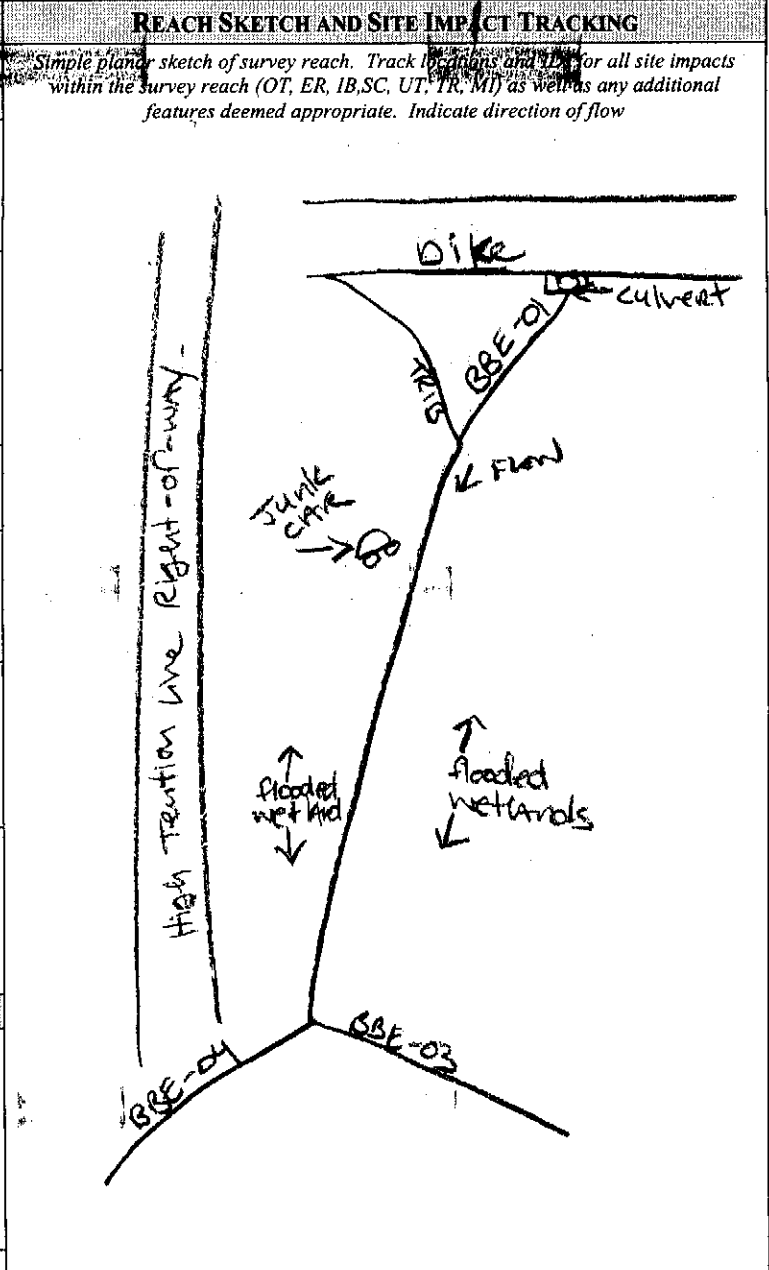




SURVEY REACH ID: 2	WTRSHD/SUBSHD: BBE	DATE: 12/3/09	ASSESSED BY: CM/BG
START TIME: 9:00 AM	LMK:	END TIME: 9:20 AM	LMK:
LAT: ? ° ' "	LONG: ? ° ' "	LAT: 41 ° 50 ' 21 "	LONG: 72 ° 42 ' 49 "
DESCRIPTION: Junction with BBE-4/BBE-3		DESCRIPTION: Junction with BBE-01	

RAIN IN LAST 24 HOURS	<input checked="" type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Trace
PRESENT CONDITIONS	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast
	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input checked="" type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop
	<input type="checkbox"/> Pasture	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested
			<input type="checkbox"/> Institutional
			<input checked="" type="checkbox"/> Other: Hi tension power lines,

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input checked="" type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	Attached: <input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
	Floating: <input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	(Evidence of)
	<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input checked="" type="checkbox"/> Deer
	<input type="checkbox"/> Snails <input checked="" type="checkbox"/> Other: RT hawk
STREAM SHADING (water surface)	<input checked="" type="checkbox"/> Mostly shaded (≥75% coverage)
	<input type="checkbox"/> Halfway (≥50%)
	<input type="checkbox"/> Partially shaded (≥25%)
	<input type="checkbox"/> Unshaded (<25%)
CHANNEL DYNAMICS	<input type="checkbox"/> Downcutting
	<input type="checkbox"/> Widening
	<input type="checkbox"/> Headcutting
	<input type="checkbox"/> Aggrading
	<input type="checkbox"/> Sed. deposition
	<input type="checkbox"/> Bed scour
	<input type="checkbox"/> Bank failure
	<input type="checkbox"/> Bank scour
	<input type="checkbox"/> Slope failure
	<input type="checkbox"/> Channelized
BANK FULL CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: <u>LT</u> bank 3' (ft)
	<u>RT</u> bank _____ (ft)
	Width: <u>Bottom</u> 11.6 (ft)
	<u>Top</u> _____ (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3
		2
		1

NOTES: (biggest problem you see in survey reach) Junked car + heavy sediment load

REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION																					
		Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
	20 19 18 17 16					15 14 13 (12) 11					10 9 8 7 6					5 4 3 2 1 0					
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
	Left Bank 10 9					(8) 7 6					5 4 3					2 1 0					
	Right Bank 10 9					(8) 7 6					5 4 3					2 1 0					
BANK EROSION <i>(facing downstream) ? under water - could not see</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use. BEST GUESS					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.					
	Left Bank 10 9					(8) 7 6					5 4 3					2 1 0					
	Right Bank 10 9					(8) 7 6					5 4 3					2 1 0					
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					
	(20) 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					

OVERALL BUFFER AND FLOODPLAIN CONDITION																					
		Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.					Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet; little or no riparian vegetation due to human activities.					
	Left Bank 10 9					(8) 7 6					5 4 3					2 1 0					
	Right Bank 10 9					(8) 7 6					5 4 3					2 1 0					
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest					Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field					Predominant floodplain vegetation type is turf or crop land					
	20 19 18 17 16					(15) 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water					Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water					
	20 19 (18) 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures					Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function					
	20 19 18 17 16					15 14 13 12 (11)					10 9 8 7 6					5 4 3 2 1 0					

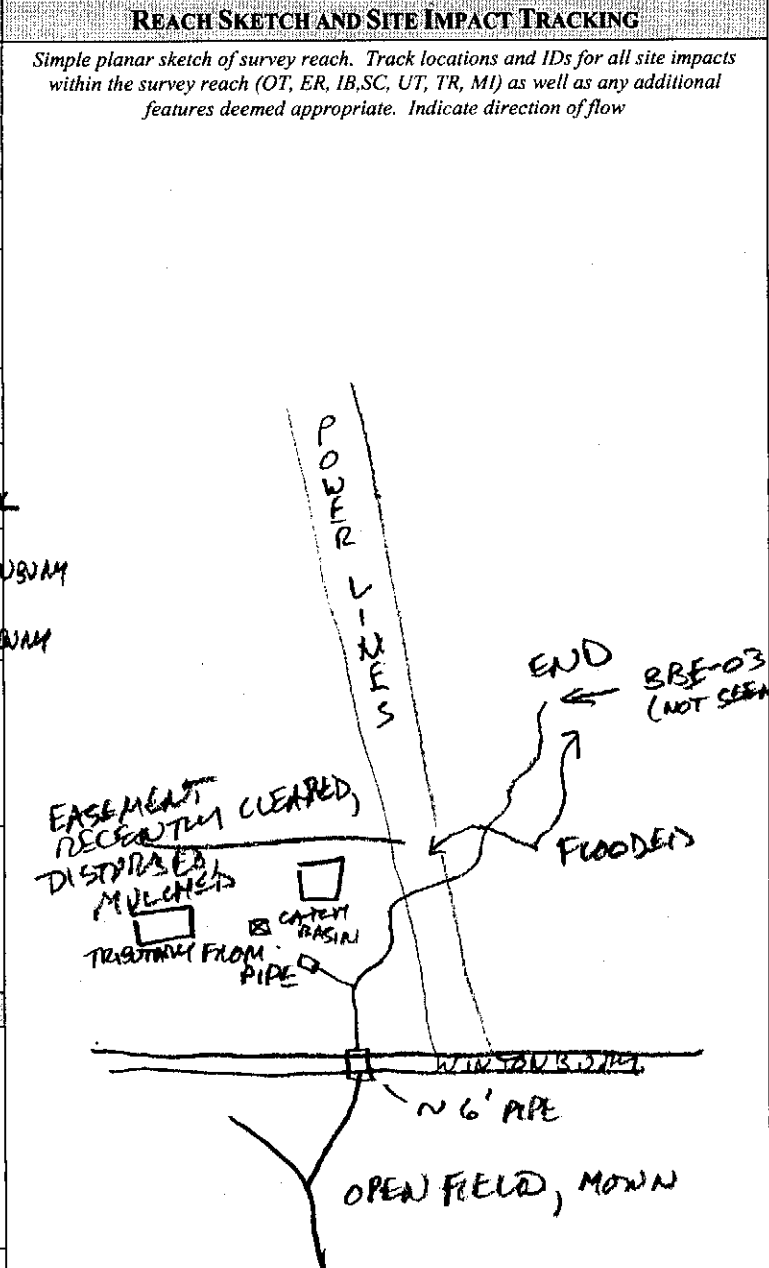
Sub Total In-stream: 66 /80 + Buffer/Floodplain: 60 /80 = Total Survey Reach 126 /160



SURVEY REACH ID: BBE-04		WTRSHD/SUBSHD: BEAMAN BROOK E.		DATE: 12/3/09		ASSESSED BY: RG+CM	
START TIME: 8:30 AM/PM	LMK: _____	END TIME: 8:50 AM/PM ?	LMK: _____	GPS ID: _____			
LAT: 41° 50' 08" LONG: 72° 43' 11"		LAT: ? LONG: ?					
DESCRIPTION: CONFLUENCE W/ BEAMAN BROOK W.				DESCRIPTION: CONFLUENCE W/ BBE-03 (NOT SEEN)			

RAIN IN LAST 24 HOURS	<input checked="" type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
	<input type="checkbox"/> Golf course	<input checked="" type="checkbox"/> Park ?	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75% <input checked="" type="checkbox"/> 75-100%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input checked="" type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	
Attached:	<input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
Floating:	<input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	
(Evidence of)	<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input checked="" type="checkbox"/> Deer
	<input type="checkbox"/> Snails <input checked="" type="checkbox"/> Other: RED-TAILED HAWK
STREAM SHADING (water surface)	
<input checked="" type="checkbox"/> Mostly shaded (>75% coverage)	ASIDE WINDOW
<input type="checkbox"/> Halfway (>50%)	
<input type="checkbox"/> Partially shaded (>25%)	
<input checked="" type="checkbox"/> Unshaded (<25%)	BELOW WINDOW
CHANNEL DYNAMICS	
<input type="checkbox"/> Downcutting	<input type="checkbox"/> Bed scour
<input type="checkbox"/> Widening	<input type="checkbox"/> Bank failure
<input type="checkbox"/> Headcutting	<input type="checkbox"/> Bank scour
<input checked="" type="checkbox"/> Unknown	<input type="checkbox"/> Aggrading
	<input type="checkbox"/> Slope failure
	<input type="checkbox"/> Sed. deposition
	<input type="checkbox"/> Channelized
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	
Height: LT bank	3 (ft)
RT bank	_____ (ft)
Width: Bottom	12 (ft)
Top	_____ (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	(4)	3 FROM 2 POWER 1 LINE

NOTES: (biggest problem you see in survey reach)

MOWN LAWN + PIPED TRIBUTARY (R) BANK N. OF WINDY BURY.

HEAVY SEDIMENT LOAD ON 12/3

REPORTED TO AUTHORITIES YES NO

INVASIVE PLANTS (PACHYSANDRA, PHRAGMITES, ROSA MULTIFLORA, etc).

OVERALL STREAM CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
	Right Bank 10 9					8 7 6					5 4 3					2 1 0				
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected. BANKS MOSTLY UNDER WATER					Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
	Right Bank 10 9					8 7 6					5 4 3					2 1 0				
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
OVERALL BUFFER AND FLOODPLAIN CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.					Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
	Right Bank 10 9					8 7 6					5 4 3					2 1 0				
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest					Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field WITH SOME FOREST					Predominant floodplain vegetation type is turf or crop land				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water					Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water				
20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures					Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
Sub-Total In-stream: 68 /80 + Buffer/Floodplain: 64 /80 = Total Survey Reach 132 /160																				



WATERSHED/SUBSHED: <u>BBE</u>		DATE: <u>12/03/09</u>	ASSESSED BY: <u>cm + BG</u>
SURVEY REACH ID: <u>04</u>	TIME: <u>8:45 AM</u> /PM	PHOTO ID: (Camera-Pic #) <u>PC0300</u> /# <u>03</u>	
SITE ID: (Condition-#) <u>SC-</u>	LAT <u>41° 50' 09" N</u>	LONG <u>72° 43' 09" W</u>	LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other: _____

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other: _____	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other: _____	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>5'</u> (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE no Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 Local stream repair Other: _____

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH:



WATERSHED/SUBSHED: <u>B6E</u>	DATE: <u>12/03/09</u>	ASSESSED BY: <u>CM + B6</u>
SURVEY REACH ID: <u>04</u>	TIME: <u>8:55</u> AM/PM	PHOTO ID: (Camera-Pic #) <u>PC0300 # 04</u>
SITE ID (Condition #): <u>OT-</u>	LAT <u>41° 56' 11" N</u> LONG <u>72° 43' 07" W</u> LMK _____	GPS: (Unit ID) _____

BANK: <input type="checkbox"/> LT <input checked="" type="checkbox"/> RT <input type="checkbox"/> Head	TYPE: <input checked="" type="checkbox"/> Closed pipe <input type="checkbox"/> Open channel	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other:	SHAPE: <input checked="" type="checkbox"/> Single <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Double <input type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other:	DIMENSIONS: Diameter: _____ (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
FLOW: <input type="checkbox"/> None <input checked="" type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial <input type="checkbox"/> Other:	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Other:	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	<div style="border: 1px solid black; width: 100%; height: 100%; display: flex; align-items: center; justify-content: center;"> X </div> NOT APPLICABLE		
CONDITION: <input checked="" type="checkbox"/> None <input type="checkbox"/> Chip/Cracked <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion <input type="checkbox"/> Other:	ODOR: <input checked="" type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	DEPOSITS/STAINS: <input checked="" type="checkbox"/> None <input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	VEGGIE DENSITY: <input checked="" type="checkbox"/> None <input type="checkbox"/> Normal <input type="checkbox"/> Inhibited <input type="checkbox"/> Excessive <input type="checkbox"/> Other:	PIPE BENTHIC GROWTH: <input checked="" type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
POOL QUALITY: <input type="checkbox"/> No pool <input type="checkbox"/> Good <input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Oils <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Floatables <input type="checkbox"/> Other:					

FOR FLOWING ONLY	COLOR:	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:				
	TURBIDITY:	<input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque				
	FLOATABLES:	<input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:				
OTHER CONCERNS:	<input type="checkbox"/> Excess Trash (paper/plastic bags) <input type="checkbox"/> Dumping (bulk) <input type="checkbox"/> Excessive Sedimentation <input type="checkbox"/> Needs Regular Maintenance <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Other:					

POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization
 no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled? Yes No Not investigated Land Use description: _____
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.		
	5	4	3	2	1

SKETCH/NOTES: goes under driveway's. Pachysandra + privet hedges here too

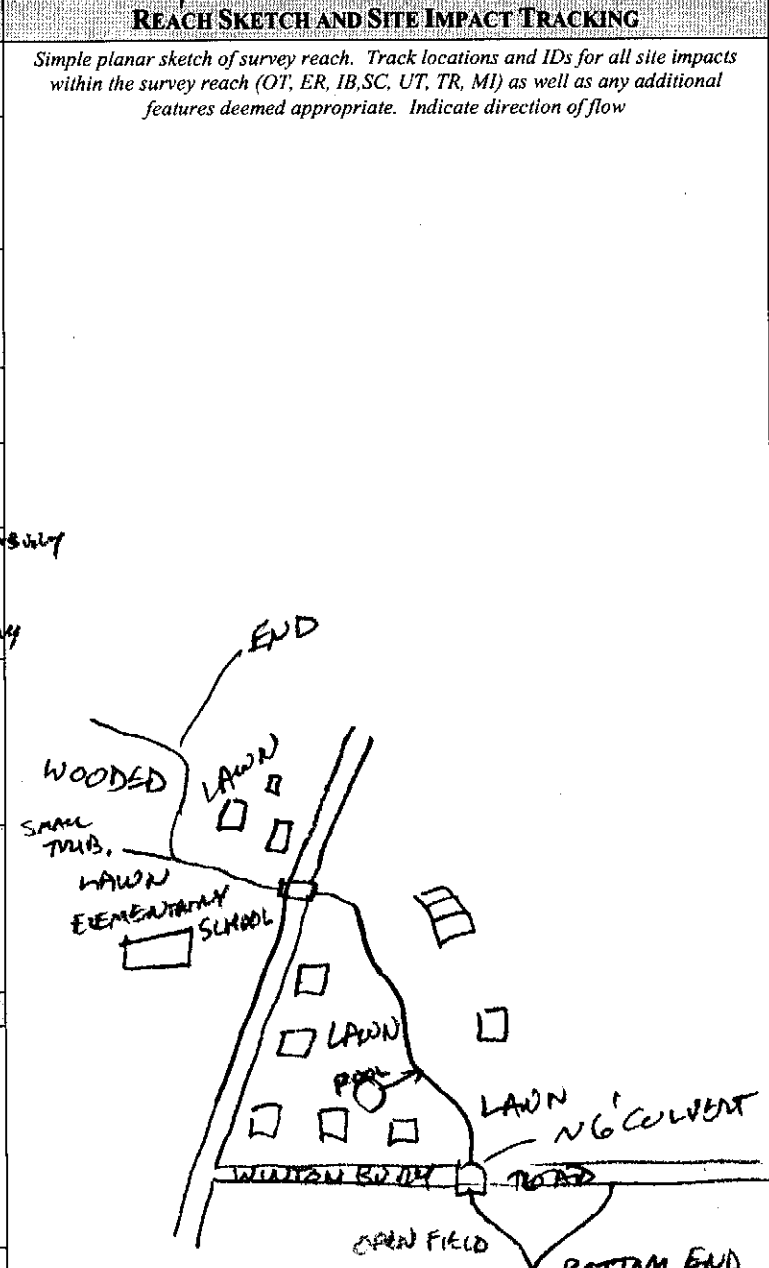
REPORTED TO AUTHORITIES: YES NO



SURVEY REACH ID: BBW-09		WTRSHD/SUBSHD: BEAMAN BROOK WEST		DATE: 12/3/09		ASSESSED BY: BG/cmm	
START TIME: 7:50 AM	LMK: _____	END TIME: 12:15 PM	LMK: _____	GPS ID: (CM)			
LAT 41° 50' 08" N		LONG 72° 43' 11" W		LAT 41° 50' 20" N		LONG 72° 43' 18" W	
DESCRIPTION: CONFLUENCE WITH BBE-04				DESCRIPTION: BEND BEHIND HOUSES			

RAIN IN LAST 24 HOURS	<input checked="" type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input type="checkbox"/> Forested	<input checked="" type="checkbox"/> Institutional
	<input type="checkbox"/> Golf course	<input checked="" type="checkbox"/> Park? BELOW WILTON BURY	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	ELEM. SCHOOL

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input checked="" type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	Attached: <input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
	Floating: <input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	
(Evidence of)	
<input type="checkbox"/> Fish	<input type="checkbox"/> Beaver
<input type="checkbox"/> Snails	<input type="checkbox"/> Deer
<input type="checkbox"/> Other:	
STREAM SHADING (water surface)	
<input checked="" type="checkbox"/> Mostly shaded (>75% coverage)	AS ABOVE WILTON BURY
<input type="checkbox"/> Halfway (>50%)	
<input checked="" type="checkbox"/> Partially shaded (>25%)	BELOW WILTON BURY
<input type="checkbox"/> Unshaded (< 25%)	
CHANNEL DYNAMICS	<input type="checkbox"/> Downcutting
	<input type="checkbox"/> Widening
	<input type="checkbox"/> Headcutting
<input checked="" type="checkbox"/> Unknown	<input type="checkbox"/> Aggrading
	<input type="checkbox"/> Sed. deposition
	<input type="checkbox"/> Bed scour
	<input type="checkbox"/> Bank failure
	<input type="checkbox"/> Bank scour
	<input type="checkbox"/> Slope failure
	<input type="checkbox"/> Channelized
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: LT bank 4 (ft)
	RT bank _____ (ft)
	Width: Bottom 16 (ft)
	Top BANK FULL (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	(4)	3
		2
		1

NOTES: (biggest problem you see in survey reach) **SUBURBANIA: MOWN LAWNS, DUMPING OF YARD WASTE, DRAINING OF POOL TO STREAM**

REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION																				
		Optimal					Suboptimal					Marginal					Poor			
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.				
	Left Bank		10 9			8 7 6			5 4 3			2 1 0								
	Right Bank		10 9			8 7 6			5 4 3			2 1 0								
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected. <i>SOME AREAS NOT VISIBLE</i>					Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.				
	Left Bank		10 9			8 7 6			5 4 3			2 1 0								
	Right Bank		10 9			8 7 6			5 4 3			2 1 0								
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
OVERALL BUFFER AND FLOODPLAIN CONDITION																				
		Optimal					Suboptimal					Marginal					Poor			
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.					Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.				
	Left Bank		10 9			8 7 6			5 4 3			2 1 0								
	Right Bank		10 9			8 7 6			5 4 3			2 1 0								
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest					Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field					Predominant floodplain vegetation type is turf or crop land <i>SOME SHRUBBY AREAS</i>				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water					Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water <i>IN LAWNS</i>					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water				
		20 19 18 17 16			15 14 13 12 11			10 9 8 7 6			5 4 3 2 1 0									
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures					Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not affecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
Sub Total In-stream: <u>57</u> /80 + Buffer/Floodplain: <u>37</u> /80 = Total Survey Reach <u>94</u> /160																				



WATERSHED/SUBSHED: BBW DATE: 12/03/09 ASSESSED BY: cm + B6

SURVEY REACH ID: 02 TIME: 10:00 AM PHOTO ID: (Camera-Pic #) PC0300 # 16

SITE ID: (Condition #) SC- LAT 41° 51' 16" N LONG 72° 43' 17" W LMK GPS (Unit ID)

↑ FILLEY ST.
 TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>5'</u> (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.

NOTES/SKETCH: rip-rap on + downstream upstream sides of culvert along both banks
602 - 30' Headwaters consists 16 rip-rap.



WATERSHED/SUBSHED: BBW DATE: 12/03/09 ASSESSED BY: CM + 36

SURVEY REACH: or TIME: 9:55 AM/PM PHOTO ID: (Camera-Pic #) PC300 # 12

SITE ID: (Condition-#) IB-A START LAT ° ' " LONG ° ' " LMK GPS: (Unit ID)
 END LAT ° ' " LONG ° ' " LMK

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other:

LAND USE: (Facing downstream) LT Bank Private Institutional Golf Course Park ? Other Public
 RT Bank ?

DOMINANT LAND COVER: LT Bank Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 RT Bank

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial (50%) Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other:

RESTORABLE AREA	REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
Length (ft): <u>LT BANK ~50'</u> <u>RT ~50'</u>				
Width (ft): <u> </u>		<u>(5)</u>	4	3
			2	1

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES: unknown land use - PARK?



WATERSHED/SUBSHED: 6BW DATE: 12/03/09 ASSESSED BY: CM+BG

SURVEY REACH: 02 TIME: 10:00 AM PHOTO ID: (Camera-Pic #) PCB00 # 15

SITE ID: (Condition-#) IB-6 START LAT 41° 50' 13" LONG 72° 43' 14" LMK _____ GPS: (Unit ID) _____
 END LAT _____ LONG _____ LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other: See below

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other: public education

RESTORABLE AREA		REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
LT BANK	RT				
Length (ft): _____	~ 30'				
Width (ft): _____	_____				
			5	4	3

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES: yard waste piled up on Right Bank + home owner is draining their pool directly into brook.



WATERSHED/SUBSHED: <u>BBW</u>	DATE: <u>12/03/09</u>	ASSESSED BY: <u>cm + B6</u>
SURVEY REACH ID: <u>02</u>	TIME: <u>10:00</u> AM/PM	PHOTO ID: (Camera-Pic #) <u>PCB00 # 18</u>
SITE ID (Condition #): <u>OT-^{MIN} 02</u>	LAT <u>41° 50' 16"</u> LONG <u>72° 43' 19"</u> LMK _____	GPS: (Unit ID) _____

BANK: <input type="checkbox"/> LT <input checked="" type="checkbox"/> RT <input type="checkbox"/> Head	TYPE: <input checked="" type="checkbox"/> Closed pipe <input checked="" type="checkbox"/> Open channel	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other:	SHAPE: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Circular <input type="checkbox"/> Double <input type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other:	DIMENSIONS: Diameter: _____ (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
FLOW: <input type="checkbox"/> None <input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial <input type="checkbox"/> Other:	<input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Earthen <input type="checkbox"/> Other:	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	<div style="border: 1px solid black; width: 100%; height: 100%; display: flex; align-items: center; justify-content: center;"> X </div> NOT APPLICABLE		
CONDITION: <input type="checkbox"/> None <input type="checkbox"/> Chip/Cracked <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion <input type="checkbox"/> Other:	ODOR: <input type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	DEPOSITS/STAINS: <input type="checkbox"/> None <input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	VEGGIE DENSITY: <input type="checkbox"/> None <input type="checkbox"/> Normal <input type="checkbox"/> Inhibited <input type="checkbox"/> Excessive <input type="checkbox"/> Other:	PIPE BENTHIC GROWTH: <input type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
POOL QUALITY: <input type="checkbox"/> No pool <input type="checkbox"/> Good <input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Oils <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Floatables <input type="checkbox"/> Other:					

FOR FLOWING ONLY	COLOR: <input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:
	TURBIDITY: <input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque
	FLOATABLES: <input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:
OTHER CONCERNS:	<input type="checkbox"/> Excess Trash (paper/plastic bags) <input type="checkbox"/> Dumping (bulk) <input type="checkbox"/> Excessive Sedimentation <input type="checkbox"/> Needs Regular Maintenance <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Other:

POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization
 no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled? Yes No Not investigated Land Use description: _____
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.
	5	4	3
			2
			1

SKETCH/NOTES: stormwater inputs from parking lot (elementary school).
There is also an intermittent stream/stormwater swale entering stream on REB



SURVEY REACH ID: 1	WTRSHD/SUBSHD: WBS	DATE: 12/1/09	ASSESSED BY: CM/86
START TIME: 1:30 AM/PM	LMK:	END TIME: 3:00 AM/PM	LMK:
LAT 41° 50' 37" LONG 72° 44' 33"		LAT 41° 51' 00" LONG 72° 44' 27"	
DESCRIPTION: Confluence with WBS-5 (Rick condos along left bank)		DESCRIPTION: Confluence with WBN-7/WBN-6	

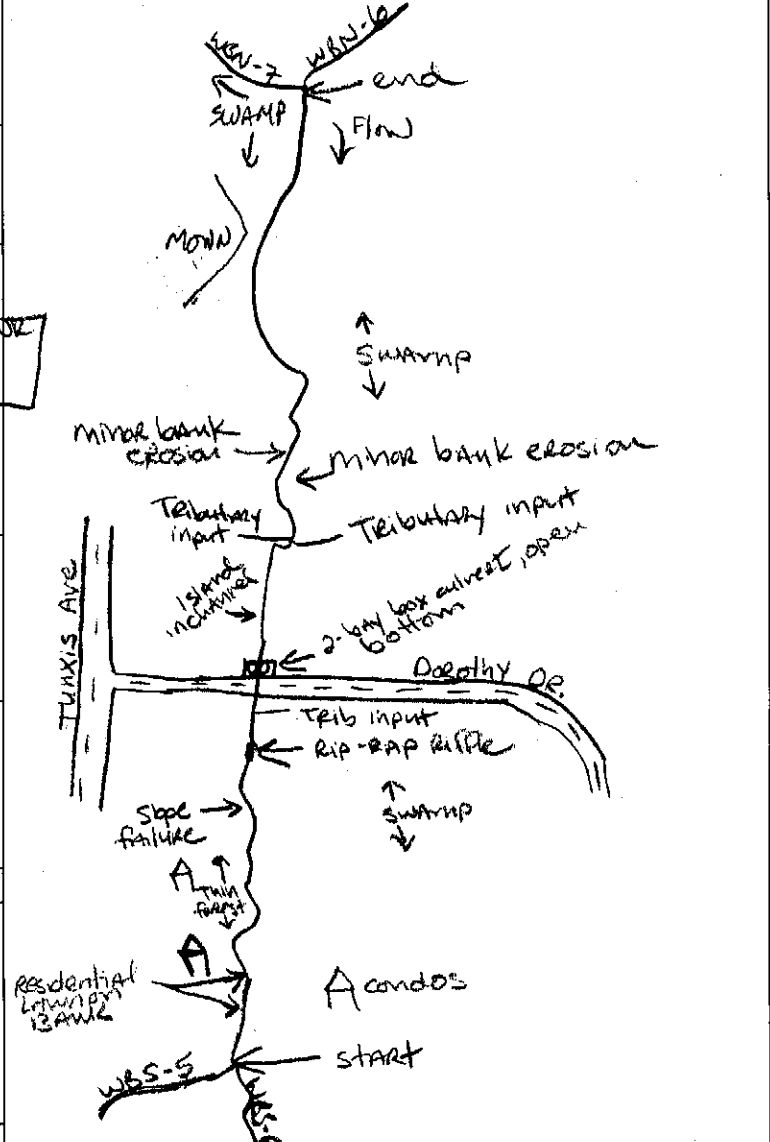
RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input checked="" type="checkbox"/> Steady rain	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Trace
PRESENT CONDITIONS	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input checked="" type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy	<input type="checkbox"/> Intermittent
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:

AVERAGE CONDITIONS (check applicable)

BASE FLOW AS %	<input type="checkbox"/> 0-25%	<input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50 %	<input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	<input type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5 - 10")
	<input checked="" type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
	<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Turbid (suspended matter)
	<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
	<input type="checkbox"/> Other (chemicals, dyes)	

REACH SKETCH AND SITE IMPACT TRACKING

Simple planar sketch of survey reach. Track locations and IDs for all site impacts within the survey reach (OT, ER, IB, SC, UT, TR, MI) as well as any additional features deemed appropriate. Indicate direction of flow



AQUATIC PLANTS IN STREAM	Attached: <input type="checkbox"/> none	<input checked="" type="checkbox"/> some	<input type="checkbox"/> lots
	Floating: <input checked="" type="checkbox"/> none	<input type="checkbox"/> some	<input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	(Evidence of) <u>MARSHALS, RT WADZ</u>		
	<input type="checkbox"/> Fish	<input type="checkbox"/> Beaver	<input checked="" type="checkbox"/> Deer
	<input type="checkbox"/> Snails	<input checked="" type="checkbox"/> Other: <u>MUSSELS, PARLOW</u>	

STREAM SHADING (water surface)	<input checked="" type="checkbox"/> Mostly shaded (≥75% coverage)
	<input type="checkbox"/> Halfway (≥50%)
	<input type="checkbox"/> Partially shaded (≥25%)
	<input type="checkbox"/> Unshaded (< 25%)

CHANNEL DYNAMICS	<input type="checkbox"/> Downcutting	<input type="checkbox"/> Bed scour
	<input type="checkbox"/> Widening	<input type="checkbox"/> Bank failure
	<input type="checkbox"/> Headcutting	<input type="checkbox"/> Bank scour
	<input type="checkbox"/> Aggrading	<input type="checkbox"/> Slope failure
	<input type="checkbox"/> Sed. deposition	<input type="checkbox"/> Channelized
<input type="checkbox"/> Unknown		

CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: <u>LT bank</u> <u>3'</u> (ft)
	<u>RT bank</u> _____ (ft)
	Width: <u>Bottom</u> <u>15'</u> (ft)
	<u>Top</u> _____ (ft)

REACH ACCESSIBILITY

Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3
		2
		1

NOTES: (biggest problem you see in survey reach) Minor bank impacts due to residential lawns

OVERALL STREAM CONDITION																																								
		Optimal					Suboptimal					Marginal					Poor																							
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).										40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).										20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.										Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.									
	20 19 18 17 16					15 <u>14</u> 13 12 11					10 9 8 7 6					5 4 3 2 1 0																								
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.										70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.										50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.										Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.									
	Left Bank 10 9					<u>8</u> 7 6					5 4 3					2 1 0																								
	Right Bank 10 9					8 <u>7</u> 6					5 4 3					2 1 0																								
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.										Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.										Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure										Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.									
	Left Bank 10 9					<u>8</u> 7 6					5 4 3					2 1 0																								
	Right Bank 10 9					<u>8</u> 7 6					5 4 3					2 1 0																								
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.										High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.										High flows (greater than bankfull) <u>not</u> able to enter floodplain. Stream deeply entrenched.										High flows (greater than bankfull) <u>not</u> able to enter floodplain. Stream deeply entrenched.									
	20 19 18 17 16					<u>15</u> 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0																								
OVERALL BUFFER AND FLOODPLAIN CONDITION																																								
		Optimal					Suboptimal					Marginal					Poor																							
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.										Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.										Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.										Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.									
	Left Bank 10 <u>9</u>					8 7 6					5 4 3					2 1 0																								
	Right Bank 10 9					<u>8</u> 7 6					5 4 3					2 1 0																								
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest										Predominant floodplain vegetation type is young forest										Predominant floodplain vegetation type is shrub or old field										Predominant floodplain vegetation type is turf or crop land									
	20 19 18 17 <u>16</u>					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0																								
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water										Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water										Either all wetland or all non-wetland habitat, evidence of standing/ponded water										Either all wetland or all non-wetland habitat, no evidence of standing/ponded water									
20 19 <u>18</u> 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0																									
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures										Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function										Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function										Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function									
	20 19 18 17 <u>16</u>					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0																								
Sub Total In-stream: <u>60</u> /80 + Buffer/Floodplain: <u>67</u> /80 = Total Survey Reach <u>127</u> /160																																								



WATERSHED/SUBSHED: WBS DATE: 12/01/09 ASSESSED BY: cm/186
 SURVEY REACH ID: 01 TIME: _____ AM/PM PHOTO ID: (Camera-Pic #) PC0100 # 35
 SITE ID: (Condition #) SC LAT _____ ' _____ " LONG _____ ' _____ " LMK _____ GPS (Unit ID) _____

Dorothy DR.
 TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input checked="" type="checkbox"/> Box <input type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input checked="" type="checkbox"/> Other: <u>NATURAL BOTTOM</u>	# BARRELS: <input type="checkbox"/> Single <input checked="" type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>12'</u> (ft) Height: <u>8'</u> (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input checked="" type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):	CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)		

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other: sediment removal

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input checked="" type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH: only 1 bay (RB) is blocked with sediment + other bay is sufficient for fish passage. Maybe investigate where sediment deposition beam

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: WBS DATE: 12/01/09 ASSESSED BY: CM+106

SURVEY REACH: 01 TIME: 1:45 AM/PM PHOTO ID: (Camera-Pic #) PC0100 # 30

SITE ID: (Condition-#) IB-^{only one} sheet START LAT 41° 50' 39" LONG 72° 44' 34" LMK _____ GPS: (Unit ID) _____
 END LAT _____ LONG _____ LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other:

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other: wider buffer

RESTORABLE AREA		REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
LT BANK	RT				
Length (ft): <u>100</u>	<u>100</u>				
Width (ft): _____	_____				5 4 3 2 (1)

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

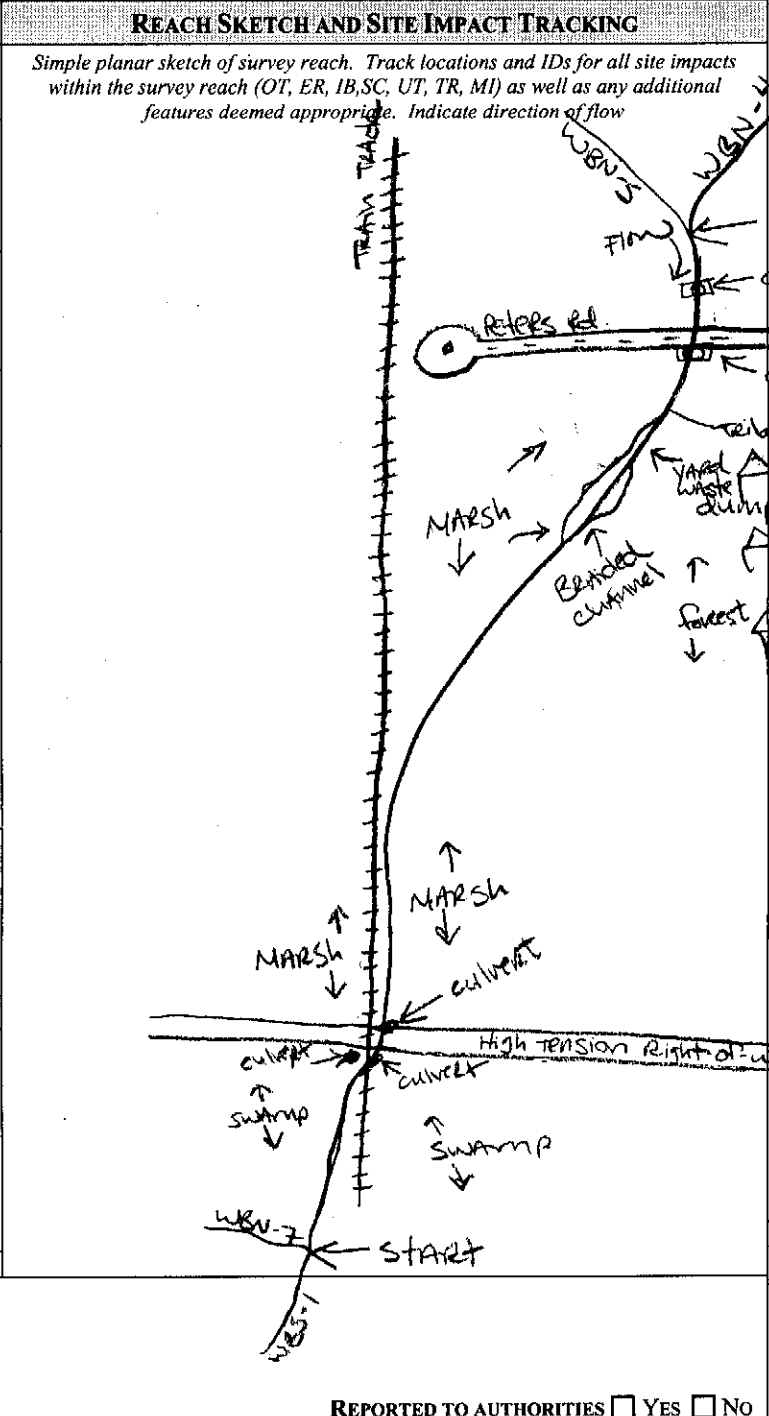
NOTES: → Impacts to LB + RB where residential trunks came up to edge of brook @ 41° 50' 39" / 72° 44' 34" Approx. 100' length.



SURVEY REACH ID: 6	WTRSHD/SUBSHD: WBN	DATE: 12/1/09	ASSESSED BY: cm/BG
START TIME: 3:00 AM/PM	LMK:	END TIME: 4:30 AM/PM	LMK:
LAT: 41° 51' 06" LONG: 72° 44' 27"		LAT: 41° 51' 31" LONG: 72° 43' 56"	GPS ID: (circled)
DESCRIPTION: Confluence with WBN-7/WBS-1		DESCRIPTION: Confluence with WBN-5/WBN-4	

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input checked="" type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input checked="" type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	<input type="checkbox"/> Silt/clay (fine or slick) <input type="checkbox"/> Cobble (2.5-10") <input checked="" type="checkbox"/> Sand (gritty) <input type="checkbox"/> Boulder (>10") <input type="checkbox"/> Gravel (0.1-2.5") <input type="checkbox"/> Bed rock
WATER CLARITY	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid (suspended matter) <input type="checkbox"/> Stained (clear, naturally colored) <input type="checkbox"/> Opaque (milky) <input type="checkbox"/> Other (chemicals, dyes)
AQUATIC PLANTS IN STREAM	Attached: <input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots Floating: <input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	(Evidence of) <input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input checked="" type="checkbox"/> Deer <input type="checkbox"/> Snails <input checked="" type="checkbox"/> Other: <u>Mussels</u>
STREAM SHADING (water surface)	<input checked="" type="checkbox"/> Mostly shaded (≥75% coverage) <input type="checkbox"/> Halfway (≥50%) <input type="checkbox"/> Partially shaded (≥25%) <input type="checkbox"/> Unshaded (<25%)
CHANNEL DYNAMICS	<input type="checkbox"/> Downcutting <input type="checkbox"/> Bed scour <input type="checkbox"/> Widening <input type="checkbox"/> Bank failure <input type="checkbox"/> Headcutting <input type="checkbox"/> Bank scour <input type="checkbox"/> Aggrading <input type="checkbox"/> Slope failure <input type="checkbox"/> Sed. deposition <input type="checkbox"/> Channelized <input type="checkbox"/> Unknown
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: LT bank <u>15"</u> (ft) RT bank _____ (ft) Width: Bottom <u>10'</u> (ft) Top _____ (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3 2 1 (circled)

NOTES: (biggest problem you see in survey reach)
 Stone toe of RAILROAD tracks

OVERALL STREAM CONDITION													
	Optimal				Suboptimal				Marginal				Poor
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).				40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).				20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.				Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 <u>19</u> 18 17 16				15 14 13 12 11				10 9 8 7 6				5 4 3 2 1 0
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.				70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.				50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.				Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	Left Bank	10	9		8	<u>7</u>	6	5	4	3	2	1	0
	Right Bank	10	9		<u>8</u>	7	6	5	4	3	2	1	0
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.				Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.				Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure				Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.
	Left Bank	10	<u>9</u>		8	7	6	5	4	3	2	1	0
	Right Bank	10	<u>9</u>		8	7	6	5	4	3	2	1	0
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.				High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.				High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.				High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.
	20 <u>19</u> 18 17 16				15 14 13 12 11				10 9 8 7 6				5 4 3 2 1 0
OVERALL BUFFER AND FLOODPLAIN CONDITION													
	Optimal				Suboptimal				Marginal				Poor
VEGETATED BUFFER WIDTH <i>except when adjacent to TRAIN TRAX</i>	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.				Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.				Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.				Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.
	Left Bank	10	<u>9</u>		8	7	6	5	4	3	2	1	0
	Right Bank	10	<u>9</u>		8	7	6	5	4	3	2	1	0
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest				Predominant floodplain vegetation type is young forest				Predominant floodplain vegetation type is shrub or old field				Predominant floodplain vegetation type is turf or crop land
	20 19 <u>18</u> 17 16				15 14 13 12 11				10 9 8 7 6				5 4 3 2 1 0
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water				Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water				Either all wetland or all non-wetland habitat, evidence of standing/ponded water				Either all wetland or all non-wetland habitat, no evidence of standing/ponded water
	<u>20</u> 19 18 17 16				15 14 13 12 11				10 9 8 7 6				5 4 3 2 1 0
FLOODPLAIN ENCROACHMENT <i>Due to TRAIN TRAX mainly</i>	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures				Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function				Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function				Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function
	20 19 18 17 16				15 14 <u>13</u> 12 11				10 9 8 7 6				5 4 3 2 1 0
Sub Total In-stream: <u>71</u> /80 + Buffer/Floodplain: <u>69</u> /80 = Total Survey Reach <u>140</u> /160													



WATERSHED/SUBSHED: WBN DATE: 12/01/07 ASSESSED BY: cm+RG
 SURVEY REACH ID: 6 TIME: 3:30 AM/PM PHOTO ID: (Camera-Pic #) PC010 # 045
 SITE ID: (Condition #) SC-A LAT 41° 51' 12" N LONG 87° 44' 23" W LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other: Power line Road

FOR ROAD/RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input checked="" type="checkbox"/> Bottomless <input checked="" type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single x3 <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>See</u> (ft) Height: <u>below</u> (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____		CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)		

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH:

→ 3 culverts @ intersection of the stream channel with the powerlines Right-of-way + the Railroad tracks:

① culvert under Right-of-way + west of RR tracks is 36" Round Concrete

② culvert under RR tracks is open bottom box culvert 15' wide x 6' high

③ culvert under power line R-o-w on east side of RR tracks is open, concrete + 10' x 3'

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: WRN DATE: 12/01/09 ASSESSED BY: amt + BT
 SURVEY REACH ID: 6 TIME: 4:15 AM (PM) PHOTO ID: (Camera-Pic #) P0100 # 54, 55 + 56
 SITE ID: (Condition #) SC-B LAT 41° 51' 31" LONG 72° 43' 56" LMK _____ GPS (Unit ID) _____

Peters Road

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>?</u> (ft) Height: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____	CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)		

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH: There is A concrete, Round culvert under Peters Road, and then Another concrete Round culvert APPROX 20' further upstream. There is constricted flow (these must be insufficient size) AS water pools. See photos



WATERSHED/SUBSHED: WB N DATE: 12/01/09 ASSESSED BY: ant/bb

SURVEY REACH: 6 TIME: ___:___ AM/PM PHOTO ID: (Camera-Pic #) PC010045

SITE ID: (Condition-#) IB- on one sheet START LAT see below LONG ° ' " LMK _____ GPS: (Unit ID) _____
 END LAT ° ' " LONG ° ' " LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other: rip-rap associated with RR track

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no where next to RR bed Other: provide educational documents to residential

RESTORABLE AREA		REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
LT BANK	RT				
Length (ft): _____	_____				
Width (ft): _____	_____				<u>1</u>

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES: There are 4 AREAS of note where buffer has been impacted. These are all included on this form:

- ① Left Bank (LB) @ 41° 51' 10" / 72° 44' 23" where train tracks encroach into stream buffer (see photo PC010045). No restoration potential.
- ② RB due to train tracks. No restoration potential.
- ③ LB behind residential home there is a washout from lack of vegetation / buffer. @ 41° 51' 20" / 72° 44' 09" No photo.
- ④ Yard waste dumping along edge of LB + within the channel itself @ 41° 51' 22" / 72° 44' 03" No photo. Potential restoration candidate by providing information or enhancement.

OVERALL STREAM CONDITION																					
		Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.																				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0					
	Right Bank 10 9					8 7 6					5 4 3					2 1 0					
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.																				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0					
	Right Bank 10 9					8 7 6					5 4 3					2 1 0					
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					

OVERALL BUFFER AND FLOODPLAIN CONDITION																					
		Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone. <i>DUE BAB SECTOR EACH BANK</i>																				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0					
	Right Bank 10 9					8 7 6					5 4 3					2 1 0					
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					

Sub Total In-stream: 68 /80 + Buffer/Floodplain: 52 /80 = Total Survey Reach 120 /160



WATERSHED/SUBSHED: BHR		DATE: 12/08/09		ASSESSED BY: CMA + BG	
SURVEY REACH ID: 01		TIME: _____ AM/PM		PHOTO ID: (Camera-Pic #) P080 # 090	
SITE ID: (Condition-#) TR- B		LAT 41° 51' 32" LONG 72° 42' 50" LMK _____		GPS: (Unit ID)	
TYPE: <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential	MATERIAL: <input type="checkbox"/> Plastic <input type="checkbox"/> Tires <input type="checkbox"/> Appliances <input checked="" type="checkbox"/> Automotive		<input type="checkbox"/> Paper <input type="checkbox"/> Construction <input type="checkbox"/> Yard Waste <input type="checkbox"/> Other:		<input type="checkbox"/> Metal <input type="checkbox"/> Medical
SOURCE: <input type="checkbox"/> Unknown <input type="checkbox"/> Flooding <input type="checkbox"/> Illegal dump <input type="checkbox"/> Local outfall		LOCATION: <input checked="" type="checkbox"/> Stream <input checked="" type="checkbox"/> Riparian Area <input type="checkbox"/> Lt bank <input checked="" type="checkbox"/> Rt bank		LAND OWNERSHIP: <input type="checkbox"/> Public <input type="checkbox"/> Private <input checked="" type="checkbox"/> Unknown	
POTENTIAL RESTORATION CANDIDATE <input checked="" type="checkbox"/> Stream cleanup <input checked="" type="checkbox"/> Stream adoption segment <input checked="" type="checkbox"/> Removal/prevention of dumping <input type="checkbox"/> no <input type="checkbox"/> Other:					
<i>If yes for trash or debris removal</i>	EQUIPMENT NEEDED: <input checked="" type="checkbox"/> Heavy equipment <input type="checkbox"/> Trash bags <input type="checkbox"/> Unknown			DUMPSTER WITHIN 100 FT: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
	WHO CAN DO IT: <input type="checkbox"/> Volunteers <input checked="" type="checkbox"/> Local Gov <input type="checkbox"/> Hazmat Team <input type="checkbox"/> Other				
CLEAN-UP POTENTIAL: (Circle #)	A small amount of trash (i.e., less than two pickup truck loads) located inside a park with easy access	A large amount of trash, or bulk items, in a small area with easy access. Trash may have been dumped over a long period of time but it could be cleaned up in a few days, possibly with a small backhoe.		A large amount of trash or debris scattered over a large area, where access is very difficult. Or presence of drums or indications of hazardous materials	
	5	(4) 3		2 1	
NOTES: Auto located in stream on upstream side of culvert.					
REPORTED TO AUTHORITIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					



WATERSHED/SUBSHED: BHR DATE: 12/08/09 ASSESSED BY: Om + BG

SURVEY REACH ID: 01 TIME: _____ AM/PM PHOTO ID: (Camera-Pic #) PC080 /# 091, 092

SITE ID: (Condition-#) TR-C LAT 41° 51' 37" LONG 72° 42' 52" LMK _____ GPS: (Unit ID) _____

TYPE: <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Residential <i>water site</i>	MATERIAL: <input checked="" type="checkbox"/> Plastic <input checked="" type="checkbox"/> Tires <input type="checkbox"/> Appliances <input type="checkbox"/> Automotive <input checked="" type="checkbox"/> Paper <input checked="" type="checkbox"/> Construction <input checked="" type="checkbox"/> Yard Waste <input checked="" type="checkbox"/> Other: <u>sediment flow out</u>	SOURCE: <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Flooding <input checked="" type="checkbox"/> Illegal dump <input type="checkbox"/> Local outfall	LOCATION: <input checked="" type="checkbox"/> Stream <input checked="" type="checkbox"/> Riparian Area <input type="checkbox"/> Lt bank <input checked="" type="checkbox"/> Rt bank	LAND OWNERSHIP: <input type="checkbox"/> Public <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Private
				AMOUNT (# Pickup truck loads): <u>Needs wetland restoration</u>

POTENTIAL RESTORATION CANDIDATE Stream cleanup Stream adoption segment Removal/prevention of dumping
 no Other: enforcement +/or wetland restoration

If yes for trash or debris removal
 EQUIPMENT NEEDED: Heavy equipment Trash bags Unknown
 WHO CAN DO IT: Volunteers Local Gov Hazmat Team Other
 DUMPSTER WITHIN 100 FT: Yes No Unknown

CLEAN-UP POTENTIAL: (Circle #)
 A small amount of trash (i.e., less than two pickup truck loads) located inside a park with easy access 5
 A large amount of trash, or bulk items, in a small area with easy access. Trash may have been dumped over a long period of time but it could be cleaned up in a few days, possibly with a small backhoe. 4
 A large amount of trash or debris scattered over a large area, where access is very difficult. Or presence of drums or indications of hazardous materials 2

NOTES: sediment washout from construction activities plus trash, tires, concrete, etc. The sediment should be removed by hand.

REPORTED TO AUTHORITIES YES NO

TR

Trash and Debris

WATERSHED/SUBSHED: BHR DATE: 12/08/09 ASSESSED BY: CM+BG

SURVEY REACH ID: 01 TIME: : AM/PM PHOTO ID: (Camera-Pic #) # None

SITE ID: (Condition-#) TR- D LAT 41° 51' 41" LONG 72° 42' 51" LMK GPS: (Unit ID)

TYPE: <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Residential	MATERIAL: <input type="checkbox"/> Plastic <input type="checkbox"/> Tires <input type="checkbox"/> Appliances <input type="checkbox"/> Automotive <input type="checkbox"/> Paper <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Yard Waste <input type="checkbox"/> Other:	SOURCE: <input type="checkbox"/> Unknown <input type="checkbox"/> Flooding <input type="checkbox"/> Illegal dump <input type="checkbox"/> Local outfall <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Medical	LOCATION: <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Riparian Area <input type="checkbox"/> Lt bank <input checked="" type="checkbox"/> Rt bank	LAND OWNERSHIP: <input type="checkbox"/> Public <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Private
				AMOUNT (# Pickup truck loads):

POTENTIAL RESTORATION CANDIDATE Stream cleanup Stream adoption segment Removal/prevention of dumping no Other: enforcement?

If yes for trash or debris removal	EQUIPMENT NEEDED: <input type="checkbox"/> Heavy equipment <input checked="" type="checkbox"/> Trash bags <input type="checkbox"/> Unknown	DUMPSTER WITHIN 100 FT: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
	WHO CAN DO IT: <input checked="" type="checkbox"/> Volunteers <input checked="" type="checkbox"/> Local Gov <input type="checkbox"/> Hazmat Team <input type="checkbox"/> Other	

CLEAN-UP POTENTIAL: (Circle #)	A small amount of trash (i.e., less than two pickup truck loads) located inside a park with easy access	A large amount of trash, or bulk items, in a small area with easy access. Trash may have been dumped over a long period of time but it could be cleaned up in a few days, possibly with a small backhoe.	A large amount of trash or debris scattered over a large area, where access is very difficult. Or presence of drums or indications of hazardous materials	
	5	(4)	3	2

NOTES: Mostly yard waste, but also metal scraps private property - some kind of store. REPORTED TO AUTHORITIES YES NO

Storm Water Outfalls



WATERSHED/SUBSHED: <u>BHR</u>		DATE: <u>12/08/09</u>	ASSESSED BY: <u>AMTB6</u>
SURVEY REACH ID: <u>01</u>	TIME: _____ AM/PM	PHOTO ID: (Camera-Pic #) <u>PC080</u>	# <u>088, 091, 092</u>
SITE ID (Condition-#): <u>OT-^{only} one swif</u>		LAT <u>° see, reverse</u>	LONG _____ " LMK _____ GPS: (Unit ID) _____

BANK: <input type="checkbox"/> LT <input type="checkbox"/> RT <input type="checkbox"/> Head	TYPE: <input type="checkbox"/> Closed pipe <input checked="" type="checkbox"/> Open channel	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Earthen <input type="checkbox"/> Other:	SHAPE: <input type="checkbox"/> Single <input type="checkbox"/> Circular <input type="checkbox"/> Double <input type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other: <input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	DIMENSIONS: Diameter: _____ (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
---	--	--	---	--	--

CONDITION: <input type="checkbox"/> None <input type="checkbox"/> Chip/Cracked <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion <input checked="" type="checkbox"/> Other: <u>erosion (x1)</u>	ODOR: <input checked="" type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	DEPOSITS/STAINS: <input type="checkbox"/> None <input checked="" type="checkbox"/> Oily (x1) <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	VEGGIE DENSITY: <input type="checkbox"/> None <input type="checkbox"/> Normal <input type="checkbox"/> Inhibited <input type="checkbox"/> Excessive <input type="checkbox"/> Other:	PIPE BENTHIC GROWTH: <input type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other: POOL QUALITY: <input type="checkbox"/> No pool <input type="checkbox"/> Good <input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Oils <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Floatables <input type="checkbox"/> Other:
---	---	--	---	---

FOR FLOWING ONLY	COLOR: <input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:
	TURBIDITY: <input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque
	FLOATABLES: <input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:

OTHER CONCERNS:	<input type="checkbox"/> Excess Trash (paper/plastic bags)	<input type="checkbox"/> Dumping (bulk)	<input type="checkbox"/> Excessive Sedimentation
	<input type="checkbox"/> Needs Regular Maintenance	<input type="checkbox"/> Bank Erosion	<input type="checkbox"/> Other:

POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization
 no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled? Yes No Not investigated Land Use description: _____
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.
	5	4	3
			2
			1

SKETCH/NOTES:
 * See reverse side *

REPORTED TO AUTHORITIES: YES NO

① A "Y" shaped split or tributary or stormwater input to LB at the northern end of the building + parking lot AREA $\approx 41^{\circ}51'28''/72^{\circ}42'43''$
see photo PC080088 open channel.

② Washout from construction site that has resulted in significant soil movement - potential site for sediment removal/cleanup/encasement on RB $\approx 41^{\circ}51'37''/72^{\circ}42'52''$. See photos PC080091 + 092.



WATERSHED/SUBSHED: BHR DATE: 12/08/09 ASSESSED BY: cm + BG
 SURVEY REACH ID: 01 TIME: : AM/PM PHOTO ID: (Camera-Pic #) PC080 I# 093, 094, 095
 SITE ID: (Condition #) SC-B LAT 41° 51' 43" LONG 72° 42' 50" LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):	CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)		

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input checked="" type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input checked="" type="checkbox"/> Other: <u>soil movement / clogged</u>	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	②	1

NOTES/SKETCH: Soil Removal / Restoration.

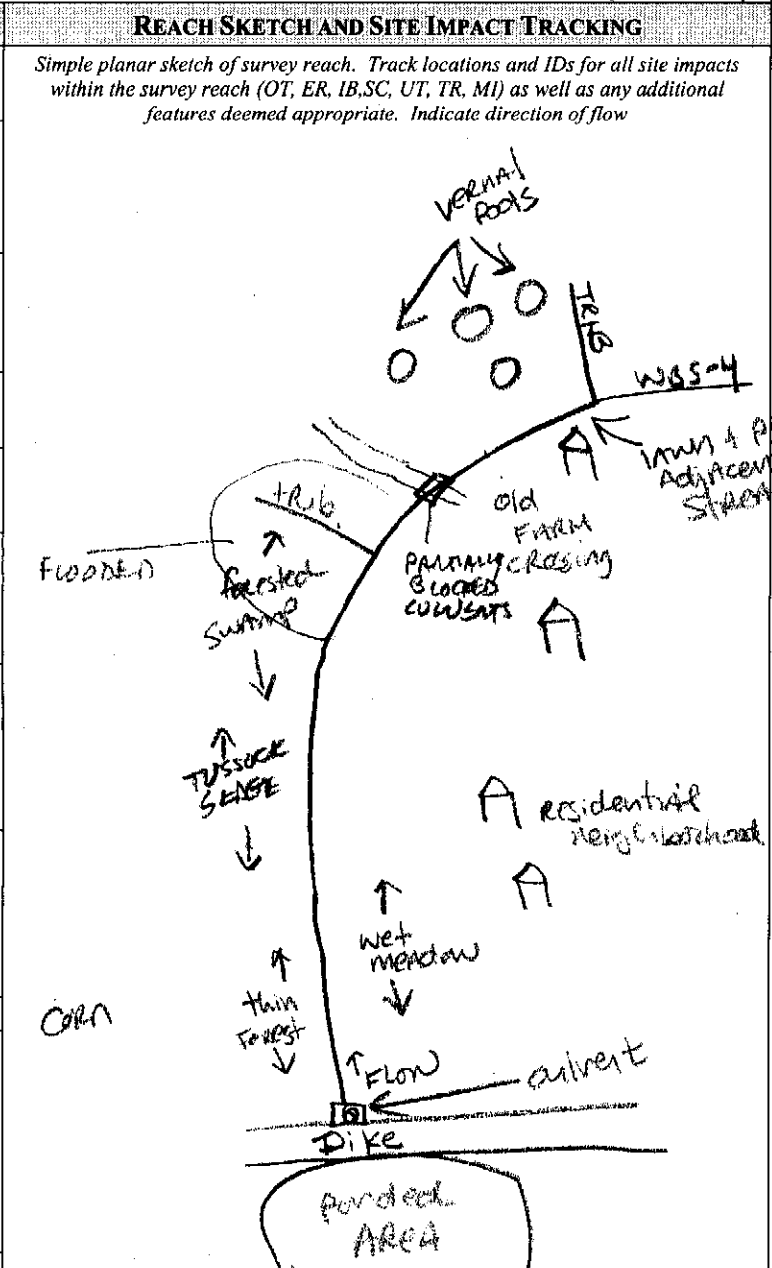
REPORTED TO AUTHORITIES YES NO



SURVEY REACH ID: <u>3</u>		WTRSHD/SUBSHD: <u>WBS</u>		DATE: <u>12/3/09</u>		ASSESSED BY: <u>CM/BB</u>	
START TIME: <u>12:00</u> AM/PM	LMK: _____	END TIME: <u>12:30</u> AM/PM	LMK: _____	GPS ID: <u>(circled)</u>			
LAT <u>41° 50' 27"</u> LONG <u>72° 45' 04"</u>		LAT <u>41° 50' 40"</u> LONG <u>72° 44' 59"</u>		DESCRIPTION: <u>culvert + dike</u>			

RAIN IN LAST 24 HOURS: <input checked="" type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS: <input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Trace	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace
SURROUNDING LAND USE: <input type="checkbox"/> Industrial		<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res
<input type="checkbox"/> Golf course		<input type="checkbox"/> Park	<input checked="" type="checkbox"/> Crop	<input type="checkbox"/> Pasture
			<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
			<input checked="" type="checkbox"/> Other: <u>wet meadow</u>	<input checked="" type="checkbox"/> Pasture

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input checked="" type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	
Attached:	<input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
Floating:	<input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	
(Evidence of)	<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input type="checkbox"/> Deer
	<input type="checkbox"/> Snails <input checked="" type="checkbox"/> Other: <u>hawk</u>
STREAM SHADING (water surface)	
<input type="checkbox"/> Mostly shaded (≥75% coverage)	<input checked="" type="checkbox"/> Halfway (≥50%)
<input type="checkbox"/> Partially shaded (≥25%)	<input type="checkbox"/> Unshaded (<25%)
CHANNEL DYNAMICS	
<input type="checkbox"/> Downcutting	<input type="checkbox"/> Bed scour
<input type="checkbox"/> Widening	<input type="checkbox"/> Bank failure
<input type="checkbox"/> Headcutting	<input type="checkbox"/> Bank scour
<input type="checkbox"/> Aggrading	<input type="checkbox"/> Slope failure
<input type="checkbox"/> Sed. deposition	<input type="checkbox"/> Channelized
<input type="checkbox"/> Unknown	
BANKFULL CHANNEL DIMENSIONS (FACING DOWNSTREAM)	
Height: <u>LT</u> bank	<u>2'</u> (ft)
	<u>RT</u> bank _____ (ft)
Width: <u>Bottom</u>	<u>7.5'</u> (ft)
	<u>Top</u> _____ (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3 2 1

NOTES: (biggest problem you see in survey reach)

Some residential AREAS developed right up to bank on RB of reach (patio, lawns, etc) otherwise this is beautiful - MIX of forested swamps, wet meadows + vernal pools.

REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION				
	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.	Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure	Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
OVERALL BUFFER AND FLOODPLAIN CONDITION				
	Optimal	Suboptimal	Marginal	Poor
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.	Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.	Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.	Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest	Predominant floodplain vegetation type is young forest	Predominant floodplain vegetation type is shrub or old field	Predominant floodplain vegetation type is turf or crop land
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water	Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water	Either all wetland or all non-wetland habitat, evidence of standing/ponded water	Either all wetland or all non-wetland habitat, no evidence of standing/ponded water
	10 9 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures	Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function	Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function	Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
Sub Total In-stream: 68 /80 + Buffer/Floodplain: 59 /80 = Total Survey Reach 127 /160				

Stream Crossing



WATERSHED/SUBSHED: WISS DATE: 12/03/09 ASSESSED BY: BLO/CMM
 SURVEY REACH ID: 03 TIME: 12:00 AM/PM PHOTO ID: (Camera-Pic #) None #

SITE ID: (Condition #) SC- LAT 41° 50' 27" N LONG 72° 45' 04" W LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other: Flood-control dike

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>5'</u> (ft) Height: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):		CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)		Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH:

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: WBS DATE: 12/03/09 ASSESSED BY: cm/166

SURVEY REACH: 3 TIME: 12:30 AM/PM PHOTO ID: (Camera-Pic #) PC800 # 27

SITE ID: (Condition-#) _____ START LAT 41°50'40" LONG 72°45'01" LMK _____ GPS: (Unit ID) _____
 IB- _____ END LAT _____ LONG _____ LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other:

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other:

RESTORABLE AREA	REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
Length (ft): <u>0</u> LT BANK <u>~50'</u> RT				
Width (ft): _____		5	4	3
		2	1	

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

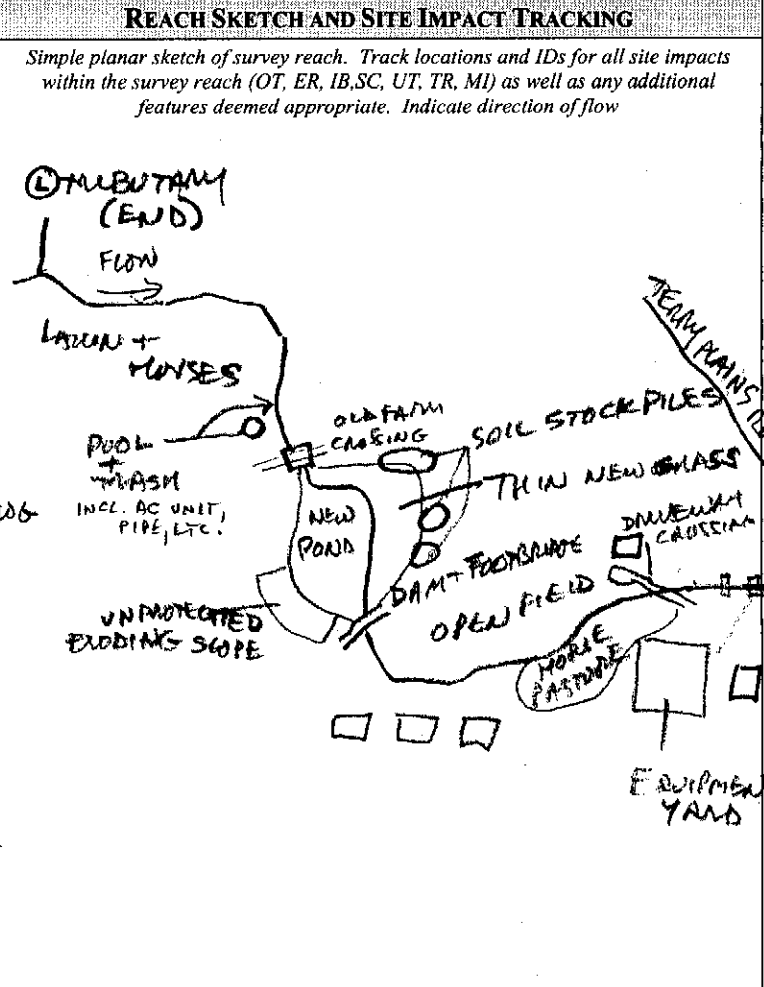
NOTES: Concrete or asphalt patio ady. to brook - RB



SURVEY REACH ID: <u>WBS-04</u>		WTRSHD/SUBSHD: <u>WASH BROOK SOUTH</u>	DATE: <u>12/3/09</u>	ASSESSED BY: <u>BG+CM</u>
START TIME: <u>12:30 AM</u>	LMK: _____	END TIME: <u>1:00 AM</u>	LMK: _____	GPS ID: _____
LAT: <u>41° 50' 40" N</u>		LONG: <u>72° 44' 59" W</u>		DESCRIPTION: <u>FROM CONFLUENCE ON (L)</u>
LAT: <u>41° 50' 36" N</u>		LONG: <u>72° 44' 41" W</u>		DESCRIPTION: <u>CULVERT, TEAM PLAINS ROAD</u>

RAIN IN LAST 24 HOURS	<input checked="" type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Trace
PRESENT CONDITIONS	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input checked="" type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input checked="" type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	Attached: <input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
	Floating: <input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	(Evidence of)
	<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input type="checkbox"/> Deer
	<input type="checkbox"/> Snails <input checked="" type="checkbox"/> Other: <u>HAWK, GREEN LOG</u>
STREAM SHADING (water surface)	<input type="checkbox"/> Mostly shaded (≥75% coverage)
	<input type="checkbox"/> Halfway (≥50%)
	<input checked="" type="checkbox"/> Partially shaded (≥25%)
	<input type="checkbox"/> Unshaded (<25%)
CHANNEL DYNAMICS	<input type="checkbox"/> DOWNCUTTING
	<input type="checkbox"/> Widening
	<input type="checkbox"/> Headcutting
<input checked="" type="checkbox"/> Unknown	<input type="checkbox"/> Aggrading
	<input type="checkbox"/> Sed. deposition
	<input type="checkbox"/> Bed scour
	<input type="checkbox"/> Bank failure
	<input type="checkbox"/> Bank scour
	<input type="checkbox"/> Slope failure
	<input type="checkbox"/> Channelized
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: <u>LT</u> bank <u>2'</u> (ft)
	<u>RT</u> bank _____ (ft)
	Width: <u>Bottom</u> <u>7'</u> (ft)
	<u>Top</u> <u>BANKFULL</u> (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	(4)	3 2 1

NOTES: (biggest problem you see in survey reach) RECENT POND EXCAVATION WITH VERY POOR EROSION + SEDIMENT CONTROL, PUTTING SEDIMENT INTO STREAM. ALSO EXTENSIVE BUFFER IMPACTS: TRASH, EQUIPMENT, MOWING, POOL

REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION																												
		Optimal					Suboptimal					Marginal					Poor											
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.												
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0												
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.												
	Left Bank	10	9			8	7	6	5	4	3	2	1	0														
	Right Bank	10	9			8	7	6	5	4	3	2	1	0														
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.												
	Left Bank	10	9			8	7	6	5	4	3	2	1	0														
	Right Bank	10	9			8	7	6	5	4	3	2	1	0														
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.												
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0												
OVERALL BUFFER AND FLOODPLAIN CONDITION																												
		Optimal					Suboptimal					Marginal					Poor											
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.					Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet; little or no riparian vegetation due to human activities.												
	Left Bank	10	9			8	7	6	5	4	3	2	1	0														
	Right Bank	10	9			8	7	6	5	4	3	2	1	0														
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest					Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field					Predominant floodplain vegetation type is turf or crop land												
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0												
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water					Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water												
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0												
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures					Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function												
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0												
Sub Total In-stream:		<u>43</u> /80					+		Buffer/Floodplain:					<u>18</u> /80					=		Total Survey Reach				<u>61</u> /160			



WATERSHED/SUBSHED: <u>WBS</u>		DATE: <u>12/03/09</u>	ASSESSED BY: <u>B6+CM</u>
SURVEY REACH ID: <u>04</u>		TIME: <u>12:30 AM/PM</u>	PHOTO ID: (Camera-Pic #) <u>PC0300</u> # <u>38, 39, 41, 43</u>
SITE ID: (Condition-#) <u>TR-^{only one}01</u>		LAT <u>* See below *</u>	LONG <u> </u> ° <u> </u> ' <u> </u> " LMK <u> </u>
GPS: (Unit ID)			
TYPE: <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential	MATERIAL: <input type="checkbox"/> Plastic <input checked="" type="checkbox"/> Tires <input type="checkbox"/> Appliances <input type="checkbox"/> Automotive <input type="checkbox"/> Paper <input type="checkbox"/> Construction <input type="checkbox"/> Yard Waste <input checked="" type="checkbox"/> Other: <u>concrete</u> <input type="checkbox"/> Metal <input type="checkbox"/> Medical	SOURCE: <input type="checkbox"/> Unknown <input type="checkbox"/> Flooding <input type="checkbox"/> Illegal dump <input type="checkbox"/> Local outfall	LOCATION: <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Riparian Area <input type="checkbox"/> Lt bank <input type="checkbox"/> Rt bank
LAND OWNERSHIP: <input type="checkbox"/> Public <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Private		AMOUNT (# Pickup truck loads): <u>0</u>	
POTENTIAL RESTORATION CANDIDATE <input checked="" type="checkbox"/> Stream cleanup <input type="checkbox"/> Stream adoption segment <input checked="" type="checkbox"/> Removal/prevention of dumping <input type="checkbox"/> no <input type="checkbox"/> Other:			
<i>If yes for trash or debris removal</i>	EQUIPMENT NEEDED: <input checked="" type="checkbox"/> Heavy equipment <input type="checkbox"/> Trash bags <input type="checkbox"/> Unknown		DUMPSTER WITHIN 100 FT: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
	WHO CAN DO IT: <input type="checkbox"/> Volunteers <input checked="" type="checkbox"/> Local Gov <input type="checkbox"/> Hazmat Team <input type="checkbox"/> Other		
CLEAN-UP POTENTIAL: (Circle #)	A small amount of trash (i.e., less than two pickup truck loads) located inside a park with easy access	A large amount of trash, or bulk items, in a small area with easy access. Trash may have been dumped over a long period of time but it could be cleaned up in a few days, possibly with a small backhoe.	A large amount of trash or debris scattered over a large area, where access is very difficult. Or presence of drums or indications of hazardous materials
	5	4	3
<p>NOTES: Along A portion of this reach there are stone slabs, old metal tires + stone gristmill wheels placed in the stream channel between 41°50'35" / 72°44'48" through 41°50'36" / 72°44'41"</p> <p>Private residence these items may have sentimental value + may have been added to channel to enhance setting.</p>			
REPORTED TO AUTHORITIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			

+ channel Modification
 Impacted Buffer **IB**

WATERSHED/SUBSHED: WBS DATE: 12/03/09 ASSESSED BY: BG+CMN
 SURVEY REACH: 04 TIME: _____ AM/PM PHOTO ID: (Camera-Pic #) PC0300 #31, 32, 34, 35, 36
 SITE ID: (Condition-#) _____ START LAT _____ ° ' " LONG _____ ° ' " LMK _____ GPS: (Unit ID) _____
 IB- A END LAT _____ ° ' " LONG _____ ° ' " LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other: Recent excavation in brook + no planting see below
 LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :
 DOMINANT Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LAND COVER: LT Bank :
 RT Bank :
 INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown
 STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other: enforcement?
 RESTORABLE AREA
 Length (ft): LT BANK ~200' ± RT ~200' ±
 Width (ft): _____
 REFORESTATION POTENTIAL: (Circle #)
 Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting 5
 Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate 4
 Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting 3 2 1

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES: → Dumping (including AC unit, pots, bricks, bottles, insulation, parts of an above-ground swimming pool) @ 41°50'32" / 72°44'56"
 → further downstream from dumpsite (↑) + possibly the same property, there is a recently excavated pond. there is trash, sediment, excess nutrients, no shade cover, runoff + no mulch/seed down on topsoil
 → small dam + watergate with footbridge here as well



WATERSHED/SUBSHED: WSS DATE: 12/03/09 ASSESSED BY: CM + B6

SURVEY REACH: 04 TIME: 12:45 AM PHOTO ID: (Camera-Pic #) PC300 # 36, 37, 38, 39, 40, 41, 42

SITE ID: (Condition-#) IB-B START LAT 41° 51' 38" LONG 72° 44' 56" LMK _____ GPS: (Unit ID) _____
 END LAT 41° 50' 30" LONG 72° 44' 41" LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other:

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :

DOMINANT Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LAND COVER: LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None + Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other:

RESTORABLE AREA		REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
LT BANK	RT				
Length (ft): <u>~500</u>	<u>~500'</u>				
Width (ft): _____	_____				①

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES: private lawn - old farm property, not likely rest. candidate but worth noting as the lack of shade for such a long stretch of stream may ↑ temps downstream.



WATERSHED/SUBSHED: WBS DATE: 12/03/09 ASSESSED BY: CM + R6
 SURVEY REACH ID: 04 TIME: 12:30 AM/PM PHOTO ID: (Camera-Pic #) PC0300 #36 + 34
 SITE ID: (Condition #) SC-A LAT ° 52' 00" N LONG ° 107' 00" W LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other: ↑ Made by landowners?

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input checked="" type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input checked="" type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		(5)	4	3	2	1

NOTES/SKETCH:
 → small footbridges @ 41°50'35"/72°41'54" (see photos 34+36).
 under bridges there are dams/waterfalls at both sites

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: WBS DATE: 12/13/09 ASSESSED BY: CM + B6
 SURVEY REACH ID: 04 TIME: _____ AM/PM PHOTO ID: (Camera-Pic #) PC8300 # 39
 SITE ID: (Condition #) SC-B LAT 41° 50' 30" LONG 72° 44' 45" LMK _____ GPS (Unit ID) _____

Residential Driveway

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):	CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)		

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)			
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	5	4	3	2

A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.

A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.

A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.

NOTES/SKETCH: *Driveway crossing - RIP RAP on downstream side on LB
 LAWNS on both banks.*

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: <u>WBS</u>	DATE: <u>12/13/09</u>	ASSESSED BY: <u>CM+BB</u>
SURVEY REACH ID: <u>04</u>	TIME: <u>1:00 AM/PM</u>	PHOTO ID: (Camera-Pic #) <u>PC0300 # 43</u>
SITE ID: (Condition-#) <u>SC-0</u>	LAT <u>41° 50' 30" N</u> LONG <u>72° 44' 41" W</u>	LMK _____ GPS (Unit ID) _____

Beman Street

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit

no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #) 5 4 3 2 1		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.

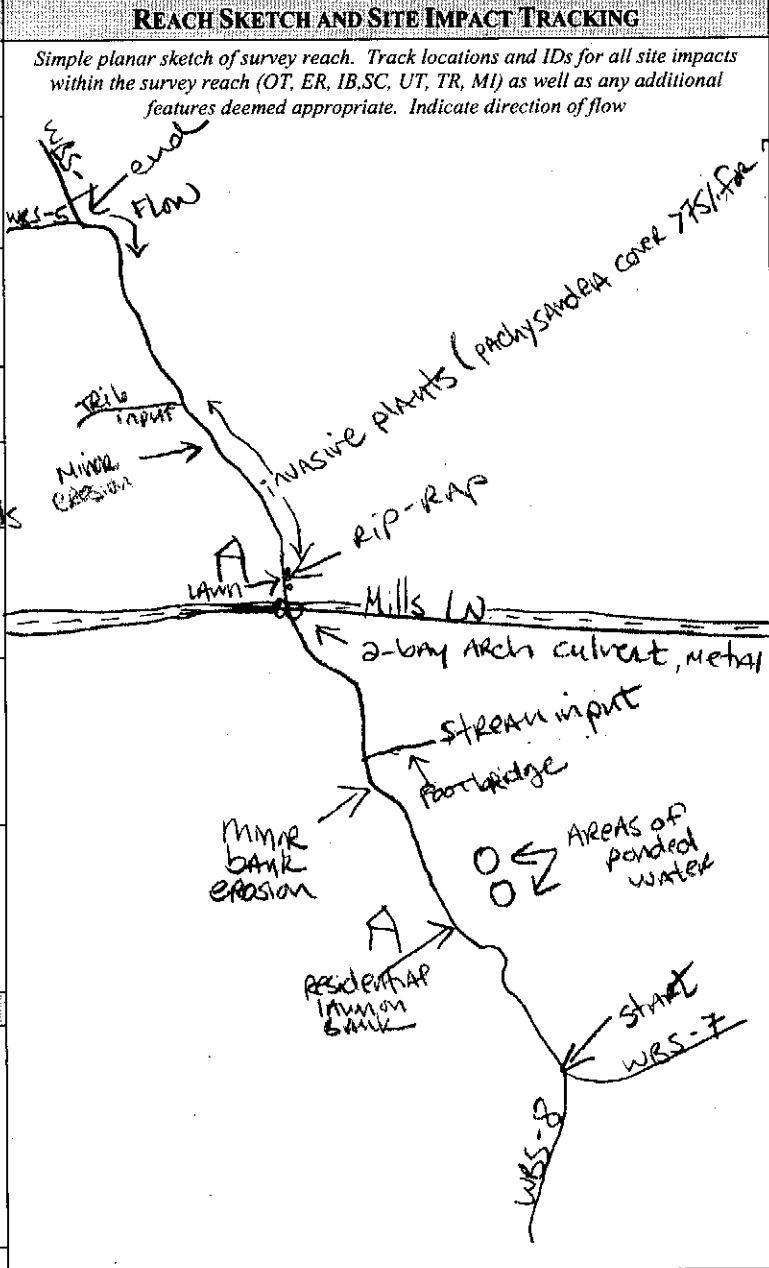
NOTES/SKETCH: stormwater pipe next to culvert pipe (MRS)



SURVEY REACH ID: 6	WTRSHD/SUBSHD: WBS	DATE: 12/1/09	ASSESSED BY: CM/BG
START TIME: 12:30 AM/PM	LMK:	END TIME: 1:30 AM/PM	LMK:
LAT: 41° 50' 15" LONG: 72° 44' 19"		LAT: 41° 50' 37" LONG: 72° 44' 33"	GPS ID: CM
DESCRIPTION: Convergence of WBS-8 and WBS-7 Paved @ Geissler's Super Market		DESCRIPTION: Convergence with WBS-5	

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input checked="" type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input checked="" type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input checked="" type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	
Attached:	<input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
Floating:	<input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	
(Evidence of)	<i>Raccoon</i>
<input type="checkbox"/> Fish	<input type="checkbox"/> Beaver
<input type="checkbox"/> Snails	<input checked="" type="checkbox"/> Deer
<input checked="" type="checkbox"/> Other:	<i>NALLARDS, MUSSELS</i>
STREAM SHADING (water surface)	
<input checked="" type="checkbox"/> Mostly shaded (≥75% coverage)	
<input type="checkbox"/> Halfway (≥50%)	
<input type="checkbox"/> Partially shaded (≥25%)	
<input type="checkbox"/> Unshaded (< 25%)	
CHANNEL DYNAMICS	
<input type="checkbox"/> Downcutting	<input type="checkbox"/> Bed scour
<input type="checkbox"/> Widening	<input type="checkbox"/> Bank failure
<input type="checkbox"/> Headcutting	<input type="checkbox"/> Bank scour
<input type="checkbox"/> Aggrading	<input type="checkbox"/> Slope failure
<input type="checkbox"/> Sed. deposition	<input type="checkbox"/> Channelized
<input type="checkbox"/> Unknown	
BANK/CHANNEL DIMENSIONS (FACING DOWNSTREAM)	
Height: <i>LT bank</i>	<i>4'</i> (ft)
	<i>RT bank</i> (ft)
Width: <i>Bottom</i>	<i>23'</i> (ft)
	<i>Top</i> (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3
		(2)
		1

NOTES: (biggest problem you see in survey reach) *OVERGROW - this reach abuts residential homes. + garden "escapes" such as PACHYSANDRA + JAPANESE BARBERY ARE common + in some AREAS those plants dominate their stream.*

REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i> <i>LOTS OF INVASIVES</i> <i>SOME RESIDENT AREAS</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	Right Bank	10	9			8	7	6			5	4	3			2	1	0		
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	Right Bank	10	9			8	7	6			5	4	3			2	1	0		
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
OVERALL BUFFER AND FLOODPLAIN CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH <i>But lots of INVASIVES</i>	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.					Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
Right Bank	10	9			8	7	6			5	4	3			2	1	0			
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest					Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field					Predominant floodplain vegetation type is turf or crop land				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water					Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures					Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not affecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
Sub Total In-stream: <u>60</u> /80 + Buffer/Floodplain: <u>66</u> /80 = Total Survey Reach <u>126</u> /160																				

2

Impacted Buffer



WATERSHED/SUBSHED: WBS DATE: 12/01/09 ASSESSED BY: CM+BG

SURVEY REACH: 06 TIME: 12:40 AM/PM PHOTO ID: (Camera-Pic #) PC010 # 020

SITE ID: (Condition #) IB-A START LAT 41° 50' 15" LONG 72° 44' 19.5" LMK _____ GPS: (Unit ID) _____

END LAT _____ LONG _____ LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants Recently planted Other: mown lawn

LAND USE: Private Institutional Golf Course Park Other Public (Facing downstream) LT Bank RT Bank

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other LT Bank RT Bank

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal no (Private Property) Other:

RESTORABLE AREA		REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
LT BANK	RT				
Length (ft): _____	~100'				
Width (ft): _____	_____				1

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES: Private property.
- mown lawn up to top of bank for ~100'



WATERSHED/SUBSHED: WBS DATE: 12/01/09 ASSESSED BY: CM + SG

SURVEY REACH: 06 TIME: 1:00 AM/ND PHOTO ID: (Camera-Pic #) PC010 #06 + 08

SITE ID: (Condition-#) IB-6 START LAT 41° 50' 25" LONG 72° 44' 25" LMK _____ GPS: (Unit ID) _____
 END LAT _____ LONG _____ LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other: Residential lawns

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other:

RESTORABLE AREA	REFORESTATION POTENTIAL:	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
LT BANK RT Length (ft): <u>~ 1000'</u> Width (ft): _____	(Circle #)	5	4	3
			2	<u>1</u>

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES: Private property stretch of approximately 300 m / 1,000 ft. where there is 75% cover of invasive plants (J. barberry, pachysandra, etc.) OR residential lawn. Left bank is more impacted (invasives, residential, some rip-rap).



WATERSHED/SUBSHED: <u>WBS</u>		DATE: <u>12/01/09</u>	ASSESSED BY: <u>cm+Bg</u>
SURVEY REACH ID: <u>06</u>	TIME: _____ AM/PM	PHOTO ID: (Camera-Pic #) <u>PC010</u>	# <u>025</u>
SITE ID: (Condition-#) <u>SC-</u>	LAT _____ ° _____ ' _____ "	LONG _____ ° _____ ' _____ "	LMK _____ GPS (Unit ID)

Mills W

TYPE: <input checked="" type="checkbox"/> Road Crossing <input type="checkbox"/> Railroad Crossing <input type="checkbox"/> Manmade Dam <input type="checkbox"/> Beaver Dam <input type="checkbox"/> Geological Formation <input type="checkbox"/> Other:					
FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input checked="" type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input checked="" type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>12'</u> (ft) Height: <u>7'</u> (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	
				Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 No Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)			
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.	
		5	4	3	2

NOTES/SKETCH:
intersection with Mills W.

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: WBS DATE: 12/01/09 ASSESSED BY: CM + RB

SURVEY REACH: 06 TIME: 1:15 AM PHOTO ID (CAMERA-PIC #): PC010 # 027 + 028

SITE ID: (Condition #) ER - only one sheet START LAT See below LONG ° ' " LMK _____ GPS: (Unit ID) _____
 END LAT ° ' " LONG ° ' " LMK _____

PROCESS: Currently unknown
 Downcutting Bed scour
 Widening Bank failure
 Headcutting Bank scour
 Aggrading Slope failure
 Sed. deposition Channelized

BANK OF CONCERN: LT RT Both (looking downstream)
 LOCATION: Meander bend Straight section Steep slope/valley wall Other:
 DIMENSIONS:
 Length (if no GPS) LT _____ ft and/or RT _____ ft Bottom width _____ ft
 Bank Ht LT _____ ft and/or RT _____ ft Top width _____ ft
 Bank Angle LT _____ ° and/or RT _____ ° Wetted Width _____ ft

LAND OWNERSHIP: Private Public Unknown LAND COVER: Forest Field/Ag Developed:

POTENTIAL RESTORATION CANDIDATE: Grade control Bank stabilization
 No - private-unknown Other:

THREAT TO PROPERTY/INFRASTRUCTURE: No Yes (Describe):

EXISTING RIPARIAN WIDTH: VARY <25 ft 25 - 50 ft 50-75ft 75-100ft >100ft

EROSION SEVERITY (circle #) Channelized = <input type="checkbox"/> 1	Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.	Pat downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure	Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.
	5	4	3

ACCESS:	Good access: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair access: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult access. Must cross wetland, steep slope or other sensitive areas to access stream. Minimal stockpile areas available and/or located a great distance from stream section. Specialized heavy equipment required.
	5	4	3

NOTES/CROSS SECTION SKETCH:

→ minor bank erosion on RB behind residential homes @ 41° 50' 19" / 72° 44' 22"

→ minor bank erosion on LB + RB @ 41° 50' 27" / 72° 44' 27"

→ walking paths adjacent to some areas + residential lawns adjacent to others - ALL PRIVATE so not likely rest. candidate.

REPORTED TO AUTHORITIES YES NO

WBS, Reach 11

Reach Level Assessment



SURVEY REACH ID: <u>11</u>		WTRSHD/SUBSHD: <u>WBS</u>		DATE: <u>11/30/09</u>		ASSESSED BY: <u>CM/BSG</u>	
START TIME: <u>12:15 AM</u> LMK: _____		END TIME: <u>2:00 AM</u> LMK: _____		GPS ID: _____		GPS ID: <u>CM</u>	
LAT <u>41°48'54"</u> LONG <u>82°44'00"</u>		LAT <u>41°49'18"</u> LONG <u>82°44'07"</u>		DESCRIPTION: <u>old grist mill behind Medical Center</u>			
DESCRIPTION: <u>old grist mill behind Medical Center</u>				DESCRIPTION: <u>intersection w/ tributary</u>			

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input checked="" type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent	
<input type="checkbox"/> None	<input checked="" type="checkbox"/> Intermittent	<input type="checkbox"/> Trace	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy	
SURROUNDING LAND USE:		<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input checked="" type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
		<input checked="" type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)

BASE FLOW AS % 0-25% 50%-75% 75-100%

CHANNEL WIDTH 25-50% 75-100%

REACH SKETCH AND SITE IMPACT TRACKING

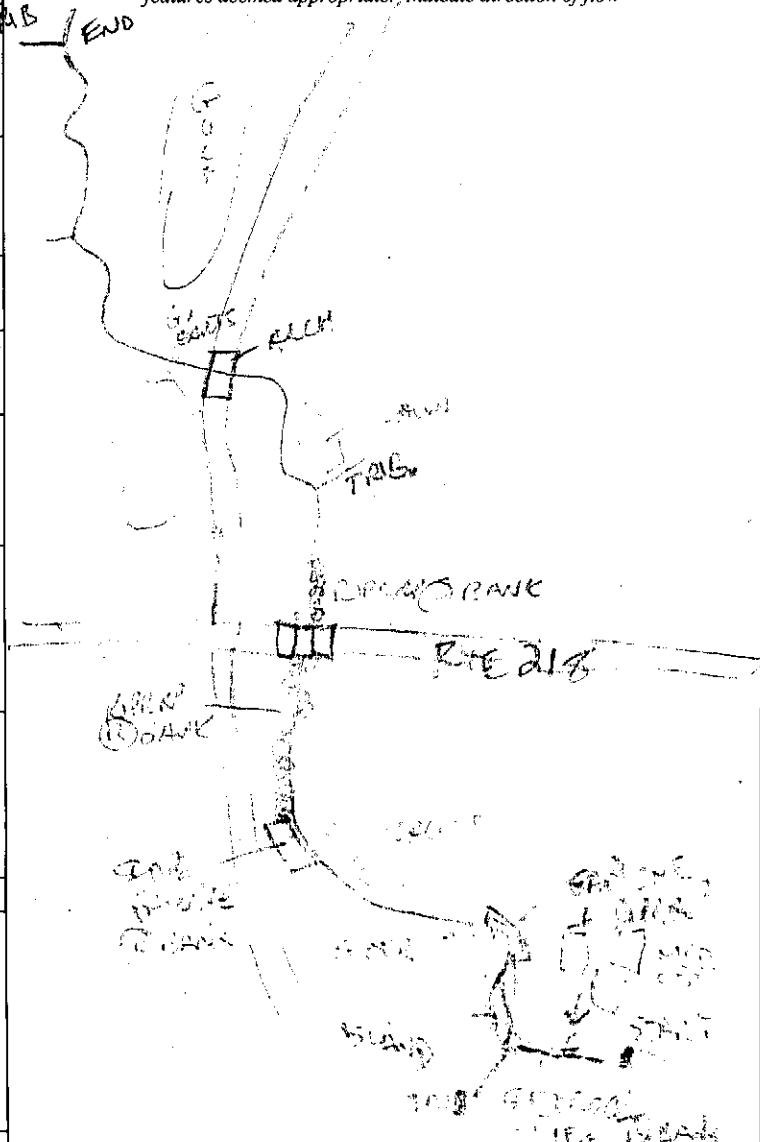
Simple planar sketch of survey reach. Track locations and IDs for all site impacts within the survey reach (OT, ER, IB, SC, UT, TR, MI) as well as any additional features deemed appropriate. Indicate direction of flow

DOMINANT SUBSTRATE

Silt/clay (fine or slick) Cobble (2.5-10")

Sand (gritty) Boulder (>10")

Gravel (0.1-2.5") Bed rock



WATER CLARITY Clear Turbid (suspended matter)

Stained (clear, naturally colored) Opaque (milky)

Other (chemicals, dyes)

AQUATIC PLANTS IN STREAM

Attached: none some lots

Floating: none some lots

WILDLIFE IN OR AROUND STREAM

(Evidence of)

Fish Beaver Deer *McLennan*

Snails Other: *leeches, muskies*

STREAM SHADING (water surface)

Mostly shaded (≥75% coverage)

Halfway (≥50%)

Partially shaded (≥25%)

Unshaded (< 25%)

CHANNEL DYNAMICS

Downcutting Widening Headcutting Aggrading Sed. deposition

Bed scour Bank failure Bank scour Slope failure Channelized

Unknown

CHANNEL DIMENSIONS (FACING DOWNSTREAM)

Height: LT bank _____ (ft)

RT bank _____ (ft)

Width: Bottom _____ (ft)

Top _____ (ft)

REACH ACCESSIBILITY

Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
--	---	---

5 4 3 2 1

NOTES: (biggest problem you see in survey reach) severe bank erosion undercutting road

REPORTED TO AUTHORITIES YES NO

P. J. 10.2
WBS, Reach 11

OVERALL STREAM CONDITION																					
		Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.																				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.																				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					

OVERALL BUFFER AND FLOODPLAIN CONDITION																					
		Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.																				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0			
	Right Bank	10	9			8	7	6			5	4	3			2	1	0			
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures																				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0					

Sub Total In-stream: 60 /80 + Buffer/Floodplain: 63 /80 = Total Survey Reach 123 /160



WATERSHED/SUBSHED: <u>WBS</u>		DATE: <u>11/30/09</u>	ASSESSED BY: <u>CM + RG</u>
SURVEY REACH ID: <u>11</u>	TIME: _____ AM/PM	PHOTO ID: (Camera-Pic #) _____ #	
SITE ID (Condition-#): <u>OT-^{any one street}</u>		LAT: <u>* See, Reverse *</u>	LONG: _____ " LMK _____ GPS: (Unit ID)

BANK: <u>(Both)</u> <input checked="" type="checkbox"/> LT <input checked="" type="checkbox"/> RT <input type="checkbox"/> Head FLOW: <input type="checkbox"/> None <input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial <input type="checkbox"/> Other:	TYPE: <input checked="" type="checkbox"/> Closed pipe <input checked="" type="checkbox"/> Open channel	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other:	SHAPE: <input checked="" type="checkbox"/> Single <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Double <input checked="" type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other:	DIMENSIONS: Diameter: _____ (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
			<input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Earthen <input type="checkbox"/> Other:	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	<div style="border: 1px solid black; width: 100%; height: 100%; display: flex; align-items: center; justify-content: center;"> X </div> NOT APPLICABLE

CONDITION:	ODOR:	DEPOSITS/STAINS:	VEGGIE DENSITY:	PIPE BENTHIC GROWTH:	POOL QUALITY:
<input type="checkbox"/> None <input type="checkbox"/> Chip/Cracked <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion <input type="checkbox"/> Other:	<input type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> None <input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	<input type="checkbox"/> None <input type="checkbox"/> Normal <input type="checkbox"/> Inhibited <input type="checkbox"/> Excessive <input type="checkbox"/> Other:	<input type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	<input type="checkbox"/> No pool <input type="checkbox"/> Good <input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Oils <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Floatables <input type="checkbox"/> Other:

FOR FLOWING ONLY	COLOR:	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:				
	TURBIDITY:	<input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque				
	FLOATABLES:	<input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:				

OTHER CONCERNS:	<input type="checkbox"/> Excess Trash (paper/plastic bags) <input type="checkbox"/> Dumping (bulk) <input type="checkbox"/> Excessive Sedimentation <input type="checkbox"/> Needs Regular Maintenance <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Other:
------------------------	---

POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization

no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled? Yes No Not investigated Land Use description: _____
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.		
	5	4	3	2	1

SKETCH/NOTES:
* See Reverse *

→ stormwater outfall pipe on (LB) from medical building parking lot.
[see photo 149300-11] concrete, round, 36" diam. $\approx 41^{\circ}48'53''/72^{\circ}44'01''$
Moderate flow, no unusual observations. Rip-rap has been placed under outfall.

→ stormwater pipe from parking lot on (LB) $\approx 41^{\circ}48'52''/72^{\circ}44'06''$

→ outfall pipe on (RB) next to parking lot + building (church?) $\approx 41^{\circ}49'02''/72^{\circ}44'15''$
elliptical, concrete, no unusual observations.

→ tributary or open channel runoff input on (LB) $41^{\circ}49'05''/72^{\circ}44'15''$ - water is
clear but odor is sewagey

→ swale or open channel input adjacent to golf course on (RB) \approx
 $41^{\circ}49'15''/72^{\circ}44'27''$ sharp bend in brook here + erosion to LB.



WATERSHED/SUBSHED: WBS DATE: 11/30/09 ASSESSED BY: cm/86
 SURVEY REACH ID: 11 TIME: 12:15 AM/PM PHOTO ID: (Camera-Pic #) 149300 # 10
 SITE ID: (Condition #) SC-A LAT 41° 48' 54" N LONG 72° 44' 00" W LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other: old Gristmill site

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)			
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	5	4	3	2

NOTES/SKETCH: covered footbridge over "Y" -shape in brook - looks like part of an oxbow with the remnants of an old gristmill (?)

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: WBS DATE: 11/30/09 ASSESSED BY: CM + RB
 SURVEY REACH ID: 11 TIME: _____ AM/PM PHOTO ID: (Camera-Pic #) 149300 # 17
 SITE ID: (Condition-#) SC-B LAT 41° 48' 59" LONG 72° 44' 16" LMK _____ GPS (Unit ID) _____

↑ Cottage Grove Rd
 TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input checked="" type="checkbox"/> Box <input type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input type="checkbox"/> Double <input checked="" type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>11</u> (ft) Height: <u>10'</u> (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): <u>→ -RIP-RAP</u>			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH: flow is somewhat bottlenecked; RIP-RAP along both banks on upstream side to culvert.



WATERSHED/SUBSHED: <u>WBS</u>		DATE: <u>1/30/09</u>	ASSESSED BY: <u>CM/B6</u>
SURVEY REACH ID: <u>11</u>	TIME: : ____ AM/PM	PHOTO ID: (Camera-Pic #) <u>149300 # 20 + 21</u>	
SITE ID: (Condition #) <u>SC-C</u>	LAT <u>41°49'08"</u>	LONG <u>72°44'20"</u>	LMK _____ GPS (Unit ID) _____

Bloomfield Ave

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input checked="" type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____				CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)			
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.	
		5	4	3	2

NOTES/SKETCH:

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: WBS DATE: 11/30/09 ASSESSED BY: cm + BG
 SURVEY REACH: 11 TIME: _____ AM/PM PHOTO ID: (Camera-Pic #) 49300 # 15+16+17

SITE ID: (Condition #) All on one IB sheet
 START LAT 41° 48' 53" N LONG 72° 44' 06" W LMK _____ GPS: (Unit ID) _____
 END LAT _____ LONG _____ LMK _____

IMPACTED BANK: LT RT Both
 REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other:

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank
 RT Bank

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank
 RT Bank

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other:

RESTORABLE AREA	REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
LT BANK RT Length (ft): <u>See below</u> Width (ft): _____		5	4	3
			(2)	1

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES: → Left Bank (LB) @ 41° 48' 53" / 72° 44' 06" → Rip-rap + gabions behind medical center.
 → RB behind residential home → lawn + driveway @ 41° 48' 54" / 72° 44' 10"
 LB here has a 10' wide forested buffer (thin) behind condo units + residential lawns on other side of forested strip.
 → RB has rip-rap + severe erosion @ 41° 48' 56" / 72° 44' 15"
 LB here has 10' strip of forested buffer (thin) + lawns on other side
 LB here has concrete slab in channel
 → Rip-rap along both banks for ~25' length @ 41° 48' 59" / 72° 44' 16"
 → leaf dumping on RB @ 41° 49' 02" / 72° 44' 15" + parking lot here.
 → RB has thin forested buffer + lawns opposite that (~10' wide fb. buffer) @ 41° 49' 02" / 72° 44' 15"
 → LB impacts @ 41° 49' 05" / 72° 44' 15" where lawn comes up to edge of block + there is no buffer for ~30' length.
 → Both banks adjacent to golf course fair ways but LB worse, particularly @ 41° 49' 14" / 72° 44' 26"

Severe Bank Erosion



WATERSHED/SUBSHED: WBS DATE: 11/30/09 ASSESSED BY: Cm + Bb

SURVEY REACH: 11 TIME: _____ AM/PM PHOTO ID (CAMERA-PIC #): 149300 # 16

SITE ID: (Condition-#)
 ER- only one sheet
 START LAT 41° 48' 56" N LONG 72° 44' 15" W LMK _____ GPS: (Unit ID)
 END LAT _____ LONG _____ LMK _____

PROCESS: Currently unknown
 Downcutting Bed scour
 Widening Bank failure
 Headcutting Bank scour
 Aggrading Slope failure
 Sed. deposition Channelized

BANK OF CONCERN: LT RT Both (looking downstream)
 LOCATION: Meander bend Straight section Steep slope/valley wall Other: downstream of 3-bay culvert under cottage 4 Ave Rd.

DIMENSIONS:
 Length (if no GPS) LT _____ ft and/or RT _____ ft Bottom width _____ ft
 Bank Ht LT _____ ft and/or RT _____ ft Top width _____ ft
 Bank Angle LT _____ ° and/or RT _____ ° Wetted Width _____ ft

LAND OWNERSHIP: Private Public Unknown LAND COVER: Forest Field/Ag Developed:

POTENTIAL RESTORATION CANDIDATE: Grade control Bank stabilization
 No Other:

THREAT TO PROPERTY/INFRASTRUCTURE: No Yes (Describe): Stormfield Ave.

EXISTING RIPARIAN WIDTH: ≤25 ft 25 - 50 ft 50-75ft 75-100ft >100ft

EROSION SEVERITY(circle#) Channelized= <input type="checkbox"/> 1	Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.	Pat downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure	Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.	
	(5)	4	3	2
ACCESS:	Good access: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair access: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult access. Must cross wetland, steep slope or other sensitive areas to access stream. Minimal stockpile areas available and/or located a great distance from stream section. Specialized heavy equipment required.	
	(3)	4	3	2

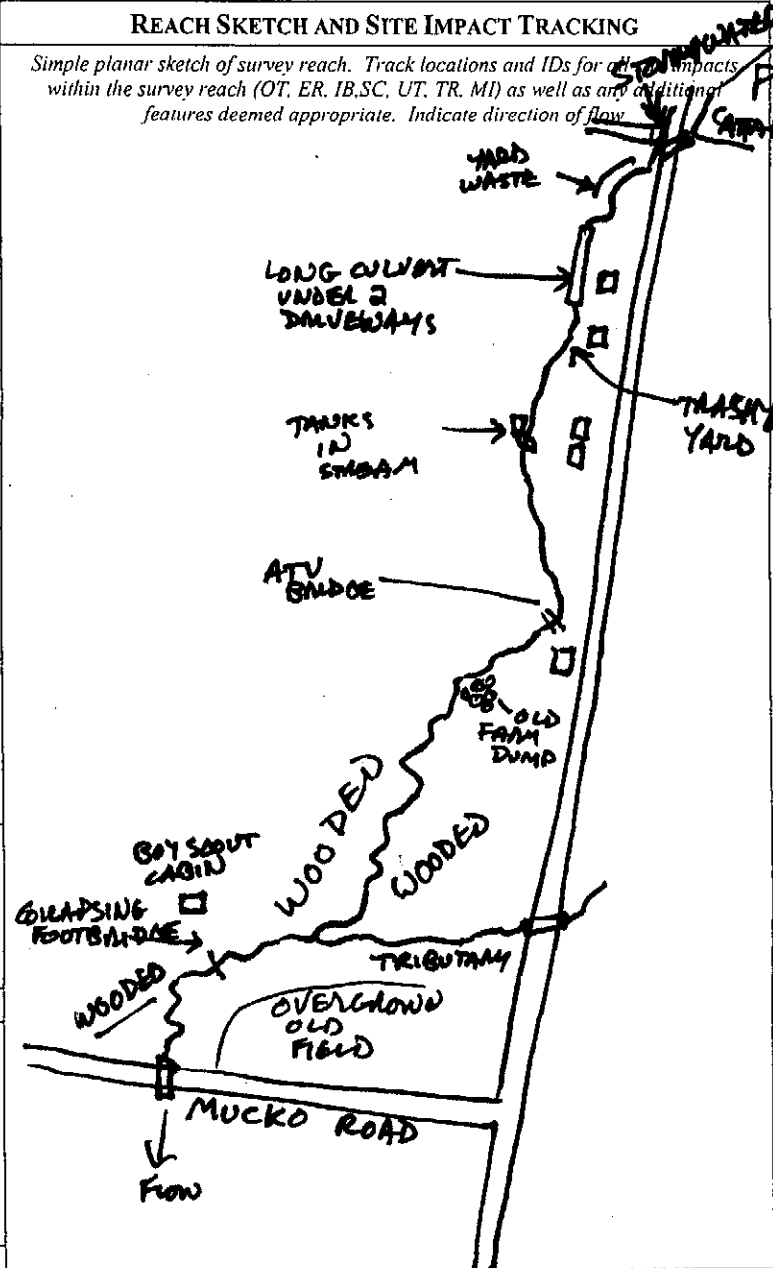
NOTES/CROSS SECTION SKETCH:
Adjacent to Stormfield Avenue.

REPORTED TO AUTHORITIES YES NO

SURVEY REACH ID: <u>WBN-04</u>		WTRSHD/SUBSHD: <u>WASH BLOOD NORTH</u>		DATE: <u>12/3/09</u>		ASSESSED BY: <u>BG+CM</u>	
START TIME: <u>2:14 AM</u> LMK: _____		END TIME: <u>3:20 AM</u> LMK: _____		GPS ID: <u>CM</u>			
LAT <u>41° 51' 42"</u> LONG <u>72° 43' 51"</u>		LAT <u>41° 52' 04"</u> LONG <u>72° 43' 33"</u>		DESCRIPTION: <u>AT MUCKO ROAD</u>		DESCRIPTION: <u>AT POND OUTLET, E. OF WOODLAND AVE.</u>	

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent		<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input checked="" type="checkbox"/> Overcast
	<input type="checkbox"/> Trace			<input type="checkbox"/> Trace	<input checked="" type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input checked="" type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid (suspended matter)	
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	Attached: <input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
	Floating: <input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	(Evidence of)
	<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input type="checkbox"/> Deer
	<input type="checkbox"/> Snails <input type="checkbox"/> Other:
STREAM SHADING (water surface)	<input checked="" type="checkbox"/> Mostly shaded (≥75% coverage)
	<input type="checkbox"/> Halfway (≥50%)
	<input type="checkbox"/> Partially shaded (≥25%)
	<input type="checkbox"/> Unshaded (< 25%)
CHANNEL DYNAMICS	<input type="checkbox"/> Downcutting <input type="checkbox"/> Bed scour
	<input type="checkbox"/> Widening <input type="checkbox"/> Bank failure
	<input type="checkbox"/> Headcutting <input type="checkbox"/> Bank scour
<input checked="" type="checkbox"/> Unknown	<input type="checkbox"/> Aggrading <input type="checkbox"/> Slope failure
STABLE	<input type="checkbox"/> Sed. deposition <input type="checkbox"/> Channelized
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: L/R bank _____ (ft)
	FT bank _____ (ft)
	Width: Bottom _____ 4 (ft)
6' WIDE, 1.5' HIGH BELOW CONFLUENCE (ft)	
REACH ACCESSIBILITY IN MIDDLE	
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.
	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4
	3
	2
	1



NOTES: (biggest problem you see in survey reach) **very long culvert + trash-dumping on left bank**
 (includes trees, old car, stone, old foundations, broken pipe. Another dump area at Woodland Ave
 (includes plastic bottles etc). REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 19 18 (17) 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	Left Bank 10 (9)	8 7 6	5 4 3	2 1 0
	Right Bank (10) 9	8 7 6	5 4 3	2 1 0
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.	Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure	Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.
	Left Bank 10 (9)	8 7 6	5 4 3	2 1 0
	Right Bank 10 (9)	8 7 6	5 4 3	2 1 0
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.
	20 (19) 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

OVERALL BUFFER AND FLOODPLAIN CONDITION

	Optimal	Suboptimal	Marginal	Poor
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone. <i>SOME AREAS <50</i>	Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.	Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.	Width of buffer zone <10 feet; little or no riparian vegetation due to human activities.
	Left Bank 10 (9)	8 7 6	5 4 3	2 1 0
	Right Bank 10 (9)	8 7 6	5 4 3	2 1 0
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest	Predominant floodplain vegetation type is young forest	Predominant floodplain vegetation type is shrub or old field	Predominant floodplain vegetation type is turf or crop land
	20 19 (18) 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water	Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water	Either all wetland or all non-wetland habitat, evidence of standing/ponded water	Either all wetland or all non-wetland habitat, no evidence of standing/ponded water
	20 (19) 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures	Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not affecting floodplain function	Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function	Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function
	20 19 18 17 16	15 14 13 12 11	(10) 9 8 7 6	5 4 3 2 1 0

Sub Total In-stream: 73 /80 + Buffer/Floodplain: 65 /80 = Total Survey Reach 138 /160



WATERSHED/SUBSHED: WBN DATE: 8/03/09 ASSESSED BY: CM/B6

SURVEY REACH ID: 4 TIME: 2:14 AM/PM PHOTO ID: (Camera-Pic #) PC0300 # 45

SITE ID: (Condition #) SC-A LAT 41° 51' 42" N LONG 72° 43' 51" W LMK _____ GPS (Unit ID) _____

Mucko Road (gravel, unpaved, forested road)

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>24"</u> (ft) Height: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input checked="" type="checkbox"/> Other (describe): <u>water ponded upstream culvert is too small</u>			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other: replaced with larger culvert.

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.

NOTES/SKETCH: we spoke to a landowner who is concerned about a proposed commercial development on Mucko Road. This portion of the reach is currently forested (mature) + ownership is unclear. There is an abandoned looking Boy Scout camp + at least one residential home.



WATERSHED/SUBSHED: WRN DATE: 12/03/09 ASSESSED BY: CMT + BG
 SURVEY REACH ID: 4 TIME: :__ AM/PM PHOTO ID: (Camera-Pic #) # None
 SITE ID: (Condition #) SC-B LAT 41° 51' 59" LONG 72° 43' 37" LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other: DRIVEWAY

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: <u>70'</u> (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH:
70 foot long culvert under driveway.



WATERSHED/SUBSHED: <u>WLN</u>	DATE: <u>12/03/09</u>	ASSESSED BY: <u>CM + B</u>
SURVEY REACH ID: <u>4</u>	TIME: <u>3:30</u> AM/PM	PHOTO ID: (Camera-Pic #) <u>PC0300</u> # <u>58</u>
SITE ID: (Condition #) <u>SC-C</u>	LAT <u>41°52'04"</u> LONG <u>72°43'33"</u> LMK _____	GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input checked="" type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other: need larger culvert?

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #) 5 4 3 2 1		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.

NOTES/SKETCH:
 → water is ponded upstream of culvert - too small?
 → stormwater pipe or (L) here as well
 → rip-rap + pavement on both banks ~ 10' downstream of crossing + masonry headwall on upstream side.



WATERSHED/SUBSHED: WBN DATE: 12/3/09 ASSESSED BY: BG/cmm

SURVEY REACH ID: 01 TIME: : AM/PM PHOTO ID: (Camera-Pic #) # (See below)

SITE ID: (Condition-#) TR-one ^{only sheet} LAT *See below* " LONG " LMK GPS: (Unit ID)

TYPE: <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential	MATERIAL: <input checked="" type="checkbox"/> Plastic <input checked="" type="checkbox"/> Tires <input checked="" type="checkbox"/> Appliances <input checked="" type="checkbox"/> Automotive	<input checked="" type="checkbox"/> Paper <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Yard Waste <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Metal <input type="checkbox"/> Medical	SOURCE: <input type="checkbox"/> Unknown <input type="checkbox"/> Flooding <input checked="" type="checkbox"/> Illegal dump <input checked="" type="checkbox"/> Local outfall	LOCATION: <input checked="" type="checkbox"/> Stream <input checked="" type="checkbox"/> Riparian Area <input checked="" type="checkbox"/> Lt bank <input type="checkbox"/> Rt bank	LAND OWNERSHIP: <input type="checkbox"/> Public <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Private
						AMOUNT (# Pickup truck loads):

POTENTIAL RESTORATION CANDIDATE Stream cleanup Stream adoption segment Removal/prevention of dumping
 no Other:

If yes for trash or debris removal
 EQUIPMENT NEEDED: Heavy equipment Trash bags Unknown
 WHO CAN DO IT: Volunteers Local Gov Hazmat Team Other
 DUMPSTER WITHIN 100 FT: Yes No Unknown

CLEAN-UP POTENTIAL: (Circle #)	A small amount of trash (i.e., less than two pickup truck loads) located inside a park with easy access	A large amount of trash, or bulk items, in a small area with easy access. Trash may have been dumped over a long period of time but it could be cleaned up in a few days, possibly with a small backhoe.	A large amount of trash or debris scattered over a large area, where access is very difficult. Or presence of drums or indications of hazardous materials	
	5	(14)	3	2

NOTES: → Dumpsite on LB @ 41°51'48"/72°43'43" including tires, old car (entire), stove, old foundation, broken pipes. Illegal-looking dump (photo PC0300-50)
 → old tank in channel (oil tank?) @ 41°51'56"/72°43'39"
 → trash in yard, including plastic milk bottles, bleach bottles + garbage on LB @ 41°51'59"/72°43'37"

REPORTED TO AUTHORITIES YES NO



SURVEY REACH ID: 2	WTRSHD/SUBSHD: BHR	DATE: 12/8/09	ASSESSED BY: CM/BG
START TIME: 10:20 AM/PM	LMK:	END TIME: 11:00 AM/PM	LMK:
LAT: 41° 51' 09" LONG: 072° 42' 38"		LAT: 41° 51' 23" LONG: 072° 42' 38"	GPS ID: OM
DESCRIPTION: Culvert + W. Dudley Town Rd Junction		DESCRIPTION: Cattail Marsh	

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Trace		<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input checked="" type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional	
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:		

AVERAGE CONDITIONS (check applicable)

BASE FLOW AS % 0-25% 50%-75%

CHANNEL WIDTH 25-50% 75-100%

DOMINANT SUBSTRATE

Silt/clay (fine or slick) Cobble (2.5-10")

Sand (gritty) Boulder (>10")

Gravel (0.1-2.5") Bed rock

WATER CLARITY Clear Turbid (suspended matter)

Stained (clear, naturally colored) Opaque (milky)

Other (chemicals, dyes)

AQUATIC PLANTS IN STREAM

Attached: none some lots

Floating: none some lots

WILDLIFE IN OR AROUND STREAM

(Evidence of)

Fish Beaver Deer

Snails Other: Raccoon

STREAM SHADING (water surface)

Mostly shaded (≥75% coverage)

Halfway (≥50%)

Partially shaded (≥25%)

Unshaded (<25%)

CHANNEL DYNAMICS

Downcutting Bed scour

Widening Bank failure

Headcutting Bank scour

Aggrading Slope failure

Sed. deposition Channelized

Unknown

CHANNEL DIMENSIONS (FACING DOWNSTREAM)

Height: LT bank _____ (ft)

RT bank _____ (ft)

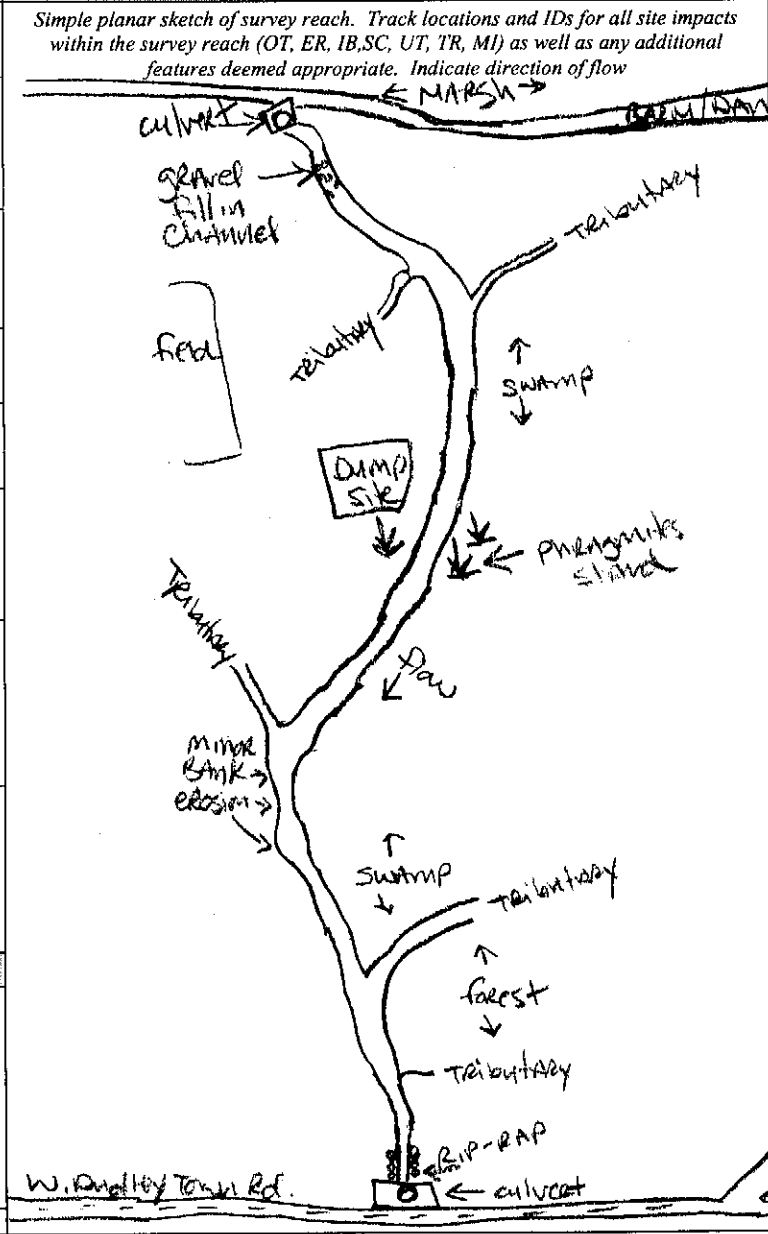
Width: Bottom _____ (ft)

Top _____ (ft)

REACH ACCESSIBILITY

Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
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REACH SKETCH AND SITE IMPACT TRACKING



NOTES: (biggest problem you see in survey reach) Dumping, trash

REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 19 18 17 16	<u>15</u> 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	Left Bank 10 9	8 <u>6</u> 6	5 4 3	2 1 0
	Right Bank 10 9	<u>8</u> 7 6	5 4 3	2 1 0
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.	Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure	Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.
	Left Bank 10 9	8 7 <u>6</u>	5 4 3	2 1 0
	Right Bank 10 9	8 <u>7</u> 6	5 4 3	2 1 0
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.
	20 19 18 17 16	15 14 13 <u>11</u>	10 9 8 7 6	5 4 3 2 1 0

OVERALL BUFFER AND FLOODPLAIN CONDITION

	Optimal	Suboptimal	Marginal	Poor
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.	Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.	Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.	Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.
	Left Bank 10 9	<u>8</u> 7 6	5 4 3	2 1 0
	Right Bank 10 <u>9</u>	8 7 6	5 4 3	2 1 0
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest	Predominant floodplain vegetation type is young forest	Predominant floodplain vegetation type is shrub or old field	Predominant floodplain vegetation type is turf or crop land
	20 19 18 17 <u>16</u>	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water	Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water	Either all wetland or all non-wetland habitat, evidence of standing/ponded water	Either all wetland or all non-wetland habitat, no evidence of standing/ponded water
	20 <u>19</u> 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures	Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function	Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function	Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function
	20 <u>19</u> 18 17 16	<u>15</u> 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Sub Total In-stream: 55 /80 + Buffer/Floodplain: 67 /80 = Total Survey Reach 122 /160



WATERSHED/SUBSHE: <u>BHR</u>	DATE: <u>12/08/09</u>	ASSESSED BY: <u>CMT+36</u>
SURVEY REACH ID: <u>02</u>	TIME: _____ AM/PM	PHOTO ID: (Camera-Pic #) <u>PC080 # 083</u>
SITE ID (Condition #): <u>OT</u>	LAT <u>41° 51' 23"</u> LONG <u>72° 42' 38"</u> LMK _____	GPS: (Unit ID) _____

BANK: <input type="checkbox"/> LT <input type="checkbox"/> RT <input type="checkbox"/> Head	TYPE: <input checked="" type="checkbox"/> Closed pipe <input type="checkbox"/> Open channel	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other:	SHAPE: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other:	DIMENSIONS: Diameter: <u>12"</u> (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input checked="" type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
FLOW: <input checked="" type="checkbox"/> None <input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial <input type="checkbox"/> Other:	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Other:	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	NOT APPLICABLE		
CONDITION: <input type="checkbox"/> None <input checked="" type="checkbox"/> Chip/Cracked <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion <input type="checkbox"/> Other:	ODOR: <input checked="" type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	DEPOSITS/STAINS: <input checked="" type="checkbox"/> None <input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	VEGGIE DENSITY: <input checked="" type="checkbox"/> None <input type="checkbox"/> Normal <input type="checkbox"/> Inhibited <input type="checkbox"/> Excessive <input type="checkbox"/> Other:	PIPE BENTHIC GROWTH: <input checked="" type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
POOL QUALITY: <input checked="" type="checkbox"/> No pool <input type="checkbox"/> Good <input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Oils <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Floatables <input type="checkbox"/> Other:					

FOR FLOWING ONLY	COLOR:	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:			
	TURBIDITY:	<input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque			
	FLOATABLES:	<input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:			
OTHER CONCERNS:	<input type="checkbox"/> Excess Trash (paper/plastic bags) <input type="checkbox"/> Dumping (bulk) <input type="checkbox"/> Excessive Sedimentation <input type="checkbox"/> Needs Regular Maintenance <input checked="" type="checkbox"/> Bank Erosion <input type="checkbox"/> Other:				

POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization
 no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled?
 Yes No Not investigated

Land Use description: forested + residential
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.
	5	4	3
			2
			1

SKETCH/NOTES: BANK erosion + pipe is now

REPORTED TO AUTHORITIES: YES NO



WATERSHED/SUBSHED: EHR DATE: 2/08/09 ASSESSED BY: CJM/BG

SURVEY REACH ID: 02 TIME: 10:30 AM/PM PHOTO ID: (Camera-Pic #) P080 /# 026

SITE ID: (Condition #) SC-A LAT 41° 51' 09" LONG 72° 42' 38" LMK _____ GPS (Unit ID) _____

West Dudley Town Road

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input checked="" type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input checked="" type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): <u>rip-rap</u>			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH:
rip-rap has been placed along the banks for ~10' downstream of the culvert passage.

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: BHR DATE: 12-08-09 ASSESSED BY: cm/186
 SURVEY REACH ID: 02 TIME: 11:00 AM PHOTO ID: (Camera-Pic #) PC080 # 083

SITE ID: (Condition-#) SC-6 LAT 41° 51' 23" LONG 72° 42' 38" LMK _____ GPS (Unit ID) _____
beam or dike

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input checked="" type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>24"</u> Height: <u>18"</u> <i>over sand</i>
	CONDITION: (Evidence of...) <input checked="" type="checkbox"/> Cracking/chipping/corrosion <input checked="" type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input checked="" type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH:
 pipe is jutting out over the top of stream
 ~18" high + the banks have eroded away.
 UNSURE ABOUT ACCESS - SURROUNDING LAND USES
 ARE RESIDENTIAL / FORESTED.



WATERSHED/SUBSHED: <u>BHR</u>		DATE: <u>12 08 / 09</u>	ASSESSED BY: <u>CM/BSG</u>
SURVEY REACH ID: <u>02</u>		TIME: <u>1</u> : <u></u> AM/PM	PHOTO ID: (Camera-Pic #) <u></u> # <u></u>
SITE ID: (Condition #) CM: <u>only one sheet</u>	START LAT <u>See below</u>	LONG <u>° ' "</u>	LMK <u></u>
	END LAT <u>See below</u>	LONG <u>° ' "</u>	LMK <u></u>
TYPE: <input type="checkbox"/> Channelization <input checked="" type="checkbox"/> Bank armoring <input type="checkbox"/> concrete channel <input type="checkbox"/> Floodplain encroachment <input type="checkbox"/> Other:			
MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Gabion <input checked="" type="checkbox"/> Rip Rap <input type="checkbox"/> Earthen <input type="checkbox"/> Metal <input type="checkbox"/> Other:	Does channel have perennial flow?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	DIMENSIONS: Height _____ (ft) Bottom Width _____ (ft) Top Width: _____ (ft) Length: _____ (ft)
	Is there evidence of sediment deposition?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	Is vegetation growing in channel?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	Is channel connected to floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
BASE FLOW CHANNEL Depth of flow _____ (in) Defined low flow channel? <input type="checkbox"/> Yes <input type="checkbox"/> No % of channel bottom _____ %		ADJACENT STREAM CORRIDOR Available width LT _____ (ft) RT _____ (ft) Utilities Present? <input type="checkbox"/> Yes <input type="checkbox"/> No Fill in floodplain? <input type="checkbox"/> Yes <input type="checkbox"/> No	
POTENTIAL RESTORATION CANDIDATE <input type="checkbox"/> Structural repair <input type="checkbox"/> Base flow channel creation <input type="checkbox"/> Natural channel design <input type="checkbox"/> Can't tell <input type="checkbox"/> no <input type="checkbox"/> De-channelization <input type="checkbox"/> Fish barrier removal <input checked="" type="checkbox"/> Bioengineering			
CHANNEL-IZATION SEVERITY: (Circle #)	A long section of concrete stream (>500') channel where water is very shallow (<1" deep) with no natural sediments present in the channel.	A moderate length (> 200') ,but channel stabilized and beginning to function as a natural stream channel. Vegetated bars may have formed in channel.	An earthen channel less than 100 ft with good water depth, a natural sediment bottom, and size and shape similar to the unchanneled stream reaches above and below impacted area.
	5	4	2
NOTES: there are 2 AREAS containing Rip-RAP: ① At culvert junction with W. Dudley Town Rd ② At culvert junction with the berm/dike			



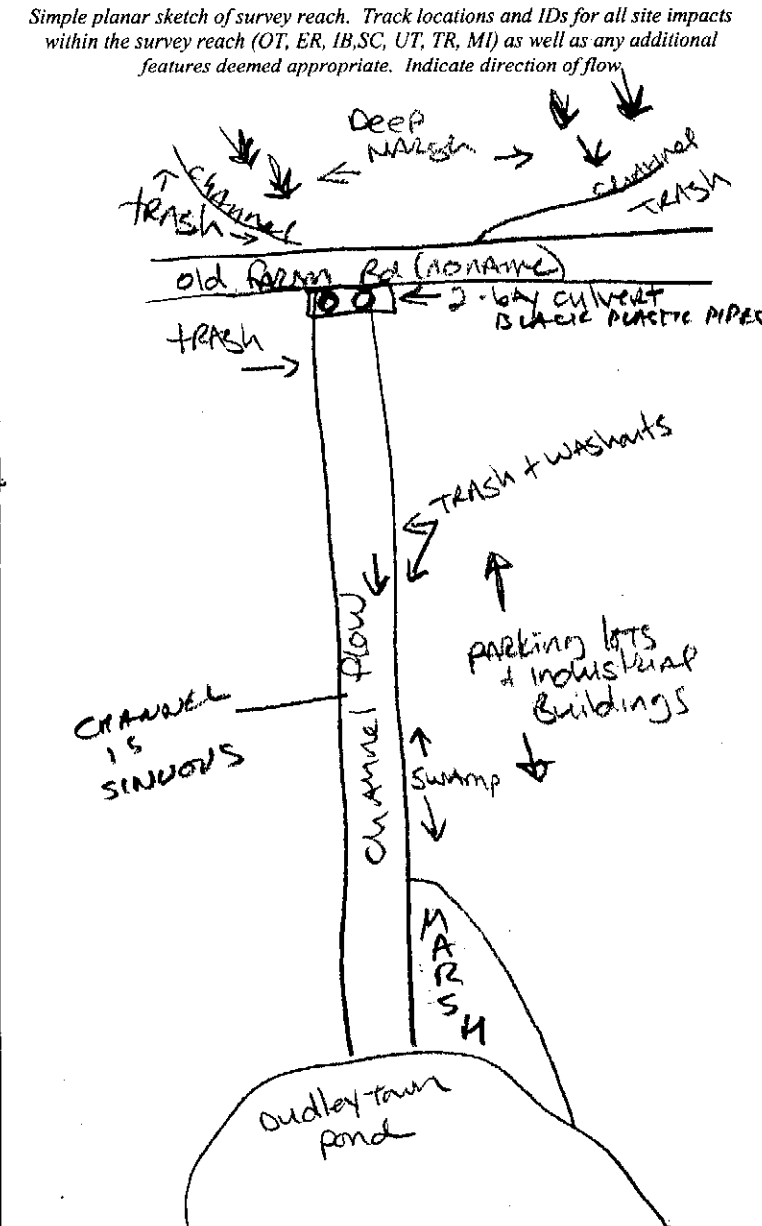
SURVEY REACH ID: 1	WTRSHD/SUBSID: WTR	DATE: 12/8/09	ASSESSED BY: CM/BG
START TIME: 9:40 AM/PM	LMK:	END TIME: 9:50 AM/PM	LMK:
LAT: 41° 51' 44" LONG: 72° 43' 08"		LAT: 41° 51' 46" LONG: 72° 43' 07"	GPS ID: (circled)
DESCRIPTION: North end of Dudley town pond		DESCRIPTION: culvert + old unnamed RAIN ROAD	

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Trace	<input checked="" type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential
<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested
		<input type="checkbox"/> Pasture	<input type="checkbox"/> Institutional
		<input type="checkbox"/> Crop	<input type="checkbox"/> Other:

AVERAGE CONDITIONS (check applicable)

BASE FLOW AS %	<input type="checkbox"/> 0-25%	<input checked="" type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50 %	<input type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	<input type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5 -10")
<input checked="" type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")	
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock	
WATER CLARITY	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)	
<input type="checkbox"/> Other (chemicals, dyes)		
AQUATIC PLANTS IN STREAM	Attached: <input checked="" type="checkbox"/> none	<input type="checkbox"/> some
	Floating: <input checked="" type="checkbox"/> none	<input type="checkbox"/> some
WILDLIFE IN OR AROUND STREAM	(Evidence of)	RT WALK,
<input type="checkbox"/> Fish	<input type="checkbox"/> Beaver	<input checked="" type="checkbox"/> Deer
<input type="checkbox"/> Snails	<input checked="" type="checkbox"/> Other: Raccoon, Mallard	
STREAM SHADING (water surface)	<input checked="" type="checkbox"/> Mostly shaded (>75% coverage)	
	<input type="checkbox"/> Halfway (>50%)	
	<input type="checkbox"/> Partially shaded (>25%)	
	<input type="checkbox"/> Unshaded (< 25%)	
CHANNEL DYNAMICS	<input type="checkbox"/> Downcutting	<input type="checkbox"/> Bed scour
<input checked="" type="checkbox"/> Stable	<input type="checkbox"/> Widening	<input type="checkbox"/> Bank failure
<input type="checkbox"/> Unknown	<input type="checkbox"/> Headcutting	<input type="checkbox"/> Bank scour
	<input type="checkbox"/> Aggrading	<input type="checkbox"/> Slope failure
	<input type="checkbox"/> Sed. deposition	<input type="checkbox"/> Channelized
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: LT bank _____ (ft)	
	RT bank _____ (ft)	
	Width: Bottom _____ (ft)	
	Top _____ (ft)	

REACH SKETCH AND SITE IMPACT TRACKING



REACH ACCESSIBILITY

Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3
		(2)
		1

NOTES: (biggest problem you see in survey reach)

trash + dumping (car parts, plastic bottles, plastic buckets, vinyl siding, garbage cans, etc.)

+ PARKING LOT RUNOFF FROM INDUSTRIAL BUILDINGS (VEHICLE WASHING?)

REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.	Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure	Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

OVERALL BUFFER AND FLOODPLAIN CONDITION

	Optimal	Suboptimal	Marginal	Poor
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.	Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.	Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.	Width of buffer zone <10 feet; little or no riparian vegetation due to human activities.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest	Predominant floodplain vegetation type is young forest	Predominant floodplain vegetation type is shrub or old field	Predominant floodplain vegetation type is turf or crop land
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water	Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water	Either all wetland or all non-wetland habitat, evidence of standing/ponded water	Either all wetland or all non-wetland habitat, no evidence of standing/ponded water.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures	Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function	Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function	Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Sub Total In-stream: 57 /80 + Buffer/Floodplain: 50 /80 = Total Survey Reach 107 /160



WATERSHED/SUBSHED: <u>WTR</u>		DATE: <u>2/08/09</u>	ASSESSED BY: <u>CM/BG</u>
SURVEY REACH ID: <u>01</u>	TIME: <u>9:40</u> AM/PM	PHOTO ID: (Camera-Pic #) # <u>none</u>	
SITE ID (Condition-#): <u>OT-02</u>		LAT <u>41° 51' 44" N</u> LONG <u>72° 43' 08" W</u> LMK _____	GPS: (Unit ID) _____

BANK: <input checked="" type="checkbox"/> LT <input type="checkbox"/> RT <input type="checkbox"/> Head FLOW: <input checked="" type="checkbox"/> None <input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial <input type="checkbox"/> Other:	TYPE: <input type="checkbox"/> Closed pipe <input checked="" type="checkbox"/> Open channel	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Earthen <input type="checkbox"/> Other:	SHAPE: <input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other: <input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	DIMENSIONS: Diameter: _____ (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully <div style="border: 1px solid black; width: 100px; height: 100px; text-align: center; line-height: 100px;">NOT APPLICABLE</div>
	CONDITION: <input type="checkbox"/> None <input type="checkbox"/> Chip/Cracked <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion <input type="checkbox"/> Other:	ODOR: <input type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	DEPOSITS/STAINS: <input type="checkbox"/> None <input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	VEGGIE DENSITY: <input type="checkbox"/> None <input type="checkbox"/> Normal <input type="checkbox"/> Inhibited <input type="checkbox"/> Excessive <input type="checkbox"/> Other:	PIPE BENTHIC GROWTH: <input type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:

FOR FLOWING ONLY	COLOR: <input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:
	TURBIDITY: <input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque
	FLOATABLES: <input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:
OTHER CONCERNS: <input type="checkbox"/> Excess Trash (paper/plastic bags) <input type="checkbox"/> Dumping (bulk) <input type="checkbox"/> Excessive Sedimentation <input type="checkbox"/> Needs Regular Maintenance <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Other:	

POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization
 no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled? Yes No Not investigated Land Use description: _____
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.
	5	④	3
			2
			1

SKETCH/NOTES: significant erosion from impervious surface & high slope over stream. stormwater runoffs are numerous + soil movement is occurring to stream channel from slope.



WATERSHED/SUBSHED: WTR DATE: 12/08/09 ASSESSED BY: cm/bg

SURVEY REACH ID: 01 TIME: 9:50 AM PHOTO ID: (Camera-Pic #) PC080 # 075

SITE ID: (Condition #) SC-01 LAT 41° 51' 46" N LONG 72° 43' 09" W LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other: weir

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input checked="" type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input checked="" type="checkbox"/> Other: <u>Asstc</u>	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.

NOTES/SKETCH: looks ok

REPORTED TO AUTHORITIES YES NO

WATERSHED/SUBSHED: <u>WTR</u>		DATE: <u>2 10 8 109</u>		ASSESSED BY: <u>cm/EG</u>	
SURVEY REACH ID: <u>01</u>		TIME: _____ AM/PM		PHOTO ID: (Camera-Pic #) /#	
SITE ID: (Condition-#) <u>TR-^{only} one</u>		LAT <u>See below</u> " LONG _____ " LMK _____		GPS: (Unit ID)	
TYPE: <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Residential	MATERIAL: <input checked="" type="checkbox"/> Plastic <input checked="" type="checkbox"/> Paper <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Tires <input type="checkbox"/> Construction <input type="checkbox"/> Medical <input type="checkbox"/> Appliances <input type="checkbox"/> Yard Waste <input checked="" type="checkbox"/> Automotive <input type="checkbox"/> Other:		SOURCE: <input type="checkbox"/> Unknown <input type="checkbox"/> Flooding <input checked="" type="checkbox"/> Illegal dump <input type="checkbox"/> Local outfall	LOCATION: <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Riparian Area <input checked="" type="checkbox"/> Lt bank <input checked="" type="checkbox"/> Rt bank	LAND OWNERSHIP: <input type="checkbox"/> Public <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Private AMOUNT (# Pickup truck loads):
POTENTIAL RESTORATION CANDIDATE <input checked="" type="checkbox"/> Stream cleanup <input checked="" type="checkbox"/> Stream adoption segment <input checked="" type="checkbox"/> Removal/prevention of dumping <input type="checkbox"/> no <input type="checkbox"/> Other:					
If yes for trash or debris removal	EQUIPMENT NEEDED: <input checked="" type="checkbox"/> Heavy equipment <input checked="" type="checkbox"/> Trash bags <input type="checkbox"/> Unknown			DUMPSTER WITHIN 100 FT: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	
	WHO CAN DO IT: <input checked="" type="checkbox"/> Volunteers <input checked="" type="checkbox"/> Local Gov <input type="checkbox"/> Hazmat Team <input type="checkbox"/> Other				
CLEAN-UP POTENTIAL: (Circle #)	A small amount of trash (i.e., less than two pickup truck loads) located inside a park with easy access <div style="text-align: center;">5</div>	A large amount of trash, or bulk items, in a small area with easy access. Trash may have been dumped over a long period of time but it could be cleaned up in a few days, possibly with a small backhoe. <div style="text-align: center;">(4)</div>	A large amount of trash or debris scattered over a large area, where access is very difficult. Or presence of drums or indications of hazardous materials <div style="text-align: center;">3</div>	<div style="text-align: center;">2</div>	<div style="text-align: center;">1</div>
NOTES: <div style="text-align: center; font-size: 2em;">↓</div>					
REPORTED TO AUTHORITIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					

trash + dumping is A problem throughen this reach. Areas of note are consolidated to one sheet:

- ① LB (left bank) where 18 wheeler trucks park AT the top of a steep slope + dump trash (including cups etc.) @ 41° 51' 44" / 72° 43' 08" can be removed with pickup truck / bag removal. No photo. EASY ACCESS, no heavy machinery required.
- ② LB + RB trash dumping (including plastic buckets, auto parts, vinyl siding, garbage cans, etc.) EASY ACCESS, heavy machinery likely required (for auto parts). No photo.

WTR-02

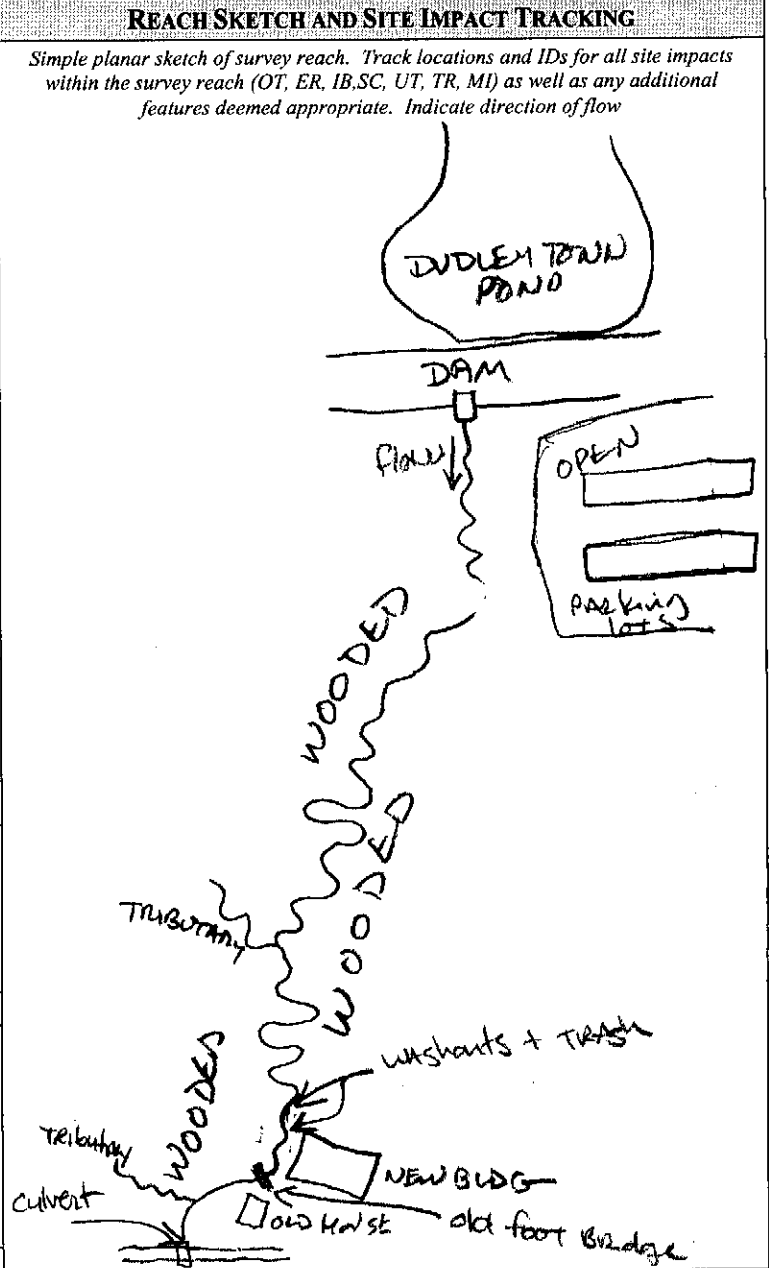
Reach Level Assessment



SURVEY REACH ID: <u>WTR-02</u>		WTRSHD/SUBSHD: <u>WINTONBURY RES,</u>		DATE: <u>12/8/09</u>		ASSESSED BY: <u>BG+CM</u>	
START TIME: <u>8:35 AM</u>	LMK: _____	END TIME: <u>9:15 AM</u>	LMK: _____	GPS ID: <u>(CM)</u>			
LAT <u>41° 51' 21" N</u>		LONG <u>72° 43' 25" W</u>		DESCRIPTION: <u>OUTLET FROM POND DAM</u>			

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Trace	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input checked="" type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input checked="" type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid (suspended matter)	
<input type="checkbox"/> Stained (clear, naturally colored) <input type="checkbox"/> Opaque (milky)	
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	Attached: <input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
	Floating: <input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	(Evidence of) <u>Wood pecker</u>
	<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input checked="" type="checkbox"/> Deer
	<input type="checkbox"/> Snails <input type="checkbox"/> Other: <u>Raccoon</u>
STREAM SHADING (water surface)	
<input checked="" type="checkbox"/> Mostly shaded (≥75% coverage)	
<input type="checkbox"/> Halfway (≥50%)	
<input type="checkbox"/> Partially shaded (≥25%)	
<input type="checkbox"/> Unshaded (< 25%)	
CHANNEL DYNAMICS	<input checked="" type="checkbox"/> Downcutting <input type="checkbox"/> Bed scour
<u>UPPER SECTION ONLY - LOWER SECTION STABLE</u>	<input type="checkbox"/> Widening <input type="checkbox"/> Bank failure
<input type="checkbox"/> Unknown	<input type="checkbox"/> Headcutting <input checked="" type="checkbox"/> Bank scour
	<input type="checkbox"/> Aggrading <input type="checkbox"/> Slope failure
	<input type="checkbox"/> Sed. deposition <input type="checkbox"/> Channelized
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: LT bank <u>2</u> (ft)
	RT bank _____ (ft)
	Width: Bottom <u>8</u> (ft)
	Top _____ (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult. Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3

NOTES: (biggest problem you see in survey reach)

DOWNCUTTING, EROSION BELOW DAM CULVERT, BUFFER ENCROACHMENT (L) BANK (NEW BLDG).

REPORTED TO AUTHORITIES YES NO

OVERALL STREAM CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.				
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	Right Bank	10	9			8	7	6			5	4	3			2	1	0		
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use. <i>UPPER SECTION</i>					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	Right Bank	10	9			8	7	6			5	4	3			2	1	0		
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched. <i>UPPER SECTION</i>					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.				
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
OVERALL BUFFER AND FLOODPLAIN CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.					Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.				
	Left Bank	10	9			8	7	6			5	4	3			2	1	0		
	Right Bank	10	9			8	7	6			5	4	3			2	1	0		
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest					Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field					Predominant floodplain vegetation type is turf or crop land				
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water					Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water				
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures					Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function				
	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Sub Total In-stream: <u>30</u> /80 + Buffer/Floodplain: <u>70</u> /80 = Total Survey Reach <u>140</u> /160																				



WATERSHED/SUBSHED: <u>WTR</u>		DATE: <u>12/08/09</u>	ASSESSED BY: <u>CM/BG</u>
SURVEY REACH ID: <u>02</u>	TIME: <u>8:35 AM/PM</u>	PHOTO ID: (Camera-Pic #) <u>PC080</u> # <u>064</u>	
SITE ID: (Condition #) <u>SC-A</u>	LAT <u>41° 51' 21"</u> LONG <u>72° 43' 25"</u>	LMK: _____	GPS (Unit ID): _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: _____ (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight ($2^\circ - 5^\circ$) <input type="checkbox"/> Obvious ($>5^\circ$)	

POTENTIAL RESTORATION CANDIDATE No Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)				
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.		
		5	4	3	2	1

NOTES/SKETCH:



WATERSHED/SUBSHED: WTR DATE: 12/08/09 ASSESSED BY: CM/186

SURVEY REACH ID: 07 TIME: 9:15 AM PHOTO ID: (Camera-Pic #) PC080 # 072

SITE ID: (Condition-#) SC-B LAT 41° 51' 32" LONG 72° 43' 16" LMK _____ GPS (Unit ID) _____

earthensill/barron

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>3'</u> (ft) Height: <u>2' high</u>
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input checked="" type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input checked="" type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):	CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)		Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other: cannot do much since upstream dam

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present. 5	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish. 4	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls. 3

NOTES/SKETCH:

REPORTED TO AUTHORITIES YES NO



WATERSHED/SUBSHED: WTR		DATE: 12/08/09		ASSESSED BY: CM+BG	
SURVEY REACH ID: 02		TIME: : : AM/PM		PHOTO ID: (Camera-Pic #) /# none	
SITE ID: (Condition-#) TR- ^{only one} _{sweet}		LAT 41° 51' . 22 " LONG 72° 43' . 24 " LMK _____		GPS: (Unit ID)	
TYPE: <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential	MATERIAL: <input checked="" type="checkbox"/> Plastic <input checked="" type="checkbox"/> Tires <input checked="" type="checkbox"/> Automotive <input type="checkbox"/> Appliances <input type="checkbox"/> Yard Waste <input checked="" type="checkbox"/> Other: toilet		SOURCE: <input type="checkbox"/> Unknown <input type="checkbox"/> Flooding <input checked="" type="checkbox"/> Illegal dump <input type="checkbox"/> Local outfall	LOCATION: <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Riparian Area <input checked="" type="checkbox"/> Lt bank <input type="checkbox"/> Rt bank	LAND OWNERSHIP: <input type="checkbox"/> Public <input checked="" type="checkbox"/> Private AMOUNT (# Pickup truck loads): 1/2
POTENTIAL RESTORATION CANDIDATE <input checked="" type="checkbox"/> Stream cleanup <input checked="" type="checkbox"/> Stream adoption segment <input checked="" type="checkbox"/> Removal/prevention of dumping <input type="checkbox"/> no <input type="checkbox"/> Other:					
<i>If yes for trash or debris removal</i>	EQUIPMENT NEEDED: <input type="checkbox"/> Heavy equipment <input checked="" type="checkbox"/> Trash bags <input type="checkbox"/> Unknown			DUMPSTER WITHIN 100 FT: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
	WHO CAN DO IT: <input checked="" type="checkbox"/> Volunteers <input type="checkbox"/> Local Gov <input type="checkbox"/> Hazmat Team <input type="checkbox"/> Other				
CLEAN-UP POTENTIAL: (Circle #)	A small amount of trash (i.e., less than two pickup truck loads) located inside a park with easy access	A large amount of trash, or bulk items, in a small area with easy access. Trash may have been dumped over a long period of time but it could be cleaned up in a few days, possibly with a small backhoe.			
	⑤	4	3	2	1
NOTES: broken glass, tires, debris, toilet. EASY ACCESS					
REPORTED TO AUTHORITIES <input type="checkbox"/> YES <input type="checkbox"/> NO					

WATERSHED/SUBSHED: _____ DATE: ___/___/___ ASSESSED BY: _____

SURVEY REACH: _____ TIME: ___:___ AM/PM PHOTO ID: (Camera-Pic #) _____ # _____

SITE ID: (Condition-#) _____ START LAT ° ' " LONG ° ' " LMK _____ GPS: (Unit ID) _____
 IB- _____ END LAT ° ' " LONG ° ' " LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other: *erosion + soil movement from construction*

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank : *impervious*
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other: *possibly remove sediment from wetlands by hand*

RESTORABLE AREA		REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
LT BANK	RT				
Length (ft): _____	_____				
Width (ft): _____	_____				
			5	4	(3)

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES:

① LB behind new building where there is thin forested buffer + sediment has been pushed up to ~6' from the top of bank (due to recent construction) w/ no erosion control measures in place. The slope is steep + sediment has recently washed off slope into brook. There are several wash outs/scours @ 41° 51' 22" / 72° 43' 24"

② LB behind new buildings + parking area / recent construction w/ no erosion control measures. no GPS.

P102
TRB, Reach 5

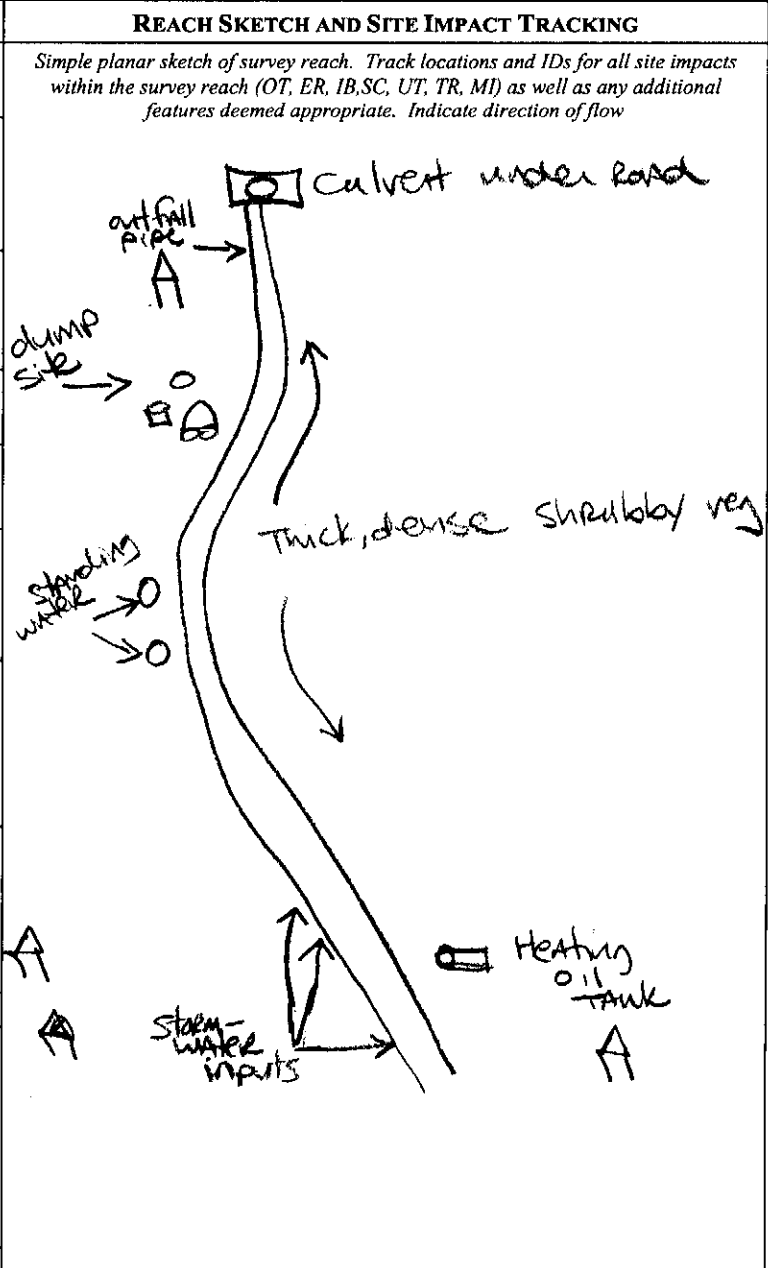
Reach Level Assessment



SURVEY REACH ID: <u>5</u>		WTRSHD/SUBSHD: <u>TRB</u>		DATE: <u>11/30/09</u>		ASSESSED BY: <u>CM/BLG</u>	
START TIME: <u>3:20 AM/PM</u> LMK: _____		END TIME: <u>3:55 AM/PM</u> LMK: _____		GPS ID: <u>(CM)</u>			
LAT <u>41°49'42"</u> LONG <u>72°45'02"</u>		LAT <u>41°49'50"</u> LONG <u>72°45'11"</u>		DESCRIPTION: <u>forested section</u>		DESCRIPTION: <u>Rk, 178 Mountain Ave,</u>	

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input checked="" type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Intermittent	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
	<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input checked="" type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	
Attached:	<input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
Floating:	<input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	
(Evidence of)	<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input checked="" type="checkbox"/> Deer
	<input type="checkbox"/> Snails <input checked="" type="checkbox"/> Other: <u>Raccoon tracks</u>
STREAM SHADING (water surface)	
<input checked="" type="checkbox"/> Mostly shaded (≥75% coverage)	
<input type="checkbox"/> Halfway (≥50%)	
<input type="checkbox"/> Partially shaded (≥25%)	
<input type="checkbox"/> Unshaded (<25%)	
CHANNEL DYNAMICS	
<input type="checkbox"/> Downtcutting	<input type="checkbox"/> Bed scour
<input type="checkbox"/> Widening	<input type="checkbox"/> Bank failure
<input type="checkbox"/> Headcutting	<input checked="" type="checkbox"/> Bank scour
<input type="checkbox"/> Aggrading	<input type="checkbox"/> Slope failure
<input type="checkbox"/> Sed. deposition	<input type="checkbox"/> Channelized
<input type="checkbox"/> Unknown	
BANKFUL CHANNEL DIMENSIONS (FACING DOWNSTREAM)	
Height: <u>LT bank</u>	<u>2'</u> (ft)
	<u>RT bank</u> (ft)
Width: <u>Bottom</u>	<u>8'</u> (ft)
	<u>Top</u> (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3 2 1

NOTES: (biggest problem you see in survey reach) Dumping, including old car, heating oil tank, oil drums, store, toilet, sink, tires. Some invasive plants (multiflora rose, knotweed, garlic mustard, barberry).

REPORTED TO AUTHORITIES YES NO

P. 2762
TOB, REACHS

OVERALL STREAM CONDITION				
	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 19 18 17 16	13 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.	Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure	Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

OVERALL BUFFER AND FLOODPLAIN CONDITION

	Optimal	Suboptimal	Marginal	Poor
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.	Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.	Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.	Width of buffer zone <10 feet; little or no riparian vegetation due to human activities.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest	Predominant floodplain vegetation type is young forest	Predominant floodplain vegetation type is shrub or old field	Predominant floodplain vegetation type is turf or crop land
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water	Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water	Either all wetland or all non-wetland habitat, evidence of standing/ponded water	Either all wetland or all non-wetland habitat, no evidence of standing/ponded water
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures	Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not affecting floodplain function	Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function	Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Sub Total In-stream: 65 /80 + Buffer/Floodplain: 60 /80 = Total Survey Reach 125 /160



Trash and Debris

WATERSHED/SUBSHED: <u>T DB</u>		DATE: <u>11/30/09</u>		ASSESSED BY: <u>CM/136</u>	
SURVEY REACH ID: <u>5</u>		TIME: _____ AM/PM		PHOTO ID: (Camera-Pic #) _____ # <u>None</u>	
SITE ID: (Condition-#) <u>TR-^{only} one</u>		LAT <u>See below</u>		LONG _____ " LMK _____ GPS: (Unit ID)	
TYPE: <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential	MATERIAL: <input checked="" type="checkbox"/> Plastic <input checked="" type="checkbox"/> Tires <input checked="" type="checkbox"/> Appliances <input checked="" type="checkbox"/> Automotive		<input checked="" type="checkbox"/> Paper <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Yard Waste <input checked="" type="checkbox"/> Other: <u>sink + toilet</u>		<input checked="" type="checkbox"/> Metal <input type="checkbox"/> Medical
SOURCE: <input type="checkbox"/> Unknown <input type="checkbox"/> Flooding <input checked="" type="checkbox"/> Illegal dump <input type="checkbox"/> Local outfall		LOCATION: <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Riparian Area <input checked="" type="checkbox"/> Lt bank <input type="checkbox"/> Rt bank		LAND OWNERSHIP: <input type="checkbox"/> Public <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Private AMOUNT (# Pickup truck loads):	
POTENTIAL RESTORATION CANDIDATE <input checked="" type="checkbox"/> Stream cleanup <input type="checkbox"/> Stream adoption segment <input checked="" type="checkbox"/> Removal/prevention of dumping <input type="checkbox"/> no <input type="checkbox"/> Other:					
If yes for trash or debris removal	EQUIPMENT NEEDED: <input checked="" type="checkbox"/> Heavy equipment <input checked="" type="checkbox"/> Trash bags <input type="checkbox"/> Unknown			DUMPSTER WITHIN 100 FT: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
	WHO CAN DO IT: <input checked="" type="checkbox"/> Volunteers <input checked="" type="checkbox"/> Local Gov <input checked="" type="checkbox"/> Hazmat Team <input type="checkbox"/> Other				
CLEAN-UP POTENTIAL: (Circle #)	A small amount of trash (i.e., less than two pickup truck loads) located inside a park with easy access	A large amount of trash, or bulk items, in a small area with easy access. Trash may have been dumped over a long period of time but it could be cleaned up in a few days, possibly with a small backhoe.		A large amount of trash or debris scattered over a large area, where access is very difficult. Or presence of drums or indications of hazardous materials	
	5	4		3 <u>2</u> 1	
NOTES: ① Heating oil tank on LB @ 41°49'42" / 72°45'02" , likely illegally dumped on private residence. ② RB @ 41°49'47" / 72°45'10" including automobile, oil drums, tires, stove, sink, toilet. Invasive plants here (J. Knotweed).					
REPORTED TO AUTHORITIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					



WATERSHED/SUBSHED: T03 DATE: 11/30/09 ASSESSED BY: CM+BGS
 SURVEY REACH ID: 5 TIME: 3:50 AM/PM PHOTO ID: (Camera-Pic #) # none

SITE ID: (Condition #) SC-~~Sheet~~
only LAT 41° 49' 50" LONG 72° 45' 11.5" LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input type="checkbox"/> Elliptical <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>?</u> (ft) Height: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe):			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other:	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.

NOTES/SKETCH:

REPORTED TO AUTHORITIES YES NO

P. 122
TAB, REACH 6

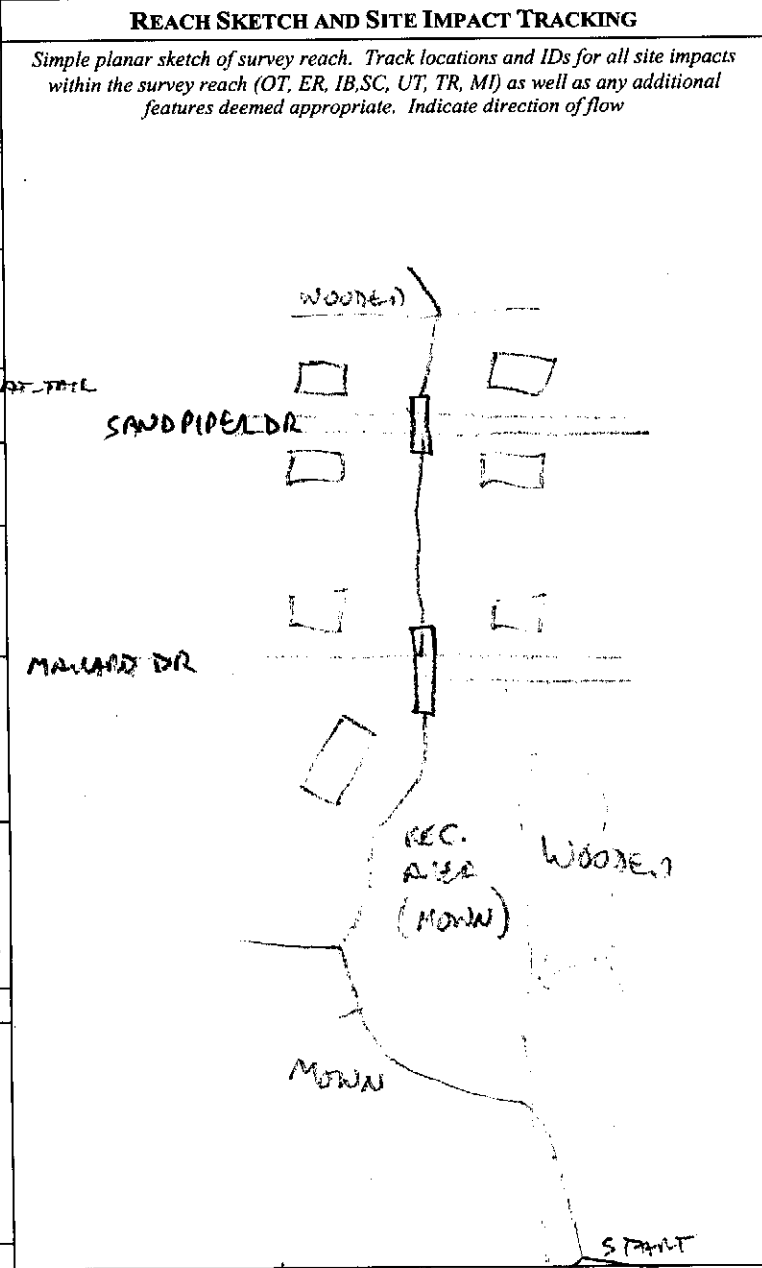
Reach Level Assessment



SURVEY REACH ID: TBB-6		WTRSHD/SUBSHD: TUMBLEDOWN BROOK		DATE: 11/30/09	ASSESSED BY: BB + CM
START TIME: 3:00 AM (PM)	LMK: _____	END TIME: 3:20 AM (PM)	LMK: _____	GPS ID: _____	
LAT _____ ' _____ " LONG _____ ' _____ "		LAT _____ ' _____ " LONG _____ ' _____ "		DESCRIPTION: CONFLUENCE WITH TMB. (R)	

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input checked="" type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent	
<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input checked="" type="checkbox"/> Trace	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy	
SURROUNDING LAND USE:		<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input type="checkbox"/> Forested	<input type="checkbox"/> Institutional
		<input type="checkbox"/> Golf course	<input checked="" type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input checked="" type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	Attached: <input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
	Floating: <input type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	(Evidence of)
	<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input checked="" type="checkbox"/> Deer
	<input type="checkbox"/> Snails <input type="checkbox"/> Other:
STREAM SHADING (water surface)	<input type="checkbox"/> Mostly shaded (≥75% coverage)
	<input type="checkbox"/> Halfway (≥50%)
	<input checked="" type="checkbox"/> Partially shaded (≥25%)
	<input type="checkbox"/> Unshaded (<25%)
CHANNEL DYNAMICS	<input type="checkbox"/> Downcutting
	<input type="checkbox"/> Widening
	<input type="checkbox"/> Headcutting
<input type="checkbox"/> Unknown	<input type="checkbox"/> Aggrading
	<input type="checkbox"/> Sed. deposition
	<input type="checkbox"/> Bed scour
	<input type="checkbox"/> Bank failure
	<input checked="" type="checkbox"/> Bank scour
	<input type="checkbox"/> Slope failure
	<input type="checkbox"/> Channelized
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: LT bank 28' (ft)
	RT bank 3' (ft)
	Width: Bottom 13' (ft)
	Top 1' (ft)
MUCH NARROWER IN OPEN	
REACH ACCESSIBILITY	
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.
	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4
3	2
	1



NOTES: (biggest problem you see in survey reach) **Impacted over adjacent to athletic fields**

REPORTED TO AUTHORITIES YES NO

P. 2062
TDB, Reach 4

OVERALL STREAM CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.				
	Left Bank		10 9			8		7 6			5 4 3		2 1 0							
	Right Bank		10 9			8		7 6			5 4 3		2 1 0							
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.				
	Left Bank		10 9			8		7 6			5 4 3		2 1 0							
	Right Bank		10 9			8		7 6			5 4 3		2 1 0							
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				

OVERALL BUFFER AND FLOODPLAIN CONDITION

	Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.					Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet; little or no riparian vegetation due to human activities. <i>EXCEPT FOR LAST SPECIMEN</i>				
	Left Bank		10 9			8		7 6			5 4 3		2 1 0			<i>IN WOODS</i>				
	Right Bank		10 9			8		7 6			5 4 3		2 1 0							
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest					Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field					Predominant floodplain vegetation type is turf or crop land				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water					Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures					Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				

Sub Total In-stream: 54 /80 + Buffer/Floodplain: 41 /80 = Total Survey Reach 95 /160



WATERSHED/SUBSHED: <u>TDB</u>	DATE: <u>11/30/09</u>	ASSESSED BY: <u>CM+BG</u>
SURVEY REACH ID: <u>6</u>	TIME: <u>3:15 AM (PM)</u>	PHOTO ID: (Camera-Pic #) # <u>none</u>
SITE ID (Condition-#): <u>OT- only one sheet</u>		GPS: (Unit ID)
LAT <u>41° 49' 37"</u> LONG <u>72° 45' 05"</u> LMK _____		

BANK: <input type="checkbox"/> LT <input checked="" type="checkbox"/> RT <input type="checkbox"/> Head	TYPE: <input type="checkbox"/> Closed pipe <input checked="" type="checkbox"/> Open channel	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other: <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Earthen <input type="checkbox"/> Other:	SHAPE: <input type="checkbox"/> Single <input type="checkbox"/> Circular <input type="checkbox"/> Double <input type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other: <input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	DIMENSIONS: Diameter: _____ (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
FLOW: <input checked="" type="checkbox"/> None <input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial <input type="checkbox"/> Other:	NOT APPLICABLE				
CONDITION: <input checked="" type="checkbox"/> None <input type="checkbox"/> Chip/Cracked <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion <input type="checkbox"/> Other:	ODOR: <input type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	DEPOSITS/STAINS: <input type="checkbox"/> None <input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	VEGGIE DENSITY: <input type="checkbox"/> None <input type="checkbox"/> Normal <input type="checkbox"/> Inhibited <input type="checkbox"/> Excessive <input type="checkbox"/> Other:	PIPE BENTHIC GROWTH: <input type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other: POOL QUALITY: <input type="checkbox"/> No pool <input type="checkbox"/> Good <input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Oils <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Floatables <input type="checkbox"/> Other:	

FOR FLOWING ONLY	COLOR: <input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:
	TURBIDITY: <input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque
	FLOATABLES: <input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:
OTHER CONCERNS:	<input type="checkbox"/> Excess Trash (paper/plastic bags) <input type="checkbox"/> Dumping (bulk) <input type="checkbox"/> Excessive Sedimentation <input type="checkbox"/> Needs Regular Maintenance <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Other:

POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization
 no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled? Yes No Not investigated Land Use description: _____
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.
	5	4	3
			2
			1

SKETCH/NOTES:

REPORTED TO AUTHORITIES: YES NO



WATERSHED/SUBSHED: TDB DATE: 11/30/09 ASSESSED BY: CM/SG
 SURVEY REACH: 6 TIME: 3:00 AM PHOTO ID: (Camera-Pic #) 149200/# 06 of 07

SITE ID: (Condition-#) _____ START LAT _____ ° ' " LONG _____ ° ' " LMK _____ GPS: (Unit ID) _____
 IB- one sheet END LAT _____ ° ' " LONG _____ ° ' " LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other:

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank Athletic
 RT Bank fields

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other:

RESTORABLE AREA LT BANK RT Length (ft): <u>250</u> <u>280</u> Width (ft): _____	REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate <u>Athletic fields</u>	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
		5	④	3

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

NOTES:
 ① Impact to LB+RB due to Athletic fields / mown lawn up to edge of brook
 LB length of impact: ~250 meters
 RB length of impact: ~280 meters



WATERSHED/SUBSHED: <u>FDB</u>	DATE: <u>11/30/09</u>	ASSESSED BY: <u>cm/BB</u>
SURVEY REACH ID: <u>6</u>	TIME: <u>3:20 AM/PM</u>	PHOTO ID: (Camera-Pic #) <u># none</u>
SITE ID: (Condition #) SC- <u>B</u>	LAT <u>41° 49' 42" N</u> LONG <u>72° 45' 02" W</u>	LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input checked="" type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>40"</u> (ft) Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____				CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present.	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish.	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls.
<div style="display: flex; justify-content: space-around; width: 100%;"> 5 4 3 2 1 </div>				

NOTES/SKETCH:

REPORTED TO AUTHORITIES YES NO

P. 1062
 TDB REACHS

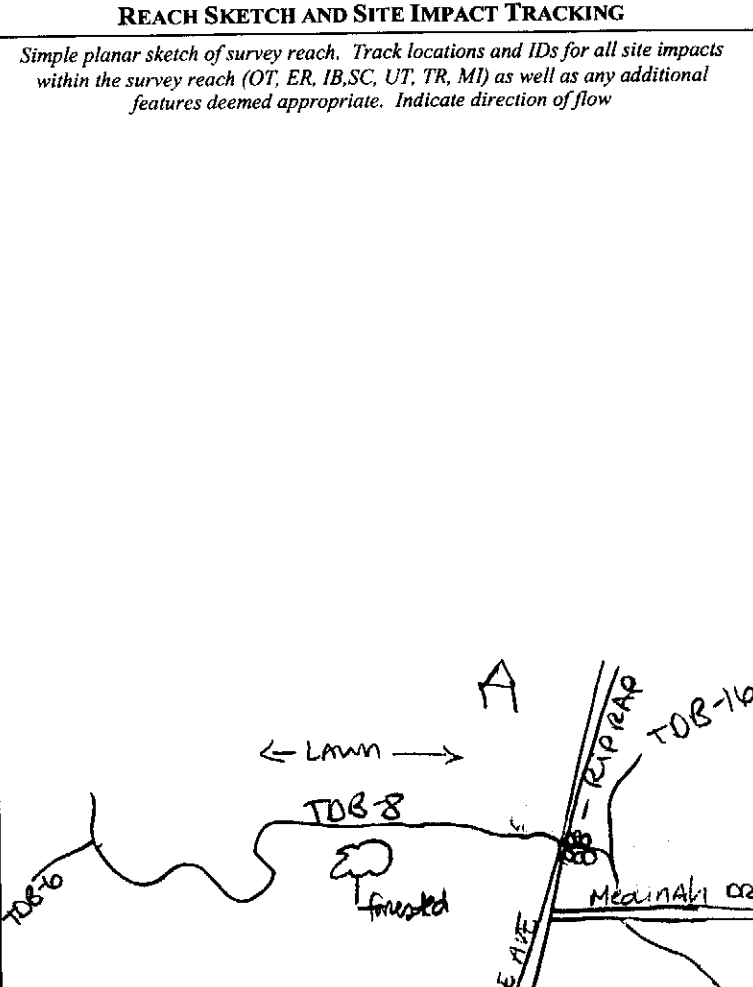
Reach Level Assessment



SURVEY REACH ID: <u>8</u>		WTRSHD/SUBSHD: <u>TDB</u>		DATE: <u>11/30/09</u>		ASSESSED BY: <u>CM/RG</u>	
START TIME: <u>2:30 AM/PM</u>	LMK: _____	END TIME: <u>3:00 AM/PM</u>	LMK: _____	GPS ID: <u>CM</u>			
LAT: <u>41° 49' 27" N</u>		LONG: <u>72° 44' 57" W</u>		LAT: <u>41° 49' 28" N</u>		LONG: <u>72° 45' 05" W</u>	
DESCRIPTION: <u>Medinah Dr</u>				DESCRIPTION: <u>tributary input (w/ right bank)</u>			

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input checked="" type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent	
<input type="checkbox"/> None	<input checked="" type="checkbox"/> Intermittent	<input type="checkbox"/> Trace	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input type="checkbox"/> Partly cloudy	
SURROUNDING LAND USE:		<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input checked="" type="checkbox"/> Suburban/Res	<input type="checkbox"/> Forested	<input type="checkbox"/> Institutional
		<input type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input type="checkbox"/> Silt/clay (fine or slick)	<input checked="" type="checkbox"/> Cobble (2.5-10")
<input type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid (suspended matter)	
<input type="checkbox"/> Stained (clear, naturally colored) <input type="checkbox"/> Opaque (milky)	
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS IN STREAM	Attached: <input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
	Floating: <input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM (Evidence of)	
<input type="checkbox"/> Fish <input type="checkbox"/> Beaver <input checked="" type="checkbox"/> Deer	
<input type="checkbox"/> Snails <input checked="" type="checkbox"/> Other:	
STREAM SHADING (water surface)	
<input checked="" type="checkbox"/> Mostly shaded (≥75% coverage)	
<input type="checkbox"/> Halfway (≥50%)	
<input type="checkbox"/> Partially shaded (≥25%)	
<input type="checkbox"/> Unshaded (< 25%)	
CHANNEL DYNAMICS	<input type="checkbox"/> Downcutting
	<input type="checkbox"/> Widening
	<input type="checkbox"/> Headcutting
	<input type="checkbox"/> Aggrading
	<input type="checkbox"/> Sed. deposition
	<input type="checkbox"/> Bed scour
	<input type="checkbox"/> Bank failure
	<input checked="" type="checkbox"/> Bank scour
	<input type="checkbox"/> Slope failure
	<input type="checkbox"/> Channelized
<input type="checkbox"/> Unknown	
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	Height: <u>LT bank</u> <u>20"</u> (ft)
	<u>RT bank</u> _____ (ft)
	Width: <u>Bottom</u> <u>12'</u> (ft)
	<u>Top</u> _____ (ft)



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3 2 1

NOTES: (biggest problem you see in survey reach) Impacted buffer due to residential lawns along left bank in particular, some rip-rap on both banks, east of Maple Ave.

REPORTED TO AUTHORITIES YES NO

P2 062
T03, REACH

OVERALL STREAM CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).					40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
	Right Bank 10 9					8 7 6					5 4 3					2 1 0				
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
Right Bank 10 9					8 7 6					5 4 3					2 1 0					
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				

OVERALL BUFFER AND FLOODPLAIN CONDITION																				
	Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.					Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.				
	Left Bank 10 9					8 7 6					5 4 3					2 1 0				
	Right Bank 10 9					8 7 6					5 4 3					2 1 0				
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest					Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field					Predominant floodplain vegetation type is turf or crop land				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water					Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures					Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function				
	20 19 18 17 16					15 14 13 12 11					10 9 8 7 6					5 4 3 2 1 0				

Sub Total In-stream: 57 /80 + Buffer/Floodplain: 27 /80 = Total Survey Reach 84 /160



WATERSHED/SUBSHED: TDB DATE: 1/30/09 ASSESSED BY: CM+BG
 SURVEY REACH ID: 8 TIME: 2:40 AM PHOTO ID: (Camera-Pic #) 14920#001,002
 SITE ID: (Condition-#) SC-only one LAT 41°49'28" LONG 70°45'00" LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input type="checkbox"/> Box <input checked="" type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input checked="" type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>4'</u> Height: _____ (ft) Culvert length: _____ (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 no Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)			
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present. 5	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish. 4	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls. 3	2

NOTES/SKETCH:
Rip-rap along both banks downstream of culvert
Thin forested buffer on RB.



WATERSHED/SUBSHED: TOB DATE: 11/30/09 ASSESSED BY: cm/BG
 SURVEY REACH: 8 TIME: _____ AM/PM PHOTO ID: (Camera-Pic #) 149200 /# 001, 003

SITE ID: (Condition-#) _____ START LAT 41° 49' 28" LONG 72° 4' 00" LMK _____ GPS: (Unit ID) _____
 IB- _____ END LAT _____ LONG _____ LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other: Rip-RAP

LAND USE: Private Institutional Golf Course Park Other Public
 (Facing downstream) LT Bank :
 RT Bank :

DOMINANT Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LAND COVER: LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE Active reforestation Greenway design Natural regeneration Invasives removal
 no Other:

RESTORABLE AREA	REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting				
		5	4	3	2	1
LT BANK RT Length (ft): <u>70</u> <u>40</u> Width (ft): _____						
		Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate				
		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting				

POTENTIAL CONFLICTS WITH REFORESTATION Widespread invasive plants Potential contamination Lack of sun
 Poor/unsafe access to site Existing impervious cover Severe animal impacts (deer, beaver) Other:

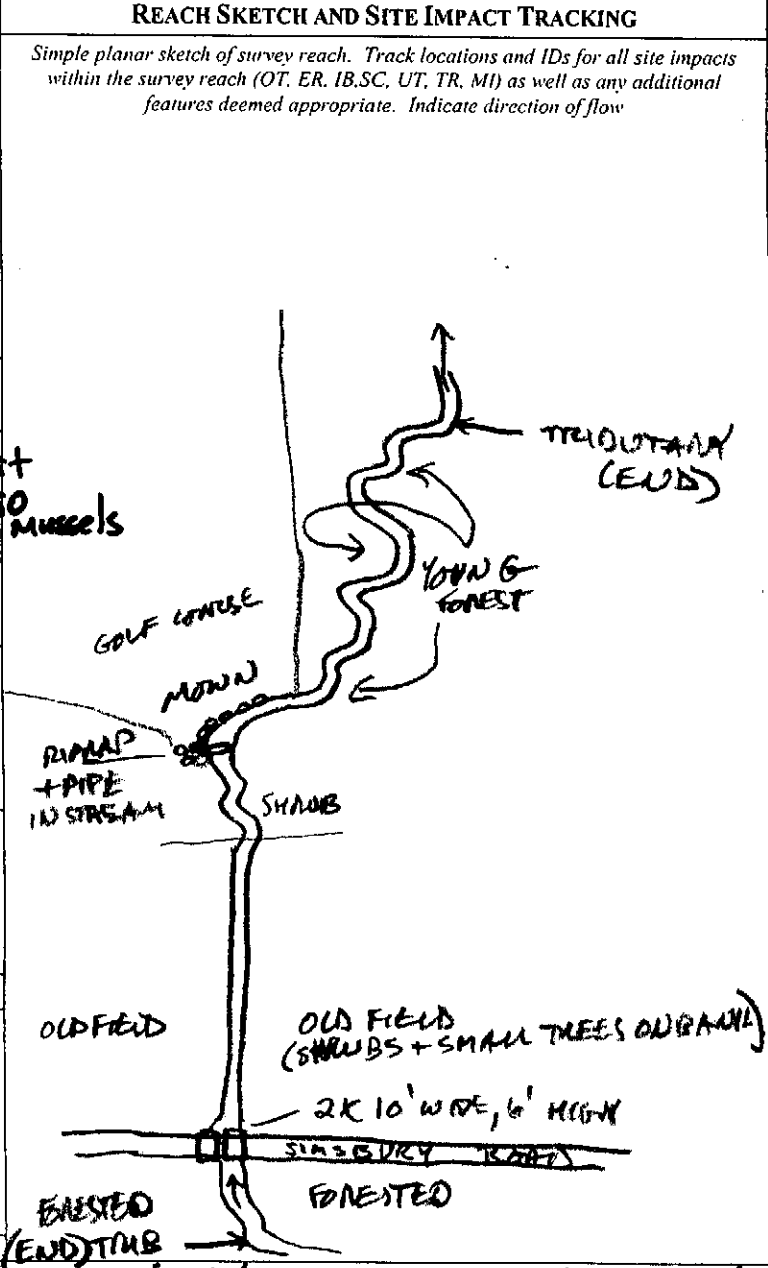
NOTES: ~40' of Rip-Rap on both banks downstream of culvert
LB here is lawn with a narrow vegetated buffer (private residence) The RB is forested here.



SURVEY REACH ID: <u>12</u>		WTRSHD/SUBSHD: <u>TDB</u>		DATE: <u>12/1/09</u>		ASSESSED BY: <u>B6/CM</u>	
START TIME: <u>8:30 AM</u> PM LMK: _____		END TIME: <u>9:30 AM</u> PM LMK: _____		GPS ID: <u>CM</u>			
LAT <u>41° 48' 23"</u> LONG <u>72° 45' 10"</u>		LAT <u>41° 48' 37"</u> LONG <u>72° 45' 04"</u>		DESCRIPTION: <u>tributary junction on right bank</u>			
DESCRIPTION: <u>~200' south of Stony Simsbury Rd.</u>							

RAIN IN LAST 24 HOURS <input type="checkbox"/> Heavy rain <input checked="" type="checkbox"/> Steady rain <input type="checkbox"/> Intermittent <input type="checkbox"/> None <input type="checkbox"/> Trace		PRESENT CONDITIONS <input type="checkbox"/> Heavy rain <input type="checkbox"/> Steady rain <input type="checkbox"/> Intermittent <input type="checkbox"/> Clear <input type="checkbox"/> Trace <input type="checkbox"/> Overcast <input checked="" type="checkbox"/> Partly cloudy	
SURROUNDING LAND USE: <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Golf course <input type="checkbox"/> Park		<input type="checkbox"/> Urban/Residential <input type="checkbox"/> Suburban/Res <input checked="" type="checkbox"/> Forested <input type="checkbox"/> Institutional <input checked="" type="checkbox"/> Pasture <input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS % <input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%	CHANNEL WIDTH <input type="checkbox"/> 25-50 % <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE <input type="checkbox"/> Silt/clay (fine or slick) <input type="checkbox"/> Cobble (2.5 -10") <input checked="" type="checkbox"/> Sand (gritty) <input type="checkbox"/> Boulder (>10") <input type="checkbox"/> Gravel (0.1-2.5") <input type="checkbox"/> Bed rock	
WATER CLARITY <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid (suspended matter) <input type="checkbox"/> Stained (clear, naturally colored) <input type="checkbox"/> Opaque (milky) <input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS Attached: <input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots Floating: <input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots	
WILDLIFE IN OR AROUND STREAM (Evidence of) <u>snake, frog, etc. rabbit</u> <input checked="" type="checkbox"/> Fish <input type="checkbox"/> Beaver <input checked="" type="checkbox"/> Deer <input type="checkbox"/> Snails <input checked="" type="checkbox"/> Other: <u>leech, elliptical mussels</u>	
STREAM SHADING (water surface) <input type="checkbox"/> Mostly shaded (≥75% coverage) <input type="checkbox"/> Halfway (≥50%) <input checked="" type="checkbox"/> Partially shaded (≥25%) <input type="checkbox"/> Unshaded (< 25%)	
CHANNEL DYNAMICS <u>MOSTLY STABLE</u> <input type="checkbox"/> Unknown	<input type="checkbox"/> Downcutting <input type="checkbox"/> Widening <input type="checkbox"/> Headcutting <input type="checkbox"/> Aggrading <input type="checkbox"/> Sed. deposition <input type="checkbox"/> Bed scour <input type="checkbox"/> Bank failure <input checked="" type="checkbox"/> Bank scour <input type="checkbox"/> Slope failure <input type="checkbox"/> Channelized
<u>Bankfull</u> CHANNEL DIMENSIONS (FACING DOWNSTREAM) Height: <u>LT bank</u> <u>42"</u> (ft) <u>RT bank</u> _____ (ft) Width: <u>Bottom</u> <u>30'</u> (ft) <u>Top</u> _____ (ft)	



REACH ACCESSIBILITY		
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	Difficult. Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	4	3 2 1

NOTES: (biggest problem you see in survey reach) Golf course impacts - chemical / thermal loading + increase in trash/debris (golf balls + bottles). Otherwise this reach is in good overall condition.

REPORTED TO AUTHORITIES YES NO

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TDB, REACH

OVERALL STREAM CONDITION																					
		Optimal					Suboptimal					Marginal					Poor				
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).						40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.				
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.						70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.				
	Left Bank	10	9				8	7	6	5	4	3	5	4	3	2	1	0			
	Right Bank	10	9				8	7	6	5	4	3	2	1	0						
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.						Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.					Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure					Active downcutting; tail banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.				
	Left Bank	10	9				8	7	6	5	4	3	2	1	0						
	Right Bank	10	9				8	7	6	5	4	3	2	1	0						
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.						High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.					High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.				
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

OVERALL BUFFER AND FLOODPLAIN CONDITION																					
		Optimal					Suboptimal					Marginal					Poor				
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.						Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.					Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.					Width of buffer zone <10 feet: little or no riparian vegetation due to human activities.				
	Left Bank	10	9				8	7	6	5	4	3	2	1	0						
	Right Bank	10	9				8	7	6	5	4	3	2	1	0						
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest						Predominant floodplain vegetation type is young forest					Predominant floodplain vegetation type is shrub or old field					Predominant floodplain vegetation type is turf or crop land				
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water						Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water					Either all wetland or all non-wetland habitat, evidence of standing/ponded water					Either all wetland or all non-wetland habitat, no evidence of standing/ponded water				
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures						Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function					Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function					Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function				
		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Sub Total In-stream: 62 /80 + Buffer/Floodplain: 47 /80 = Total Survey Reach 109 /160



WATERSHED/SUBSHED: T06 DATE: 12/01/09 ASSESSED BY: WMTB
 SURVEY REACH ID: 12 TIME: 8:30 AM PHOTO ID: (Camera-Pic #) PC010 # 001, 002
 SITE ID: (Condition-#) SC-01N-002 LAT 41° 48' 23" LONG 72° 45' 10" LMK _____ GPS (Unit ID) _____

TYPE: Road Crossing Railroad Crossing Manmade Dam Beaver Dam Geological Formation Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY	SHAPE: <input type="checkbox"/> Arch <input type="checkbox"/> Bottomless <input checked="" type="checkbox"/> Box <input type="checkbox"/> Elliptical <input type="checkbox"/> Circular <input type="checkbox"/> Other:	# BARRELS: <input type="checkbox"/> Single <input checked="" type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other:	MATERIAL: <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> Other:	ALIGNMENT: <input checked="" type="checkbox"/> Flow-aligned <input type="checkbox"/> Not flow-aligned <input type="checkbox"/> Do not know	DIMENSIONS: (if variable, sketch) Barrel diameter: <u>10'</u> (ft) Height: _____ (ft) Culvert length: <u>60'</u> (ft) Width: _____ (ft) Roadway elevation: _____ (ft)
	CONDITION: (Evidence of...) <input type="checkbox"/> Cracking/chipping/corrosion <input type="checkbox"/> Downstream scour hole <input type="checkbox"/> Sediment deposition <input type="checkbox"/> Failing embankment <input type="checkbox"/> Other (describe): _____			CULVERT SLOPE: <input type="checkbox"/> Flat <input type="checkbox"/> Slight (2° - 5°) <input type="checkbox"/> Obvious (>5°)	

POTENTIAL RESTORATION CANDIDATE Fish barrier removal Culvert repair/replacement Upstream storage retrofit
 No Local stream repair Other:

IS SC ACTING AS GRADE CONTROL No Yes Unknown

<i>If yes for fish barrier</i>	EXTENT OF PHYSICAL BLOCKAGE: <input type="checkbox"/> Total <input type="checkbox"/> Partial <input type="checkbox"/> Temporary <input type="checkbox"/> Unknown	BLOCKAGE SEVERITY: (circle #)		
	CAUSE: <input type="checkbox"/> Drop too high Water Drop: _____ (in) <input type="checkbox"/> Flow too shallow Water Depth: _____ (in) <input type="checkbox"/> Other: _____	A structure such as a dam or road culvert on a 3rd order or greater stream blocking the upstream movement of anadromous fish; no fish passage device present. 5	A total fish blockage on a tributary that would isolate a significant reach of stream, or partial blockage that may interfere with the migration of anadromous fish. 4	A temporary barrier such as a beaver dam or a blockage at the very head of a stream with very little viable fish habitat above it; natural barriers such as waterfalls. 3

NOTES/SKETCH:
 CAN see light through culvert + sufficient for fish and wildlife passage. GREAT blue heron here.



WATERSHED/SUBSHED: <u>TDB</u>	DATE: <u>12/01/09</u>	ASSESSED BY: <u>CM/186</u>
SURVEY REACH ID: <u>12</u>	TIME: <u>7:50</u> PM	PHOTO ID: (Camera-Pic #) <u>PC010 # 007</u>
SITE ID (Condition #): <u>OT-Submerged</u>		GPS: (Unit ID)
LAT <u>41° 48' 32"</u>		LONG <u>72° 45' 07"</u>

BANK: <input checked="" type="checkbox"/> LT <input type="checkbox"/> RT <input type="checkbox"/> Head	TYPE: <input checked="" type="checkbox"/> Closed pipe <input type="checkbox"/> Open channel	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input checked="" type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other:	SHAPE: <input checked="" type="checkbox"/> Single <input checked="" type="checkbox"/> Circular <input type="checkbox"/> Double <input type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other:	DIMENSIONS: Diameter: _____ (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input type="checkbox"/> No <input checked="" type="checkbox"/> Partially <input type="checkbox"/> Fully
FLOW: <input checked="" type="checkbox"/> None <input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Other: <u>Submerged</u>	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Other:	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other:	<div style="border: 1px solid black; width: 100%; height: 100%; display: flex; align-items: center; justify-content: center;"> X </div> NOT APPLICABLE		
CONDITION: <input type="checkbox"/> None <input type="checkbox"/> Chip/Cracked <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion <input checked="" type="checkbox"/> Other: <u>1/2 in water</u>	ODOR: <input checked="" type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/Sour <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	DEPOSITS/STAINS: <input type="checkbox"/> None <input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	VEGGIE DENSITY: <input type="checkbox"/> None <input type="checkbox"/> Normal <input type="checkbox"/> Inhibited <input type="checkbox"/> Excessive <input type="checkbox"/> Other:	PIPE BENTHIC GROWTH: <input type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	
POOL QUALITY: <input type="checkbox"/> No pool <input type="checkbox"/> Good <input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Oils <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Floatables <input type="checkbox"/> Other:					

FOR FLOWING ONLY	COLOR: <input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:
	TURBIDITY: <input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque
	FLOATABLES: <input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:
OTHER CONCERNS:	<input type="checkbox"/> Excess Trash (paper/plastic bags) <input type="checkbox"/> Dumping (bulk) <input type="checkbox"/> Excessive Sedimentation <input type="checkbox"/> Needs Regular Maintenance <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Other:

POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization
 no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled? Yes No Not investigated Land Use description: _____
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.		
	5	4	3	2	1

SKETCH/NOTES:



WATERSHED/SUBSHED: FOB		DATE: 12/01/09	ASSESSED BY: CM/06				
SURVEY REACH: 12		TIME: 9:15 AM	PHOTO ID: (Camera-Pic #) PC010 #007				
SITE ID: (Condition-#) IB- only one sheet	START LAT 41°48'32" LONG 72°45'07" LMK _____	GPS: (Unit ID)					
	END LAT _____ LONG _____ LMK _____						
IMPACTED BANK: <input checked="" type="checkbox"/> LT <input type="checkbox"/> RT <input type="checkbox"/> Both	REASON INADEQUATE: <input checked="" type="checkbox"/> Lack of vegetation <input checked="" type="checkbox"/> Too narrow <input type="checkbox"/> Widespread invasive plants <input type="checkbox"/> Recently planted <input checked="" type="checkbox"/> Other: rip-rap						
LAND USE: (Facing downstream) LT Bank	Private <input type="checkbox"/>	Institutional <input type="checkbox"/>	Golf Course <input checked="" type="checkbox"/>	Park <input type="checkbox"/>	Other Public <input type="checkbox"/>		
RT Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
DOMINANT LAND COVER:	Paved <input type="checkbox"/>	Bare ground <input type="checkbox"/>	Turf/lawn <input checked="" type="checkbox"/>	Tall grass <input type="checkbox"/>	Shrub/scrub <input type="checkbox"/>	Trees <input type="checkbox"/>	Other <input type="checkbox"/>
LT Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RT Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INVASIVE PLANTS:	<input type="checkbox"/> None	<input type="checkbox"/> Rare	<input checked="" type="checkbox"/> Partial coverage	<input type="checkbox"/> Extensive coverage	<input type="checkbox"/> unknown		
STREAM SHADE PROVIDED? <input type="checkbox"/> None <input checked="" type="checkbox"/> Partial <input type="checkbox"/> Full			WETLANDS PRESENT? <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Unknown				
POTENTIAL RESTORATION CANDIDATE <input type="checkbox"/> Active reforestation <input checked="" type="checkbox"/> Greenway design <input type="checkbox"/> Natural regeneration <input type="checkbox"/> Invasives removal <input type="checkbox"/> no <input type="checkbox"/> Other: Along GC							
RESTORABLE AREA		REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting		
Length (ft): 50	LT BANK RT					5	4
Width (ft): _____							
POTENTIAL CONFLICTS WITH REFORESTATION <input type="checkbox"/> Widespread invasive plants <input type="checkbox"/> Potential contamination <input type="checkbox"/> Lack of sun <input type="checkbox"/> Poor/unsafe access to site <input type="checkbox"/> Existing impervious cover <input type="checkbox"/> Severe animal impacts (deer, beaver) <input type="checkbox"/> Other:							

NOTES:

- ① Pasture (good quality habitat) but this area is beginning
- ② LB impact due to rip-rap ~ 3' hi x 50' long ~ 41°48'32"/72°45'07"

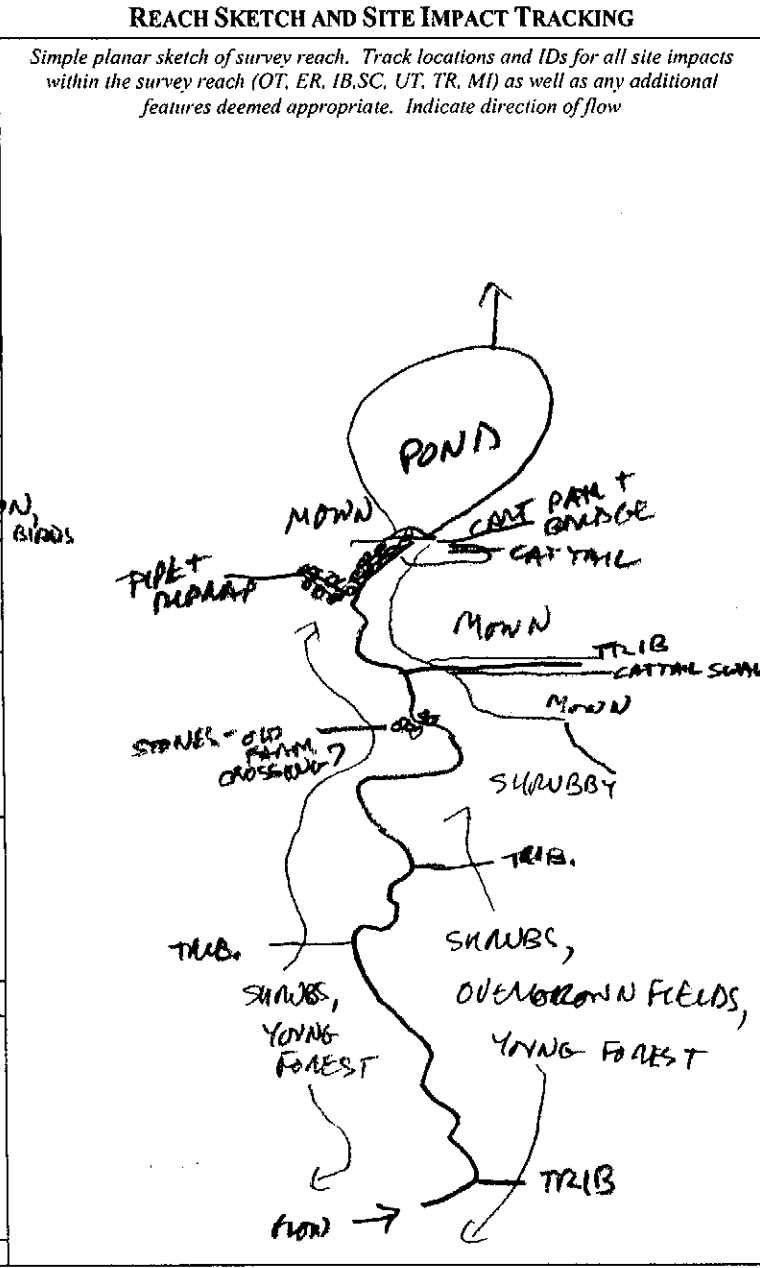
P.132
TOB reach 14



SURVEY REACH ID: <u>TBD 14</u>		WTRSHD/SUBSHD: <u>TUMBLEDOWN BLK</u>		DATE: <u>12/1/09</u>	ASSESSED BY: <u>BG+CM</u>
START TIME: <u>9:30</u> AM/PM	LMK: _____	END TIME: <u>10:30</u> AM/PM	LMK: _____	GPS ID:	
LAT <u>41° 48' 37"</u> LONG <u>72° 45' 04"</u>		LAT <u>41° 48' 54"</u> LONG <u>72° 45' 00"</u>			
DESCRIPTION: <u>CONFLUENCE</u>		DESCRIPTION: <u>GOLF COURSE POND</u>			

RAIN IN LAST 24 HOURS	<input type="checkbox"/> Heavy rain	<input checked="" type="checkbox"/> Steady rain	PRESENT CONDITIONS	<input type="checkbox"/> Heavy rain	<input type="checkbox"/> Steady rain	<input type="checkbox"/> Intermittent
	<input type="checkbox"/> None	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Clear	<input type="checkbox"/> Trace	<input type="checkbox"/> Overcast	<input checked="" type="checkbox"/> Partly cloudy
SURROUNDING LAND USE:	<input type="checkbox"/> Industrial	<input type="checkbox"/> Commercial	<input type="checkbox"/> Urban/Residential	<input type="checkbox"/> Suburban/Res	<input checked="" type="checkbox"/> Forested	<input type="checkbox"/> Institutional
	<input checked="" type="checkbox"/> Golf course	<input type="checkbox"/> Park	<input type="checkbox"/> Crop	<input checked="" type="checkbox"/> Pasture	<input type="checkbox"/> Other:	

AVERAGE CONDITIONS (check applicable)	
BASE FLOW AS %	<input type="checkbox"/> 0-25% <input type="checkbox"/> 50%-75%
CHANNEL WIDTH	<input type="checkbox"/> 25-50% <input checked="" type="checkbox"/> 75-100%
DOMINANT SUBSTRATE	
<input checked="" type="checkbox"/> Silt/clay (fine or slick)	<input type="checkbox"/> Cobble (2.5-10")
<input type="checkbox"/> Sand (gritty)	<input type="checkbox"/> Boulder (>10")
<input type="checkbox"/> Gravel (0.1-2.5")	<input type="checkbox"/> Bed rock
WATER CLARITY	
<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Turbid (suspended matter)
<input type="checkbox"/> Stained (clear, naturally colored)	<input type="checkbox"/> Opaque (milky)
<input type="checkbox"/> Other (chemicals, dyes)	
AQUATIC PLANTS	
Attached:	<input type="checkbox"/> none <input checked="" type="checkbox"/> some <input type="checkbox"/> lots
Floating:	<input checked="" type="checkbox"/> none <input type="checkbox"/> some <input type="checkbox"/> lots
WILDLIFE IN OR AROUND STREAM	
(Evidence of)	
<input checked="" type="checkbox"/> Fish	<input type="checkbox"/> Beaver <input type="checkbox"/> Deer
<input type="checkbox"/> Snails	<input checked="" type="checkbox"/> Other: <u>MUSSELS, HERON, OTHER BIRDS</u>
STREAM SHADING (water surface)	
<input type="checkbox"/> Mostly shaded (≥75% coverage)	
<input checked="" type="checkbox"/> Halfway (≥50%)	
<input type="checkbox"/> Partially shaded (≥25%)	
<input type="checkbox"/> Unshaded (< 25%)	
CHANNEL DYNAMICS	
<input type="checkbox"/> Downcutting	<input type="checkbox"/> Bed scour
<input type="checkbox"/> Widening	<input type="checkbox"/> Bank failure
<input type="checkbox"/> Headcutting	<input checked="" type="checkbox"/> Bank scour
<input type="checkbox"/> Aggrading	<input type="checkbox"/> Slope failure
<input type="checkbox"/> Sed. deposition	<input type="checkbox"/> Channelized
<input type="checkbox"/> Unknown	
CHANNEL DIMENSIONS (FACING DOWNSTREAM)	
Height: LT bank	<u>BANK FULL 30"</u> (ft)
RT bank	<u>(2.5')</u> (ft)
Width: Bottom	<u>38'</u> (ft)
Top	_____ (ft)
REACH ACCESSIBILITY	
Good: Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Fair: Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.
	Difficult: Must cross wetland, steep slope, or sensitive areas to get to stream. Few areas to stockpile available and/or located a great distance from stream. Specialized heavy equipment required.
5	<u>4</u> 3 2 1



NOTES: (biggest problem you see in survey reach) GOLF COURSE RUNOFF + RIPRAP

REPORTED TO AUTHORITIES Yes No

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OVERALL STREAM CONDITION				
	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT <i>(May modify criteria based on appropriate habitat regime)</i>	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
VEGETATIVE PROTECTION <i>(score each bank, determine sides by facing downstream)</i>	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
BANK EROSION <i>(facing downstream)</i>	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Grade and width stable; isolated areas of bank failure/erosion; likely caused by a pipe outfall, local scour, impaired riparian vegetation or adjacent use.	Past downcutting evident, active stream widening, banks actively eroding at a moderate rate; no threat to property or infrastructure	Active downcutting; tall banks on both sides of the stream eroding at a fast rate; erosion contributing significant amount of sediment to stream; obvious threat to property or infrastructure.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
FLOODPLAIN CONNECTION	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) able to enter floodplain. Stream not deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.	High flows (greater than bankfull) not able to enter floodplain. Stream deeply entrenched.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

OVERALL BUFFER AND FLOODPLAIN CONDITION				
	Optimal	Suboptimal	Marginal	Poor
VEGETATED BUFFER WIDTH	Width of buffer zone >50 feet; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, crops) have not impacted zone.	Width of buffer zone 25-50 feet; human activities have impacted zone only minimally.	Width of buffer zone 10-25 feet; human activities have impacted zone a great deal.	Width of buffer zone <10 feet; little or no riparian vegetation due to human activities.
	Left Bank 10 9	8 7 6	5 4 3	2 1 0
	Right Bank 10 9	8 7 6	5 4 3	2 1 0
FLOODPLAIN VEGETATION	Predominant floodplain vegetation type is mature forest	Predominant floodplain vegetation type is young forest	Predominant floodplain vegetation type is shrub or old field	Predominant floodplain vegetation type is turf or crop land
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN HABITAT	Even mix of wetland and non-wetland habitats, evidence of standing/ponded water	Even mix of wetland and non-wetland habitats, no evidence of standing/ponded water	Either all wetland or all non-wetland habitat, evidence of standing/ponded water	Either all wetland or all non-wetland habitat, no evidence of standing/ponded water
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
FLOODPLAIN ENCROACHMENT	No evidence of floodplain encroachment in the form of fill material, land development, or manmade structures	Minor floodplain encroachment in the form of fill material, land development, or manmade structures, but not effecting floodplain function	Moderate floodplain encroachment in the form of filling, land development, or manmade structures, some effect on floodplain function	Significant floodplain encroachment (i.e. fill material, land development, or man-made structures). Significant effect on floodplain function
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Sub Total In-stream: 75 /80 + Buffer/Floodplain: 65 /80 = Total Survey Reach 140 /160



WATERSHED/SUBSHED: <u>TDB</u>		DATE: <u>8/01/09</u>	ASSESSED BY: <u>Cm + BG</u>
SURVEY REACH ID: <u>14</u>	TIME: <u>9:45 AM</u> PM	PHOTO ID: (Camera-Pic #) # <u>None</u>	
SITE ID (Condition-#): <u>OT-</u>		LAT <u>° See below</u> ° ' " LMK	GPS: (Unit ID)

BANK: <input type="checkbox"/> LT <input checked="" type="checkbox"/> RT <input type="checkbox"/> Head	TYPE: <input type="checkbox"/> Closed pipe <input checked="" type="checkbox"/> Open channel	MATERIAL: <input type="checkbox"/> Concrete <input type="checkbox"/> Metal <input type="checkbox"/> PVC/Plastic <input type="checkbox"/> Brick <input type="checkbox"/> Other:	SHAPE: <input type="checkbox"/> Single <input type="checkbox"/> Circular <input type="checkbox"/> Double <input type="checkbox"/> Elliptical <input type="checkbox"/> Triple <input type="checkbox"/> Other:	DIMENSIONS: Diameter: _____ (in) Depth: _____ (in) Width (Top): _____ (in) " (Bottom): _____ (in)	SUBMERGED: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully

FOR FLOWING ONLY	COLOR: <input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Grey <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:
	TURBIDITY: <input type="checkbox"/> None <input type="checkbox"/> Slight Cloudiness <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque
	FLOATABLES: <input type="checkbox"/> None <input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:

OTHER CONCERNS:	<input type="checkbox"/> Excess Trash (paper/plastic bags) <input type="checkbox"/> Dumping (bulk) <input type="checkbox"/> Excessive Sedimentation <input type="checkbox"/> Needs Regular Maintenance <input type="checkbox"/> Bank Erosion <input type="checkbox"/> Other:
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POTENTIAL RESTORATION CANDIDATE Discharge investigation Stream daylighting Local stream repair/outfall stabilization
 no Storm water retrofit Other:

If yes for daylighting:
 Length of vegetative cover from outfall: _____ ft Type of existing vegetation: _____ Slope: _____ °

If yes for stormwater:
 Is stormwater currently controlled? Yes No Not investigated Land Use description: _____
 Area available: _____

OUTFALL SEVERITY: (circle #)	Heavy discharge with a distinct color and/or a strong smell. The amount of discharge is significant compared to the amount of normal flow in receiving stream; discharge appears to be having a significant impact downstream.	Small discharge; flow mostly clear and odorless. If the discharge has a color and/or odor, the amount of discharge is very small compared to the stream's base flow and any impact appears to be minor / localized.	Outfall does not have dry weather discharge; staining; or appearance of causing any erosion problems.	
	5	4	3	2

SKETCH/NOTES: ① stormwater input on RB @ 41°48'43"/72°45'02"
 ② swale / stormwater input on RB @ 41°48'53"/72°45'01"
 ⇒ potential input for nutrient loading. since this stream reach is relatively open-canopied an ↑ in nutrients can lead to vegetative excessive growth / choke.

REPORTED TO AUTHORITIES: YES NO



WATERSHED/SUBSHED: TDB DATE: 7/21/07 ASSESSED BY: cm/BB

SURVEY REACH: 14 TIME: 10:30 AM PHOTO ID: (Camera-Pic #) P010 # 018

SITE ID: (Condition #) IB- one sheet START LAT 41° 48' 57" LONG 72° 45' 00" LMK _____ GPS: (Unit ID) _____
 END LAT _____ LONG _____ LMK _____

IMPACTED BANK: LT RT Both REASON INADEQUATE: Lack of vegetation Too narrow Widespread invasive plants
 Recently planted Other: Rip rap, no woody veg

LAND USE: (Facing downstream) Private Institutional Golf Course Park Other Public
 LT Bank : + stream bank
 RT Bank :

DOMINANT LAND COVER: Paved Bare ground Turf/lawn Tall grass Shrub/scrub Trees Other
 LT Bank :
 RT Bank :

INVASIVE PLANTS: None Rare Partial coverage Extensive coverage unknown

STREAM SHADE PROVIDED? None Partial Full WETLANDS PRESENT? No Yes Unknown

POTENTIAL RESTORATION CANDIDATE no Active reforestation Greenway design Natural regeneration Invasives removal
 Other:

RESTORABLE AREA	REFORESTATION POTENTIAL: (Circle #)	Impacted area on public land where the riparian area does not appear to be used for any specific purpose; plenty of area available for planting	Impacted area on either public or private land that is presently used for a specific purpose; available area for planting adequate	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
Length (ft): <u> </u> LT BANK <u> </u> RT				
Width (ft): <u> </u>				

POTENTIAL CONFLICTS WITH REFORESTATION Poor/unsafe access to site Existing impervious cover Widespread invasive plants Potential contamination Lack of sun
 Severe animal impacts (deer, beaver) Other:

NOTES: