Populating the Technology Ranking Matrix

The selected lagoon optimization technologies/BMPs from Section 3.1 should be entered across the top of the matrix as shown in the example at the end of this section. The selected technologies will be identified in the Level 4 evaluation of the Technology Screening Tool. It is assumed that the Operational Improvements described earlier in this document will be employed prior to or in conjunction with the specific upgrade technologies.

Identify Design Criteria

The design criteria are intended to help determine which identified technology/BMP will best serve the needs of the community. These key criteria were identified as generally the most important factors to consider in lagoon optimization design. The ranking matrix is structured so that a high score for each criterion represents a favorable result and a low score represents an unfavorable result. Design criteria are listed down the left side of the matrix but can be changed by the user to reflect site specific conditions.

The following criteria have been identified for facultative lagoon upgrade projects:

1. Capital Costs
2. Operation and Maintenance Costs
3. Expected Removal Efficiency
4. Design Flexibility/Implementation
5. Land Requirements
6. Power Requirements/Availability
7. Operator Skill Requirements
8. Public Opinion

Assign Criteria Weighting

Decision/Selection criteria are also weighted to represent which criteria are most and least important to the project. Weights are assigned to each decision criteria, with the total combined weight not to exceed 100%. Weightings have been assigned to the identified design criteria in the matrix; however, weightings can be adjusted by the user to reflect site specific conditions.

Assign Scores to the Design Criteria

The user will then assign a score for each design criteria for each technology that is being ranked. The matrix scoring system is scaled from 1 to 5, with 1 being the lowest (worst) and 5 being the highest (best). The user may want to consult with their design engineer or other wastewater professional in order to ensure accurate scoring. A scoring guide is listed below for each design criterion:

1. Capital Costs

Rating: 1 = Highest Cost

2

3 = Moderate Cost

Selection Criteria		Weight	PROJECT ALTERNATIVES				
			T-1	T-2	T-3	T-4	T-5
1.	**Capital Costs** *Rating 1 = Highest Cost* *2* *3* *4* *5 = Lowest Cost*	20	Rating: 3 Score: 60	2 40	3 60	3 60	5 100
2.	**O & M Costs** *Rating: 1 = Highest Cost* *2* *3* *4* *5 = Lowest Cost*	15	Rating: 4 Score: 60	2 30	2 30	4 60	1 15
3.	**Removal Efficiency/Technical Feasibility/Performance** *Rating 1 = Does not remove all, Low removal efficiency* *2* *3 = Partial parameter removal* *4* *5 = High potential for removal of all parameters*	20	Rating: 5 Score: 100	4 80	4 80	2 40	1 20
4.	**Design Flexibility/Implementation** *Rating 1 = Lest Flexible* *2* *3* *4* *5 = Most Flexible*	15	Rating: 5 Score: 75	4 60	4 60	3 45	2 30
5.	**Land Requirements** *Rating 1 = Significant Additional Land Requirement* *2* *3* *4* *5 = No additional land required*	15	Rating: 3 Score: 45	4 60	4 60	1 15	5 75
6.	**Power Requirements/Availability** *Rating 1 = 3 Phase power required, Distance >1 mile* *2* *3 = Power required minimal/solar* *4* *5 = No additional permanent power requirement*	5	Rating: 3 Score: 15	3 15	3 15	4 20	4 20
7.	**Operator Skill Requirements** *Rating 1 = Significant additional skills required* *2* *3* *4* *5 = No additional skills required*	5	Rating: 3 Score: 15	3 15	3 15	4 20	4 20
8.	**Public Opinion** *Rating 1 = Very significate opposition* *2* *3* *4* *5 = Overwhelming community support*	5	Rating: 3 Score: 15	3 15	3 15	4 20	5 25
	TOTAL SCORE	100 Weight	385 T-1	315 T-2	335 T-3	280 T-4	305 T-5