

Preliminary Assessment Results and Prioritization
VT116 Culvert AOP Assessment Study
Starksboro, Vermont
(with notes from 2/24/2012 meeting and design flow)

LocalID	SgaID	VTrans Milepost (miles)	Drainage Area (square miles)	Stream Order (Strahler)	Structure Type	Structure Length (ft)	Channel Bankfull Width (ft)*	Structure Width / Channel Width (%)	Culvert Outlet Type	Outlet Drop Height (ft)	Fill over Upstream end of Pipe (feet)	AOP Coarse Screen	Retrofit Potential	GC SCREEN	AOP / Habitat Notes	Structure Condition Notes	AOP Priority #	Structural Priority #	GC Priority #	Constructability	Meeting Notes	50-Year Design Flow (cfs)	Method
1	200116000701192	6.65	0.0	1	24" RCP	50	3	29	Partially Backwatered	0	6	GRAY	LLL	YELLOW	Limited fish habitat upstream. Wetland conditions with little concentrated channel flow.	Some spalling of concrete, loose rocks in headwall, downstream section disconnected with flow under end of structure.	12	3	9	High	Vtrans would expect to replace at least the end that is disjointed.	51	BPR Method
2	200116000401192	6.16	0.3	2	48" RCP	90	7	57	At Grade	0	7	GRAY	LLL	LEMON LIME	Moderate fish habitat potential. Little shading up or downstream. Downstream channel leads to cow pasture.	Lower three sections & upper four to five sections broken apart. Upper section scoured on bottom. Upstream embankment caving from edge of road.	7	2	13	High	AOP higher priority?	87	Average
3	200116000801192	6.02	1.1	2	42" RCP	90	11	32	Partially Backwatered	0	9	GRAY	LLL	YELLOW	Fish habitat potential in channel and pond. Meadow upstream, limited shade, channel flows through manmade pond.	Downstream four sections disconnected, erosion on embankment, scour undermining structure.	3	1	7	Moderate. Fill is deep.		209	Average
4	200116000901192	5.78	0.3	1	42" CMP	80	8	27	Cascade	0.5	7	GRAY	LLL	LEMON LIME	Good habitat upstream in shrubs and woods. Active cow pasture downstream of culvert. Channel trampled.	Some rust, pipe liner worn off, embankment sagging.	4	9	12	High		58	Average
5	200116001001192	5.60	1.2	2	48" RCP	80	9	44	Entirely Backwatered	0	2	GRAY	LLL	LEMON LIME	Good habitat potential as large stream channel. Active cow pasture with some channel trampling. Needs buffer.	Upstream section disconnected. Concrete spalling.	2	7	10	High. Little fill.	Would need box.	237	Average
6	200116001101192	5.36	0.1	1	42" CMP	125	5	44	Free Fall	2	13	RED	LLL	YELLOW	Limited habitat upstream and downstream. Active pasture in downstream channel and trampled. Wetland upstream with little fish habitat.	Loose stones in us headwall, embankment slumping us and large hole downstream, liner worn off, hole in culvert 20 feet from outlet causing embankment failure.	10	6	8	Low. Deep Fill.	Carol Zeno. Broken joint likely.	41	BPR Method
7	200116001201192	5.19	0.0	1	30" RCP	75	2	25	Free Fall	2	2	RED	LLL	ORANGE	Limited habitat due to small drainage area. Channel ditched along lawn and roadway.	Loose stones in upstream headwall.	9	8	5	High. Little fill.		8	BPR Method
7a	200116001401192	5.03	0.0	0	30" RCP	50	2	25	Entirely Backwatered	0	2	GRAY	LLL	ORANGE	Limited habitat upstream. Road ditch with small drainage area.	Good.	14	14	4	High. Little fill.		10	BPR Method
8	200116001301192	4.36	0.1	1	48" RCP	80	4	33	Partially Backwatered	0	6	GREEN	LLL	ORANGE	Moderate habitat upstream. Small channel. Wooded upstream buffer.	Good.	5	12	3	High.	Sentinel Farm	67	BPR Method
9	200116000601192	2.93	0.3	3	48" RCP	75	8	36	Cascade	1.7	2	GRAY	LLL	ORANGE	Limited habitat potential. Waterfall 290' upstream that is a fish barrier. Channelized stream and lawn floodplain.	Good.	11	13	2	High. Little fill.	Baldwin Pond Upstream. Discussed importance due to natural blockages upstream.	71	Average
10	200116000001192	2.22	5.4	4	7' x 6' Box	85	25	24	Free Fall	0.2	11	RED	LLL	ORANGE	Good habitat potential. Large upstream watershed. Some natural grade control upstream.	Minor concrete spalling and cracks in many locations, rebar showing on bottom.	1	10	1	Low. Deep Fill.	Too large for current project scope.	915	Average
11	200116000501192	1.37	0.7	2	42" RCP	75	11	13	Cascade	2	4	GRAY	MLL	LEMON LIME	Habitat potential. Needs buffers and stormwater controls. Shrub/trees upstream. Runoff directly from mucky pasture. Concrete step downstream.	Downstream end section broken off and tilted.	6	4	11	High	Horse farm, Dave Russell. Outlet fix with stone.	118	Average
12	200116000301192	1.23	0.0	2	18" CMP	93	2	8	Cascade	0.5	22	GRAY	LLL	ORANGE	Limited upstream habitat in managed barnyard.	Rusting ends, sag in pipe.	13	5	6	Low. Deep Fill.	Replace	13	BPR Method
13	200116000201192	1.02	0.3	2	78" Round Multi-Plate	80	8	54	At Grade	0.6	3	GRAY	LLL	LEMON LIME	Upstream active cow pasture leading to pine forest. Limited to moderate potential for habitat. Needs buffers.	Small sag in culvert top. Minor rust on bottom.	8	11	14	High		69	Average
14	200116000101192	0.90	9.0	4	Bridge	31	32	113	N/A (bridge)	0	N/A	N/A	N/A	LEMON LIME	Lewis Creek Bridge	New and good.	15	15	15			1654	Average

NOTES: RCP = radial concrete pipe. CMP = corrugated metal pipe. Gray AOP coarse screen means reduced AOP for all organisms. LLL = low retrofit potential for strong, medium, and weak swimming organisms. MLL = medium retrofit potential for strong swimmers and low retrofit potential for medium and weak swimming organisms. Lemon-lime means structure mostly compatible with geomorphic stream type. Yellow means structure partially compatible with geomorphic stream type. Orange means structure mostly incompatible with geomorphic stream type.

* Bankfull width measured in field and compared to Hydraulic Geometry Curve Estimates. Hydraulic Geometry Curve Estimates used where italicized