

---

**PRELIMINARY ENGINEERING TECHNICAL REPORT  
APPENDIX C  
STORMWATER TREATMENT SUMMARIES**

---

**TABLE 3-7.1  
VT 2A CORRIDOR  
STORMWATER TREATMENT SUMMARY**

LOCATION	RECEIVING WATER	IMPERVIOUS AREA <sup>*1</sup> (Acres)	TOTAL SITE AREA (Acres)	WQv <sup>*2</sup> TREATMENT PROVIDED	RECHARGE PROVIDED	CPv <sup>*3</sup> CONTROL PROVIDED	OVERBANK CONTROL REQUIRED	FLOOD CONTROL REQUIRED	DESCRIPTION
18+00 LT	Unnamed drainageway to Muddy Brook	3.14	3.42	Yes	No	Yes	Yes	No	Micropool Extended Detention Pond; HSG D Soils
59+50 LT/RT	Unnamed drainageway to Muddy Brook	7.23	8.38	Yes	No	Yes	Yes	No	Micropool Extended Detention Pond; HSG D Soils
64+00 LT	Unnamed drainageway to Muddy Brook	2.29	2.50	No	No	Yes	Yes	No	Micropool Extended Detention Pond
68+50 RT	Unnamed drainageway to Muddy Brook			Yes	Yes	No	No	No	Infiltration Trench; Grass Swale Pretreatment
88+50 LT	Allen Brook	4.87	5.34	Yes	Yes	No	No	No	Infiltration Basin; Grass Swale Pretreatment
103+50 LT	Closed Drainage to Allen Brook	1.75	1.95	Yes	Yes	Yes	Yes	No	Micropool Extended Detention Pond
138+00 LT	Unnamed drainageway to Winooski River	NA	NA	Yes	Yes	No	No	No	Existing Infiltration Basin; Existing flow quantity will be diverted to basin
144+00 LT	Closed Drainage to Unnamed drainageway to Winooski River	5.09	6.01	No	No	Yes	Yes	No	Micropool Extended Detention Pond
144+00 LT	Closed Drainage to Unnamed drainageway to Winooski River			Yes	Yes	No	No	No	Infiltration Trench; Grass Swale Pretreatment
149+50 LT	Closed Drainage to Unnamed drainageway to Winooski River	1.05	1.21	No	No	Yes	Yes	No	Micropool Extended Detention Pond
149+50 RT	Closed Drainage to Unnamed drainageway to Winooski River			Yes	Yes	No	No	No	Infiltration Trench; Grass Swale Pretreatment
160+50 RT	Winooski River	1.89	1.89	Yes	No	No	No	No	Micropool Extended Detention Pond
172+50 RT	Winooski River	3.00	3.09	No	Yes	No	No	No	Micropool Extended Detention Pond
173+50 RT	Winooski River			Yes	No	No	No	No	Infiltration Trench; Grass Swale Pretreatment

Notes:  
 Basin Number Determined by Station & Offset  
<sup>\*1</sup> Impervious Area is based on Alternative 2.  
<sup>\*2</sup> WQv - Water Quality Volume Treatment Standard  
<sup>\*3</sup> CPv - Channel Protection Volume Treatment Standard  
 Full Depth Construction is anticipated, therefore 100% of impervious shall be treated.  
 Predevelopment modeled as Meadow in Good Condition.  
 Drainage analysis by HydroCAD TR-20 method.  
 VT Stormwater Management Manual Standards (April 2002, 5th Printing)

Channel Protection (CPv) shall be waived for:  
 A site where the pre-routed post development discharge is less than 2 cfs;  
 A site that directly discharges to a waterbody with a drainage area equal to or greater than 10 sq. mi., and that is less than 5% of the watershed area at the site's upstream boundary.

Overbank Flood Protection (Qp10) shall be waived if:  
 A site discharges directly to a large reservoir, lake, or stream with a drainage area greater than or equal to 10 sq. mi.;  
 The site is smaller than five acres and the channel has adequate capacity to convey the post development 10 yr. discharge;  
 Downstream to the point of the so called 10% rule and downstream conveyance systems have adequate capacity to convey the 10 yr storm.

Extreme Flood Protection (Qp100) shall be waived if:  
 A site discharges directly to a large reservoir, lake, or stream with a drainage area greater than or equal to 10 sq. mi.;  
 The impervious area is less than 10 acres;  
 A downstream analysis is conducted that indicated extreme flood control is not necessary for the site.

**TABLE 3-7.2  
CIRC AB CORRIDOR  
STORMWATER TREATMENT SUMMARY**

S/N No.	RECEIVING WATER	IMPERVIOUS AREA <sup>1</sup> (Acres)	TOTAL SITE AREA (Acres)	TREATMENT PROVIDED	RECHARGE PROVIDED	CPV <sup>2</sup> CONTROL REQUIRED	OVERBANK CONTROL REQUIRED	FLOOD CONTROL REQUIRED	DESCRIPTION
672	Winooski River	2.7	27.5	Vegetative Buffers Grass Swales	Yes	No	No	No	Existing Route 289 sedimentation pond, culvert and stone lined swale to Winooski River at Route 289/Route 117 interchange, Essex
675	Winooski River	1.9	9.8	Vegetative Buffers Grass Swales	Yes	No	No	No	Existing Route 289 sedimentation pond, culvert and stone lined swale to Winooski River at Route 289 bridge, south side of river
681	Not to Water of the State	0.9	2.0+/-	N/A	N/A	No	No	No	Landfill Access Road under Route 289. Outlet to stone flow pad
692	Redmond Creek	2.2	11.2	Vegetative Buffers Grass Swales	Yes	Yes	Yes	No	Cp control structure and stone lined swale to Redmond Creek in proximity of landfill off Redmond Road, Williston
706	Unnamed Drainageway to Redmond Creek	0	3.2	Vegetative Buffers Grass Swales	Yes	No	No	No	Interceptor Ditch to collect offsite flows. Outlet to stone flow pad
714	Unnamed Tributary to Winooski River	2.4	9.5	Vegetative Buffers Grass Swales	Yes	Yes	Yes	No	Cp/Overbank control structure and swale to unnamed tributary at northern IBM access drive off Redmond Road, Williston
749	Unnamed Tributary to Winooski River	9.6	45.2	Vegetative Buffers Grass Swales	Yes	Yes	Yes	No	Cp/Overbank control structure and culvert to unnamed drainageway at proposed Route 289/Redmond Road interchange (approximately 300 feet south of IBM drive), Williston
756	Unnamed Tributary to Winooski River	0.8	2.8	Vegetative Buffers Grass Swales	Yes	No	No	No	Grass Swale to culvert under Redmond Road approximately 590 feet north of intersection with Mountain View Road, Williston
759	Unnamed Tributary to Winooski River	1.8	6.5	Vegetative Buffers Grass Swales	Yes	Yes	Yes	No	Cp/Overbank control structure to natural drainageway approximately 800 feet east of Redmond Road/Mountain View Road intersection, Williston.
822	Allen Brook	10.7	28.2	Vegetative Buffers Grass Swales	Yes	Yes	Yes	Y	Cp control structure to stone lined swale on north side of Allen Brook approximately 1,100 feet north of US Route 2/Talcott R intersection, Williston
824	Allen Brook	1.8	4.0	Vegetative Buffers Grass Swales	Yes	Yes	No	No	Cp control structure to existing culvert under Route 2 on south side of Allen Brook approximately 500 feet north of US Route 2/Talcott Road intersection, Williston
848 A	Unnamed Drainageway to Allen Brook	1.1 New 0.99 Existing	7.2	Vegetative Buffers Grass Swales	Yes	Yes	Yes	No	Cp/Overbank control structure under Ramp C to natural drainageway, I-89/289 interchange, Williston
848 B	Unnamed Drainageway to Allen Brook	3.3 New 2.1 Existing	30.0	Vegetative Buffers Grass Swales	Yes	Yes	Yes	No	Cp/Overbank control structure to stone lined swale to natural drainageway, I-89/289 interchange, Williston
848 C	Unnamed Drainageway to Allen Brook	0.8 New 0.8 Existing	4.0	Vegetative Buffers Grass Swales	Yes	Yes	Yes	No	Cp/Overbank control structure to two culverts under I-89 northbound to natural drainageways, I-89/289 interchange, Williston

Notes:  
S/N Number refers to approximate station location of outlet to receiving water  
<sup>1</sup> Impervious Area is based on Alternative 16.  
<sup>2</sup> CPV - Channel Protection Volume Treatment Standard  
Drainage analysis by HydroCAD TR-20 method.

Reference is made to:  
*The Application for Stormwater Discharge Permit Winooski River and Redmond Creek Watersheds Chittenden County Circumferential Highway (CCCH), Williston, VT and*  
*The Application for Stormwater Discharge Permit Allen Brook Watershed, CCCH, Williston, VT prepared for Vtrans July 19, 2002 by Dubois & King, Inc.*

Channel Protection (CPV) shall be waived for:  
A site where the pre-routed post development discharge is less than 2 cfs;  
A site that directly discharges to a waterbody with a drainage area equal to or greater than 10 sq. mi., and that is less than 5% of the watershed area at the site's upstream boundary.

Overbank Flood Protection (Qp10) shall be waived if:  
A site discharges directly to a large reservoir, lake, or stream with a drainage area greater than or equal to 10 sq. mi.;  
The site is smaller than five acres and the channel has adequate capacity to convey the post development 10 yr. discharge;  
Downstream to the point of the so called 10% rule and downstream conveyance systems have adequate capacity to convey the 10 yr storm.

Extreme Flood Protection (Qp100) shall be waived if:  
A site discharges directly to a large reservoir, lake, or stream with a drainage area greater than or equal to 10 sq. mi.;  
The impervious area is less than 10 acres;  
A downstream analysis is conducted that indicated extreme flood control is not necessary for the site.