Team 2 – Joan, Caden, Jaryd, Mohamed

Selection Matrices

Criteria / Requirements	Weight Factors of criteria = **WF**	Concept Option 1	Concept Option 2	Concept Option 3	Concept Option 4	Concept Option …
Appropriate technology	.2	4	3	1	2	
Available materials	.4	3	2	4	1	
Affordable cost	.3	3	2	4	1	
Ease of maintenance	.1	3	2	1	4	
Safety	0	3	2	4	2	
		WR Total 3.2	**WR Total** 2.2	**WR Total** 3.1	**WR Total** 1.5	**WR Total**

Best option: 1 – Joan, 3- Jaryd

Criteria / Requirements	Appropriate technology	Available materials	Affordable cost	Ease of maintenance	Safety	**Total of each row**	**WF for each row = *Total of row / Sum of totals***
Appropriate technology		0	0	1	1	2	.2
Available materials	1		1	1	1	4	.4
Affordable cost	1	0		1	1	3	.3
Ease of maintenance	0	0	0		1	1	.1
Safety	0	0	0	0		0	0
	2	0	1	3	4	**Sum of Totals**	**Sum of WFs = 100%**

Drip Irrigation System – initial conceptual solutions to the problem

Joan

Use polyethylene tubing for the main line and sub-main lines of the drip irrigation system. The polyethylene is durable yet flexible, and it can be connected from the mainline to the sub mainline using a polyethylene T connector. The tubing can also easily have holes poked into it with a sharp tool. Assuming we will be using about 150 feet of tubing for the sub-main lines, it would cost $6.57 per 50 ft of 1/2' poly drip tubing, bringing the cost of sub-main line tubing to about $20.

Caden

PVC pipe would be used for the whole system. Benefits of this would include not having to drill holes for the sub main lines because a t-connector would allow for the sub main lines to be installed. Cutting the PVC pipe would be the only modification that would need to be made to make the sub main lines. Using the various connectors made for PVC pipe they should be able to adapt to any shape needed. Use duct tape. $0.18 per foot.

Jaryd

Use PVC piping for the main line and latex rubber tubing or the sub-main lines. The PVC would make a durable main line while the rubber tubing would be extremely cheap and easy to work with for the sub-main lines. They can be connected by drilling holes into the PVC and placing the tubes directly into the drilled holes. The total cost for the rubber tubing will be about $75. $0.18 per foot for PVC.

Mohamed

I think the best material is special high-temperature plastic, this is because it because pipes are sometimes exposed to high temperatures (near pump station). Using plastic may also reduce the cost and increase profit. This material should be easy to bend, and it's better to be thick to make it hard to break down especially when be bending them near the edges.