**Final Solution Description**

To maximize our materials covering the largest area we calculated our mainline to be 8.5m long with while sub-mainlines stretching 6m long each. There will be 8 sub-mainlines that run perpendicular to the mainline. To add water pressure the tank will be elevated 3m off the ground and the water will run through the mainline to ground level (as seen in process flow diagram). In each of the sub-mainlines there will be small holes punctured in the side of the hoses where the water will drop out from at the plant specific locations.

The most efficient and cheapest material we found was Polyethylene Tubing. 100 feet of this tubing is around $5.78, however, the dimensions of the garden require more than 100 feet of tubing so we would end up spending $11.56 on 200 feet of tubing. The same tubing will be used for both the mainline and sub-mainline. The mainline and sub-mainline will be connected by 7 small, inexpensive, t-shaped, plastic connectors and one L-shaped connector (for the end hose) each costing $0.15 (8 x $0.15=1.20). Additionally the sub-mainlines will be plugged to avoid water waste. Each sub-mainline will be plugged with a plastic plug costing $0.12 (8 x $0.12= $0.96). To avoid sediment build up in the distribution points in the sub-mainlines (the holes) placing the holes on the side of the tube will prove most efficient. Since the garden is inside a greenhouse weather and environmental conditions are negligible. Water, small tubes, and plastic components pose no safety threats to human beings. Workers should take notice of tube locations to avoid tripping and falling.