



LOS OLIVOS WASTEWATER COMPARISONS OF REGIONAL AND LOCAL ALTERNATIVES – TECHNICAL MEMORANDUM

March 15, 2023

Los Olivos CSD & Regen Project Objectives

- Evaluate available alternatives for the treatment and dispersal or reuse of effluent from a regional and local perspective
- Consider the community of Los Olivos priorities and utilize a weighted scale to evaluate alternatives based on prioritizations
- Consider various impacts of specific wastewater treatment approaches and rank alternatives against the communities weighted priority
- Create a rubric that can be modified based on incoming information to allow for changes in prioritization and data

Categories utilized for weighted prioritization scale

- Economics
 - Capital
 - Ongoing Costs
- Performance
 - Effluent Quality
 - Performance Reliability
- Operations
 - Complexity
 - Maintenance
- Social Impacts
 - Location
 - Appearance
 - Growth impacts
 - Disruption or Community

Regional and Local Wastewater Treatment and Dispersal Alternative Considered

- Centralized Membrane BioReactor treatment with immediate implementation of reuse
- Centralized Membrane BioReactor treatment to percolation chambers
- Centralized secondary treatment to percolation chambers
- Distributed secondary treatment systems to percolation chambers, three to five separate systems distributed throughout the community
- Advanced Onsite for Individual homes & businesses with nitrogen specific treatment
- Hybrid combination of distributed secondary treatment in dense sections of the community and advanced onsite individual home systems in less dense areas

Wastewater Comparisons Rubric

Results

- Based on the results from the rubric, the Centralized Secondary Treatment to Percolation Chambers alternative scored the highest in two of the four categories including economics, and operation while also scoring high in performance and social impacts
- The Distributed Secondary Systems, Hybrid Alternative, and MBR to Percolation Chambers approaches scored within a reasonable margin to the Centralized Secondary Treatment alternative and should remain in consideration.

Category	Criteria	Weight	Systems Ranking					
			MBR/Reuse	MBR/Percolation	Secondary/Percolation	Distributed/Percolation	Advanced Onsite	Hybrid
Economic	Capital Costs	12%	1	2	3	3	4	3
	Annual Maintenance Costs	6%	1	2	3	3	2	3
	Energy Efficiency	2%	1	1	2	2	2	1
	Repair Costs	2%	1	2	3	3	2	3
	Replacement Costs	2%	1	1	2	2	2	2
Economic Score	Maximum Score	24%	5%	9%	14%	14%	14%	13%
Performance	Overall Effluent Quality	2%	5	5	4	4	2	4
	Nitrogen Reduction Capabilities	8%	5	5	5	5	3	4
	Reuse Quality	6%	5	4	2	2	1	2
	Innovative	2%	4	4	3	3	3	4
	Proven Technology	2%	4	4	5	4	3	4
	Handles Fluctuating Flows	2%	2	2	2	3	4	3
	Handles Fluctuating Strength	2%	3	3	2	3	2	3
	Modular Design	2%	2	2	4	5	5	5
Performance Score	Maximum Score	26%	22%	21%	18%	19%	14%	18%
Operations	Operation Simplicity	2%	1	2	3	3	2	3
	Maintenance Requirements	2%	1	2	3	3	3	3
	Repair & Replacement Difficulty	2%	2	3	3	3	4	3
	Start-up Simplicity	2%	2	3	4	4	2	4
	Sludge Management	2%	1	2	3	4	5	4
	Equipment Clean/Replacement Freq.	2%	1	1	3	3	3	3
	Chemical Addition	2%	1	1	3	3	2	3
Operation Score	Maximum Score	14%	4%	6%	9%	9%	8%	9%
Social/Regulatory	Simplicity of Approval Process	4%	5	5	4	3	1	3
	Grant Funding Potential	8%	5	5	4	3	1	3
	Location	2%	5	5	4	3	2	3
	Aesthetics	2%	4	4	4	4	3	4
	Potential for Odors	4%	4	4	3	3	3	3
	Potential Impact to Growth	6%	1	1	2	4	5	4
	Construction Disruption to Community	6%	5	5	5	4	3	4
	Ongoing Disruption to Community	4%	5	5	5	5	3	5
Social/Reg Score	Maximum Score	36%	30%	30%	28%	26%	19%	26%
Total		100%	60.40%	65.20%	68.40%	68.00%	55.20%	66.40%

Wastewater Regional and Local Alternatives Scoring

Centralized Secondary Treatment to Percolation Chamber	68.4%
Distributed Secondary Treatment to Percolation Chambers Systems	68%
Hybrid Distributed / Advanced Onsite	66.4%
Membrane BioReactor (MBR) Treatment to Percolation Chambers	65.2%
Membrane BioReactor (MBR) Treatment to Immediate Implementation of Reuse	60.4%
Advanced Onsite Treatment and Onsite Dispersal Systems	55.2%

Path Forward

- Finalize the groundwater monitoring evaluation and determine if local systems are acceptable on alternatives on less dense properties with minimal background nitrogen contamination
- Continue to identify funding sources and the impacts of obtaining various funds in relation to treatment technology and dispersal or reuse alternatives
- Continue the refinement of site selection and consider how site selection impacts the treatment, dispersal, and reuse aspects of system selection
- Continue the evaluation of collection system alternatives and impacts on sizing and siting of the wastewater treatment, dispersal, and reuse alternatives
- With additional information, re-evaluate wastewater comparisons rubric and make final decision on appropriate alternative for the Los Olivos Community