

**Scenario Worksheet**

**Practice and Scenario Description:**

<b>Information Type</b>	<b>Data</b>
Region	New England
State	Connecticut
Discipline Group	Water Management Engineering
Practice Code/Name	443 - Irrigation System, Surface and Subsurface
Scenario ID	2
Scenario Name	Flood (Ebb and Flow) Bench Irrigation
Scenario Description	The scenario consists of an aluminum flood bench system. The plants receive water from the flooded bench through the root zone. Only needed water is taken up by the soil medium. After irrigation completed all water is cycled to the holding tank and is reused for the next irrigation cycle. For pumps - use 533 - Pumping Plant, for holding tank use 447 - Irrigation Tail Water Recovery, for piping use 430 - Irrigation Pipeline.
Before Practice Situation	The greenhouse plants are watered by hand or by sprinkler system. Water drips onto the floor and sinks into the earthen floor, runs off or evaporates. Water is lost to the plants and can become contaminated with fertilizers or pesticides.
After Practice Situation	Greenhouse plants are irrigated with an aluminum flood bench (Ebb and Flow) system. The plants receive water from the flooded bench through the root zone. Water is taken up by the soil medium. All remaining water is recycled for reuse. No water is wasted or contaminated.
Scenario Feature Measure	Square foot of bench installed
Scenario Unit	Square Foot
Scenario Typical Size	2000

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$8,000.00	\$4.00
Labor	\$0.00	\$0.00
Mobilization	\$261.76	\$0.13
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
<b>Total</b>	<b>\$8,261.76</b>	<b>\$4.13</b>

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.23	4	\$156.92
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$26.21	4	\$104.84
Equipment/Installation	2231	Irrigation Flood Bench system	Sliding benches or troughs used for potted plant irrigation. Distribution system is included in benches. Includes materials, labor, and equipment costs.	Square Foot	\$4.00	2000	\$8,000.00

**Scenario Worksheet**

**Practice and Scenario Description:**

<b>Information Type</b>	<b>Data</b>
Region	New England
State	Connecticut
Discipline Group	Water Management Engineering
Practice Code/Name	443 - Irrigation System, Surface and Subsurface
Scenario ID	1
Scenario Name	Flood Floor Irrigation
Scenario Description	The scenario consists of a concrete floor and under floor water distribution system. The plants receive water from the flooded floor through the root zone. Only needed water is taken up by the soil medium. After irrigation completed all water is cycled to the holding tank and is reused for the next irrigation cycle. For pumps - use 533 - Pumping Plant , for piping use 430 - Irrigatin Pipeline. Based on flood floor design.
Before Practice Situation	The greenhouse plants are watered by hand or by sprinkler system. Water drips onto the floor and sinks into the earthen floor, runs off or evaporates. Water is lost to the plants and can become contaminated with fertilizers or pesticides.
After Practice Situation	Greenhouse irrigation water is supplied by a Flood-Floor irrigation system. Water is taken up by the soil medium. All remaining water is recycled for reuse. No water is wasted or contaminated.
Scenario Feature Measure	Square foot of flooded area
Scenario Unit	Square Foot
Scenario Typical Size	21600

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$35,036.87	\$1.62
Equipment/Installation	\$96,763.00	\$4.48
Labor	\$2,910.72	\$0.13
Mobilization	\$261.76	\$0.01
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$134,972.35	\$6.25

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	980	Pipe, PVC, 6", SCH 40	Materials: - 6" - PVC - SCH 40 - ASTM D1785	Foot	\$5.40	400	\$2,160.00
Materials	981	Pipe, PVC, 8", SCH 40	Materials: - 8" - PVC - SCH 40 - ASTM D1785	Foot	\$8.15	2125	\$17,318.75
Materials	1074	Tank, Poly enclosed Storage, 300-1000 gal	Includes materials	Gallon	\$0.74	14000	\$10,360.00
Materials	1077	Tank, Float Valve Assembly	Float Valve, Stem, Swivel, Float Ball	Each	\$84.27	1	\$84.27
Materials	1485	Micro Irrigation, control valves and timers	Automatic controller and timer, to turn on and off the sets for micro irrigation, installation and valves. Based on control unit, not number of valves controlled.	Each	\$2,537.00	2	\$5,074.00
Materials	1617	Micro Irrigation, screen filter, < 100 gpm	Screen filter for Micro Irrigation used in small systems. Includes filter. No controls are included or needed.	Each	\$39.85	1	\$39.85
Equipment/Installation	37	Concrete, CIP, slab on grade, reinforced	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$316.71	300	\$95,013.00
Equipment/Installation	1987	Micro Irrigation, chemical injection equipment	Chemical Injector Pump, plus chemigation check valve, injector ports, and appurtenances, Installation included.	Each	\$1,750.00	1	\$1,750.00
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	64	\$1,645.44
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.54	32	\$1,265.28
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.23	4	\$156.92
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$26.21	4	\$104.84