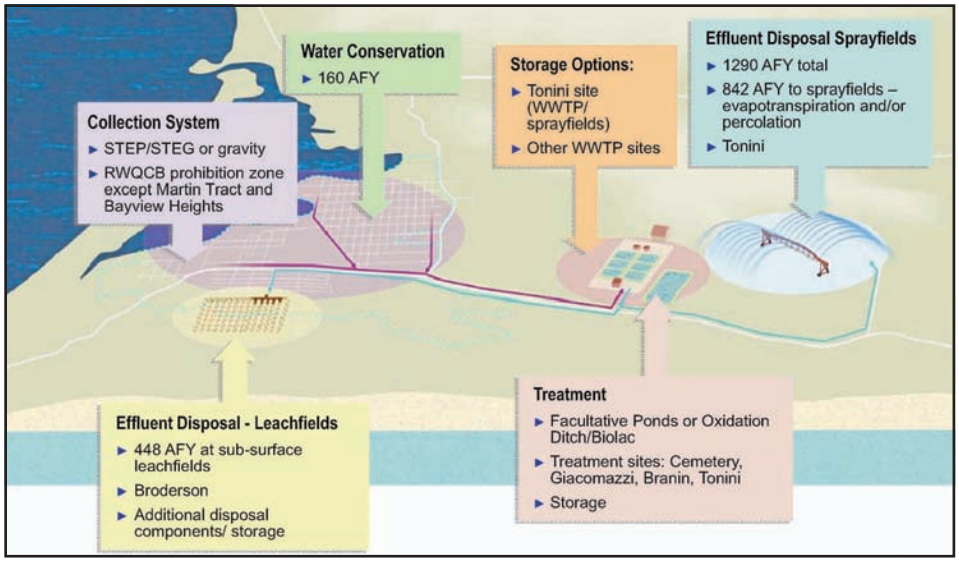
Proposed Project	*Treatment Plant Site*	*Collection System*	*Treatment Process*	*Wet Weather Storage*
1	Cemetery-Giacomazzi-Branin	STEP/STEG	Ponds	Cemetery-Giacomazzi-Branin
2	Giacomazzi	Gravity	Oxidation Ditch or Biolac	Tonini
3	Giacomazzi-Branin	Gravity	Oxidation Ditch or Biolac	Giacomazzi
4	Tonini	Gravity	Ponds	Tonini

Highlights of Proposed Projects as seen in the Draft EIR Report in section 2-8.

the Final EIR and the CDP would be based only on using Broderson as a "disposal" site, and not a "recharge" project. This approach will help bring the treated wastewater back into the basin to help mitigate seawater intrusion, and the pipeline will serve as the main trunkline, or backbone, to possible future water reclamation by the community's water purveyors.

The technical difference between a disposal site and a recharge project includes the quantity of treated wastewater that is put into the sub-surface leach lines for percolation, the vertical distance to the top of the groundwater basin, the location of the drinking water wells, how fast the treated wastewater moves underground, and other factors. By initially reducing the amount of wastewater disposed at Broderson in comparison to prior project proposals, the County assures the DPH the maximum protection of public health concerns while also benefitting groundwater supplies by bringing the water back into the basin. Under all project alternatives, the Tonini site provides sprayfield irrigation to back-up disposal at Broderson, and ensure that the wastewater project can proceed to completion without excess regulations while maximizing future water reuse options.

Schematic of Alternatives



Source: Draft EIR Report from Kennedy/Jenks Consultants, 2008.

Environmentally Superior Alternative

A significant departure from the last project, the County will set the environmentally superior project as the frontrunner. The challenge will be to find sufficient reasons to go with a different project. Unless the Community Survey comes out with a clear direction, or the design-build process compels us to believe that the cost of any alternative will be sufficiently low to justify a change, or another compelling reason emerges, the environmentally superior alternative will be presented to the Board of Supervisors as the Public Works Department's recommendation.

Proposed Projects From the NWRI

Collection System	*Treatment Technology*	*Biosolids Management*	*Effluent Management*
Hybrid gravity sewer	Oxidation ditch/Biolac	Mechanical dewatering with landfill disposal	Spray application
STEP/STEG	Oxidation ditch/Biolac	Mechanical dewatering with landfill disposal	Spray application
Hybrid gravity sewer	Facultative pond	Hauling	Spray application
STEP/STEG	Facultative pond	Hauling	Spray application
Hybrid gravity sewer	Oxidation ditch/Biolac	Solar drying and co-composting with landfilling as needed	Spray application
STEP/STEG	Oxidation ditch/Biolac	Solar drying and co-composting with landfilling as needed	Spray application

The table refers to the NWRI's Final Report (09/11/08). The table illustrated the six (6) alternatives that NWRI believes to be best.

Groundwater Basin Management Plan

The Los Osos Groundwater Basin is the sole source of water supply for the community. As a result of overpumping, sea water intrusion is currently occurring in the lower aquifer. In September of 2007, a four member technical group was formed after the County entered into an Interlocutory Stipulated Judgment (ISJ) with the Golden State Water Company, the Los Osos Community Services District, and the S&T Mutual Water Company. The ISJ established a legally approved and coordinated work effort to address critical deficiencies in the Los Osos Groundwater Basin through the preparation of a comprehensive Basin Management Plan (BMP). The ISJ provides for an "equitable sharing of costs related to data gathering and analysis, and development and implementation of the BMP." The financial burden to provide adequate water supply is therefore being shared by all the water customers of the three community purveyors, as opposed to only the wastewater prohibition zone.

County staff has been meeting monthly with the purveyor technical group to formulate a mutually-agreeable work program that develops physical solutions to the seawater intrusion problem within a schedule that facilitates timely input into the County wastewater project. This work program has been developed, and is now under way. Critical tasks include an analysis of the urban area of the groundwater basin under various wastewater disposal scenarios, investigation into the water supply available in the area of Los Osos Creek, a comprehensive look at recycled water options, water conservation planning, and finally the development of an integrated BMP. Initial results from the first two tasks are expected in the next few months.

The EIR has determined that the following recombination of the alternatives is the superior approach:

- ***Tonini Ranch.***
  This property, approximately one-half mile north of LOVR on Turri Road, reduces many of the social impacts of a project closer to the community. It is also large enough to have the treatment plant, winter storage of treated effluent, and a large spray irrigation field. It will be important to insure that the location of the plant does not provide an inducement to growth in the Los Osos Valley. Land use controls and agricultural protection easements will help keep this an agrarian area.
- ***Gravity collection system.***
  This is the best understood, and least impactful. Most of the excavation will be in the street right-of-way. It uses our most sustainable resource, gravity, to do much of the work. STEP/STEG remains an option, but whether a new septic tank with electrical connections and easements allowing County right of entry will be acceptable to property owners must be verified by the Community Survey to compel the Project Team to recommend this alternative to the Board of Supervisors. Because most lots are small in Los Osos, the STEP excavation will disrupt a large percentage of people's landscaping. It will generate more greenhouse gas emissions. It also has, for the lack of a better explanation, an enormous number of moving parts. Again, guidance will be received by the Community Survey and contractor's submittals in the design-build process.
- ***Extended aeration.***
  Greenhouse gas emissions are lowest for this type of facility. It also presents the most consistent quality of treated wastewater and lends itself for future additional (tertiary) treatment of the water.
- ***Spray irrigation and Leachfields.***
  Spray irrigation gives the most flexibility for disposing of the effluent, and leachfields at the Broderson site bring water back to the basin.
- ***Biosolid disposal.***
  The County supports hauling of the solids (known as Class B) that remain after the treatment process. However, the Tonini site will be arrayed to allow the future development of a biosolids processing facility such as greenhouse drying.

CEQA Environmental Analysis

Prior Efforts

To avoid repeating mistakes from earlier efforts, the County decided to fully analyze several alternatives and let the process help choose the project. Although this is a more complex process, it eliminates the prejudice in the earlier efforts. CEQA analyses previously focused upon a single project, chosen before the environmental analysis was done. Prior efforts that pre-selected an option created challenges for themselves and each ultimately failed.

Draft EIR

The structure and scope of the DEIR were designed to fully embrace a range of alternatives that would focus the investigation but give viable choices to the decision makers. The "architecture" of the DEIR establishes a pyramid of information, with a concise summary at its apex, descending through several layers of increasing technicality and depth of analysis, data and background resources. This allows readers of the DEIR to go into the level of depth that they choose.

CEQA & the New Project

The current approach to CEQA is different. Using an approach tailored after Federal Environmental Review and the National Environmental Protection Act (NEPA), the EIR analyzes a range of alternatives to a full level of inquiry, not the shortened type of alternative analysis typical in CEQA documents. This approach is necessarily more detailed, requiring considerably more effort in the analysis. However, the result is a true set of alternatives for presentation to the community and decision makers, allowing the latter the flexibility of finding an appropriate project for the community. Stated another way, the choice of a wastewater project becomes a product of the analysis, rather than a preselected project that an EIR then attempts to justify.

The EIR was supported by nearly three decades and thousands of hours of effort expended towards sewering Los Osos. This included prior EIR's for the Turri Road project, the Pismo Avenue project and the Mid-Town project. Other information available

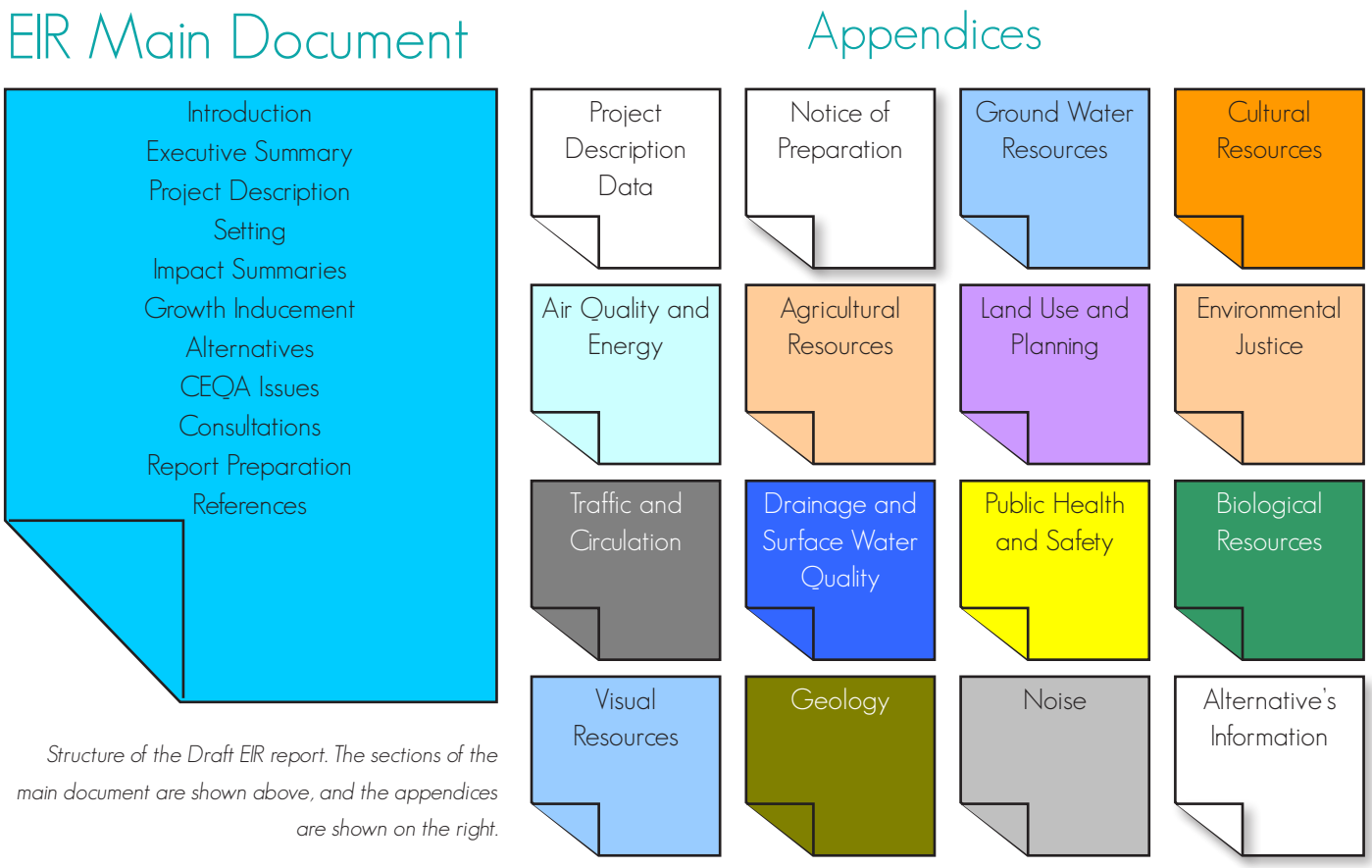
to the CEQA team included the Rough and Fine Screening Reports, numerous technical memoranda, and the reports of the Technical Advisory Committee.

Other outside expertise was used as well, including consultants and other experts from across the Country, and environmental groups and associations.

It is also important to recognize that the County's effort has also explored new territory with this EIR. Greenhouse gas emissions have been quantified and have demonstrated a slight advantage with a gravity collection system. Spill protection and other issues associated with conveying wastewater outside of town have been studied. Since the last effort, Morro Bay has been designated a State Marine Reserve, and additional policies and regulations needed to be considered. Of course archaeology remained a very important issue, given the Native American history in the area. This EIR considers impacts to agricultural resources because of the alternatives located outside of the community of Los Osos. And as part of the alternatives analysis, the STEP collection system was analyzed fully.

The only impact that was determined by the EIR to be unavoidable (a "significant" impact that couldn't be remedied with mitigation) was to agricultural resources. As mentioned earlier, there is no ideal site for the treatment plant. If one were chosen in town, it would be on Environmentally Sensitive Habitat, since all land west of Los Osos Creek supports the endangered Morro shoulderband dune snail. And every parcel east of the creek is agriculture.

The only "Class One" environmental impact results from the land needed for a treatment plant and sprayfield disposal. This impact will result in Agricultural lands for any site east of town, or ESHA lands for any site within town.



Structure of the Draft EIR report. The sections of the main document are shown above, and the appendices are shown on the right.

Environmentally Superior Alternative

Protection of the Community's wetlands is a requirement

The EIR needs to identify an environmentally superior alternative. As discussed earlier, the EIR concluded that all of the four alternatives were similar in their impacts, that they all met the project objectives and were feasible. A modified version of Alternative 4, at the Tonini site with the gravity collection system, was marginally superior to the others. Because the differences were slight, the environmental superiority may not be the determining factor in the County's choice of a wastewater system, but it is the frontrunner and it is the alternative that all others will be compared to while the Project Team considers the Community Survey and design-build submittals to develop its final project recommendations.

Wastewater Treatment Plant Alternative Sites

Source: Exhibit 7-1 in the Draft EIR Report. (AirPhoto USA, San Luis Obispo County GIS Data, and MBA GIS Data)

Project Funding

As required by AB 2701, the County's initial efforts in January 2007 began with the funding and Proposition 218 requirements. First, the County needed to develop engineering reports which would serve as a "basis of evidence" necessary to establish cost estimates used in the Proposition 218 proceedings. After evaluating various alternatives by utilizing available industry construction methods and technologies, the County developed the total cost estimate for the wastewater project of $165 million. The following table represents the estimated equivalent monthly cost assuming the final project cost is $165 million and the Community received no grant assistance.

The structure of the funding will be an important factor in managing the costs to each household. New guidelines for the State Revolving Fund allow for a longer term on the low interest loans. This will translate into lower monthly sewer bills. At $165 million the Los Osos sewer is the second highest cost request on the SRF 2008/2009 project priority list. While recognizing affordability impacts, the County is working to mitigate the cost impacts as much as possible.

In 2008, the County applied for SRF loan eligibility and received the highest available priority ranking on the state's Project Priority List. The 80% Proposition 218 approval by property owners in fall of 2007 has given the

Monthly Cost Estimates

Cost Estimates for a Typical Single Family Residence	***Monthly Equivalent Cost Estimate***	***Total Annual Cost Estimate***
Utility Bill for Operations & Maintenance	$40	$480
Assessments	$150	$1,800
Equivalent Monthly Capital	$10	$120
SUBTOTAL	***$200***	***$2,400***
Homeowner Monthly On-Lot	$50	$600
TOTAL	***$250***	***$3,000***

County and other funding agencies the confidence and ability to fund the project and continue under the authority of AB 2701.

In addition to loan funds, the County has pursued numerous grants which may help address affordability issues. A $35 million dollar authorization was approved by the federal government through the Water Resources Development Act (WRDA) but the actual "appropriation" in the federal budget still needs to be obtained. At the state level, $52 million is available to the Central Coast funding area under the Integrated Regional Water Management (IRWM) program, and the County will be extremely competitive for a portion of this amount during the 2009 application period. Federal "Stimulus" funds currently being discussed in Congress include allocations for infrastructure projects. Evaluating and possibly modifying the project schedule in order to compete for grant funding will be necessary as it is clear any project delays would jeopardize grant funding. The table below represents the County's focus on targeted grant funds.

Undeveloped Properties

A second Proposition 218 is still anticipated, which will allow the under and undeveloped parcels within the Prohibition Zone the ability to authorize funding for their portion of the wastewater project and additional water resource projects. Since the boundary of the Prohibition Zone does not encompass the entire community, certain inequities exist in regards to the financial burden of Prohibition Zone residents especially for costs of water supply enhancements and environmental protection. In order to address these inequities, the County will be open to considering a ballot initiative which would authorize a community-wide special tax that would spread some costs f rom the Prohibition Zone to the community at large. Although this "equity option" will help address an issue of what is fair, it would only cover a relatively small share of overall project costs.

A special tax would require two-thirds approval of the registered voters in the community. Addressing inequities by this method has been successfully implemented in the County before, most recently in Flood Control Zone 3 for costs associated with the Lopez Dam Seismic upgrade project. Project implementation does not depend on a special tax, but because input from the Community has included concerns over cost sharing equity/fairness issues, the County is willing to consider this financial issue as a part of the upcoming details and our guiding principal of obtaining public input and developing project details to meet Community needs as much as possible.

Grant Strategy

Project Stage	Collection System	Treatment Facility	Disposal	Property Owner Connection Costs
	↓	↓	↓	↓
Funding Source	Federal Stimulus Funding	WRDA	IRWM →	USDA CDBG Other

Executive *Pro/Con Analysis*

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

TAC Members

Chair
William Garfinkel

Vice Chair
Rob Miller

Engineering

Bob Semonsen
John Brady
Russell A. Westmann
John Fouche

Environmental

Don Asquith
David Dubbink
Daniel Berman
Lee Ferrero
Maria M. Kelly
Marshall E. Ochylski

Financial

George A. Call
James E. Furman
Rob R. Shipe
Karen A. Venditti

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.

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.

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.

Summary of *on Project Components*

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.

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.

Pros & 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).

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

History

1970	*1980*	*1990*	*2000*
1972 Congress approves Clean Water Act	***1983*** Regional Water Quality Control Board (RWQCB) adopts Resolution No. 83-13 prohibiting septic tanks ***1987*** First Environmental Impact Report (EIR) is certified ***1988*** RWCQB establishes a discharge moratorium ***1989*** 1st supplemental EIR certified	***1990-1996*** The need for project is re-evaluated ***1997*** 2nd supplemental EIR is certified Solutions group is formed and prepares a comprehensive Resource Management Plan (CRMP) which recommends alternative waste-water collection and treatment technologies ***1998*** Voters approve the LOCSD	***2000*** LOCSD certifies their Final EIR ***2005*** ***Aug.*** - Project approved by the Coastal Commission, begins construction ***Sept.*** - Recall election installs a new majority of the LOCSD ***Oct.*** - LOCSD votes to suspend construction of the project ***2006*** ***Sept.*** - Assembly Bill 2701 is signed into law authorizing the County to proceed with the wastewater project ***Dec.*** - County assembles project engineering team and Technical Advisory Committee who begin the process of identifying project alternatives ***2007*** Property owners approve assessments to construct wastewater project under the direction of the County with an 80% favorable outcome ***2008*** Draft EIR on County project is released for public comment

Current Work Efforts

2008	*2009*				*2010*
	1st Quarter	***2nd Quarter***	***3rd Quarter***	***4th Quarter***	
Without Stimulus					
Draft EIR			Final EIR/CDP		Final Permits
D-B RFQ		D-B RFP	D-B Contracts	Design	Begin Construction
With Stimulus					
Draft EIR		Final EIR/CDP	Final Permits		
D-B RFQ	D-B RFP	D-B Contracts	Begin Design and Construction		