

Scoring and Ranking of Alternative Solutions Table

Categories	Category Weight (%)	Criteria	Criteria Weight (%)	1. Existing Upgraded Plant and Optimized Operations (Stages 1, 2, and 3)		2. Modify Existing Outfall Diffuser & Alternative 1		3. Provide Tertiary Treatment at the Duffin Creek WPCP & Alternative 1		4. Extend Existing Outfall Diffuser & Alternative 1		5. New Outfall & Alternative 1	
				Impact Rating	Weighted Score	Impact Rating	Weighted Score	Impact Rating	Weighted Score	Impact Rating	Weighted Score	Impact Rating	Weighted Score
Technical	24.3%	T1 - Performance and Peak Flow Considerations	25.0%	3	0.75	4	1.00	4	1.00	1	0.25	5	1.25
		T2 - Ease of Implementation	10.0%	3	0.30	5	0.50	3	0.30	2	0.20	3	0.30
		T3 - Compatibility with Current Operation of the WPCP	10.6%	5	0.53	5	0.53	2	0.21	3	0.32	4	0.43
		T4 - Ability to Use Existing Infrastructure and land	10.0%	5	0.50	5	0.50	3	0.30	2	0.20	2	0.20
		T5 - Flexibility to Meet Possible Future Capacity Requirements	13.1%	1	0.13	3	0.39	3	0.39	1	0.13	5	0.66
		T6- Risks to Shoreline Infrastructure Features	6.9%	5	0.34	5	0.34	4	0.28	2	0.14	3	0.21
		T7 - Risks or Susceptibility to Changing Long-term Conditions	13.8%	3	0.41	3	0.41	3	0.41	3	0.41	5	0.69
		T8 - Ease of Operation and Maintenance	10.6%	4	0.43	4	0.43	1	0.11	4	0.43	5	0.53
			100%	29	3.39	34	4.11	23	3.00	18	2.08	32	4.26
		<b>Technical Score</b>			<b>0.83</b>		<b>1.00</b>		<b>0.73</b>		<b>0.50</b>		<b>1.04</b>
Natural Environment	31.1%	N1 - Impact on Nearshore Aquatic Systems and Habitats	20.0%	4	0.80	4	0.80	4	0.80	4	0.80	4	0.80
		N2 - Impact on Offshore Aquatic Systems and Habitat	13.8%	5	0.69	5	0.69	5	0.69	5	0.69	4	0.55
		N3 - Impact on Water Quality	18.8%	4	0.75	4	0.75	5	0.94	4	0.75	4	0.75
		N4 - Impact on Terrestrial Environment	11.3%	5	0.56	5	0.56	4	0.45	5	0.56	3	0.34
		N5 - Impact on Species at Risk and Significant Habitats	15.6%	5	0.78	5	0.78	4	0.63	4	0.63	4	0.63
		N6- Geotechnical impact	10.0%	5	0.50	5	0.50	4	0.40	2	0.20	3	0.30
		N7 - Energy Use	10.6%	5	0.53	5	0.53	1	0.11	4	0.43	3	0.32
			100%	33	4.61	33	4.61	27	4.01	28	4.05	4	3.68
		<b>Natural Environment Score</b>			<b>1.43</b>		<b>1.43</b>		<b>1.25</b>		<b>1.26</b>	<b>0</b>	<b>1.14</b>
Social/Cultural	24.3%	S1 - Tourism, Recreation and Other Uses of Lake and Lakefront	13.1%	4	0.53	4	0.53	4	0.53	3	0.39	3	0.39
		S2 - Impact on Archaeological/cultural Features	9.4%	5	0.47	5	0.47	4	0.38	4	0.38	4	0.38
		S3 - Community Health and Safety	14.4%	5	0.72	5	0.72	4	0.58	4	0.58	4	0.58
		S4 - Worker Health and Safety	8.1%	5	0.41	4	0.33	4	0.33	2	0.16	3	0.24
		S5 - Noise and Vibration Impacts	6.9%	5	0.34	5	0.34	4	0.28	3	0.21	4	0.28
		S6 - Impact on Aesthetic Conditions along the shoreline	20.6%	5	1.03	5	1.03	5	1.03	4	0.83	4	0.83
		S7 - Impact on Lake Shipping Routes/Transportation	8.1%	5	0.41	5	0.41	5	0.41	5	0.41	5	0.41
		S8 - Impact on the Ajax WSP Intake	19.4%	4	0.78	4	0.78	4	0.78	3	0.58	3	0.58
			100%	38	4.68	37	4.59	34	4.29	28	3.53	30	3.68
		<b>Social/Cultural Environment Score</b>			<b>1.14</b>		<b>1.12</b>		<b>1.04</b>		<b>0.86</b>		<b>0.89</b>
Financial	20.3%	F1 - Capital Costs	23.8%	5	1.19	5	1.19	1	0.24	2	0.48	1	0.24
		F2 - Operating and Maintenance Costs	37.5%	4	1.50	4	1.50	1	0.38	4	1.50	4	1.50
		F3 - Lifecycle Cost	26.3%	4	1.05	4	1.05	1	0.26	2	0.53	1	0.26
		F4 - Write-Off Cost	12.5%	5	0.63	5	0.63	5	0.63	5	0.63	4	0.50
			100%	18	4.36	18	4.36	8	1.50	13	3.13	10	2.50
	100%	<b>Financial Score</b>			<b>0.88</b>		<b>0.88</b>		<b>0.30</b>		<b>0.63</b>		<b>0.51</b>
<b>Overall Weighted Score</b>				<b>4.28</b>	<b>4.43</b>	<b>3.32</b>	<b>3.25</b>	<b>3.58</b>					
<b>Rank</b>				<b>2</b>	<b>1</b>	<b>4</b>	<b>5</b>	<b>3</b>					

**Duffin Outfall Class EA  
SAC Questionnaire Analysis**

Criteria	SAC Member	1	2	3	4	5	6	7	8	Criteria Weight (%)
<b>Technical</b>										
T1	Performance and Peak Flow Considerations	30	25	10	15	30	40	30	20	25.0%
T2	Ease of Implementation	5	15	10	15	5	10	20	0	10.0%
T3	Compatibility with Current Operation of the WPCP	5	15	10	15	5	10	10	15	10.6%
T4	Ability to Use Existing Infrastructure and land	10	20	10	10	5	5	5	15	10.0%
T5	Flexibility to Meet Possible Future Capacity Requirements	10	10	25	10	20	10	10	10	13.1%
T6	Risks to Shoreline Infrastructure Features	5	5	10	10	5	5	5	10	6.9%
T7	Risks or Susceptibility to Changing Long-term Conditions	25	5	10	10	10	15	10	25	13.8%
T8	Ease of Operation and Maintenance	10	5	15	15	20	5	10	5	10.6%
<b>Natural Environment</b>										
N1	Impact on Nearshore Aquatic Systems and Habitats	15	15	15	15	25	20	30	25	20.0%
N2	Impact on Offshore Aquatic Systems and Habitat	15	15	15	15	10	15	10	15	13.8%
N3	Impact on Water Quality	15	30	10	15	15	20	25	20	18.8%
N4	Impact on Terrestrial Environment	10	10	15	20	10	15	5	5	11.3%
N5	Impact on Species at Risk and Significant Habitats	20	15	25	15	5	15	15	15	15.6%
N6	Geotechnical Impact	10	10	10	5	15	10	5	15	10.0%
N7	Energy Use	15	5	10	15	20	5	10	5	10.6%
<b>Social/Cultural/Legal Environment</b>										
S1	Tourism, Recreation and Other Uses of Lake and Lakefront	15	10	15	15	10	15	10	15	13.1%
S2	Impact on Archaeological/cultural Features	10	10	10	5	10	10	5	15	9.4%
S3	Community Health and Safety	10	10	15	20	25	15	20	0	14.4%
S4	Worker Health and Safety	10	10	10	10	10	5	10	0	8.1%
S5	Noise and Vibration Impacts	5	5	10	10	5	5	5	10	6.9%
S6	Impact on Aesthetic Conditions along the Shoreline	20	30	10	10	10	20	35	30	20.6%
S7	Impact on Lake Shipping Routes/Transportation	20	5	10	10	10	5	5	0	8.1%
S8	Impact on the Ajax WSP Intake	10	20	20	20	20	25	10	30	19.4%
<b>Financial Criteria</b>										
F1	Capital Costs	10	25	25	15	30	40	30	15	23.8%
F2	Operating and Maintenance Costs	35	40	25	60	40	40	30	30	37.5%
F3	Lifecycle Cost	50	20	30	20	20	15	20	35	26.3%
F4	Write-off Cost	5	15	20	5	10	5	20	20	12.5%
		100	100	100	100	100	100	100	100	100%

Criteria Categories		1	2	3	4	5	6	7	8	Average	Weighting (%)
1	Technical	2	2	3	2	3	3	2	1	2	24.3%
2	Natural Environment	3	3	3	3	2	3	3	3	3	31.1%
3	Social/Cultural/Legal	2	3	2	2	1	2	3	3	2	24.3%
4	Financial	2	2	1	3	2	2	2	1	2	20.3%
	<b>Total</b>									9	100%