

Practice: 441 - Irrigation System, Microirrigation

Scenario # 1 SDI (Subsurface Drip Irrigation)

Scenario Description: Actual Scenario # 1

New York

A subsurface drip irrigation system (SDI) with a lateral spacing between 37-59 inches. This buried drip irrigation system utilizes a thinwall dripperline or tape with inline emitters at a uniform spacing for the system laterals. The dripperline or tape is normally installed by being plowed in approx 10-14 inches deep with a chisel shank type plow equipped with tape reels. This type of drip irrigation system utilizes a buried supply manifold with automated zone control valves and a buried flush manifold with manual flush valves. This permanent micro-irrigation system includes an automated filter station, flow meter, backflow prevention device, automated control box or timer, the thinwall dipperline or tape for laterals, both a supply and a flushing manifold and numerous types of water control valves. This is an all-inclusive system starting with the filter station including all required system components out to the flush valves. The water supply line from the water source to the filter station is an irrigation pipeline (430) and is not included as part of this system

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plantproductivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

Typical before irrigation situation would normally be an existing inefficient surface or sprinkler irrigation system on a cropland or hayland field. The existing irrigation system would experience poor, non-uniform irrigation applications and significant water losses affecting both water quantity and water quality

After Practice Situation:

A typical practice would be the installation of a subsurface drip irrigation system (SDI) on a 10 acre cropland or hayland field. The system lateral (thinwall dripperline or tape) spacing would 40 inches. This highly efficient SDI (buried) irrigation system provides irrigation water directly to the plant root zone eliminating application losses resulting in a very high water application efficiency and properly designed these SDI systems are capable of very uniform water applications. Typical field size is 10 acres.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:	10	Acre	Tot Unit Cost	\$2,892.03
-------------------------------	----	------	---------------	------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	984	Pound	\$1.43	\$1,407.12
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, media filter	2	Each	\$2,449.98	\$4,899.96
Materials	Micro Irrigation, screen filter, ≥ 100	1	Each	\$313.85	\$313.85
Materials	Micro Irrigation, control valves and	1	Each	\$1,223.75	\$1,223.75
Materials	Micro Irrigation, buried drip tubing	95850	Foot	\$0.14	\$13,419.00
Equip./Install.	Trenching, Earth, 12" x 48"	1800	Foot	\$1.45	\$2,610.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Payment types:

Total Cost: \$28,920.32

<u>PayType</u>	<u>Unit Payment</u>	<u>PayType</u>	<u>Unit Payment</u>
EQIP	\$2,169.02	EQIP-HU	\$2,602.83
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 2 Surface PE Perennial Crops, filtered, no flow meter

Scenario Description:

Actual Scenario # 2

New York

A micro-irrigation system, utilizing surface tubing (can be placed on trellis or above ground) with emitters to provide irrigation for an orchard, vineyard, field nursery stock or other specialty crop grown in a grid pattern. The typical system is a permanent system, installed over 20 acres of perennial crops on the ground surface or trellis. This system utilizes emitters at each tree or plant as the water application device. Durable, UV resistant tube/tape is used for a multi-year system. This system typically includes all fittings, control valves, pressure reducing/regulating valves, air vacuum release, a filter system (screen/disc), pressure gauges, submains, lateral lines, and emitters to deliver water to plants at or below the soil infiltration rate on a typical 20 acre site. Does not include Pump, Power source, Water source (well or reservoir). The water supply line from the water source to the field edge is an irrigation pipeline (430) and is not included as part of this system. Water supply is not filtered. Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

An orchard has an inefficient sprinkler irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A surface placed microirrigation system is utilized to provide highly efficient irrigation to an orchard. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:

20	Acre	Tot Unit Cost	\$5,350.65
----	------	---------------	------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	2520	Pound	\$1.43	\$3,603.60
Materials	Micro Irrigation, media filter	2	Each	\$2,449.98	\$4,899.96
Materials	Micro Irrigation, screen filter, ≥ 100	1	Each	\$313.85	\$313.85
Materials	Micro Irrigation, surface drip tubing	106480	Foot	\$0.87	\$92,637.60
Equip./Install.	Trenching, Earth, 12" x 48"	2700	Foot	\$1.45	\$3,915.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Total Cost: \$107,012.94

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$4,012.99	EQIP-HU	\$4,815.58
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 3 Surface PE Perennial Crops

Scenario Description: Actual Scenario # 3

New York

A micro-irrigation system, utilizing surface PE tubing (can be placed on trellis or above ground) with emitters to provide irrigation for an orchard, vineyard, field nursery stock or other specialty crop grown in a grid pattern. The typical system is a permanent system, installed over 20 acres of perennial crops on the ground surface or trellis. This system utilizes emitters at each tree or plant as the water application device. Durable, UV resistant tube/tape is used for a multi-year system. This system typically includes all fittings, control valves, pressure reducing/regulating valves, air vacuum release, a filter system (screen/disc), pressure gauges, submains, lateral lines, computerized soil moisture sensors system, and emitters to deliver water to plants at or below the soil infiltration rate on a typical 20 acre site. Does not include Pump, Power source, Water source (well or reservoir). The water supply line from the water source to the zone valves is an irrigation pipeline (430) and is not included as part of this system. Water supply is not filtered.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

An orchard has an inefficient sprinkler irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A surface placed microirrigation system is utilized to provide highly efficient irrigation to an orchard. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:	20	Acre	Tot Unit Cost	\$5,275.83
-------------------------------	----	------	---------------	------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	2520	Pound	\$1.43	\$3,603.60
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, screen filter, ≥ 100	1	Each	\$313.85	\$313.85
Materials	Micro Irrigation, surface drip tubing	106480	Foot	\$0.87	\$92,637.60
Equip./Install.	Trenching, Earth, 12" x 48"	2700	Foot	\$1.45	\$3,915.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Payment types:

Total Cost: \$105,516.69

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$3,956.88	EQIP-HU	\$4,748.25
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 4 Surface PE Container Nursery

Scenario Description: Actual Scenario # 4

New York

A micro-irrigation system, utilizing surface PE tubing (can be placed on trellis or above containers) with emitters to provide irrigation for container-grown nursery stock in a grid pattern. The typical system is a permanent system, installed over 10 acres of container-grown nursery stock. This system utilizes emitters at each tree or plant as the water application device. Durable, UV resistant tube/tape is used for a multi-year system. This system typically includes all fittings, control valves, pressure reducing/regulating valves, air vacuum release, a filter system (screen/disc), pressure gauges, submains, lateral lines, computerized soil moisture sensors system, and emitters to deliver water to plants at or below the soil infiltration rate on a typical 10 acre site. Does not include Pump, Power source, Water source (well or reservoir). The water supply line from the water source to the zone valves is an irrigation pipeline (430) and is not included as part of this system. Water supply is not filtered.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

A container-grown nursery stock has an inefficient sprinkler irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A surface placed microirrigation system is utilized to provide highly efficient irrigation to a ontainer-grown nursery stock. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:	10	Acre	Tot Unit Cost	\$9,946.16
-------------------------------	----	------	---------------	------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	788	Pound	\$1.43	\$1,126.84
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, screen filter, ≥ 100	1	Each	\$313.85	\$313.85
Materials	Micro Irrigation, control valves and	1	Each	\$1,223.75	\$1,223.75
Materials	Micro Irrigation, emitters or sprays	95850	Foot	\$0.93	\$89,140.50
Equip./Install.	Trenching, Earth, 12" x 48"	1800	Foot	\$1.45	\$2,610.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Total Cost: \$99,461.58

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$7,459.62	EQIP-HU	\$8,951.54
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 5 Surface PE Perennial Filtered

Scenario Description: Actual Scenario # 5

New York

A micro-irrigation system, utilizing surface PE tubing (can be placed on trellis or above ground) with emitters to provide irrigation for an orchard, vineyard, field nursery stock or other specialty crop grown in a grid pattern. The typical system is a permanent system, installed over 20 acres of perennial crops on the ground surface or trellis. This system utilizes emitters at each tree or plant as the water application device. Durable, UV resistant tube/tape is used for a multi-year system. This system typically includes all fittings, control valves, pressure reducing/regulating valves, air vacuum release, a filter system (screen/disc), pressure gauges, submains, lateral lines, computerized soil moisture sensors system, and emitters to deliver water to plants at or below the soil infiltration rate on a typical 20 acre site. Does not include Pump, Power source, Water source (well or reservoir). An additional automatic-cleaning sand media filtration system or its equivalent is needed to prevent the passage of solids in sizes or quantities from the water source that might obstruct the emitter openings to ensure proper efficiency and uniformity of irrigation system. The water supply line from the water source to the zone valves is an irrigation pipeline (430) and is not included as part of this system.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

An orchard has an inefficient sprinkler irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A surface placed microirrigation system is utilized to provide highly efficient irrigation to an orchard. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:	20	Acre	Tot Unit Cost	\$5,643.33
-------------------------------	----	------	---------------	------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	2520	Pound	\$1.43	\$3,603.60
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, media filter	3	Each	\$2,449.98	\$7,349.94
Materials	Micro Irrigation, screen filter, ≥ 100	1	Each	\$313.85	\$313.85
Materials	Micro Irrigation, surface drip tubing	106480	Foot	\$0.87	\$92,637.60
Equip./Install.	Trenching, Earth, 12" x 48"	2700	Foot	\$1.45	\$3,915.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Total Cost: \$112,866.63

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$4,232.50	EQIP-HU	\$5,079.00
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 6 Surface Tape Annual Filtered, no Flow Meter

Scenario Description: Actual Scenario # 6

New York

A micro-irrigation system, utilizing surface drip tape to provide irrigation for vegetables. The typical system is a permanent system, installed over 10 acres of vegetables crops on the ground surface, with buried main lines and headers. This system utilizes closely spaced emitters as the water application device. This system typically includes all fittings, control valves, pressure reducing/regulating valves, air vacuum release, a filter system (screen/disc), pressure gauges, submains, to deliver water to plants at or below the soil infiltration rate on a typical 10 acre site. Does not include Pump, Power source, Water source (well or reservoir) and lateral lines (drip tape). An additional automatic-cleaning sand media filtration system or its equivalent is needed to prevent the passage of solids in sizes or quantities from the water source that might obstruct the emitter openings to ensure proper efficiency and uniformity of irrigation system. The water supply line from the water source to the field edge is an irrigation pipeline (430) and is not included as part of this system.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

A vegetable field has an inefficient sprinkler irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A surface placed microirrigation system is utilized to provide highly efficient irrigation to a vegetable field. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:	10	Acre	Tot Unit Cost	\$884.88
-------------------------------	----	------	---------------	----------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	303	Pound	\$1.43	\$433.29
Materials	Micro Irrigation, media filter	2	Each	\$2,449.98	\$4,899.96
Materials	Micro Irrigation, screen filter, < 100	1	Each	\$277.62	\$277.62
Equip./Install.	Trenching, Earth, 12" x 48"	1100	Foot	\$1.45	\$1,595.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Total Cost: \$8,848.80

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$663.66	EQIP-HU	\$796.39
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 7 Surface Tape Annual Crops

New York

Scenario Description: Actual Scenario # 7

A micro-irrigation system, utilizing surface drip tape to provide irrigation for vegetables. The typical system is a permanent system, installed over 10 acres of vegetables crops on the ground surface. This system utilizes closely spaced emitters as the water application device. This system typically includes all fittings, control valves, pressure reducing/regulating valves, air vacuum release, a filter system (screen/disc), pressure gauges, submains, computerized soil moisture sensors system, to deliver water to plants at or below the soil infiltration rate on a typical 10 acre site. Does not include Pump, Power source, Water source (well or reservoir) and lateral lines (drip tape). The water supply line from the water source to the zone valves is an irrigation pipeline (430) and is not included as part of this system. Water supply is not filtered.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

A vegetable field has an inefficient sprinkler irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A surface placed microirrigation system is utilized to provide highly efficient irrigation to a vegetable field. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:	10	Acre	Tot Unit Cost	\$735.26
-------------------------------	----	------	---------------	----------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	303	Pound	\$1.43	\$433.29
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, screen filter, < 100	1	Each	\$277.62	\$277.62
Equip./Install.	Trenching, Earth, 12" x 48"	1100	Foot	\$1.45	\$1,595.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Total Cost: \$7,352.55

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$551.44	EQIP-HU	\$661.73
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 8 Surface Tape Annual Filtered

New York

Scenario Description: Actual Scenario # 8

A micro-irrigation system, utilizing surface drip tape to provide irrigation for vegetables. The typical system is a permanent system, installed over 10 acres of vegetables crops on the ground surface. This system utilizes closely spaced emitters as the water application device. This system typically includes all fittings, control valves, pressure reducing/regulating valves, air vacuum release, a filter system (screen/disc), pressure gauges, submains, computerized soil moisture sensors system, to deliver water to plants at or below the soil infiltration rate on a typical 10 acre site. Does not include Pump, Power source, Water source (well or reservoir) and lateral lines (drip tape). An additional automatic-cleaning sand media filtration system or its equivalent is needed to prevent the passage of solids in sizes or quantities from the water source that might obstruct the emitter openings to ensure proper efficiency and uniformity of irrigation system. The water supply line from the water source to the zone valves is an irrigation pipeline (430) and is not included as part of this system.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

A vegetable field has an inefficient sprinkler irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A surface placed microirrigation system is utilized to provide highly efficient irrigation to a vegetable field. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:	10	Acre	Tot Unit Cost	\$1,225.25
-------------------------------	----	------	---------------	------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	303	Pound	\$1.43	\$433.29
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, media filter	2	Each	\$2,449.98	\$4,899.96
Materials	Micro Irrigation, screen filter, < 100	1	Each	\$277.62	\$277.62
Equip./Install.	Trenching, Earth, 12" x 48"	1100	Foot	\$1.45	\$1,595.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Payment types:

Total Cost: \$12,252.51

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$918.94	EQIP-HU	\$1,102.73
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 9 Surface PE Container Filtered

New York

Scenario Description: Actual Scenario # 9

A micro-irrigation system, utilizing surface PE tubing (can be placed on trellis or above containers) with emitters to provide irrigation for container-grown nursery stock in a grid pattern. The typical system is a permanent system, installed over 10 acres of container-grown nursery stock. Laterals are spaced every 5 ft. This system utilizes emitters at each tree or plant as the water application device. Durable, UV resistant tube/tape is used for a multi-year system. This system typically includes all fittings, control valves, pressure reducing/regulating valves, air vacuum release, a filter system (screen/disc), pressure gauges, submains, lateral lines, computerized soil moisture sensors system, and emitters to deliver water to plants at or below the soil infiltration rate on a typical 10 acre site. Does not include Pump, Power source, Water source (well or reservoir). An additional automatic-cleaning sand media filtration system or its equivalent is needed to prevent the passage of solids in sizes or quantities from the water source that might obstruct the emitter openings to ensure proper efficiency and uniformity of irrigation system. The water supply line from the water source to the zone valves is an irrigation pipeline (430) and is not included as part of this system. Water supply is not filtered.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

A container-grown nursery stock has an inefficient sprinkler irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A surface placed microirrigation system is utilized to provide highly efficient irrigation to a container-grown nursery stock. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:

10	Acre	Tot Unit Cost	\$10,436.15
----	------	---------------	-------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	788	Pound	\$1.43	\$1,126.84
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, media filter	2	Each	\$2,449.98	\$4,899.96
Materials	Micro Irrigation, screen filter, ≥ 100	1	Each	\$313.85	\$313.85
Materials	Micro Irrigation, control valves and	1	Each	\$1,223.75	\$1,223.75
Materials	Micro Irrigation, emitters or sprays	95850	Foot	\$0.93	\$89,140.50
Equip./Install.	Trenching, Earth, 12" x 48"	1800	Foot	\$1.45	\$2,610.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Payment types:

Total Cost: \$104,361.54

<u>PayType</u>	<u>Unit Payment</u>	<u>PayType</u>	<u>Unit Payment</u>
EQIP	\$7,827.12	EQIP-HU	\$9,392.54
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 10 Microjet

Scenario Description:

Actual Scenario # 10

New York

A micro-irrigation system, utilizing micro-jets to provide irrigation and/or frost protection for an orchard or other specialty crops grown in a grid pattern. The system is installed with all fittings, control valves, pressure reducing/regulating valves, air/vacuum release, sand media/screen/disc filters, pressure gauges, submains, lateral lines, and micro-jet sprayers to deliver water to the trees. This practice applies to systems designed to discharge < 60 gal/hr at each individual lateral discharge point. Does not include Pump, Power source, Water source (well or reservoir). The typical installation is a permanent, microjet -irrigation system installed on a 20 acre orchard. Typical tree spacing is 20' x 20 feet. The water supply line from the water source to the zone valves is an irrigation pipeline (430) and is not included as part of this system.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

An orchard has an inefficient irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A micro-spray microirrigation system is utilized to provide highly efficient irrigation to an orchard. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:

20	Acre	Tot Unit Cost	\$2,934.82
----	------	---------------	------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	2520	Pound	\$1.43	\$3,603.60
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, screen filter, ≥ 100	1	Each	\$313.85	\$313.85
Materials	Micro Irrigation, control valves and	1	Each	\$1,223.75	\$1,223.75
Materials	Micro Irrigation, emitters or sprays	47950	Foot	\$0.93	\$44,593.50
Equip./Install.	Trenching, Earth, 12" x 48"	2700	Foot	\$1.45	\$3,915.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Payment types:

Total Cost: \$58,696.34

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$2,201.11	EQIP-HU	\$2,641.34
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 11 Microjet Filtered

Scenario Description: Actual Scenario # 11

New York

A micro-irrigation system, utilizing micro-jets to provide irrigation and/or frost protection for an orchard or other specialty crops grown in a grid pattern. The system is installed with all fittings, control valves, pressure reducing/regulating valves, air/vacuum release, sand media/screen/disc filters, pressure gauges, submains, lateral lines, and micro-jet sprayers to deliver water to the trees. This practice applies to systems designed to discharge < 60 gal/hr at each individual lateral discharge point. Does not include Pump, Power source, Water source (well or reservoir). The typical installation is a permanent, microjet -irrigation system installed on a 20 acre orchard. Typical tree spacing is 20' x 20 feet. The water supply line from the water source to the zone valves is an irrigation pipeline (430) and is not included as part of this system.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 433 - Irrigation Flow Measurement, 610 - Salinity & Sodic Soil Management, 434 - Soil Moisture Measurement, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

An orchard has an inefficient irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A micro-spray microirrigation system is utilized to provide highly efficient irrigation to an orchard. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Acres in System

Scenario Typical Size:	20	Acre	Tot Unit Cost	\$3,302.31
-------------------------------	----	------	----------------------	-------------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, dia. < 18", weight priced	2520	Pound	\$1.43	\$3,603.60
Materials	Flow Meter, with Electronic Index	1	Each	\$3,403.71	\$3,403.71
Materials	Micro Irrigation, media filter	3	Each	\$2,449.98	\$7,349.94
Materials	Micro Irrigation, screen filter, ≥ 100	1	Each	\$313.85	\$313.85
Materials	Micro Irrigation, control valves and	1	Each	\$1,223.75	\$1,223.75
Materials	Micro Irrigation, emitters or sprays	47950	Foot	\$0.93	\$44,593.50
Equip./Install.	Trenching, Earth, 12" x 48"	2700	Foot	\$1.45	\$3,915.00
Equip./Install.	Micro Irrigation, chemical injection	1	Each	\$1,360.10	\$1,360.10
Labor	General Labor	4	Hour	\$23.16	\$92.64
Mobilization	Mobilization, small equipment	1	Each	\$190.19	\$190.19

Total Cost: \$66,046.28

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$2,476.74	EQIP-HU	\$2,972.08
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 441 - Irrigation System, Microirrigation

Scenario # 12 Seasonal High Tunnel Micro Irrigation System

Scenario Description: Actual Scenario # 12

New York

An irrigation system for vegetables or other specialty crops, irrigating inside of a high-tunnel poly-house. Water delivery to the plants by surface lines and/or subsurface applicators. Spacing of the plants will vary, w/ delivery lines spaced 60". Area in question is being converted from other means of less efficient irrigation. Payment includes on-ground mainline and drip tape, fittings, and apurtenances. Pump & supply line is not included in this payment and may be offered through associated practices 533 Pumping plant and 430 Irrigation Pipeline, or existing pump & supply lines will be used. Cost represents typical situations for conventional, organic, and transitioning to organic producers.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, Degraded Plant Condition - Undesirable plantproductivity and health, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities.

Associated Practices: 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 328- Conservation Crop Rotation, and 590 Nutrient Management.

Before Practice Situation:

A high tunnel has an inefficient surface irrigation system causing irrigation water loss that impacts water quality and water quantity.

After Practice Situation:

A microirrigation system is utilized to provide highly efficient irrigation to crops grown in a high tunnel. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced.

Scenario Feature Measure:

Area Sq ft

Scenario Typical Size:	2178	Square Foot	Tot Unit Cost	\$0.31
-------------------------------	------	-------------	---------------	--------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Micro Irrigation, surface drip tubing	458	Foot	\$0.87	\$398.46
Materials	Micro Irrigation, screen filter, < 100	1	Each	\$277.62	\$277.62

Payment types:

Total Cost: \$676.08

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$0.23	EQIP-HU	\$0.28
WHIP	\$0.00	WHIP-HU	\$0.00