

Practice: 441 - Irrigation System, Microirrigation

Scenario: #4 - Surface Tape 1.1 - 6 acres

Scenario Description: A micro-irrigation system using drip tape or similar type micro-irrigation material placed on the soil surface for vegetables or field crops. Spacing of drip tape or similar type micro-irrigation material is based on soil type or row alignment but will typically vary from 18" to 36". This system typically includes a filter system, PE manifolds fittings, drip tape, etc. This practice applies to systems designed to discharge < 60 gal/hr at each individual discharge point. Does not include Pump, power source, water source. Surface placed drip tape will not meet the 441 practice life and will normally need replacement every year. After first installation drip tape will be replaced as operation and maintenance issue as required for proper operation of the system. Water source is typically groundwater well or public water source. Resource Concerns: Inefficient 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, 610 - Salinity & Sodic Soil Management, 328-Conservation Crop Rotation, 590 Nutrient Management, and 595-Integrated Pest Management.

Before Situation: A typical before irrigation situation would normally be an existing inefficient sprinkler or surface irrigation system for vegetable or other crop production system. The existing irrigation system would experience poor, nonuniform irrigation applications and significant water losses affecting both water quantity and water quality.

After Situation: A surface placed microirrigation system is utilized to provide highly efficient irrigation to a field. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced. Drip tape will be replaced as operation and maintenance issue as required for proper operation of the system. A typical scenario consists of a 3 acre irrigated field with lateral spacing of 2 feet.

Scenario Feature Measure: Acres in System

Scenario Unit: Acre

Scenario Typical Size: 3

Total Scenario Cost: \$5,457.89

Scenario Cost/Unit: \$1,819.30

Cost Details

| Component Name | Id | Description | Unit | Cost | Qty | Total |
|----------------|----|-------------|------|------|-----|-------|
|----------------|----|-------------|------|------|-----|-------|

Materials

| | | | | | | |
|--|------|--|-------|----------|-------|------------|
| Micro Irrigation, screen or disc filter, < 3" | 2524 | Micro Irrigation, small manual flush screen or disc filter, <3 inch nominal size. Includes materials only. | Each | \$152.79 | 1 | \$152.79 |
| Micro Irrigation, surface drip tape | 2522 | Tape is installed above ground for surface drip irrigation on annual crops, includes installation, and connections to the supply and flushing laterals. Tape is a minimum of 10 mil thick and has emitters built in. | Foot | \$0.07 | 65340 | \$4,406.40 |
| Pipe, HDPE, smooth wall, weight priced | 1379 | High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only. | Pound | \$2.15 | 49 | \$105.43 |
| Pressure Regulator | 2468 | Materials for pressure regulator less than or equal to 2" diameter. | Each | \$13.71 | 1 | \$13.71 |
| Test, comprehensive specialized water test, well water | 2002 | Comprehensive testing for a broad spectrum of pesticides, inorganic chemicals or volatile organics not included in a basic well suitability test. Includes materials and shipping only. | Each | \$209.75 | 1 | \$209.75 |
| Valve, Air Vacuum Release, Manual | 1041 | Materials for <2" Manual Air/Vacuum Relief Valve | Each | \$32.73 | 1 | \$32.73 |
| Water Meter, Microirrigation, <= 2", with Volume Totalizer | 2437 | Microirrigation water meter less than or equal to 2 inch diameter, with volume totalizer. Includes materials only. | Each | \$286.05 | 1 | \$286.05 |

Mobilization

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|-------------------------------|------|--|------|----------|---|----------|
| Mobilization, small equipment | 1138 | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | \$170.76 | 1 | \$170.76 |
|-------------------------------|------|--|------|----------|---|----------|

Labor

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|---------------|-----|--|------|---------|---|---------|
| General Labor | 231 | 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 | \$20.07 | 4 | \$80.28 |
|---------------|-----|--|------|---------|---|---------|

Practice: 441 - Irrigation System, Microirrigation

Scenario: #5 - Surface Tape > 6 acres

Scenario Description: A micro-irrigation system using drip tape or similar type micro-irrigation material placed on the soil surface for vegetables or other field crops. Spacing of drip tape similar type micro irrigation material is based on soil type or row alignment but will typically vary from 18" to 36". This system typically includes a filter system, PE manifolds fittings, drip tape, etc. Does not include Pump, power source, water source. Surface placed drip tape will not meet the 441 practice life and will normally need replacement every year. After first installation drip tape will be replaced as a part of regular operation and maintenance as required for proper operation of the 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, 610 - Salinity &Sodic Soil Management, 328-Conservation Crop Rotation, 590 Nutrient Management, and 595-Integrated Pest Management.

Before Situation: A typical before irrigation situation would include an existing inefficient sprinkler or surface irrigation system used to irrigate vegetables or other crops. The existing irrigation system would supply excessive or inadequate non-uniform irrigation applications with significant water losses affecting both water quantity and water quality.

After Situation: A surface placed microirrigation system is utilized to provide highly efficient irrigation to a field. Crop water requirements are met. Water applications are normally reduced and runoff eliminated. Offsite water quality is improved, and on site water use reduced. Drip tape will be replaced as operation and maintenance issue as required for proper operation of the system. A typical scenario consists of a 15 acre irrigated field with lateral spacing of 2.5 feet.

Scenario Feature Measure: Acres in System

Scenario Unit: Acre

Scenario Typical Size: 15

Total Scenario Cost: \$16,994.80

Scenario Cost/Unit: \$1,132.99

Cost Details

| Component Name | Id | Description | Unit | Cost | Qty | Total |
|----------------|----|-------------|------|------|-----|-------|
|----------------|----|-------------|------|------|-----|-------|

Materials

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|--|------|--|-------|----------|--------|-------------|
| Micro Irrigation, screen or disc filter, < 3" | 2524 | Micro Irrigation, small manual flush screen or disc filter, <3 inch nominal size. Includes materials only. | Each | \$152.79 | 1 | \$152.79 |
| Micro Irrigation, surface drip tape | 2522 | Tape is installed above ground for surface drip irrigation on annual crops, includes installation, and connections to the supply and flushing laterals. Tape is a minimum of 10 mil thick and has emitters built in. | Foot | \$0.07 | 235224 | \$15,863.04 |
| Pipe, HDPE, smooth wall, weight priced | 1379 | High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only. | Pound | \$2.15 | 49 | \$105.43 |
| Pressure Regulator | 2468 | Materials for pressure regulator less than or equal to 2" diameter. | Each | \$13.71 | 1 | \$13.71 |
| Test, comprehensive specialized water test, well water | 2002 | Comprehensive testing for a broad spectrum of pesticides, inorganic chemicals or volatile organics not included in a basic well suitability test. Includes materials and shipping only. | Each | \$209.75 | 1 | \$209.75 |
| Valve, Air Vacuum Release, Manual | 1041 | Materials for <2" Manual Air/Vacuum Relief Valve | Each | \$32.73 | 1 | \$32.73 |
| Water Meter, Microirrigation, <= 2", with Volume Totalizer | 2437 | Microirrigation water meter less than or equal to 2 inch diameter, with volume totalizer. Includes materials only. | Each | \$286.05 | 1 | \$286.05 |

Labor

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|---------------|-----|--|------|---------|---|----------|
| General Labor | 231 | 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 | \$20.07 | 8 | \$160.56 |
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Mobilization

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|-------------------------------|------|--|------|----------|---|----------|
| Mobilization, small equipment | 1138 | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | \$170.76 | 1 | \$170.76 |
|-------------------------------|------|--|------|----------|---|----------|

Practice: 441 - Irrigation System, Microirrigation

Scenario: #17 - Surface Tape < or = 1 acre

Scenario Description: A micro-irrigation system using drip tape or similar type micro-irrigation material placed on the soil surface for vegetables or field crops. Spacing of drip tape or similar type micro irrigation material is based on soil type or row alignment but will typically vary from 18" to 36". This system typically includes a filter system, PE manifolds fittings, drip tape, etc. This practice applies to systems designed to discharge < 60 gal/hr at each individual discharge point. Does not include Pump, power source, water source. Surface placed drip tape will not meet the 441 practice life and will normally need replacement every year. After first installation drip tape will be replaced as operation and maintenance issue as required for proper operation of the system. Water source is typically groundwater well or public water source. Resource Concerns: Inefficient 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, 610 - Salinity & Sodic Soil Management, 328-Conservation Crop Rotation, 590 Nutrient Management, and 595-Integrated Pest Management.

Before Situation: A typical before irrigation situation would normally be an existing inefficient sprinkler or surface irrigation system for vegetable or other crop production system. The existing irrigation system would experience poor, nonuniform irrigation applications and significant water losses affecting both water quantity and water quality.

After Situation: A surface placed microirrigation system is utilized to provide highly efficient irrigation to a field. Water applications are reduced and runoff eliminated. Offsite water quality is improved, and on site water use is reduced. Drip tape will be replaced as operation and maintenance issue as required for proper operation of the system. A typical scenario consists of a 1 acre irrigated field with lateral spacing of 3 feet.

Scenario Feature Measure: Acres in System

Scenario Unit: Acre

Scenario Typical Size: 1

Total Scenario Cost: \$2,128.61

Scenario Cost/Unit: \$2,128.61

Cost Details

| Component Name | Id | Description | Unit | Cost | Qty | Total |
|----------------|----|-------------|------|------|-----|-------|
|----------------|----|-------------|------|------|-----|-------|

Materials

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|--|------|--|-------|----------|-------|------------|
| Micro Irrigation, screen or disc filter, < 3" | 2524 | Micro Irrigation, small manual flush screen or disc filter, <3 inch nominal size. Includes materials only. | Each | \$152.79 | 1 | \$152.79 |
| Micro Irrigation, surface drip tape | 2522 | Tape is installed above ground for surface drip irrigation on annual crops, includes installation, and connections to the supply and flushing laterals. Tape is a minimum of 10 mil thick and has emitters built in. | Foot | \$0.07 | 15972 | \$1,077.12 |
| Pipe, HDPE, smooth wall, weight priced | 1379 | High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only. | Pound | \$2.15 | 49 | \$105.43 |
| Pressure Regulator | 2468 | Materials for pressure regulator less than or equal to 2" diameter. | Each | \$13.71 | 1 | \$13.71 |
| Test, comprehensive specialized water test, well water | 2002 | Comprehensive testing for a broad spectrum of pesticides, inorganic chemicals or volatile organics not included in a basic well suitability test. Includes materials and shipping only. | Each | \$209.75 | 1 | \$209.75 |
| Valve, Air Vacuum Release, Manual | 1041 | Materials for <2" Manual Air/Vacuum Relief Valve | Each | \$32.73 | 1 | \$32.73 |
| Water Meter, Microirrigation, <= 2", with Volume Totalizer | 2437 | Microirrigation water meter less than or equal to 2 inch diameter, with volume totalizer. Includes materials only. | Each | \$286.05 | 1 | \$286.05 |

Mobilization

| | | | | | | |
|-------------------------------|------|--|------|----------|---|----------|
| Mobilization, small equipment | 1138 | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | \$170.76 | 1 | \$170.76 |
|-------------------------------|------|--|------|----------|---|----------|

Labor

| | | | | | | |
|---------------|-----|--|------|---------|---|---------|
| General Labor | 231 | 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 | \$20.07 | 4 | \$80.28 |
|---------------|-----|--|------|---------|---|---------|