

**Scenario Worksheet****Practice and Scenario Description:**

Information Type	Data
Region	Mid Atlantic
State	New Jersey
Discipline Group	Environmental Engineering
Practice Code/Name	635 - Vegetated Treatment Area
Scenario ID	1
Scenario Name	VTA-surface application-gravity flow
Scenario Description	This is a permanent herbaceous vegetative area of channel installed down slope from a livestock production area. Wastewater (runoff or milking parlor wastewater) is properly collected and released with a controlled gravity outflow into the VTA. The VTA vegetation is harvested to remove nutrients and wastewater containing vir from an animal operation that has the potential to pollute surface waters or percolate into groundwater.
Before Practice Situation	Typical VTA is 1.0 ac in size, includes a gravel trench for distribution flow (sheet flow into the VTA). Typically requires grading and shaping, gravel spreader, trenches and perforated pipe to maintain sheet flow throughout the VTA. A settling basin for wastewater collection is constructed using
After Practice Situation	
Scenario Feature Measure	Amount of VTA installed
Scenario Unit	Square Foot
Scenario Typical Size	43560

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$3,916.55	\$0.09
Equipment/Installation	\$2,013.34	\$0.05
Labor	\$1,059.96	\$0.02
Mobilization	\$650.96	\$0.01
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$7,640.81	\$0.18



**Scenario Worksheet**

<b>Practice and Scenario Description:</b>	
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Region	Mid Atlantic
State	New Jersey
Discipline Group	Environmental Engineering
Practice Code/Name	635 - Vegetated Treatment Area
Scenario ID	2
Scenario Name	Wastewater is Pumped up to the VTA
Scenario Description	This is a permanent herbaceous vegetative area or channel located upslope from the livestock production area. The topography of the site requires wastewater to be pumped uphill to the VTA drainage system. Wastewater runoff or effluent is properly collected at the treatment area and is pumped uphill to the VTA drainage system. Wastewater runoff or effluent is properly collected at the treatment area and is pumped uphill to the VTA drainage system.
Before Practice Situation	Typical VTA is 1.0 ac in size, includes the installation site to be upslope from the production area with a shallow tank or basin that provides a controlled gravity outflow into the VTA. Typically requires grading and channel, gravel spreader, tree/shrub and perforated pipe to maintain sheet flow.
After Practice Situation	
Scenario Feature Measure	Amount of VTA installed
Scenario Unit	Square Foot
Scenario Typical Size	43560

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$4,413.75	\$0.10
Equipment/Installation	\$7,995.80	\$0.18
Labor	\$911.60	\$0.02
Mobilization	\$730.12	\$0.02
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$14,051.27	\$0.32



**Scenario Worksheet**

Practice and Scenario Description:	
Information Type	Data
Region	Mid Atlantic
State	New Jersey
Discipline Group	Environmental Engineering
Practice Code/Name	635 - Vegetated Treatment Area
Scenario ID	3
Scenario Name	VTA with Minor Grading

Scenario Description	<p>This is a proposed permanent herbaceous vegetative area located adjacent to a livestock production area needs to be regraded before use. Distribution is directly off the barnyard across the lower end. The VTA vegetation is harvested to removed nutrients on a regular basis. This practice addresses water quality degradation due to uncontrolled nutrient rich wastewater that can flow into surface waters or leach into ground water</p> <p>Associated practices: Waste Storage Facility (313), Fence (382), Solid/Liquid Waste Separation Facility (632), Manure Transfer (634), Irrigation System, Sprinkler (442), Roof runoff Management (558), Pumping Plant (533), Subsurface Drain (606), Critical Area Planting (342), Terrace (600), Nutrient Management (590), Diversion (362), Pipeline (516), Land Smoothing (466), Precision Land Forming (462), Waste Treatment (629)</p>
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Before Practice Situation	Nutrient rich wastewater is running off from an animal operation that has the potential to pollute surface waters or ponding and leaching into groundwater.
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After Practice Situation	<p>Typical VTA is 0.5 ac in size, includes the sizing, grading and shaping of the VTA area. Requires grading and shaping to maintain sheet flow onto the VTA. A settling basin for wastewater collection is contracted using Solid/Liquid Waste Separation Facility (632) and Pumping Plant (533) to get the wastewater to the VTA mechanical distribution component that is contracted using Irrigation System, Sprinkler (442). For milkhouse waste, Waste Treatment (629) could be contracted to provide pretreatment prior to being pumped and distributed onto the VTA via a spreader pipe across top of VTA. An option for small barnyards can use slotted curbs to distribute across top side. The VTA practice will provide a controlled release of nutrient rich wastewater into a designed vegetative area for nutrient uptake. This system will improve water quality by treating nutrient rich wastewater and prevent contamination of surface and ground water resources.</p>
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Scenario Feature Measure	Amount of VTA installed
Scenario Unit	Square Foot
Scenario Typical Size	21780

Cost Summary:		
Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,858.38	\$0.09
Equipment/Installation	\$877.44	\$0.04
Labor	\$968.80	\$0.04
Mobilization	\$285.90	\$0.01
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$3,990.52	\$0.18



**Scenario Worksheet**

<b>Practice and Scenario Description:</b>	
<b>Information Type</b>	<b>Data</b>
Region	Mid Atlantic
State	New Jersey
Discipline Group	Environmental Engineering
Practice Code/Name	635 - Vegetated Treatment Area
Scenario ID	4
Scenario Name	VTA using an Existing Vegetative Area with Complex Distr

**Scenario Description**  
 An existing permanent herbaceous vegetated area that meets the requirements for a VTA and is used as an overland flow area for nutrient rich runoff treatment. A flow distribution component is installed to achieve sheet flow at the start of the VTA. Clean runoff is diverted where possible. The VTA vegetation is harvested to removed nutrients on a regular basis. This practice addresses water quality degradation due to uncontrolled nutrient rich runoff that can flow into surface waters or leach into ground water.  
 Associated practices: [Waste Storage Facility \(313\)](#), [Fence \(382\)](#), [Solid/Liquid Waste Separation Facility \(632\)](#), [Manure Transfer \(634\)](#), [Irrigation](#)

**Before Practice Situation**  
 Nutrient rich wastewater is running off from an animal operation that has the potential to pollute surface waters or ponding and leaching into groundwater.

**After Practice Situation**  
 Typical VTA is 1.0 ac in size, includes a gravel trenches and perforacted pipe to establish sheet flow into the VTA where and existing permanent herbaceous vegetated area meets the requirements for a VTA. Does not include any grading or seeding. The VTA practice will provide a controlled release of nutrient rich runoff into an existing vegetative area for nutrient uptake. This system will improve water quality by treating nutrient rich runoff and prevent contamination of surface and ground water resources.

<b>Scenario Feature Measure</b>	Amount of VTA treating wastewater
<b>Scenario Unit</b>	Square Foot
<b>Scenario Typical Size</b>	43560

**Cost Summary:**

<b>Cost Category</b>	<b>Scenario Cost</b>	<b>Scenario Cost/Unit</b>
Materials	\$4,529.55	\$0.10
Equipment/Installation	\$4,844.60	\$0.11
Labor	\$364.64	\$0.01
Mobilization	\$444.22	\$0.01
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
<b>Total</b>	<b>\$10,183.01</b>	<b>\$0.23</b>



**Scenario Worksheet**

Practice and Scenario Description:	
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Region	Mid Atlantic
State	New Jersey
Discipline Group	Environmental Engineering
Practice Code/Name	635 - Vegetated Treatment Area
Scenario ID	5
Scenario Name	VTA using an Existing Vegetative Area with Gated pipe or sprinkler system

Scenario Description	<p>An existing permanent herbaceous vegetated area that meets the requirements for a VTA and is used as an overland flow area for nutrient rich runoff treatment. A flow distribution component is installed to achieve sheet flow at the start of the VTA or a fixed sprinkler setup is installed. Clean runoff is diverted where possible. The VTA vegetation is harvested to removed nutrients on a regular basis. This practice addresses water quality degradation due to uncontrolled nutrient rich runoff that can flow into surface waters or leach into ground water.</p> <p>Associated practices: Waste Storage Facility (313), Fence (382), Solid/Liquid Waste Separation Facility (632), Manure Transfer (634), Irrigation System, Sprinkler (442), Roof runoff Management (558), Pumping Plant (533), Subsurface Drain (606), Critical Area Planting (342), Terrace (600), Nutrient Management (590), Diversion (362), Pipeline (516), Land Smoothing (466), Precision Land Forming (462), Waste Treatment Area (629)</p>
Before Practice Situation	Nutrient rich wastewater is running off from an animal operation that has the potential to pollute surface waters or ponding and leaching into groundwater.
After Practice Situation	Typical VTA is .5 ac in size, includes perforacted pipe to establish sheet flow into the VTA where and existing permanent herbaceous vegetated area meets the requirements for a VTA. Does not include any grading or seeding. The VTA practice will provide a controlled release of nutrient rich runoff into an existing vegetative area for nutrient uptake. This system will improve water quality by treating nutrient rich runoff and prevent contamination of surface and ground water resources.
Scenario Feature Measure	SF
Scenario Unit	Square Foot
Scenario Typical Size	22500

Cost Summary:		
Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,858.38	\$0.08
Equipment/Installation	\$0.00	\$0.00
Labor	\$182.32	\$0.01
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,040.70	\$0.09

