

Geographic Area	Practice Code	Practice/Activity Name	Practice/Activity Type
Only States with Professional Engineer Requirement	130	Drainage Water Management Plan	DWM CAP without Map

**Cost Data**

<b>Scenario Description:</b>	
Natural Resource Concern:	Development of a 130 Conservation Activity Plan CAP (Professional Engineer) without support of a map.
Resource Setting:	Water Quality on Cropland. Corn, soybeans, wheat, field grain crops. Typical operation is 150 acres are usually rented cropland. Cropland fields are less than 1% slope. The soil is somewhat poorly drained to poorly drained, with a naturally high water table, requiring drainage in order to establish suitable airable root zone to successfully grow a crop. Cropland fields have existing surface and/or patterned subsurface drainage system outletting to a drainage ditch, and a map of the tile system is NOT available from the producer. The Engineering Licensing Board in the state has defined creation of the DWM Conservation Activity Plan as the practice of engineering; the DWM-CAP must be certified by a Professional Engineer licensed in the state where the land is located.
Before Practice Situation:	Producer has no plan for or knowledge for controlling drainage water retention. The producer does not manage the field for the purpose of controlling water retention and therefore crop yields are reduced. Existing ditches and/or tile drains on the cropland field currently result in continuous flow off field to waterways resulting in potential water quality resource concerns related to excessive nitrogen.
After Practice Situation:	After EQIP contract approval, participant has obtained services from a certified TSP for development of the "Drainage Water Management" conservation activity plan (CAP). The CAP criteria requires the plan to identify the number and location of water control structures that are needed to implement drainage water management according to Field Office Technical Guide design standards. The CAP plan will also provide additional detail to allow design of water control structures, and for proper management of the water control structures to achieve desired resource outcomes. Plan includes guidance to enable the producer to know when and how much to adjust the water level. The CAP plan allows for continuous flow of subsurface drainage water to off-site locations, but timing, flow and amounts are managed to minimize potential water quality impacts.
Associated Practices:	554 Drainage Water Management, 587 Structure for Water Control, 606 Subsurface Drain, 607 Surface Drain Field Ditch, 608 Surface Drain Main or Lateral.

<b>Geographic Area:</b>	US States and Territories
<b>Typical Size (1)</b>	acres 130
<b>Unit for Cost Estimate:</b>	No
<b>Practice Life (Years):</b>	1
<b>Discount Rate (%/Year):</b>	5%

**Cost/Unit**

**Materials**

Not Applicable No materials are needed to develop a plan.

**Equipment/Installation**

Not Applicable No equipment/installation is needed to develop a plan.

**Labor**

Labor provided by a certified Technical Service Provider for development of the CAP plan. Specific estimated costs as follows:

**\$2,445.64**

Name of Item (Data Source)	Unit	Cost/Unit	Number	Item Cost
<b>Basic Cost Data (Data)</b>				
CAP Labor, manager	hour	\$44.02		
CAP Labor, skilled	hour	\$33.61		
CAP Labor, small surveying crew	8 hour day	\$780.00		
CAP Labor, smal surveying crew	hour	\$97.50		
CAP Labor, professional engineer	hour	\$77.36		
<b>Planning Activities</b>				
Interview client, define objectives, collect tile map	hour	44.02	1	\$44.02
Map showing drained area	hour	44.02	4	\$176.08
Probe & identify tile lines	hour	33.61	8	\$268.88

Topographic survey,	hour	97.50	8	\$780.00
Topographic map	hour	33.61	8	\$268.88
Overlay map => CAP Criteria (item B.8)	hour	33.61	4	\$134.44
Management plan / schedule	hours	44.02	5	\$220.10
Mileage Costs for Site Visits				
Visits, round trip	number		3	
Roundtrip Miles per Visit	miles		80	
Total Travel Miles per plan	miles		240	
Travel Hours per Visit	hours		2	
Total Travel Hours for the Plan	hours		6	
Vehicle Travel Cost (4) Transportation	per mile	\$0.56		
Total Vehicle Travel Cost / Plan				\$134.40
Planner Travel Time	hours	\$44.02	6	\$264.12
Professional Engineer Review and Certification	hours	\$77.36	2	\$154.72

**Mobilization**

Not Applicable No mobilization is needed to develop a plan.

**Operation & Maintenance (Annual)**

Not Applicable No O&M is needed to develop a plan.

**Acquisition of Technical Knowledge**

Not Applicable. Allowed costs are included in "Labor" cost category.

\$0.00

**Forgone Income (Annual)**

Not Applicable No Foregone Income is associated with plan development.

**Risk**

Not Applicable No costs for Risk is associated with plan development.

**Administration & Permit Costs**

Not Applicable No costs associated with administrative expenses or permits are allowed with plan development.

**Total Cost Estimate:**

**\$2,445.64**

Geographic Area    Practice Code    Practice/Activity Name    Practice/Activity Type  
 All States - Territories    130    Drainage Water Management Plan    DWM CAP with Map

**Cost Data**

<b>Scenario Description:</b>	Development of a 130 Conservation Activity Plan CAP supported with map.
Natural Resource Concern:	Water Quality on Cropland.
Resource Setting:	Corn, soybeans, wheat, field grain crops. Typical operation is 150 acres are usually rented cropland. Cropland fields are less than 1% slope. The soil is somewhat poorly drained to poorly drained, with a naturally high water table, requiring drainage in order to establish suitable airable root zone to successfully grow a crop. Cropland fields have existing surface and/or patterned subsurface drainage system outletting to a drainage ditch, and a map of the tile system is readily available from the producer.
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<b>Geographic Area:</b>	US States and Territories
<b>Typical Size (1)</b> acres	130
<b>Unit for Cost Estimate:</b>	No
<b>Practice Life (Years):</b>	1
<b>Discount Rate (%/Year):</b>	5%

**Cost/Unit**

**Materials**

Not Applicable    No materials are needed to develop a plan.

**Equipment/Installation**

Not Applicable    No equipment/installation is needed to develop a plan.

**Labor**

Labor provided by a certified Technical Service Provider for development of the CAP plan. Specific estimated costs as follows:

**\$2,022.04**

Name of Item (Data Source Number)	Unit	Cost/Unit	Number	Item Cost
<b>Basic Cost Data (Data Source)</b>				
	Unit	Cost/Unit		
CAP Labor, manager	hour	\$44.02		
CAP Labor, skilled	hour	\$33.61		
CAP Labor, small surveying crew	8 hour day	\$780.00		
CAP Labor, small surveying crew	hour	\$97.50		

**Planning Activities**

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**Acquisition of Technical Knowledge**

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**Risk**

Not Applicable No costs for Risk is associated with plan development.

**Administration & Permit Costs**

Not Applicable No costs associated with administrative expenses or permits are allowed with plan development.

**Total Cost Estimate:**

**\$2,022.04**

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**Cost/Unit**

#### Materials

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#### Equipment/Installation

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#### Labor

Labor provided by a certified Technical Service Provider for development of the CAP plan. Specific estimated costs as follows:

**\$2,176.76**

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CAP Labor, manager	hour	\$44.02		
CAP Labor, skilled	hour	\$33.61		
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#### Planning Activities

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**Acquisition of Technical Knowledge**

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**Forgone Income (Annual)**

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**Risk**

Not Applicable No costs for Risk is associated with plan development.

**Administration & Permit Costs**

Not Applicable No costs associated with administrative expenses or permits are allowed with plan development.

**Total Cost Estimate:**

**\$2,176.76**

Geographic Area Practice Code Practice/Activity Name Practice/Activity Type  
 All States - Territories 130 Drainage Water Management Plan DWM CAP without Map

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**Cost/Unit**

**Materials**

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**Equipment/Installation**

Not Applicable No equipment/installation is needed to develop a plan.

**Labor**

Labor provided by a certified Technical Service Provider for development of the CAP plan. Specific estimated costs as follows:

**\$2,290.84**

Name of Item (Data Source Number)	Unit	Cost/Unit	Number	Item Cost
<b>Basic Cost Data (Data Source)</b>				
CAP Labor, manager	hour	\$44.02		
CAP Labor, skilled	hour	\$33.61		
CAP Labor, small surveying crew	8 hour day	\$780.00		
Topographic survey crew	hour	\$97.50		
<b>Planning Activities</b>				
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Probe & identify tile lines	hour	33.60	8	\$268.80
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			\$264.12

**Mobilization**

Not Applicable No mobilization is needed to develop a plan.

**Operation & Maintenance (Annual)**

Not Applicable No O&M is needed to develop a plan.

**Acquisition of Technical Knowledge**

Not Applicable. Allowed costs are included in "Labor" cost category.

\$0.00

**Forgone Income (Annual)**

Not Applicable No Foregone Income is associated with plan development.

**Risk**

Not Applicable No costs for Risk is associated with plan development.

**Administration & Permit Costs**

Not Applicable No costs associated with administrative expenses or permits are allowed with plan development.

**Total Cost Estimate:**

**\$2,290.84**