Reach Level Assessment **RCH**

SURVEY REACH ID: MRP-4	WTRSHD/SUBSHD:	DATE: 11/23/09	ASSESSED BY: BG+CM

START	END	GPS ID:
TIME: 10:15 AM/PM LMK: PORTAGE RD	TIME: 11:45 AM/PM LMK: ARMAMENT RD	
LAT 41° 43' 04" LONG 72° 43' 24"	LAT 41° 48' 18" LONG 72° 43' 34"	
DESCRIPTION:	DESCRIPTION:	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☑ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☑ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☑ Suburban/Res ☑ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75%
☐ 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 SOME BEDROCK

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: DUCKS, PRINTS IN MUD

STREAM SHADING (water surface)
☑ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☑ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank BF 30" (ft)
RT bank _____ (ft)
Width: Bottom 39' BF (ft)
Top _____ (ft)

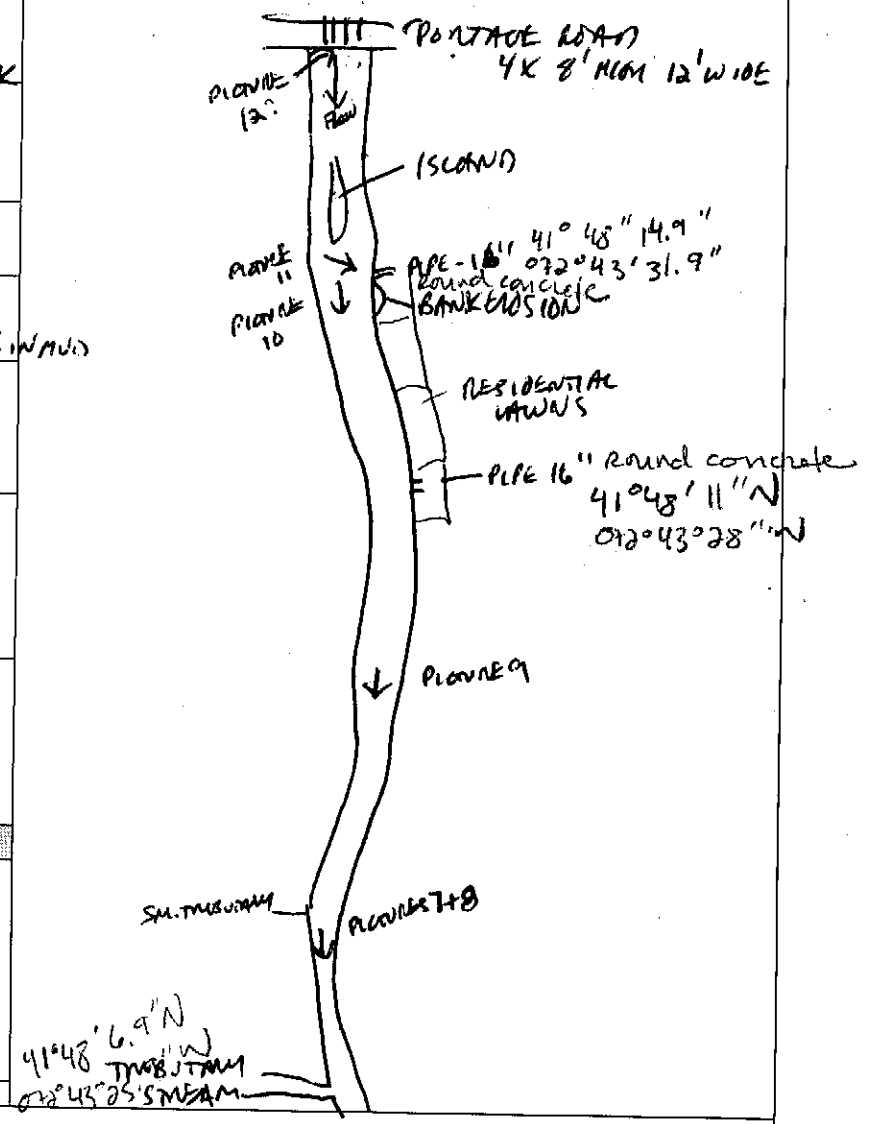
REACH ACCESSIBILITY

Good	Fair	Difficult
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

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



NOTES: *(biggest problem you see in survey reach)*
IMPACTED BUFFER - RESIDENTIAL LAWNS

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 SOME LAWN	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 Encroach-ment	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: 65 /80 + Buffer/Floodplain: 51 /80 = **Total** Survey Reach 116 /160

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP		**DATE:** 11 / 23 / 09	**ASSESSED BY:** CM/BG
SURVEY REACH: 4	**TIME:** 11 : 00 AM/PM	**PHOTO ID:** (*Camera-Pic #*) 10+11 /#	
SITE ID: (*Condition-#*) IB- A	*START* **LAT** 41 °48 '10" **LONG** 72 °43 '26"	**LMK** Resident	**GPS:** (*Unit ID*)
	END **LAT** 41 °48 '18" **LONG** 72 °43 '34"	**LMK** Partridge Rd.	CM

IMPACTED BANK: ☒ LT ☐ RT ☐ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☐ Other: Mown, Maintained lawns + yard waste dumping

LAND USE:

(*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):		
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: Residential yard - space up to top of bank, areas are mown actively + grass is short (~1"). Yard waste dumping in riparian area + in places at bank top + even in water channel.

→ See photo PB230010.jpg for overall

→ See photo PB230011.jpg for minor bank erosion

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP | **DATE:** 11/23/09 | **ASSESSED BY:** CM/BO

SURVEY REACH: 4 | **TIME:** 11:00 AM/PM | **PHOTO ID:** (*Camera-Pic #*) cm /# PB23001

SITE ID: (*Condition-#*) IB-1B

START **LAT** 41 ° 48 ' 15 " **LONG** 92 ° 43 ' 32 " **LMK** ____

END **LAT** ___ ° ___ ' ___ " **LONG** ___ ° ___ ' ___ " **LMK** ____

GPS: (*Unit ID*)

IMPACTED BANK: ☒ LT ☐ RT ☐ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☐ Other: residential / private property

LAND USE:

(*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
LT Bank	☒	☐	☐	☐	☐:
RT Bank	☐	☐	☐	☐	☐: right bank - forested

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):	15'	____
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: there is an outflow pipe located approximately 5 feet upstream of the erosion (you can just see it in the photo [PB2 30011])

This is residential / private property.

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** BG/CM
SURVEY REACH ID: 4	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID (*Condition-#*): **OT-** A	**LAT** 41 ° 48 ' 6.9 " **LONG** 72 ° 43 ' 25.9 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: ___ (in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel

☐ Concrete ☒ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)

~~NOT APPLICABLE~~

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES:

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP | **DATE:** 11/23/09 | **ASSESSED BY:** CM/BG

SURVEY REACH ID: 4 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) /#

SITE ID (*Condition-#*): **OT-** 6 | **LAT** 41 ° 48 ' 11 " **LONG** 72 ° 43 ' 28 " | **LMK** ____ | **GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 16 (in)

Depth: ____ (in) Width (Top): ____ (in) " (Bottom): ____ (in)

NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☒ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☒ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: Residential

Area available:

OUTFALL SEVERITY: (*circle #*)

5	4	3	2	1
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.

SKETCH/NOTES: located Approximated 5' upstream of Mouth bank erosion + Residential Lawns

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/LG
SURVEY REACH ID: 4	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID (*Condition-#*): OT- C	**LAT** 41 ° 48 ' 14.9 " **LONG** 72 ° 43 ' 31.9 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☒ Single ☐ Double ☒ Circular ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: 16 (in)

SUBMERGED: ☒ No ☐ Partially ☐ Fully

☐ Concrete ☐ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ___ (in) Width (Top): ___ (in) " (Bottom): ___ (in)

NOT APPLICABLE

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☒ Other: Scum

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☒ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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:

pipe is jutting out slightly, Approx 5'

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: NBP | **DATE:** 11/23/09 | **ASSESSED BY:** BG/CW

SURVEY REACH ID: NBP-4 | **TIME:** 11:45 (AM) PM | **PHOTO ID:** (*Camera-Pic #*) 12 /#

SITE ID: (*Condition-#*) SC-NBP-2 | **LAT** 41° 48' 18" | **LONG** 72° 43' 34" | **LMK** POINT OF ROAD | **GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☑ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☑ Other: 4

MATERIAL:
☑ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☑ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____ (ft)
Height: 8' (ft)
Culvert length: ~64' (ft)
Width: 12'X4 (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☑ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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: SOUND 4-BAM CONCRETE BOX CULVERT, NO IMPACT TO FLOW OR FISH PASSAGE

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Reach Level Assessment **RCH**

SURVEY REACH ID: 9	WTRSHD/SUBSHD: NBP	DATE: 11/23/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 2:30 AM/PM LMK: ____	TIME: 3:45 AM/PM LMK: ____	CM0
LAT 41°47'54" LONG 72°42'46"	LAT 41°47'48" LONG 72°43'06"	
DESCRIPTION: culvert/Road crossing	DESCRIPTION: tributary (2) inputs	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ None ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☐ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75%
☐ 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: Elliptio

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☑ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☑ Channelized

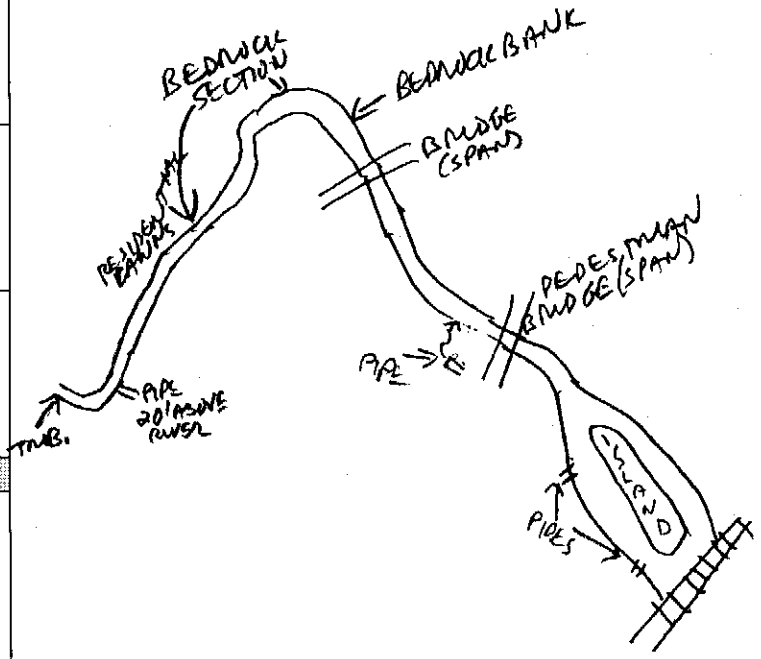
CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank _____(ft)
RT bank _____(ft)
Width: Bottom _____(ft)
Top _____(ft)

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)

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



NOTES: *(biggest problem you see in survey reach)* some impacted buffer associated w/ U.H. and with private landowner - difficult accessability + bedrock substrate would likely make this a poor candidate for restoration.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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: 72 /80 + Buffer/Floodplain: 55 /80 = **Total** Survey Reach 127 /160

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BB
SURVEY REACH: 9	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# PB230032
SITE ID: (*Condition-#*) IB-4	*START* **LAT** 41 ° 47 ' 54 " **LONG** 72 ° 42 ' 46 "	**LMK** ____	**GPS:** (*Unit ID*)
	END **LAT** 41 ° 47 ' 56 " **LONG** 72 ° 42 ' 57 "	**LMK** ____	

IMPACTED BANK: ☐ LT ☒ RT ☐ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☐ Other: forested buffer is thin ~10' wide on left

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	____	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		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
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: Thin forested area (~10') with maintained lawn on other side on U-Hartford campus.

→ Landmark of start to IB ⇒ 8-bay culvert/stream crossing that marks the start of Reach 9

→ Landmark of end to IB ⇒ student overpass bridge

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP | **DATE:** 11 / 23 / 09 | **ASSESSED BY:** CM / BG

SURVEY REACH: 9 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) /# PB230036

SITE ID: (*Condition-#*) IB- B

START **LAT** 41 ° 47 ' 54 " **LONG** 72 ° 43 ' 07 " **LMK** ____

END **LAT** 41 ° 47 ' 52 " **LONG** 72 ° 43 ' 06 " **LMK** ____

GPS: (*Unit ID*)

IMPACTED BANK: ☒ LT ☐ RT ☐ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☐ Other: Residential/Landscaped

LAND USE:	Private	Institutional	Golf Course	Park	Other Public
(*Facing downstream*) LT Bank	☒	☐	☐	☐	☐:
RT Bank	☐	☒ U-Hartford	☐	☐	☐: Bedrock cliff on RB

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

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):	~ 75'	____
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: Impacted area is located on private property + is a maintained lawn w/ some yard waste disposal at edge of River. The Right Bank is a bedrock cliff.

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BP
SURVEY REACH ID: 9	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# PB230031
SITE ID (*Condition-#*): OT- A	**LAT** 41 ° 47 ' 54 " **LONG** 72 ° 42 ' 46 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☐ RT ☒ Head

FLOW: ☐ None ☐ Trickle ☒ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☐ Double
☒ Circular ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter 24" (in)

Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)

NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☒ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: U-Hartford Campus
Area available:

OUTFALL SEVERITY: (*circle #*)

5	4	3	2	1
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.

SKETCH/NOTES: Associated with the 9-bay Culvert that marks the division between Reaches 9 + 10 (NBP) where there is also an 8-bay culvert.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM / BG
SURVEY REACH ID: 9	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID (*Condition-#*): OT- B-10	**LAT** 41°47'55" **LONG** 72°42'51"	**LMK** ___	**GPS:** (*Unit ID*)
	C=41°47'56" / 72°42'55		

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: ___ (in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☐ Concrete ☐ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)

NOT APPLICABLE

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
	TURBIDITY:	☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque
	FLOATABLES:	☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: WBP		**DATE:** 11/23/09	**ASSESSED BY:** BG/CM
SURVEY REACH ID: 9	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# P823 0033
SITE ID (*Condition-#*): OT- D	**LAT** 41 ° 47 ' 56 " **LONG** 72 ° 42 ' 57 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☒ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: ___ (in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel

☐ Concrete ☐ Earthen ☒ Other: Bedrock

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)

NOT APPLICABLE

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☒ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES: outfall pipe located approx. 20' from top to Bank.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 1/23/09	**ASSESSED BY:** BG/CM
SURVEY REACH ID: 9	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# PB230037
SITE ID (*Condition-#*): **OT-** E	**LAT** 41 ° 47 ' 48 " **LONG** 72 ° 43 ' 06 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☑ LT ☒ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: ? (in)
Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)
NOT APPLICABLE

SUBMERGED: ☒ No ~20' up/over water ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ Other:

POTENTIAL RESTORATION CANDIDATE ☐ Discharge investigation ☐ Stream daylighting ☐ Local stream repair/outfall stabilization ☒ no - Bedrock ☐ 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:
This outfall pipe is located near the top of a bedrock cliff, approx. 20' higher from surface of water @ time of assessment (near bankfull). Located approx. 40' from end of Reach 9, NBP

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: Break betwn 9+10	**TIME:** 2:30 AM/PM	**PHOTO ID:** (*Camera-Pic #*)	# PB230031
SITE ID: (*Condition-#*) SC-culvert	**LAT** 41 ° 47 ' 54 " **LONG** 72 ° 42 ' 46 " **LMK**____		**GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☒ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☒ Other: 8

MATERIAL:
☒ Concrete with
☒ Metal lining
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 30" (ft)
Height: _____ (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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:
→ Downstream of 8-brl culvert is Reach 9 (NBP) + upstream is Reach 10 the Reach 9 side was armored size Rip-Rap in the channel, velocity is high, and immediately downstream (for ~20') is shallow, Riffle zone. Upstream (Reach 10) of culvert is deeper, slower + ponded.
→ There is also a stormwater pipe (24" Metal) here.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Reach Level Assessment **RCH**

SURVEY REACH ID: 10	WTRSHD/SUBSHD: NB P	DATE: 11/23/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 1:45 AM/PM LMK: ____	TIME: 2:30 AM/PM LMK: ____	
LAT 41°47'40" LONG 72°42'37"	LAT 41°47'54" LONG 72°42'46"	
DESCRIPTION: At Junction	DESCRIPTION: Road / culvert	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ None ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☒ Urban/Residential ☐ Suburban/Res ☐ Forested ☒ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☒ Other: H - Hartford

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75% ☐ 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: Ellipto, Mallards

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☑ Bank failure
☐ Headcutting	☑ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank _____(ft)
RT bank _____(ft)
Width: Bottom _____(ft)
Top _____(ft)

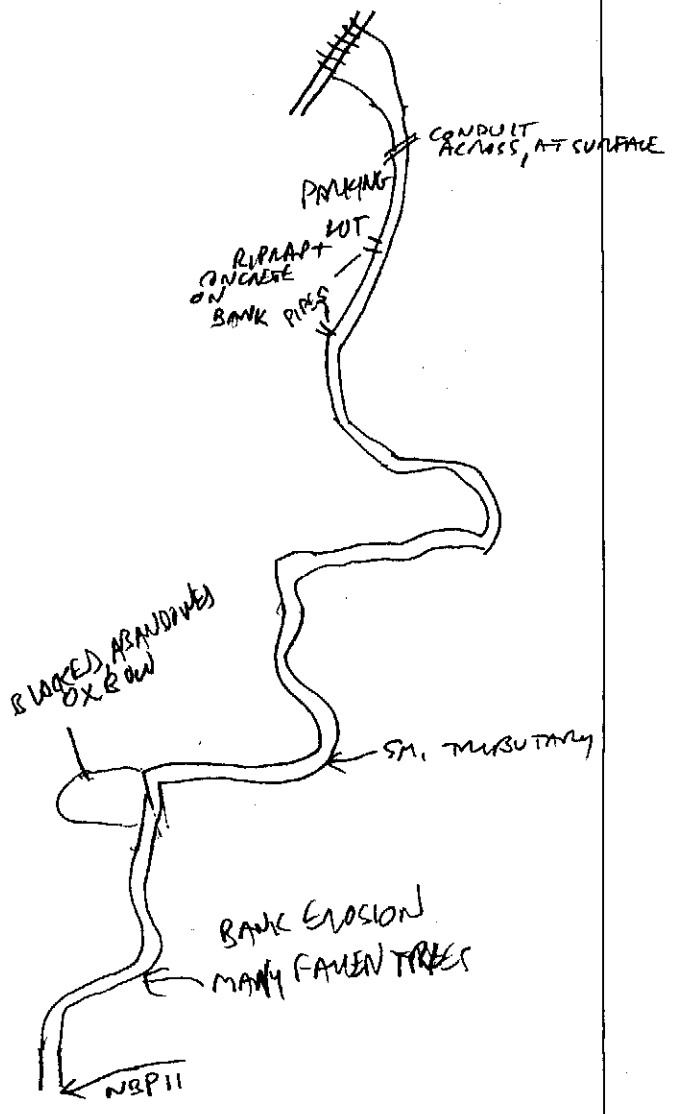
REACH ACCESSIBILITY

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

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



NOTES: *(biggest problem you see in survey reach)* Impacted buffer adjacent to parking lot Along Right Bank

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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: 46 /80 + Buffer/Floodplain: 56 /80 = **Total** Survey Reach 102 /160

Utility Impacts **UT**

WATERSHED/SUBSHED: NBP	**DATE:** 11/23/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 10	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) /# PB230030
SITE ID: (*Condition-#*) **UT-** mk2	**LAT** 41 ° 47 ' 53 " **LONG** 72 ° 42 ' 44 " **LMK:** ____	**GPS:** (*Unit ID*)

TYPE:	**MATERIAL:**	**LOCATION:**	**POTENTIAL FISH BARRIER:**	**PIPE DIMENSIONS:**
☐ Leaking sewer ☒ Exposed pipe ☐ Exposed manhole ☐ Other:	☐ Concrete ☐ Corrugated metal ☐ Smooth metal ☒ PVC ☐ Other:	☐ Floodplain ☒ Stream bank ☒ Above stream ☒ Stream bottom ☐ Other:	☐ Yes ☒ No	Diameter: ____ in Length exposed: ____ ft

CONDITION: ☐ Joint failure ☐ Pipe corrosion/cracking ☐ Protective covering broken ☐ Manhole cover absent ☐ Other:

EVIDENCE OF DISCHARGE:		
	COLOR	☒ None ☐ Clear ☐ Dark Brown ☐ Lt Brown ☐ Yellowish ☐ Greenish ☐ Other:
	ODOR	☒ None ☐ Sewage ☐ Oily ☐ Sulfide ☐ Chlorine ☐ Other:
	DEPOSITS	☒ None ☐ Tampons/Toilet Paper ☐ Lime ☐ Surface oils ☐ Stains ☐ Other:

POTENTIAL RESTORATION CANDIDATE ☐ Structural repairs ☐ Pipe testing ☐ Citizen hotlines ☐ Dry weather sampling
☒ no ☐ Fish barrier removal ☐ Other:

If yes to fish barrier, Water Drop: _____ (in)

UTILITY IMPACT SEVERITY: (*Circle #*)				
Leaking= ☐ 5	Section of pipe undermined by erosion and could collapse in the near future; a pipe running across the bed or suspended above the stream; a long section along the edge of the stream where nearly the entire side of the pipe is exposed; or a manhole stack that is located in the center of the stream channel and there is evidence of stack failure.	A moderately long section of pipe is partially exposed but there is no immediate threat that the pipe will be undermined and break in the immediate future. The primary concern is that the pipe may be punctured by large debris during a large storm event.	Small section of exposed pipe, stream bank near the pipe is stable; the pipe is across the bottom of the stream but only a small portion of the top of the pipe exposed; the pipe is exposed but is reinforced with concrete and it is not causing a blockage to upstream fish movement; a manhole stack that is at the edge of the stream and does not extend very far out into the active stream channel.	
	5	4	3	2 (1)

NOTES: NOT critical, but worth noting. Located downstream to 8-bay culvert which marks the break between reaches 9 + 10 (NBP). Located under powerlines (LANDMARK)

REPORTED TO LOCAL AUTHORITIES ☐ Yes ☐ No

Severe Bank Erosion **ER**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BC
SURVEY REACH: 10	**TIME:** ___:___ AM/PM	**PHOTO ID** (CAMERA-PIC #):	/# PB230023 +PB2300:
SITE ID: (Condition #) ER- (on/y 1)	*START* **LAT** 41 ° 47 ' 41 " **LONG** 72 ° 42 ' 37 " **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: ☐ No ☐ Grade control ☐ Bank stabilization ☐ Other:

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

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

EROSION SEVERITY(*circle#*) Channelized= ☐ 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 1
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)	2 1

NOTES/CROSS SECTION SKETCH: a bend in stream.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP | **DATE:** 11/23/09 | **ASSESSED BY:** CM/BG

SURVEY REACH: 10 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) PB2300/#27

SITE ID: (*Condition-#*) IB- only one sheet

START **LAT** 41 °47 '46 " **LONG** 72 °42 '43 " **LMK** ____

END **LAT** 41 °47 '48" **LONG** 72 °42 '44 " **LMK** ____

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☒ RT ☐ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: parking lot, concrete + other debris

LAND USE: (*Facing downstream*)

	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):		
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:

Rip-RAP, chunks of concrete, exposed concrete, parking lot, and lawn

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 10	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# PB230027
SITE ID (*Condition-#*): **OT-** A	**LAT** 41 ° 47 ' 46 " **LONG** 72 ° 42 ' 43 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☒ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: 24 " (in)

SUBMERGED: ☒ No ☐ Partially ☐ Fully

☐ Open channel — ☐ Concrete ☐ Earthen ☐ Other: — ☐ Trapezoid ☐ Parabolic ☐ Other: — Depth: ___ (in) — Width (Top): ___ (in) — " (Bottom): ___ (in) — NOT APPLICABLE

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☒ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: NEAR PARKING, Mostly forested

Area available:

OUTFALL SEVERITY: *(circle #)*

5	4	3	2	1
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.

SKETCH/NOTES:

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 10	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# PB230028
SITE ID (*Condition-#*): OT-B	**LAT** 41 ° 47 ' 47 " **LONG** 72 ° 42 ' 45 "	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☒ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 30 " (in)

Depth: ___ (in) Width (Top): ___ (in) " (Bottom): ___ (in)

NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #*)

5	4	(3)	2	1
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.

SKETCH/NOTES: Headwall + outflow pipe located ~10' back from channel

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Reach Level Assessment **RCH**

SURVEY REACH ID: 11	WTRSHD/SUBSHD: NB-P	DATE: 11/23/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 1:00 AM/PM LMK: RR	TIME: 1:46 AM/PM LMK: Ink	CM
LAT 41°47'51" LONG 72°42'30"	LAT 41°47'40" LONG 72°42'37"	
DESCRIPTION: RR TRAX	DESCRIPTION: Trib joins Main Stem	

RAIN IN LAST 24 HOURS ☐ None ☐ Heavy rain ☐ Intermittent ☒ Steady rain ☐ Trace

PRESENT CONDITIONS ☐ Clear ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☒ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☒ Other: Hartford

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75%
☐ 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:

STREAM SHADING (water surface)
☐ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☒ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☒ Downcutting	☒ Bed scour
☐ Widening	☒ Bank failure
☐ Headcutting	☒ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS ~~(facing downstream)~~ Bankfull

Height: ~~Left bank~~ 3' (ft)
~~Rt bank~~ (ft)
Width: ~~Bottom~~ 10 (ft)
~~Top~~ (ft)

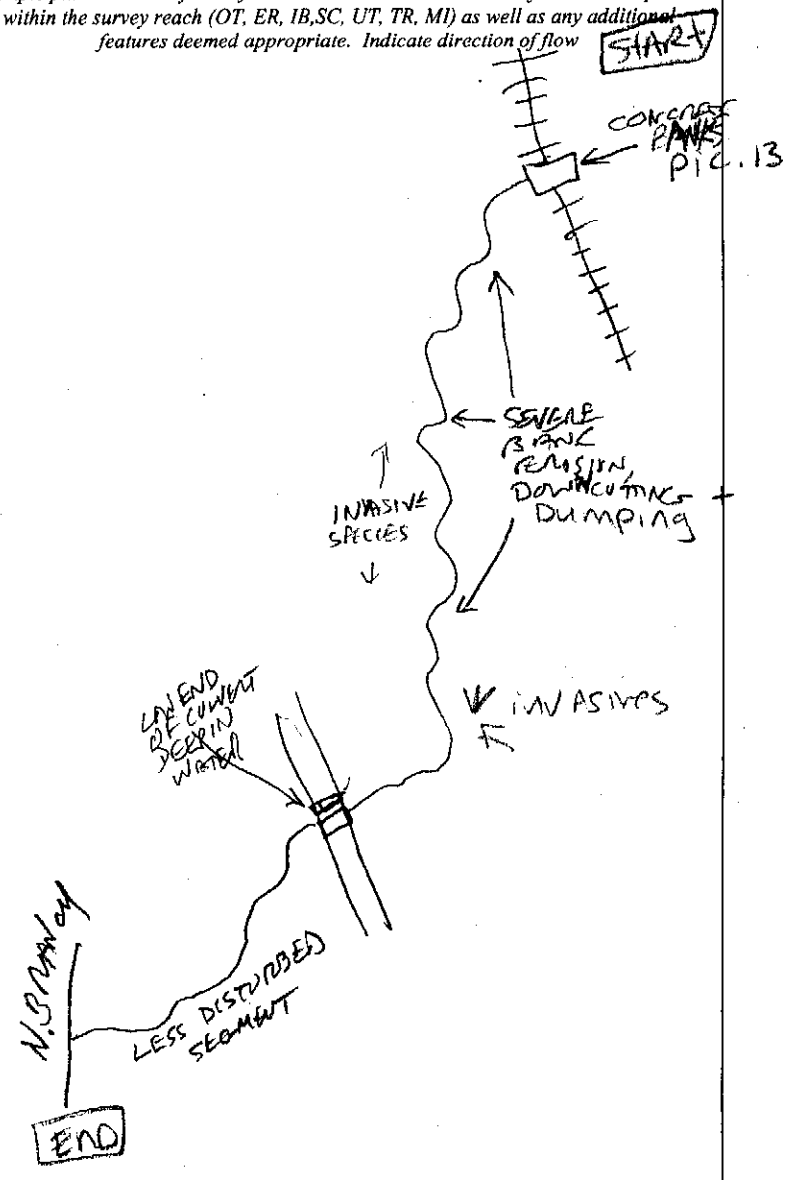
REACH ACCESSIBILITY

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

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



NOTES: *(biggest problem you see in survey reach)* Dumping, flashy flow, invasive plants, sediment load.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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. UNSTABLE W/M OVERHANGING BANKS + SNAGS
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	(5) 4 3 2 1 0
Vegetative Protection *(score each bank, determine sides by facing downstream)*	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. PREDOMINANTLY NON-NATIVE	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 (facing downstream)	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 Encroach-ment	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: 29 /80 + Buffer/Floodplain: 59 /80 = **Total** Survey Reach 88 /160

Trash and Debris **TR**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 11	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB2300/# 16	
SITE ID: (*Condition #*) **TR-** A	**LAT** 41 ° 47 ' 50 " **LONG** 72 ° 42 ' 30 " **LMK** ___		**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☐ Residential

MATERIAL:
- ☒ Plastic
- ☐ Paper
- ☐ Metal
- ☒ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☐ Automotive
- ☐ Other: RR ties, shopping carts, glass, crates

SOURCE:
- ☐ Unknown
- ☒ Flooding
- ☒ Illegal dump
- ☒ Local outfall

LOCATION:
- ☒ Stream
- ☐ Riparian Area
  - ☐ Lt bank
  - ☐ Rt bank

LAND OWNERSHIP:
- ☒ Public ?
- ☐ Unknown
- ☐ 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 Hand Removal

WHO CAN DO IT: ☒ Volunteers ☒ Local Gov ☐ Hazmat Team ☒ Other

DUMPSTER WITHIN 100 FT: ☐ Yes ☒ No ☐ Unknown

CLEAN-UP POTENTIAL: (*Circle #*)

5	4	(3)	2	1
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	

NOTES: Debris includes shopping cart, crates, tires, RAILROAD ties, plastic bottles, broken glass, etc.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Trash and Debris **TR**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 11	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# none
SITE ID: (*Condition-#*) TR-B	**LAT** 41 ° 47 · 46 " **LONG** 72 ° 42 · 27 " **LMK** ____		**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☒ Commercial ?
- ☐ Residential

MATERIAL:
- ☒ Plastic
- ☐ Paper
- ☐ Metal
- ☐ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☒ Other: CRATES
- ☐ Automotive

SOURCE:
- ☐ Unknown
- ☒ Flooding
- ☐ Illegal dump
- ☐ Local outfall

LOCATION:
- ☒ Stream
- ☐ Riparian Area
  - ☐ Lt bank
  - ☐ Rt bank

LAND OWNERSHIP:
- ☐ Public
- ☒ Unknown
- ☐ 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 #*)

5	4	3	2	1
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

NOTES: plastic bottles + plastic crates have piled up against a fallen tree this has been dumped / flooded + settled here — indicates overall litter problem + worth noting

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: NBP | **DATE:** 11/23/09 | **ASSESSED BY:** CM/BG

SURVEY REACH ID: 11 | **TIME:** 1:00 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PB2300 /# 13 + 14

SITE ID: (*Condition-#*) SC- A | **LAT** 41 ° 47 ' 51 " | **LONG** 72 ° 42 ' 30 " | **LMK** ____ | **GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☒ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other: stone masonry

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 10 ' (ft)
Height: _____ (ft)
Culvert length: 20 ' (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier NO

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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: upstream of RR crossing there is concrete lining the left bank (see photo 13) - but this is not part of Reach 11.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: NBP | **DATE:** 11/23/09 | **ASSESSED BY:** am AB

SURVEY REACH ID: 11 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) PB2300 I# 18 + 19

SITE ID: (*Condition-#*) SC- 6 | **LAT** 41 ° 47 ' 41 " | **LONG** 72 ° 42 ' 32 " | **LMK** ____ | **GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☒ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 12 ' (ft)
Height: 3½' (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☒ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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:

upstream of culvert the water is deeper than downstream, this shouldn't impact fish - but would not be an acceptable passage for turtles given the low light penetration (you can't see the light at the end of the tunnel, so to speak).

REPORTED TO AUTHORITIES ☐ YES ☐ NO

P. 1 of 2
NBP, Reach 13

RCH

Survey Reach ID: NBP-13	Wtrshd/Subshd: NBP	Date: 11/24/09	Assessed by: BG+CM

Start Time: 12 : 30 AM/PM LMK: ____
Lat 42° 46 ' 56 " Long 072° 42 ' 22 "
Description: Potential Vernal Pool (photo # 071)

End Time: 1 : 05 AM/PM LMK: ____
Lat 41° 47 ' 04 " Long 72° 42 ' 28 "
Description: Rte. 44 over pass

GPS ID: CW

Rain in last 24 hours: ☐ Heavy rain ☑ Steady rain ☐ Intermittent ☐ None ☐ Trace
Present conditions: ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☑ Overcast ☐ Partly cloudy

Surrounding land use: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☑ Suburban/Res ☑ Forested ☑ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

Average Conditions *(check applicable)*

Base Flow as % Channel Width: ☐ 0-25% ☐ 25-50 % ☐ 50%-75% ☑ 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:

Stream Shading (water surface)
☑ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

Channel Dynamics ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☑ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

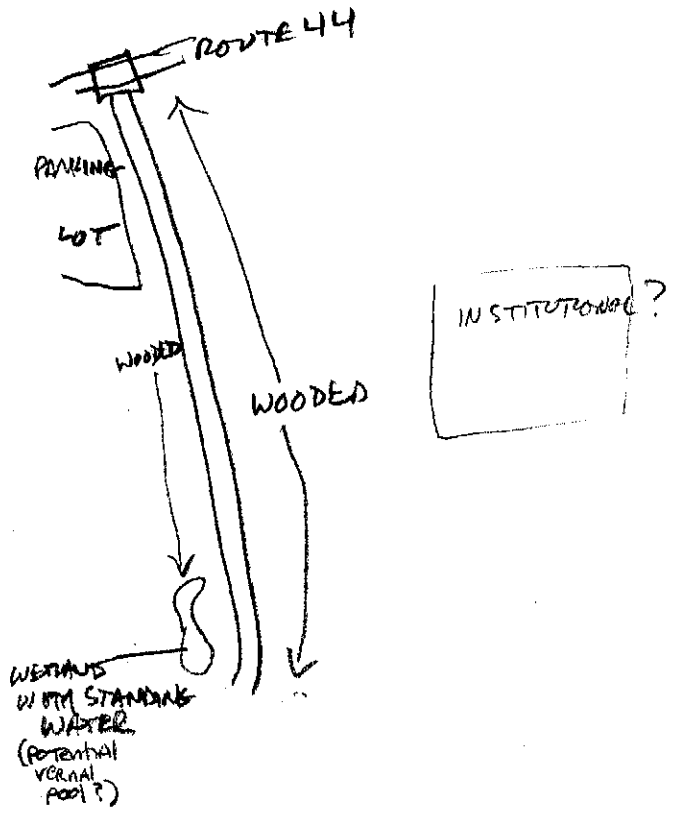
Channel Dimensions *(facing downstream)*
Height: LT bank ____ (ft)
RT bank ____ (ft)
Width: Bottom 5 (ft)
Bankfull Top ____ (ft)

Reach Accessibility

5	4	3	2	1
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.

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



Notes: *(biggest problem you see in survey reach)* Debris, parking lot adjacent to nearly ½ of right bank of this reach, stormwater out fall pipes in need of repair.

Reported to Authorities ☐ Yes ☐ No

p.2 of 2
NRP, Reach 13

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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: 67 /80 = **Total** Survey Reach 135 /160

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 13	**TIME:** 12:35 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB240/# 72	
SITE ID (*Condition-#*): **OT-** A	**LAT** 41 ° 47 ' 00 " **LONG** 72 ° 42 ' 25 "	**LMK**	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: ____ (in)

Depth: ____ (in) Width (Top): ____ (in) " (Bottom): ____ (in)

NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☒ Other: detached, pipe failure

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR NO FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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:

NOT clear whether outfall water can reach the river except through seepage or extreme overflow.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: B3	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) none #	
SITE ID (*Condition-#*): **OT-** B	**LAT** 41 ° 47 ' 01 " **LONG** 72 ° 42 ' 26 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☒ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe x2 ☐ Open channel

MATERIAL: ☐ Concrete ☒ Metal x2 ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☒ Circular x2 ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: 10" (in)

SUBMERGED: ☒ No ☐ Partially ☐ Fully

☐ Concrete ☐ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)

NOT APPLICABLE

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:
	TURBIDITY:	☐ None	☐ Slight Cloudiness	☐ Cloudy	☐ Opaque				
	FLOATABLES:	☐ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:				

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: one on RB + corresponding one on LB

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 13	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID (*Condition-#*): **OT-** C	**LAT** 41 ° 47 ' 00 " **LONG** 72 ° 42 ' 27 "	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 10 " (in)

Depth: ____ (in) Width (Top): ____ (in) " (Bottom): ____ (in)

NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NSP		**DATE:** 11/24/09	**ASSESSED BY:** cm/BG
SURVEY REACH ID: 13	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) none /#	
SITE ID (*Condition-#*): OT-01	**LAT** ___°___'___" **LONG** ___°___'___"	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 10" (in) ~3' off water level

Depth: ___(in) Width (Top): ___(in) " (Bottom): ___(in)

NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
	TURBIDITY:	☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque
	FLOATABLES:	☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:
OTHER CONCERNS:		☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: located Approx 3' high

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

P. 1 of 2
NBP, REACH 14

RCH

SURVEY REACH ID: 14	WTRSHD/SUBSHD: NBP	DATE: 11/24/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 10:52 AM/PM LMK: ____	TIME: 12:30 AM/PM LMK: ____	CMW
LAT 41° 46' 36" LONG 72° 42' 04"	LAT 42° 46' 56" LONG 72° 42' 22"	
DESCRIPTION: TRIBUTARY INPUT	DESCRIPTION: potential vernal pool (Adj. To Right Bank)	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☒ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☒ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 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 (Raccoon) Mussels
☐ Snails ☒ Other: Mallards, woodchucks, small mammals

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

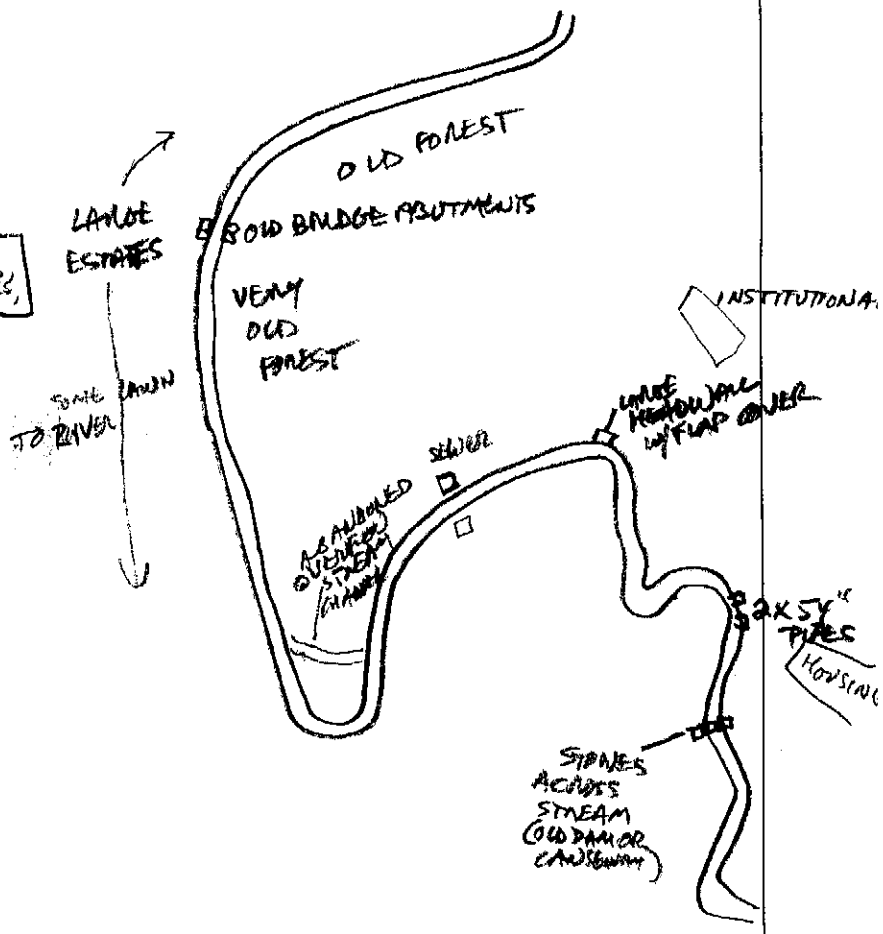
CHANNEL DIMENSIONS (FACING DOWNSTREAM) Bankfull
~~Height: LT bank~~ ____ (ft)
~~RT bank~~ ____ (ft)
Width: ~~Bottom~~ 55 (ft)
~~Top~~ ____ (ft)

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

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



NOTES: *(biggest problem you see in survey reach)* TRASH in water (i.e., styrofoam cups + plates), plastic bottles, some invasive plants, but overall there is wide forested buffer - particularly along the left BANK there is MATURE floodplain forest with many trees DBH > 30" + excellent RIPARIAN wildlife HABITAT.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

P-2202 NBP, Reach 14

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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: 69 /80 + Buffer/Floodplain: 72 /80 = **Total** Survey Reach 141 /160

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP | **DATE:** 11/24/09 | **ASSESSED BY:** CM/BG

SURVEY REACH: 14 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) PB0400 #58, 59, 60, 61, 62 + 70

SITE ID: (*Condition-#*) IB- one sheet only

START **LAT** see Notes Below " **LONG** ° ' " **LMK**

END **LAT** ° ' " **LONG** ° ' " **LMK**

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☐ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: see notes below

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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 ☒ no ☐ Active reforestation ☐ Greenway design ☐ Natural regeneration ☐ Invasives removal ☐ Other:

RESTORABLE AREA

	LT BANK	RT
Length (ft):		
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: ① minor bank erosion to RB adjacent to brick mansion (see pic, 58), but good wildlife habitat, some invasive plants here. Private property so restoration potential unknown,

② remnant stone MASON bridge @ 41°46'42" / 72°42'07" - see pic. 60

③ TRASH behind low-income housing

④ very minor bank erosion on RB but looks like good wildlife habitat (overhanging roots, cover habitat) + not easy access so low restoration potential @ 41°46'45" / 72°42'12" - kingfisher burrows here

⑤ remnant stone MASON bridge @ 41°46'95" / 72°42'26"

⑥ LAWN @ edges of RB

⟹ these issues are minor and overall this reach is in good condition. The riparian area is mostly mature floodplain forest + trees with a diameter @ breast height 730" are common on the floodplain.

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 14	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB2400 /# 59	
SITE ID (*Condition-#*): OT- A	**LAT** 41 ° 46 ' 40 " **LONG** 72 ° 42 ' 06 "	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other: ? Submerged

TYPE: ☑ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 18" (in)
Depth: ___ (in) Width (Top): ___ (in) " (Bottom): ___ (in)
NOT APPLICABLE

SUBMERGED: ☐ No ☒ Partially (~½) ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☒ Orange ☐ Green ☐ Other:
↑ but could be from fence

POOL QUALITY: ☐ No pool ☒ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY								
COLOR:	☐ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☒ Orange	☐ Red	☐ Other:
TURBIDITY:	☐ None	☐ Slight Cloudiness	☒ Cloudy	☐ Opaque				
FLOATABLES:	☒ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:				

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☒ Other: Fence in water (Bank)

POTENTIAL RESTORATION CANDIDATE ☐ no ☐ Discharge investigation ☐ Stream daylighting ☒ Local stream repair/outfall stabilization ☐ 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: located behind 10-story building.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** BG/CM
SURVEY REACH ID: 14	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB240018 64	
SITE ID (*Condition-#*): OT- 6	**LAT** ___°____'____" **LONG** ___°____'____"	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☐ Double ☐ Circular ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: ? (in)
Depth: ____(in)
Width (Top): ____(in)
" (Bottom): ____(in)
NOT APPLICABLE

SUBMERGED: ☐ No ☒ Partially (~ ½) ☐ Fully

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☒ Other: See notes

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY									
COLOR:	☐ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:	
TURBIDITY:	☐ None	☐ Slight Cloudiness	☐ Cloudy	☐ Opaque					
FLOATABLES:	☐ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:					

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: this looks like some kind of headwall with an overflow pipe — however - it was closed + didn't look like it functions properly (?) located behind some kind of medical facility.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11 / 24 / 09	**ASSESSED BY:** CM / BG
SURVEY REACH ID: 14	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) P32400 # 61 + 62	
SITE ID (*Condition-#*): OT- 6	**LAT** 41 ° 46 ' 45.8 " **LONG** 72 ° 42 ' 08.6 "	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☒ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 24 " (in)
Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)
NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☒ Other: see notes below

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☒ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES: Concrete chunks around outfalls. Slopy.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11 / 24 / 09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 14	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) none /#	
SITE ID (*Condition-#*): **OT-** 6	**LAT** 41 ° 46 ' 50 " **LONG** 72 ° 42 ' 16 "	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☑ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter:____(in)

Depth: ____(in) Width (Top):____(in) " (Bottom):____(in)

NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:
	TURBIDITY:	☐ None	☐ Slight Cloudiness	☐ Cloudy	☐ Opaque				
	FLOATABLES:	☐ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:				

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: M	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) None /#	
SITE ID (*Condition-#*): **OT-** D	**LAT** 41°46'48" **LONG** 72°42'17"	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 12" (in)
Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)
NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY									
COLOR:	☐ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:	
TURBIDITY:	☐ None	☐ Slight Cloudiness	☐ Cloudy	☐ Opaque					
FLOATABLES:	☐ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:					

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: Located on both banks. Approximately 10' down-stream of the OT, there are 2 sewer holes (one on each bank). The one on the left bank was open - both smelled like sewage.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 14	**TIME:** 12:00 AM/PM	**PHOTO ID:** (*Camera-Pic #*) none / #	
SITE ID (*Condition-#*): **OT-** E	**LAT** 41 ° 46 ' 46 " **LONG** 72 ° 42 ' 20.5"	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter:____ (in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel but pipe up slope ~ 40'

☐ Concrete ☒ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____ (in)
Width (Top): ____ (in)
" (Bottom): ____ (in)

NOT APPLICABLE

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

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

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 14	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB2400 I# 66	
SITE ID (*Condition-#*): OT- F	**LAT** 41 ° 46 · 44 " **LONG** 72 ° 42 · 21 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other: ☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other: ☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 12" (in) Depth: ___ (in) Width (Top): ___ (in) " (Bottom): ___ (in) — NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☒ Other: see notes below

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
	TURBIDITY:	☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque
	FLOATABLES:	☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ Other:

POTENTIAL RESTORATION CANDIDATE ☐ no ☐ Discharge investigation ☐ Stream daylighting ☒ Local stream repair/outfall stabilization ☐ 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: outfall pipe is disconnected from headwall + pipe behind headwall (leader). No flow

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

page 1 of 2
NBP, Reach 15

Reach Level Assessment **RCH**

SURVEY REACH ID: 15	WTRSHD/SUBSHD: NBP	DATE: 11/24/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 10 : 15 AM/PM LMK: ____	TIME: 10 : 52 AM/PM LMK: ____	
LAT 41 ° 46 ' 24 " LONG 092 ° 42 ' 12 "	LAT 41 ° 46 ' 36 " LONG 092 ° 42 ' 04 "	
DESCRIPTION: Elizabeth Park / Street over-pass	DESCRIPTION: Tributary junction w/ main stem	

RAIN IN LAST 24 HOURS ☐ None ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Clear ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Trace ☒ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☒ Urban/Residential ☐ Suburban/Res ☐ Forested ☒ Institutional ☐ Golf course ☒ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75%
☐ 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: mallards, wood ducks, fish, small mammals

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☒ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

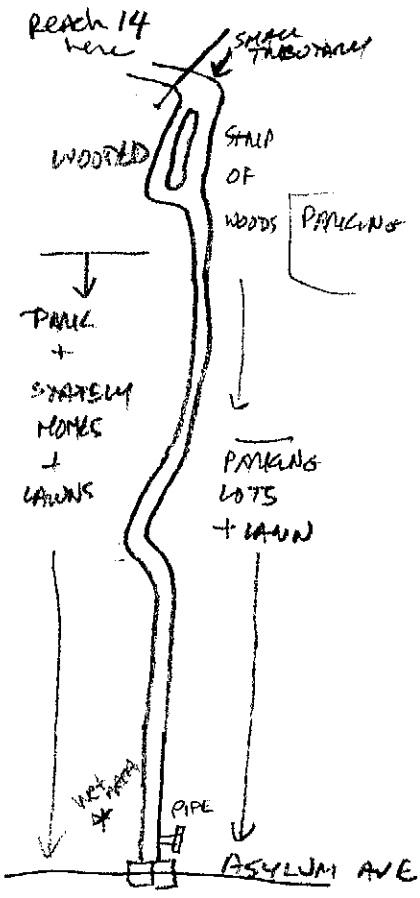
CHANNEL DIMENSIONS (FACING ~~DOWNSTREAM~~ Bankfull)
~~Height: LT bank~~ _____ (ft)
~~RT bank~~ _____ (ft)
Width: ~~Bottom~~ 64 (ft)
~~Top~~ _____ (ft)

REACH ACCESSIBILITY

5	4	3	2	1
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.

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



NOTES: *(biggest problem you see in survey reach)* Impacted Buffer due to parking lots, maintained lawns, invasive plants (J. knotweed), trash, stormwater outfall + chunks of concrete in isolated areas.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

page 2 of 2
NBP, Reach 15

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream) Most areas of bank failure are good wildlife habitat though.	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 Encroach-ment	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: 60 /80 + Buffer/Floodplain: 66 /80 = **Total** Survey Reach 126 /160

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH: 15	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#

SITE ID: (*Condition-#*)			**GPS:** (*Unit ID*)
IB-___	*START* LAT 41°46'23.8" LONG 72°42'12"	LMK ___	
	END LAT 41°46'28" LONG 72°42'08.5"	LMK ___	

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☒ Widespread invasive plants ☐ Recently planted ☐ Other:

LAND USE:

(*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
LT Bank	☒	☐	☐	☐	☒: PARKING LOTS
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

	LT BANK	RT
Length (ft):	_____	_____
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:

① Left Bank (LB) start @ 41°46'23.8" / 72°42'12" due to MAintained lawns, PARKING LOTS, INVASIVE PLANTS, chunks of concrete, trash, End @ 41°46'28" / 72°42'08.5"

② But @ end point (41°46'28" / 72°42'08.5") there is impact To the Right Bank (RB) due to A Retaining wall.

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NSP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 15	**TIME:** 10:20 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB240011 # 50	
SITE ID (*Condition-#*): OT- A	**LAT** 41°46'.24" **LONG** 72°43'.11"	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other: ?

TYPE: ☒ Closed pipe

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: 30" (in)

SUBMERGED: ☐ No ☒ Partially (~ 1/2) ☐ Fully

☐ Open channel

☐ Concrete ☐ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____ (in)
Width (Top): ____ (in)
" (Bottom): ____ (in)

NOT APPLICABLE

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☒ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES:

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/GG
SURVEY REACH ID: 15	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) none /#	
SITE ID (*Condition-#*): OT- 6	**LAT** 41°46'26" **LONG** 72°42'09.6"	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 12" (in)

Depth: ___ (in) Width (Top): ___ (in) " (Bottom): ___ (in)

NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: Large concrete headwall + puny pipe. JAP. Knotweed here

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** OM/BG
SURVEY REACH ID: 15	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PBJ400 /# 51	
SITE ID (*Condition-#*): OT-C	**LAT** 41 ° 46 '28 " **LONG** 72 ° 42 '08.5 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 24 " (in)
Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)
NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY									
COLOR:	☐ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:	
TURBIDITY:	☐ None	☐ Slight Cloudiness	☐ Cloudy	☐ Opaque					
FLOATABLES:	☐ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:					

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: near Retaining wall

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11 / 24 / 09	**ASSESSED BY:** CM / BG
SURVEY REACH ID: 15	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) none /#	
SITE ID (*Condition-#*): **OT-** D	**LAT** 42 ° 46 ' 30 " **LONG** 72 ° 42 ' 07 "	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☒ Other: ? ½ Submerged

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 30 " (in)

Depth: ____(in) Width (Top): ____(in) " (Bottom): ____(in)

NOT APPLICABLE

SUBMERGED: ☐ No ☒ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
	TURBIDITY:	☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque
	FLOATABLES:	☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: Adjacent to a parking lot

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 15	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB240004	53
SITE ID (*Condition-#*): OT-6	**LAT** 41° 46' 32" **LONG** 72° 42' 05.8"	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 54" (in)

Depth: ____(in) Width (Top): ____(in) " (Bottom): ____(in)

NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
	TURBIDITY:	☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque
	FLOATABLES:	☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES: out flow is surrounded by Rip-Rap -- however there was no flow on 11/24/09

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP | DATE: 11/24/09 | ASSESSED BY: CM/BG

SURVEY REACH ID: 15 | TIME: ___:___ AM/PM | PHOTO ID: (Camera-Pic #) PB2400 /# 55

SITE ID (Condition-#): OT- F | LAT 41 ° 46 ' 33 " LONG 72 ° 42 ' 06 " | LMK ___ | GPS: (Unit ID)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: ____ (in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel

☐ Concrete ☐ Earthen ☒ Other: concrete chunks

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____ (in) Width (Top): ____ (in) " (Bottom): ____ (in)

NOT APPLICABLE

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☒ Other: Scour

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Needs Regular Maintenance ☐ Dumping (bulk) ☐ Bank Erosion ☐ Excessive Sedimentation ☐ Other:

POTENTIAL RESTORATION CANDIDATE ☐ no ☐ Discharge investigation ☐ Stream daylighting ☐ Local stream repair/outfall stabilization ☒ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES: steep grade, some scour (see photo)

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 15	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) none /#	
SITE ID (*Condition-#*): OT- 6	**LAT** 41 ° 46 ' 34.9 " **LONG** 72 ° 42 ' 04.6"	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☐ Double
☒ Circular ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 12" (in)
Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)
NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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

Stream Crossing **SC**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** cm/bb
SURVEY REACH ID: 15	**TIME:** 10:15 AM/PM	**PHOTO ID:** (*Camera-Pic #*) P8240O /# 49	
SITE ID: (*Condition-#*) SC-one shed	**LAT** 41 ° 46 ' 28.8 "	**LONG** 72 ° 42 ' 12 "	**LMK**____ **GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☒ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation:_____(ft)

CONDITION: (*Evidence of...*) none
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE: none
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth:_____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

page 1 of 2
for NBP, reach 16

Reach Level Assessment

RCH

SURVEY REACH ID: 16 | **WTRSHD/SUBSHD:** North Branch Park (NBP) | **DATE:** 11/24/09 | **ASSESSED BY:** CM + BG

START TIME: 9:00 AM/PM LMK: ___
LAT 41° 46' 04" LONG 72° 42' 13"
DESCRIPTION: medical center

END TIME: 10:15 AM/PM LMK: ___
LAT 41° 46' 24" LONG 72° 42' 12"
DESCRIPTION: Elizabeth Park

GPS ID: CM

RAIN IN LAST 24 HOURS ☐ Heavy rain ☒ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☒ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☒ Commercial ☒ Urban/Residential ☐ Suburban/Res ☐ Forested ☒ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other: medical offices

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH ☐ 0-25% ☐ 50%-75% ☐ 25-50 % ☒ 75-100%

DOMINANT SUBSTRATE But Mostly Rip-Rap
☒ 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: Wood ducks, Mallards, rat, hawk, snake, mammal, fish

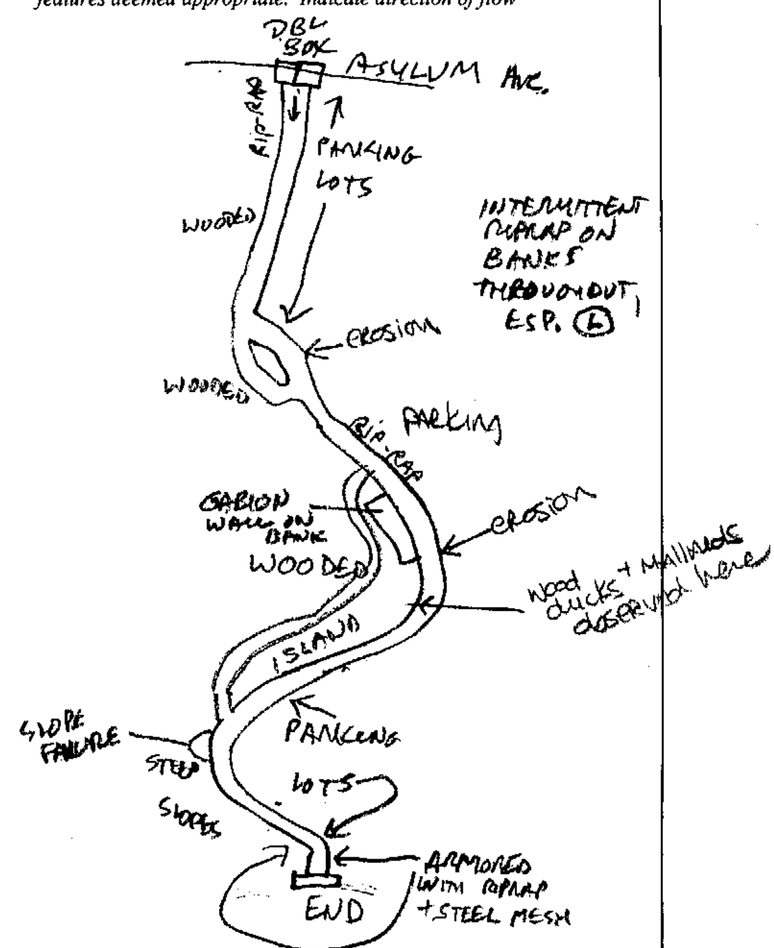
STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown
☐ Downcutting ☐ Widening ☐ Headcutting ☐ Aggrading ☐ Sed. deposition
☐ Bed scour ☒ Bank failure ☐ Bank scour ☒ Slope failure ☐ Channelized

CHANNEL DIMENSIONS ~~(FACING DOWNSTREAM)~~ Bankfull
Height: LT bank ______ (ft)
RT bank ______ (ft)
Width: ~~Bottom~~ 70 (ft)
~~Top~~ ______ (ft)

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



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 → Parking lots adjacent to bank, rip-rap along almost entire reach/both banks, residential mown lawns, yard waste dumping, snow piling, trash/debris, invasive species (especially Jap. knotweed). Unstable channel related to impacted buffer + stormwater inputs.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

PAGE 2 of 2
for NBF, REACH #2

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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. RIP-RAP + POOR WATER QUAL but wood ducks indicate potential food base
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	(5) 4 3 2 1 0
VEGETATIVE PROTECTION *(score each bank, determine sides by facing downstream)*	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. LOTS of RIP-RAP
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 (facing downstream)	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 Development
	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: 31 /80 + Buffer/Floodplain: 25 /80 = **Total** Survey Reach 56 /160

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP | DATE: 11/24/09 | ASSESSED BY: CM/BG

SURVEY REACH: 16 | TIME: ___:___ AM/PM | PHOTO ID: (*Camera-Pic #*) PB2400 /# 38, 39, 40 + 42

SITE ID: (*Condition-#*) IB-A

START LAT 41 ° 46 ' 04.7" LONG 072 ° 42 ' 13.6" LMK ____

END LAT 41 ° 46 ' 09.9" LONG 072 ° 42 ' 13.8" LMK ____

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: see notes below

LAND USE:

(*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
LT Bank	☒	☐	☐	☐	☐:
RT Bank	☐	☐	☐	☐	☒: Parking lots

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):		
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: ① Upstream of the culvert on the LB there is a parking lot, on the RB there is rip-rap with screen tied in, a retaining wall, + loose rip-rap. Both banks ~ 30' upstream of culvert are covered with rip-rap.

② Residential lawn adjacent to RB + parking lots adjacent to LB. Leaf/yard waste dumping.

③ Bank failure @ RB (see photo 40) @ 41° 46' 05.9"/72° 42' 17.1"

→ very good candidate for restoration.

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH: 16	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB3400 /# 44	
SITE ID: (*Condition-#*) IB-B	*START* **LAT** 41 °46' 11" **LONG** 72 °42' 14" **LMK** ____		**GPS:** (*Unit ID*)
	END **LAT** 41 °46' 12" **LONG** 72 °42' 14.8" **LMK** ____		

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: Rip-Rap with wire mesh

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	_____	_____
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: ① Impacts to both banks associated with Rip-Rap covered with wire mesh

② Minor bank erosion just upstream of end GPS mark.

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP | **DATE:** 11/24/09 | **ASSESSED BY:** CM/BG

SURVEY REACH: 16 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) none /#

SITE ID: (*Condition-#*) IB- C

START **LAT** 41 °46 '08.7" **LONG** 72 °42 '18 " **LMK** ____

END **LAT** 41 °46 '09.9" **LONG** 072 °42 '13.8" **LMK** ____

GPS: (*Unit ID*)

IMPACTED BANK: ☒ LT ☐ RT ☐ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: see below

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	_____	_____
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:
① Rip-Rap Along LB
② Leaf dumping on LB adjacent to River + possible snow piling (parking lot); Possible salt depositions?

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH: 16	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#

SITE ID: (*Condition-#*) IB- D

START **LAT** 41 °46'11" **LONG** 72°42'14" **LMK** ____

END **LAT** 41 °46'12" **LONG** 72°42'14.8" **LMK** ____

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: Rip-RAP (poor wildlife value)

LAND USE:

(*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	_____	_____
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:

(1) Rip-RAP on both banks

(2) Minor bank erosion on both banks

Impacted Buffer **IB**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH: 16	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB2400 /# 47 (wall)	
SITE ID: (*Condition-#*) IB- E	*START* **LAT** 41 °46 ' 14 " **LONG** 72 °42 ' 15.4 " **LMK** ____		**GPS:** (*Unit ID*)
	END **LAT** 41 °46 ' 8.9 " **LONG** 72 °42 ' 14.3 " **LMK** ____		

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: erosion, parking lots, trails, retaining wall INCM

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	____	____
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:

(1) Parking lot adjacent to LB @ starting GPS mark
(2) Rip-rap on banks (poor wildlife value)
(3) Minor erosion (both banks)
(4) Mown lawn up to edge of River

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 16	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) None /#	
SITE ID (*Condition-#*): **OT-** A	**LAT** 41°46'08.7" **LONG** 72°42'18"	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☒ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 24" (in)
Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)
NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY									
COLOR:	☐ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:	
TURBIDITY:	☐ None	☐ Slight Cloudiness	☐ Cloudy	☐ Opaque					
FLOATABLES:	☐ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:					

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: Rip-RAP surrounding pipe, also lots dumping here (+ possible snowpiling + salt inputs).

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11 / 24 / 09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 10	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) P8400 /# 43	
SITE ID (*Condition-#*): OT- B	**LAT** 41 ° 46 '09.9 " **LONG** 72 ° 42 '13.8 "	**LMK** ___	**GPS:** (*Unit ID*)

+ 41° 46' 11" / 72° 42' 14"

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other: / ☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other: / ☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: ___ (in) / Depth: ___ (in) / Width (Top): ___ (in) / " (Bottom): ___ (in) — NOT APPLICABLE

SUBMERGED: ☒ No * notes ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

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

5	4	3	2	1
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.

SKETCH/NOTES: → the pipe is jutting out from bank ~10', possible evidence of bank erosion + channel widening?
→ Another pipe a LB with same characteristics is included to reduce redundancy.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP | **DATE:** 11/24/09 | **ASSESSED BY:** BG/CM

SURVEY REACH ID: 16 | **TIME:** :___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) None /#

SITE ID (*Condition-#*): **OT-** C | **LAT** 41 ° 46 ' 12.9" **LONG** 72 ° 42 ' 15.2" | **LMK**___ | **GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other: ☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☒ Elliptical ☐ Triple ☐ Other: ☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter:___(in) Depth: ___(in) Width (Top):___(in) " (Bottom):___(in) NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES: Adjacent to parking lot.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP | **DATE:** 11/24/CM | **ASSESSED BY:** BG/CM

SURVEY REACH ID: 16 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) PB2400 /# 46

SITE ID (*Condition-#*): OT- D | **LAT** 41 ° 46 ' 17 " **LONG** 72 ° 42 ' 16 " **LMK** ___ | **GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other: ?

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

MATERIAL: ☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

SHAPE: ☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 36 11 (in)

Depth: ___ (in) Width (Top): ___ (in) " (Bottom): ___ (in)

NOT APPLICABLE

SUBMERGED: ☐ No ☒ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: Sewer?

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: NBP		**DATE:** 11/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 16	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) None / #	
SITE ID (*Condition-#*): **OT-** E	**LAT** 41 ° 46 ' 18.9 " **LONG** 72 ° 42 ' 44.3 "	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 36 11 (in)

Depth: ____(in) Width (Top): ____(in) " (Bottom): ____(in)

NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES: Metal pipe with cap on end that is AJAR + housed in A concrete box culvert. Coming out of parking lot AREA, Possible sewer?

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: NBP | **DATE:** 11/24/09 | **ASSESSED BY:** CM/KG

SURVEY REACH ID: 16 | **TIME:** 9 : 00 AM/PM | **PHOTO ID:** (*Camera-Pic #*) P1120400 #38

SITE ID: (*Condition-#*) SC- only one sheet | **LAT** 41 ° 46 '04.7 " | **LONG** 072 ° 42 ' 13.6" | **LMK**____ | **GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☒ Other: 5

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☒ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*) none
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier none

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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: this marks the downstream (start) of Reach 16 (NBP) + the southernmost point in this Assessment

REPORTED TO AUTHORITIES ☐ YES ☐ NO

P. 104 NBP, REACH 19

Reach Level Assessment **RCH**

SURVEY REACH ID: 19	WTRSHD/SUBSHD: NBP	DATE: 11/23/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 8:21 AM/PM LMK: ____	TIME: 9:25 AM/PM LMK: ____	
LAT 41° 48' 18" LONG 92° 42' 24"	LAT 41° 48' 24" LONG 92° 42' 24"	
DESCRIPTION: Culvert @ road crossing	DESCRIPTION: Environmental Restoration Driveway / Berm / culvert	

RAIN IN LAST 24 HOURS: ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☒ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS: ☐ Heavy rain ☐ Steady rain ☒ Intermittent ☐ Clear ☒ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☒ Urban/Residential ☐ Suburban/Res ☐ Forested ☐ Institutional ☐ Golf course ☒ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 25-50 % ☐ 50%-75% ☒ 75-100%

DOMINANT SUBSTRATE
☒ Silt/clay (fine or slick) ☐ Sand (gritty) ☐ Gravel (0.1-2.5") ☐ Cobble (2.5 –10") ☐ Boulder (>10") ☐ 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 tracks

STREAM SHADING (water surface): ☒ Mostly shaded (≥75% coverage) ☐ Halfway (≥50%) ☐ Partially shaded (≥25%) ☐ Unshaded (< 25%)

CHANNEL DYNAMICS ☐ Unknown
☐ Downcutting ☒ Widening ☐ Headcutting ☐ Aggrading ☐ Sed. deposition
☐ Bed scour ☐ Bank failure ☐ Bank scour ☐ Slope failure ☐ Channelized

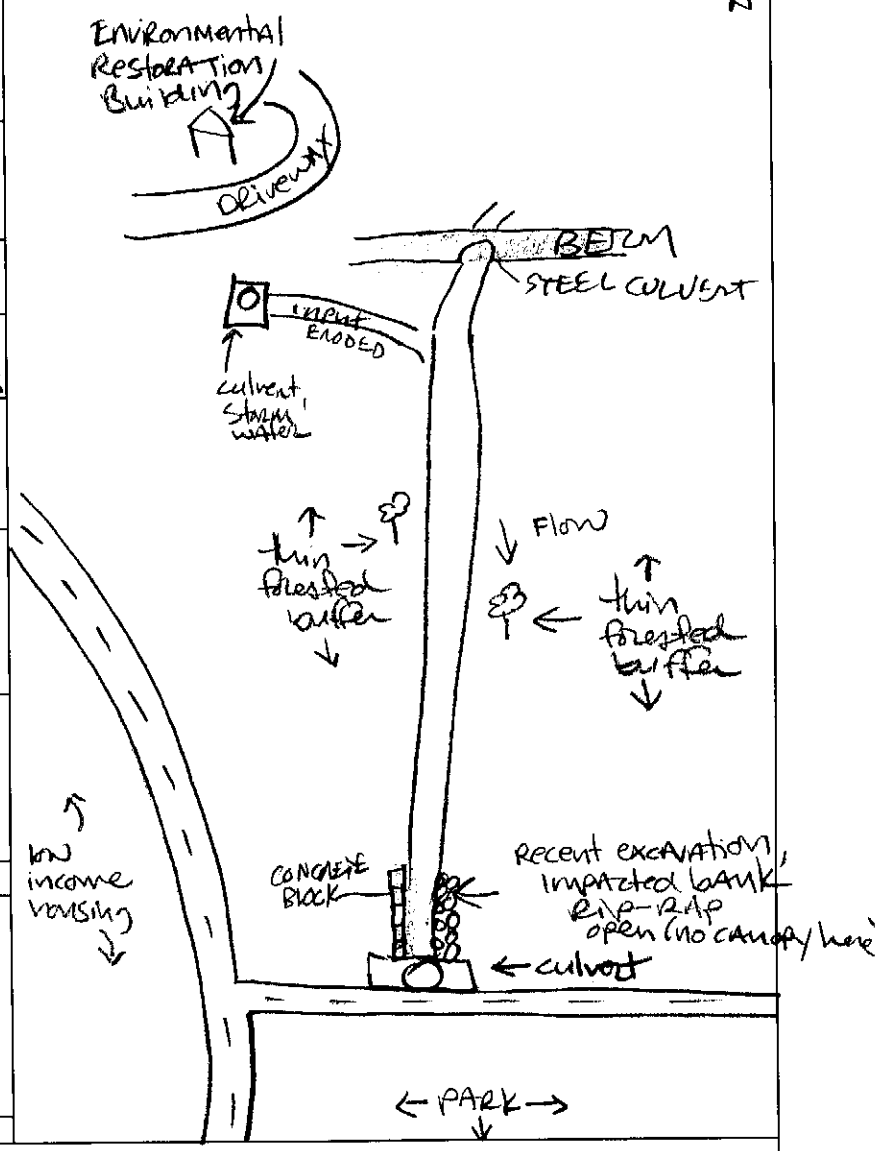
CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank 30" (ft) RT bank ____ (ft)
Width: Bottom 12" (ft) Top ____ (ft)

REACH ACCESSIBILITY

5	4	3	2	1
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.	

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



NOTES: *(biggest problem you see in survey reach)*
Impacted bank @ southern end upstream of culvert. The underground tunnel that carries water downstream must be very long - it is not located on the other side of the street - or it is closed

REPORTED TO AUTHORITIES ☐ YES ☐ NO

P. 1 of 2
NSP, Reach 19

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 ENCROACH-MENT	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: 45 /80 + Buffer/Floodplain: 52 /80 = **Total** Survey Reach 97 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 19	**TIME:** 8:25 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB3300	/# 01 + 02
SITE ID: (*Condition-#*) SC-A	**LAT** 41°48'18" **LONG** 72°42'24"	**LMK**____	**GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: ? (ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☒ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☒ Other (*describe*): Rip-Rap, fill, Recent possible flood? excavation

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ Obvious (>5°)

POTENTIAL RESTORATION CANDIDATE
☐ no
☐ Fish barrier removal ☒ Culvert repair/replacement ☒ Upstream storage retrofit
☒ Local stream repair ☒ Other: investigate length - can it be shorter

IS SC ACTING AS GRADE CONTROL ☐ No ☐ Yes ☒ Unknown

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☒ Partial
☐ Temporary ☒ Unknown - did not locate other end

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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:

Reach 19 (NBP) flows into this box culvert but it is unclear how far the stream must travel underground - no outlet was observed and there is an athletic field at the other side of the street. At the box culvert inlet there appears to be evidence of recent excavation - possibly from an emergency flood event (?) there is fill, rip-rap, + evidence of a recent washout under the road (see photo #01+02).

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: NBP | **DATE:** 11/23/09 | **ASSESSED BY:** CM/BG

SURVEY REACH ID: 19 | **TIME:** 9 : 15 (AM)/PM | **PHOTO ID:** (*Camera-Pic #*) PB2300 /# 05

SITE ID: (*Condition-#*) SC-B | **LAT** 41 ° 48 ' 24 " | **LONG** 72 ° 42 ' 24 " | **LMK**____ | **GPS** (*Unit ID*)

TYPE: ☒ Farm Road Crossing ☐ Railroad Crossing ☐ Manmade Dam ☐ Beaver Dam ☐ Geological Formation ☐ Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☒ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☒ Other: open bottom

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 9' (ft)
Height: ____ (ft)
Culvert length: ____ (ft)
Width: ____ (ft)
Roadway elevation: ____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☒ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ Obvious (>5°)

POTENTIAL RESTORATION CANDIDATE
☐ no
☐ Fish barrier removal ☒ Culvert repair/replacement ☐ Upstream storage retrofit
☒ Local stream repair ☒ Other: Sediment Removal / better stormwater management

IS SC ACTING AS GRADE CONTROL ☐ No ☐ Yes ☒ Unknown

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☒ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: ____ (in)
☐ Flow too shallow Water Depth: ____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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: the stream passes through this culvert under A berm - possibly an old farm road. It is in good condition other than high sediment loads - likely from storm water inputs.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Channel Modification **CM**

WATERSHED/SUBSHED: NBP	**DATE:** 11 / 23 / 07	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 19	**TIME:** 8 : 32 AM/PM	**PHOTO ID:** (*Camera-Pic #*) 100 # 002

SITE ID: (*Condition-#*) CM-____

START **LAT** 41 ° 48 ' 18 " **LONG** ___ ° ___ ' ___ " **LMK** Road Crossing

END **LAT** 42 ° 42 ' 24 " **LONG** ___ ° ___ ' ___ " **LMK** ____

GPS: (*Unit ID*)

TYPE: ☐ Channelization ☒ Bank armoring Rip-Rap ☐ concrete channel ☒ Floodplain encroachment ☐ Other:

MATERIAL:
☐ Concrete ☐ Gabion
☒ Rip Rap ☐ Earthen
☐ Metal
☐ Other:

Does channel have perennial flow?	☒ Yes ☐ No
Is there evidence of sediment deposition?	☒ Yes ☐ No
Is vegetation growing in channel?	☐ Yes ☒ No
Is channel connected to floodplain?	☐ Yes ☒ No

DIMENSIONS:
Height 8 (ft)
Bottom Width ____ (ft)
Top Width: 8 (ft)
Length: 12 (ft)

BASE FLOW CHANNEL
Depth of flow 10 (in)
Defined low flow channel? ☐ Yes ☐ No
% of channel bottom ____ %

ADJACENT STREAM CORRIDOR
Available width LT____ (ft) RT____ (ft)
Utilities Present? only Road
☒ Yes ☐ No
Fill in floodplain?
☒ Yes ☐ No

POTENTIAL RESTORATION CANDIDATE ☐ Structural repair ☐ Base flow channel creation ☒ Natural channel design ☐ Can't tell
☐ no ☐ De-channelization ☐ Fish barrier removal ☒ Bioengineering

CHANNELIZATION 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 unchannelized stream reaches above and below impacted area.
	5	4 3	2 (1)

NOTES:

- Appears to have been emergency flooding + Rip-Rap/excavation was been placed/occurred recently.

WATERSHED/SUBSHED: NBP		**DATE:** 11/23/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 19	**TIME:** 9:05 AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID (*Condition-#*): **OT-** only one	**LAT** 41°48'24" **LONG** 72°42'25"	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☐ LT ☐ RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☒ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter:____ (in)

SUBMERGED: ☐ No ☒ Partially ☐ Fully

☐ Open channel

☐ Concrete ☒ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: 3.2 ft
Width (Top): 4.0 ft roof
" (Bottom):____ (in)

NOT APPLICABLE

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☒ Oily some ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
	TURBIDITY:	☐ None ☒ Slight Cloudiness ☐ Cloudy ☐ Opaque
	FLOATABLES:	☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☒ Other: scum

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☒ Bank Erosion ☒ Other: Rip RAP ~ 10" diam Rock

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: N/A ft Type of existing vegetation: N/A 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

p. 1 of 2
FYB, Reach 1

Reach Level Assessment **RCH**

SURVEY REACH ID: 1	WTRSHD/SUBSHD: FYB	DATE: 11/30/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 9 : 55 AM/PM LMK:	TIME: 10 : 30 AM/PM LMK:	
LAT 41 ° 49 ' 28 " LONG 72 ° 43 ' 41 "	LAT 41 ° 49 ' 42 " LONG 72 ° 43 ' 50 "	CM
DESCRIPTION: RAILROAD TRACKS/culvert	DESCRIPTION: helipad	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☒ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☒ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☐ Forested ☒ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☒ Other: powerlines, "Highschool", RR tracks

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % / CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 25-50 % ☒ 75-100%

DOMINANT SUBSTRATE
- ☒ Silt/clay (fine or slick)
- ☐ Sand (gritty)
- ☐ Gravel (0.1-2.5")
- ☐ Cobble (2.5 –10")
- ☐ Boulder (>10")
- ☐ 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: snake, raccoon, green frog, RT hawk

STREAM SHADING (water surface)
- ☐ Mostly shaded (≥75% coverage)
- ☒ Halfway (≥50%)
- ☐ Partially shaded (≥25%)
- ☐ Unshaded (< 25%)

CHANNEL DYNAMICS ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)* — BANK FULL
- Height: ~~LT bank~~ 32" (ft)
- ~~RT bank~~ (ft)
- Width: ~~Bottom~~ 14.6 (ft)
- ~~Top~~ (ft)

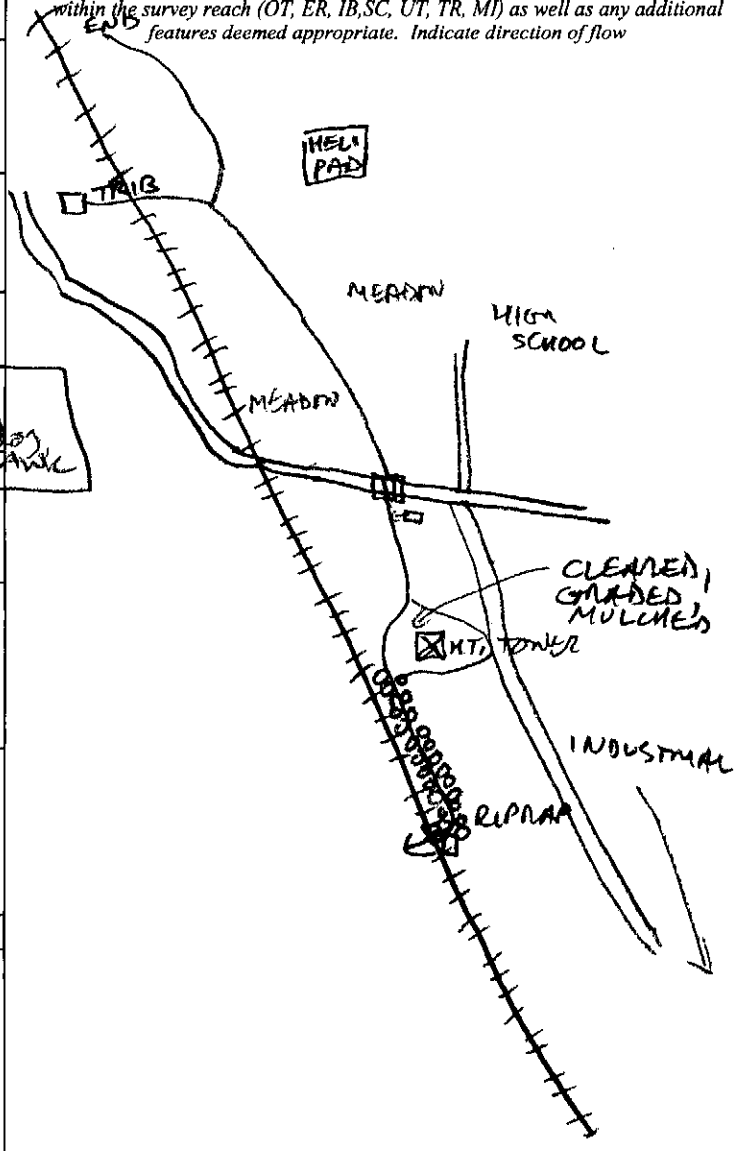
REACH ACCESSIBILITY

Good	Fair	Difficult
Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	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

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



NOTES: *(biggest problem you see in survey reach)* Impacted buffer: lacks tall trees + wide buffer, mostly herb access with some shrubs, saplings + vines. Areas of Rip-Rap, adjacent to Rebl, road, RR/Road tracks

REPORTED TO AUTHORITIES ☐ YES ☐ NO

P.2 of 2
FY8, Reach 1

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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: 59 /80 + Buffer/Floodplain: 27 /80 = **Total** Survey Reach 86 /160

Impacted Buffer **IB**

WATERSHED/SUBSHED: FYB		**DATE:** 11 / 30 / 09	**ASSESSED BY:** CM + BG
SURVEY REACH: 1	**TIME:** 7 :58 AM/PM	**PHOTO ID:** (*Camera-Pic #*) 4930 /# 03	
SITE ID: (*Condition-#*) IB- A	*START* **LAT** 41 °49 '28 " **LONG** 72 °43 ' 41 " **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

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
LT Bank	☐	☐	☐	☐	☒: RR tracks + wetland
RT Bank	☐	☐	☐	☐	☒: RR TRACKS

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

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):	200'	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	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
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: Railroad tracks / rip-rap along both banks for ~200'

Impacted Buffer **IB**

WATERSHED/SUBSHED: FYB		**DATE:** 11/30/07	**ASSESSED BY:** CM/BG
SURVEY REACH:	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) 4930 /# 04 +07	
SITE ID: (*Condition-#*) IB-B	*START* **LAT** 41 °49 '32" **LONG** 72 °43 '42" **LMK** ___		**GPS:** (*Unit ID*)
	END **LAT** 41 °49 '39" **LONG** 72 °43 '47" **LMK** ___		

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☒ Lack of vegetation (canopy) ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: stormwater inputs without canopy cover (4 outfalls)

LAND USE: ?

(*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	___	___
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:

→ Recent clearing of veg + topsoil. Straw has been laid down to keep seed/soil. (Left Bank)

→ No buffer (Left Bank)

→ Mown lawn without vegetation in riparian zone + low % cover of canopy (30%) - Left Bank

→ Field (Both banks) with stormwater inputs through grassy swales - could increase thermal regime.

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: FYB		**DATE:** 11/30/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 1	**TIME:** 9:55 (AM)/PM	**PHOTO ID:** (*Camera-Pic #*) 149300 /# 03	
SITE ID (*Condition-#*): **OT-** A	**LAT** 41 ° 49 ' 28 " **LONG** 72 ° 43 ' 41 "	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 5' (in)

Depth: ____(in) Width (Top): ____(in) " (Bottom): ____(in)

NOT APPLICABLE

SUBMERGED: ☐ No ☒ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☒ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:
	TURBIDITY:	☐ None	☒ Slight Cloudiness	☐ Cloudy	☐ Opaque				
	FLOATABLES:	☒ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:				

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: Next to culvert which carries stream under RR tracks

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: FYB		**DATE:** 11/30/09	**ASSESSED BY:** CWM IBG
SURVEY REACH ID: \	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) none /#	
SITE ID (*Condition-#*): **OT-** B	**LAT** 41 ° 49 ' 30 " **LONG** 72 ° 43 ' 41 "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: ___ (in)

Depth: ___ (in) Width (Top): ___ (in) " (Bottom): ___ (in)

NOT APPLICABLE

SUBMERGED: ☐ No ☐ Partially ☐ Fully

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:
	TURBIDITY:	☐ None	☐ Slight Cloudiness	☐ Cloudy	☐ Opaque				
	FLOATABLES:	☐ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:				

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: insufficient notes.

?

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: FYB		**DATE:** 11/30/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID:	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) 149300 /# 07 + 09	
SITE ID (*Condition-#*): OT- C	**LAT** * see below **LONG** ___°___'___"	**LMK**___	**GPS:** (*Unit ID*)

BANK: * see below ☐LT ☐RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter:____(in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel

☐ Concrete ☒ Earthen ☐ Other: GRASSY SWALES

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____(in)
Width (Top): ____(in)
" (Bottom): ____(in)

~~NOT APPLICABLE~~

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY									
COLOR:	☒ Clear	☐ Brown	☐ Grey	☐ Yellow	☐ Green	☐ Orange	☐ Red	☐ Other:	
TURBIDITY:	☒ None	☐ Slight Cloudiness	☐ Cloudy	☐ Opaque					
FLOATABLES:	☒ None	☐ Sewage (toilet paper, etc.)	☐ Petroleum (oil sheen)	☐ Other:					

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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:

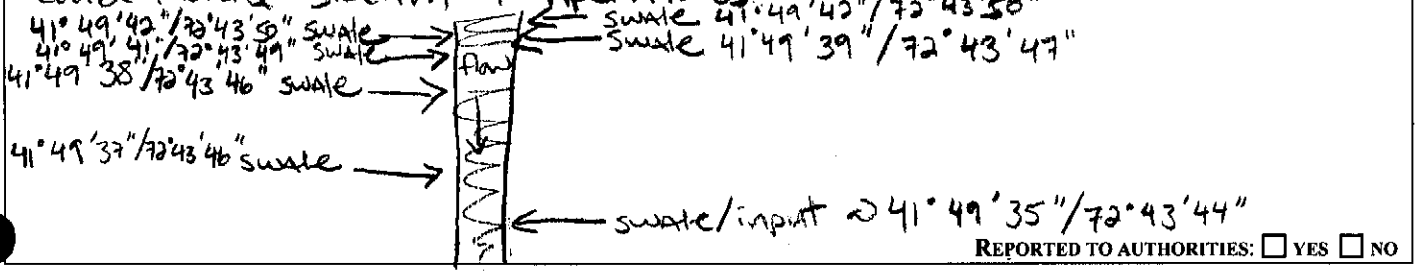
Is stormwater currently controlled? ☐ Yes ☐ No ☐ Not investigated

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: Unknown land use? Several inputs through grassy swales could increase stream temperatures



REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: FYB		**DATE:** 11 / 30 / 09	**ASSESSED BY:** CM/BG
SURVEY REACH ID:	**TIME:** 9 : 55 AM/PM	**PHOTO ID:** (*Camera-Pic #*) 14730	/# 03
SITE ID: (*Condition-#*) SC- A	**LAT** 41 ° 49 ' 28 " **LONG** 72 ° 43 ' 41 "	**LMK**	**GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other: cement bottom

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete + stone
☐ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☒ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 10 (ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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

Stream Crossing **SC**

WATERSHED/SUBSHED: FV/B		**DATE:** 11 / 30 / 09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 1	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) 149300	/# 06
SITE ID: (*Condition #*) SC-B	**LAT** 41 ° 49 ' 33 " **LONG** 72 ° 43 ' 42 "	**LMK** ___	**GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☒ Other: 4

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*) * See below
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

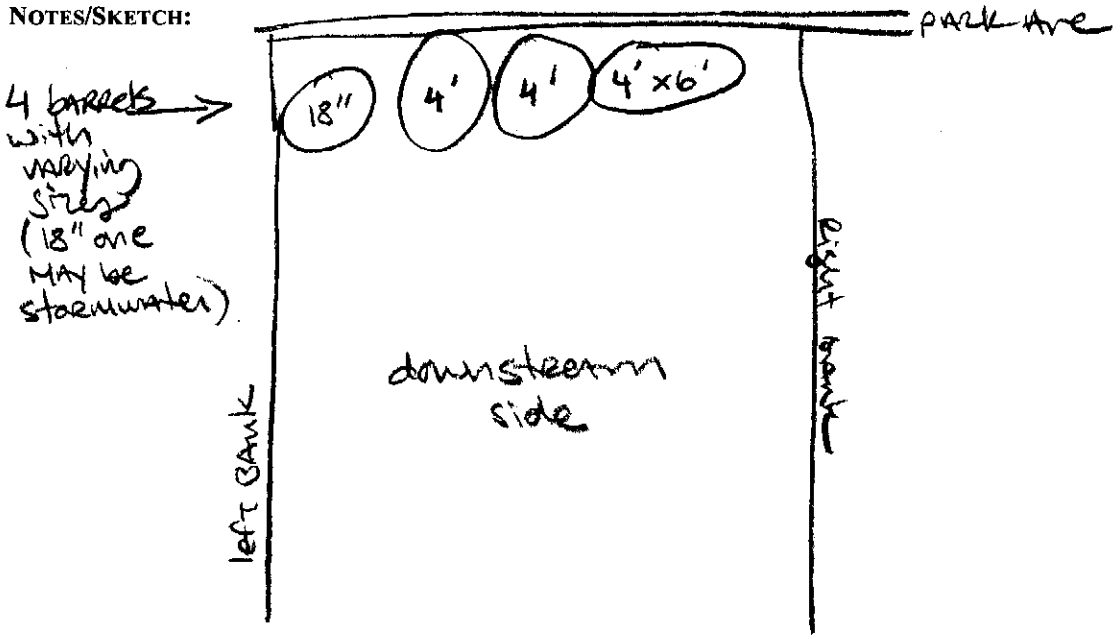
EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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 are 3 barrels on the upstream side of the culvert. We assume, therefore, that the 18" barrel is stormwater.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Trash and Debris **TR**

WATERSHED/SUBSHED: FYB	**DATE:** 11/30/09	**ASSESSED BY:** BG+CM
SURVEY REACH ID: 1	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) 14300 /# 05
SITE ID: (*Condition-#*) TR-only one	**LAT** throughout ° ' " **LONG** ° ' " **LMK** ___	**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☐ Residential

MATERIAL:
- ☒ Plastic
- ☐ Paper
- ☒ Metal
- ☒ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☒ Automotive
- ☒ Other: shopping cart, car parts

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☐ Illegal dump
- ☒ Local outfall

LOCATION:
- ☐ Stream
- ☒ Riparian Area
  - ☒ Lt bank
  - ☒ Rt bank

LAND OWNERSHIP:
- ☐ Public
- ☒ Unknown
- ☐ Private

AMOUNT (*# Pickup truck loads*): 2 or 3

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 #*)

5	4	3	2	1
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

NOTES: oil bottles, plastic bottles shopping carts, tires, parts of a Nissan which apparently crashed + was poorly cleaned up, etc. The Nissan was next to Park Ave.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

RCH

SURVEY REACH ID: 2	WTRSHD/SUBSHD: FYB	DATE: 11/24/08	ASSESSED BY: CM/BG

START TIME: 3:25 AM/PM LMK: ____
LAT 41 ° 48 ' 55 " LONG 72 ° 43 ' 39 "
DESCRIPTION: Junction with WBS

END TIME: 4:20 AM/PM LMK: ____
LAT 41 ° 49 ' 00 " LONG 72 ° 43 ' 40 "
DESCRIPTION: Cottage Grove Rd. Underpass/ culvert

GPS ID: CM

RAIN IN LAST 24 HOURS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ None ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☒ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☒ Urban/Residential ☐ Suburban/Res ☐ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☒ Other: Retirement Community + Parking lots

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH ☐ 0-25% ☐ 50%-75% ☐ 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:

STREAM SHADING (water surface)
☐ Mostly shaded (≥75% coverage)
☒ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank _____(ft)
RT bank _____(ft)
Width: Bottom _____(ft)
Top _____(ft)

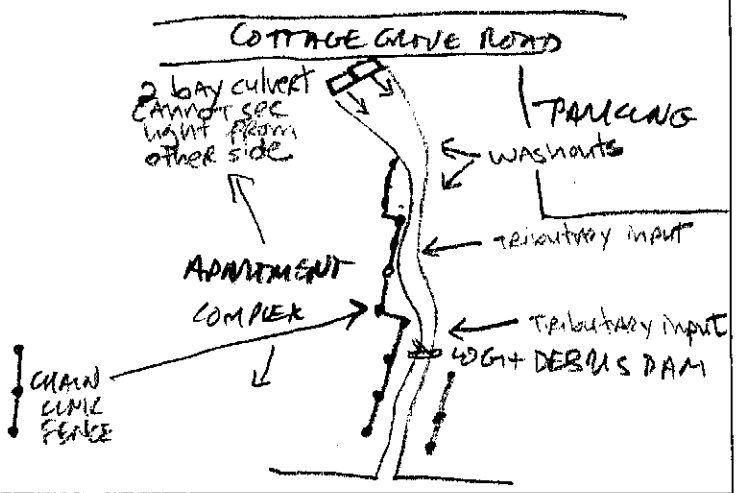
REACH ACCESSIBILITY

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

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



NOTES: *(biggest problem you see in survey reach)* Stormwater runoff not well managed.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

FYB-2 P.2

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 ENCROACH-MENT	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
	(15) 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	

Sub Total In-stream: 42 /80 + Buffer/Floodplain: 55 /80 = **Total** Survey Reach 97 /160

Severe Bank Erosion **ER**

WATERSHED/SUBSHED: FYB		**DATE:** 11/24/09	**ASSESSED BY:** CM + BG
SURVEY REACH: 2	**TIME:** 3:25 AM (PM)	**PHOTO ID** (CAMERA-PIC #): P8240/#075 + 076 + 078	
SITE ID: (*Condition-#*) ER- only one sheet	*START* **LAT** 41°48'55" **LONG** 72°43'39" **LMK** ____		**GPS:** (*Unit ID*)
	END **LAT** ___°___'___" **LONG** ___°___'___" **LMK** ____		

PROCESS:
- ☐ Currently unknown
- ☒ Downcutting
- ☒ Widening
- ☐ Headcutting
- ☐ Aggrading
- ☐ Sed. deposition
- ☐ Bed scour
- ☐ Bank failure
- ☒ Bank scour
- ☒ Slope failure
- ☐ 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: ☐ No ☐ Grade control ☒ Bank stabilization ☒ Other: stormwater control / minimize flashiness

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

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

EROSION SEVERITY(*circle#*) Channelized= ☐ 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 (1)
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	2 1

NOTES/CROSS SECTION SKETCH: Minor slope failure at junction of FYB + WBS. Adjacent to Senior living facility + access could be fairly easy. There is a chain-link fence along portions of both banks, though.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

The following document has not been transmitted. Try to retransmit.

(FRI) JAN 22 2010 9:44

ACCOUNT NAME :
DESTINATION : Scan PDF
DEST. NUMBER : 1
:

DOCUMENT# : 6800000-400
TIME STORED : JAN 22 9:43
TIME SENT :
DURATION :
MODE :

PAGES : 0 sheets
RESULT : NG

p. 1 of 2
FYB, Reach 1

Reach Level Assessment **RCH**

SURVEY REACH ID: 1	WTRSHD/SUBSHD: FYB	DATE: 11/30/09	ASSESSED BY: CM/BG
START TIME: 9:55 AM/PM LMK: ____ LAT 41° 49' 28" LONG 72° 43' 41" DESCRIPTION: RAILROAD TRACKS/CULVERT	END TIME: 10:30 AM/PM LMK: ____ LAT 41° 49' 42" LONG 72° 43' 50" DESCRIPTION: heli pad		GPS ID: CM

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☒ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☒ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☐ Forested ☒ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☒ Other: powerlines, "High school", RR TRACKS

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 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

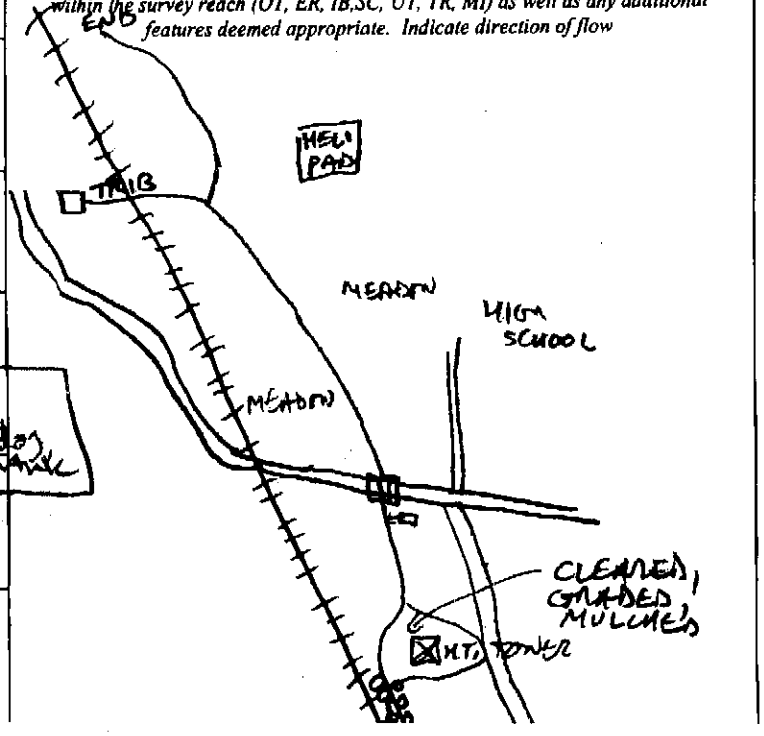
WILDLIFE IN OR AROUND STREAM
(Evidence of)
☐ Fish ☐ Beaver ☒ Deer
☐ Snails ☒ Other: SNAKE, RACCOON, GROUNDHOG, RT HAWK

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

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



Trash and Debris **TR**

WATERSHED/SUBSHED: FYB		**DATE:** 11/24/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 2	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PB240 /# 080 + 082	
SITE ID: (*Condition #*) TR-only one	**LAT** 41 ° 48 · 59 " **LONG** 72 ° 43 · 38 " **LMK** ___		**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☒ Residential

MATERIAL:
- ☒ Plastic
- ☒ Paper
- ☐ Metal
- ☐ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☐ Automotive
- ☐ Other:

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☐ Illegal dump
- ☒ Local outfall

LOCATION:
- ☒ Stream
- ☒ Riparian Area
  - ☒ Lt bank
  - ☐ Rt bank

LAND OWNERSHIP:
- ☐ Public ☐ Unknown
- ☒ Private - ~~Apartments~~ ?

AMOUNT (*# Pickup truck loads*): 2 or 3

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 #*)

5	4	3	2	1
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

NOTES: local outfall - Adjacent to dumpster And parking lot in fairly urban area. Stream reach is in between a senior living center + Apartment building (?)

REPORTED TO AUTHORITIES ☐ YES ☒ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: FYB		**DATE:** 4/24/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 2	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) none /#	
SITE ID (*Condition-#*): **OT-** A	**LAT** 41 ° 48 ' 55 " **LONG** 72 ° 43 ' 38 "	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe ☒ Open channel

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other: / ☐ Concrete ☒ Earthen ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other: / ☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: ____ (in) / Depth: ____ (in) / Width (Top): ____ (in) / " (Bottom): ____ (in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

NOT APPLICABLE

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☒ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ Other:

POTENTIAL RESTORATION CANDIDATE ☐ no ☒ Discharge investigation ☐ Stream daylighting ☒ Local stream repair/outfall stabilization ☐ 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: parking / building (apt?)

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: Poorly designed stormwater from parking lot.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: FYB		**DATE:** 11/24/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 2	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID (*Condition-#*): **OT-** 6	**LAT** ___° See below "**LONG** ___° ___' ___"	**LMK**___	**GPS:** (*Unit ID*)

BANK: See below ☐LT ☐RT ☐Head

FLOW: ☒None ☒Trickle ☐Moderate ☐Substantial ☐Other:

TYPE: ☒Closed pipe ☒Open channel

MATERIAL: ☒Concrete ☐Metal ☐PVC/Plastic ☐Brick ☐Other: ☐Concrete ☒Earthen ☐Other:

SHAPE: ☐Single ☒Circular ☐Double ☐Elliptical ☐Triple ☐Other: ☐Trapezoid ☐Parabolic ☐Other:

DIMENSIONS: Diameter: 12" (in) Depth: ___ (in) Width (Top): 5' (in) " (Bottom): ___ (in) NOT APPLICABLE

SUBMERGED: ☐No ☐Partially ☐Fully

CONDITION: ☒None ☐Chip/Cracked ☐Peeling Paint ☐Corrosion ☐Other:

ODOR: ☒No ☐Gas ☐Sewage ☐Rancid/Sour ☐Sulfide ☐Other:

DEPOSITS/STAINS: ☒None ☐Oily ☐Flow Line ☐Paint ☐Other:

VEGGIE DENSITY: ☒None ☐Normal ☐Inhibited ☐Excessive ☐Other:

PIPE BENTHIC GROWTH: ☒None ☐Brown ☐Orange ☐Green ☐Other:

POOL QUALITY: ☒No pool ☐Good ☐Odors ☐Colors ☐Oils ☐Suds ☐Algae ☐Floatables ☐Other:

FOR FLOWING ONLY

COLOR: ☒Clear ☐Brown ☐Grey ☐Yellow ☐Green ☐Orange ☐Red ☐Other:

TURBIDITY: ☐None ☒Slight Cloudiness ☐Cloudy ☐Opaque

FLOATABLES: ☒None ☐Sewage (toilet paper, etc.) ☐Petroleum (oil sheen) ☐Other:

OTHER CONCERNS: ☒Excess Trash (paper/plastic bags) ☐Dumping (bulk) ☐Excessive Sedimentation ☐Needs Regular Maintenance ☐Bank Erosion ☐Other:

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

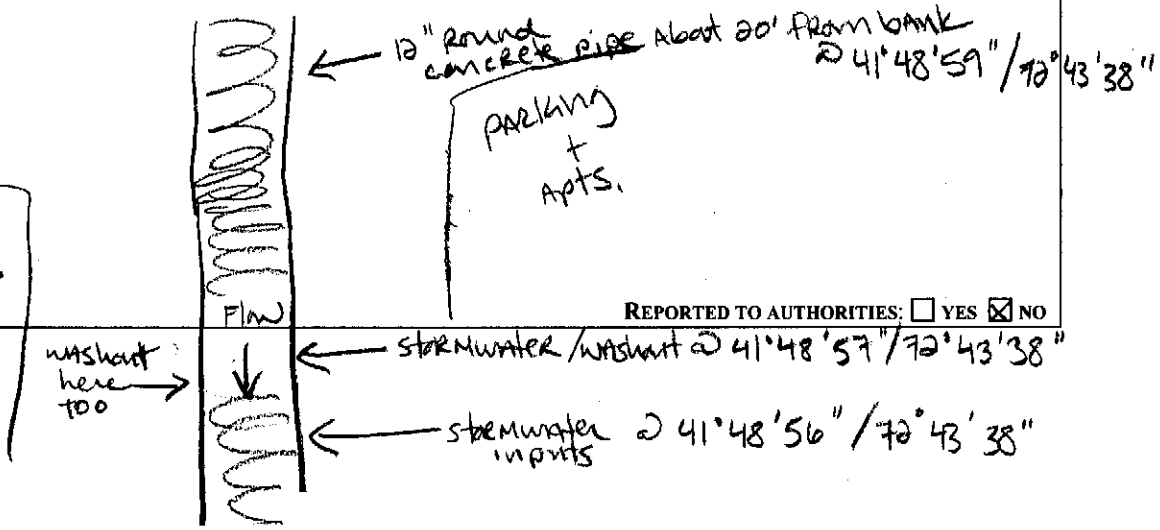
If yes for daylighting:
Length of vegetative cover from outfall: _____ft Type of existing vegetation: _____ Slope: _____°

If yes for stormwater:
Is stormwater currently controlled? ☐Yes ☐No ☒Not investigated
Land Use description: Parking / Building (apartments?)
Area available:

OUTFALL SEVERITY: (*circle #*)

5	4	3	2	1
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.

SKETCH/NOTES:



REPORTED TO AUTHORITIES: ☐YES ☒NO

Stream Crossing **SC**

WATERSHED/SUBSHED: FYB | **DATE:** 11/24/09 | **ASSESSED BY:** cm + BG

SURVEY REACH ID: 2 | **TIME:** 4 : 10 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PB240 /# 083

SITE ID: (*Condition-#*) **SC-** ont | **LAT** 41 ° 49 ' 00 " **LONG** 72 ° 43 ' 40 " **LMK**____ | **GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☒ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☒ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ Obvious (>5°)

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

IS SC ACTING AS GRADE CONTROL ☐ No ☐ Yes ☐ Unknown

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☒ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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: excess sediment.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

P. 1 of 2
FY6 reaches

Reach Level Assessment **RCH**

SURVEY REACH ID: 3	WTRSHD/SUBSHD: FY6	DATE: 11/30/07	ASSESSED BY: OM/BG

START	END	GPS ID:
TIME: 8:15 AM/PM LMK: ____	TIME: 9:55 AM/PM LMK: ____	
LAT 41°49'0" LONG 72°43'40"	LAT 41°49'28" LONG 72°43'41"	
DESCRIPTION: Rt. 218 / culvert crossing	DESCRIPTION: RR tracks / culvert cross	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☒ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☒ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 25-50 % ☐ 50%-75% ☒ 75-100%

DOMINANT SUBSTRATE
☒ Silt/clay (fine or slick) ☐ Sand (gritty) ☐ Gravel (0.1-2.5") ☐ Cobble (2.5 –10") ☐ Boulder (>10") ☐ 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 ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)* Bankfull
Height: LT bank _____ (ft)
RT bank _____ (ft)
Width: ~~Bottom~~ 13 (ft)
~~Top~~ _____ (ft)

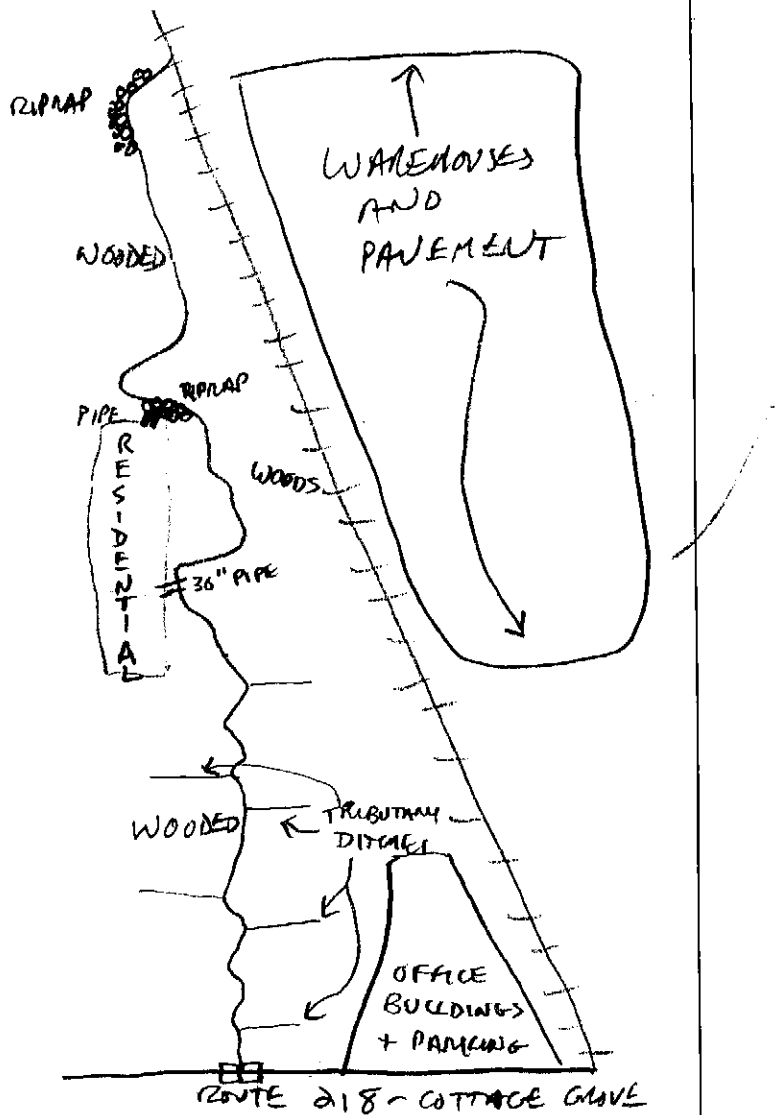
REACH ACCESSIBILITY

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)

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



NOTES: *(biggest problem you see in survey reach)* Impacted buffers; Areas of erosion, invasive plants, lots of stormwater inputs / outfalls, areas of rip-rap (right bank) behind residential neighborhood.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

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FY8, Reach 12

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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	(3) 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 Encroach-ment	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: 51 /80 + Buffer/Floodplain: 54 /80 = **Total** Survey Reach 105 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: FY3 | **DATE:** 1/30/09 | **ASSESSED BY:** CM + RG

SURVEY REACH ID: 3 | **TIME:** 8:15 (AM)/PM | **PHOTO ID:** (*Camera-Pic #*) olympus / # 002

SITE ID: (*Condition-#*) SC-____ | **LAT** 41 °49 ' 02 " | **LONG** 72 °43 ' 40 " | **LMK** ____ | **GPS** (*Unit ID*)

TYPE: ☒ Road Crossing (Rt. 218) ☐ Railroad Crossing ☐ Manmade Dam ☐ Beaver Dam ☐ Geological Formation ☐ Other:

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☒ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☒ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ Obvious (>5°)

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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☒ Partial left bay
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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: Cannot see light through tunnel (will not be used by wildlife including turtles- can still be used by fish). Left bay of 2-bay culvert is clogged with sediment + flow is restricted to right bay only. Culvert goes under Rte. 218 / 4-lane highway.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: FYB		**DATE:** 11/30/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 3	**TIME:** 8:15 - 9:45 AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID (*Condition-#*): **OT-** All on one sheet	**LAT** *See Reverse* **LONG** ° ' "	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☒ LT ☒ RT ☐ Head

FLOW: ☒ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☒ Open channel

MATERIAL: ☒ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☒ Earthen ☐ Other:

SHAPE: ☒ Single ☐ Double
☐ Circular ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: vary - See Reverse (in)
Depth: ____(in)
Width (Top): ____(in)
" (Bottom): ____(in)
NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☒ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☒ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☒ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☒ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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: Parking lot
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: There are several open channel inputs to this reach + a few closed pipes (~21 in total). See reverse side for locations + additional details.

- No unusual observations -

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

1.) Tributary entering LB @ 41°49'03"/72°43'41" - possibly stormwater from parking lot.
2.) Washout from stormwater flow or tributary on LB @ 41°49'03" / 72°43'41"
3.) Tributary input on LB @ 41°49'05" /72°43'41"
4.) Tributary input on RB @ 41°49'05"/72°43'41"
5.) " " " @ 41°49'06"/72°43'41"
6.) " " " @ 41°49'06"/72°43'42"
7.) " " LB ~30' further North
8.) " "
" @ 41°49'08"/72°43'41"
9.) " " " @ 41°49'10"/72°43'40"
10.) " " " @ 41'49' 12"/72°43'42" - there is some running water here, unlike the others listed above, which were more wash-out/scours.
11.) Washout/tributary input to RB @ 41°49'13"/72°43'42"
12.) " " behind residential area @ 41°49'13"/72°43'42"
13.) Stormwater input on RB @ 41°49'15"/72°43'43" - there's a 30" Round concrete pipe ~2' high off ground + Rip-Rap under to buffer outflow before it reaches brook. see photo olympus1-006
14.) Tributary or stormwater flow (x2) on RB @ 41°49'16"/72°43'42"
15.) Tributary input on LB @ 41°49'16"/72°43'40"
16.) Input on LB @ 41°49'17"/72°43'41"
17.) Stormwater pipe on RB behind residential area ~12" diam; Rip-Rap under pipe ~14" off ground + ~4' back from top of bank @ 41°49'21"/72°43'43"
18.) Tributary/input with running water to LB @ 41°49'22"/72°43'42"
19.) Input to LB @ 41°49'25"/72°43'42"
20.) Stormwater input (no pipe) to RB @ 41°49'26"/72°43'42"
21.) @ end of reach (upstream end) @ culvert there is a 5' round metal pipe

Severe Bank Erosion **ER**

WATERSHED/SUBSHED: FYB		**DATE:** 11/30/09	**ASSESSED BY:** CM + BG
SURVEY REACH: 3	**TIME:** ___:___ AM/PM	**PHOTO ID** (CAMERA-PIC #): DSP	/# 007
SITE ID: (*Condition-#*) ER-_____	*START* **LAT** 41 °49'20" **LONG** 72 °43'42"	**LMK** _____	**GPS:** (*Unit ID*)
	END **LAT** ___ ° ___ ' ___ " **LONG** ___ ° ___ ' ___ "	**LMK** _____	

PROCESS: ☐ Currently unknown

☐ Downcutting ☐ Widening ☐ Headcutting ☐ Aggrading ☐ Sed. deposition

☐ Bed scour ☐ Bank failure ☐ Bank scour ☒ Slope failure ☐ 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: ☒ No ☐ Grade control ☐ Bank stabilization ☐ Other:

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

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

EROSION SEVERITY(*circle#*) Channelized= ☐ 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	1
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) 2	1

NOTES/CROSS SECTION SKETCH: Minor bank erosion/slope failure at various spots throughout reach - this example is typical

→ Another slope failure to left bank @ 41°49'33" / 072°43'42"

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Impacted Buffer **IB**

WATERSHED/SUBSHED: FYB		**DATE:** 11/30/09	**ASSESSED BY:** CMT BG
SURVEY REACH: 3	**TIME:** 9:45 AM/PM	**PHOTO ID:** (*Camera-Pic #*) DISP /# 007	
SITE ID: (*Condition-#*) IB-____	*START* **LAT** 41 °49'26" **LONG** 72 °43'42"	**LMK** ____	**GPS:** (*Unit ID*)
	END **LAT** 41 °49'28" **LONG** 72 °43'41"	**LMK** ____	

IMPACTED BANK: ☐ LT ☒ RT ☐ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: Rip-RAP (poor-no wildlife value)

LAND USE: (*Facing downstream*)

	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):		~80' ±
Width (ft):		~15' ±

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
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: There are areas where Rip-RAP has been placed on banks to stabilize. These areas were documented as below:

→ Rip-RAP ~30' long + 10' high up bank on RB @ 41°49'21"/72°43'43"

→ RipRAP ~10' high x 30' long with approx. 25' of no RIP-RAP, then another 40' long x 15' high stretch of Rip-RAP. Right Bank.

⟹ these areas may not be potential Restoration candidates (they have already technically been "restored") - however, it is relevant to note, particularly if future restoration is proposed on this reach. Other bioengineering techniques could be proposed instead of more Rip-RAP, since Rip-RAP can lead to ↑ stream temperatures + does not provide wildlife value.

Reach Level Assessment **RCH**

SURVEY REACH ID: 1	WTRSHD/SUBSHD: BBE	DATE: 12 / 3 / 09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 9 : 20 AM/PM LMK:	TIME: 9 : 45 AM/PM LMK:	CM
LAT 41 ° 50 ' 21 " LONG 72 ° 42 ' 49 "	LAT 41 ° 50 ' 23 " LONG 72 ° 42 ' 45 "	
DESCRIPTION: Junction with BBE-2	DESCRIPTION: culvert w/ dike	

RAIN IN LAST 24 HOURS ☒ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☒ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☐ Forested ☒ Institutional (Senior Center) ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☒ Other: Dike, powerlines ROW

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 25-50 % ☒ 75-100%

DOMINANT SUBSTRATE
- ☒ Silt/clay (fine or slick)
- ☐ Sand (gritty)
- ☐ Gravel (0.1-2.5")
- ☐ Cobble (2.5 –10")
- ☐ Boulder (>10")
- ☐ 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: RT HAWK

STREAM SHADING (water surface)
- ☐ Mostly shaded (≥75% coverage)
- ☐ Halfway (≥50%)
- ☒ Partially shaded (≥25%)
- ☐ Unshaded (< 25%)

CHANNEL DYNAMICS in flood
- ☒ Unknown
- ☐ Downcutting
- ☐ Widening
- ☐ Headcutting
- ☐ Aggrading
- ☐ Sed. deposition
- ☐ Bed scour
- ☐ Bank failure
- ☐ Bank scour
- ☐ Slope failure
- ☐ Channelized

BANKFULL CHANNEL DIMENSIONS (~~FACING DOWNSTREAM~~) Estimate
- Height: ~~LT bank~~ 3' (ft)
- ~~RT bank~~ (ft)
- Width: ~~Bottom~~ 13' (ft)
- ~~Top~~ (ft)

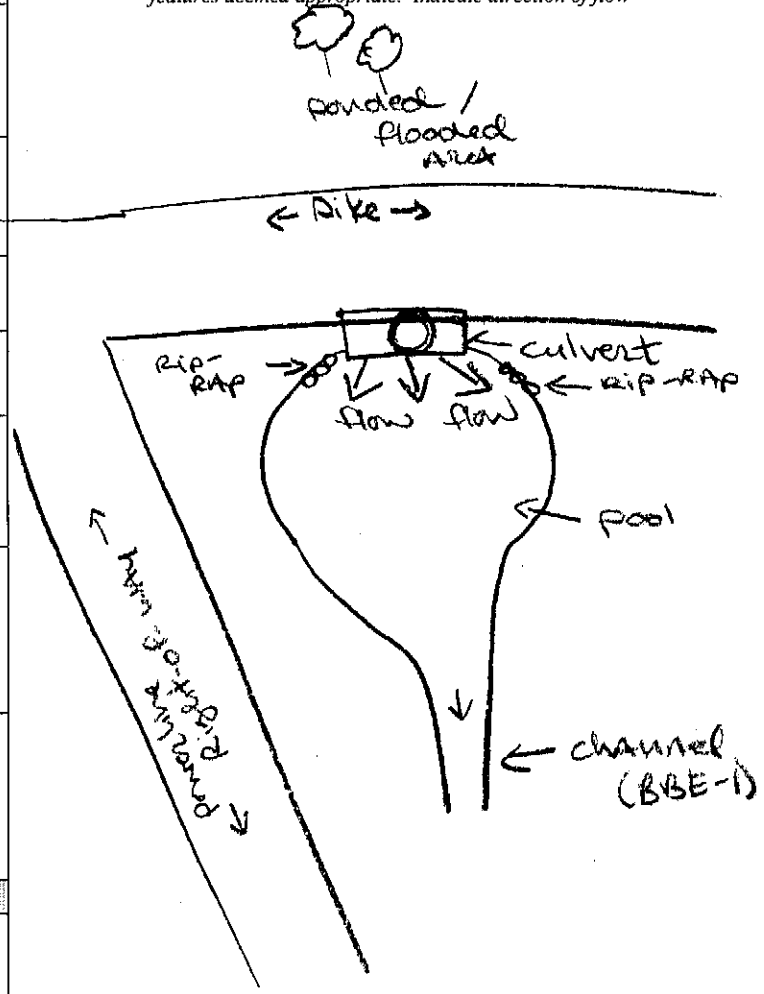
REACH ACCESSIBILITY

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

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



NOTES: *(biggest problem you see in survey reach)* The velocity of flow through the culvert was so high it caused the water to pool + the banks to blowout (hence the RIP-RAP). There is no canopy cover — thermal increase.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream) ? under water	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 – ROW
	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 dike, culvert, R.O.W.	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: 51 /80 + Buffer/Floodplain: 33 /80 = **Total** Survey Reach 84 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: BBE		**DATE:** 12/08/09	**ASSESSED BY:** Bjotem
SURVEY REACH ID: 01	**TIME:** 9 : 45 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC0300	/# 10
SITE ID: (*Condition-#*) **SC-** see sheet	**LAT** 41 ° 50 ' 23 " **LONG** 72 ° 42 ' 45 "	**LMK**	**GPS** (*Unit ID*)

TYPE: ☐ Road Crossing ☐ Railroad Crossing ☒ Manmade Dam ☐ Beaver Dam ☐ Geological Formation ☐ Other: Dike

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other: pipe

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 24" (ft)
Height: _____ (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☒ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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: See Rch datasheet for sketch.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Reach Level Assessment **RCH**

SURVEY REACH ID: 2	WTRSHD/SUBSHD: BBE	DATE: 12/3/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 9:00 AM/PM LMK: ____	TIME: 9:20 AM/PM 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: ☒ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS: ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☒ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☒ Other: High tension power lines,

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 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: RT hawk

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 (under H2O tinted)

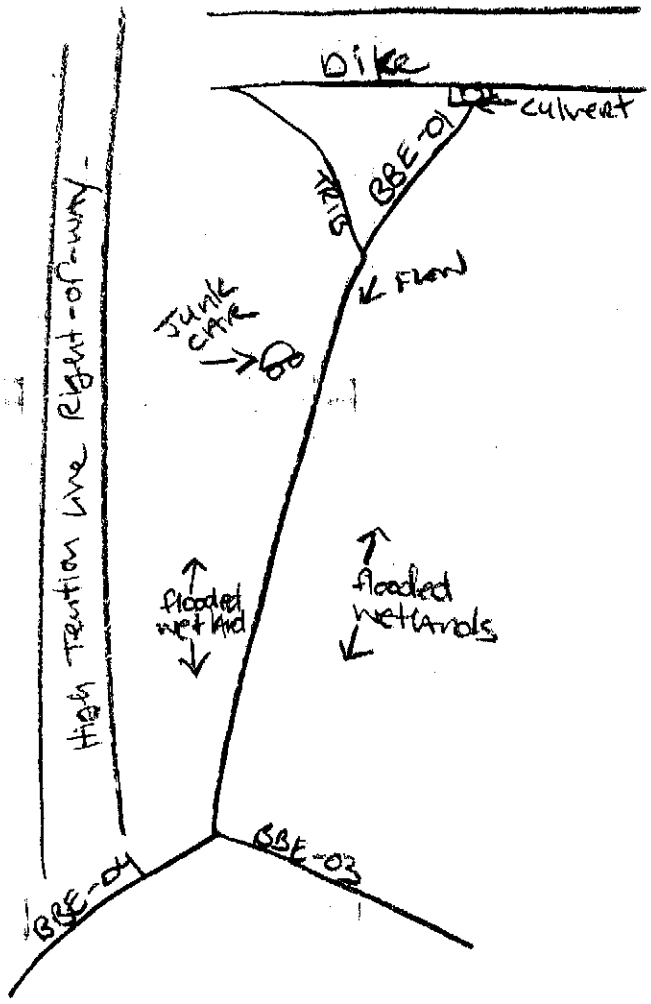
CHANNEL DIMENSIONS *(FACING DOWNSTREAM)* (Bankfull)
- Height: ~~LT bank~~ 3' (ft)
- ~~RT bank~~ ____ (ft)
- Width: ~~Bottom~~ 11.6 (ft)
- ~~Top~~ ____ (ft)

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

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



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 *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream) 2 ° under water - can't see	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: 106 /80 + Buffer/Floodplain: 60 /80 = **Total** Survey Reach 166 /160

Trash and Debris **TR**

WATERSHED/SUBSHED: BB.E		**DATE:** 12/03/09	**ASSESSED BY:** CM+BG
SURVEY REACH ID: 07	**TIME:** 9:10 (AM)/PM	**PHOTO ID:** (*Camera-Pic #*) PC300 /# 08	
SITE ID: (*Condition-#*) TR-only one sheet	**LAT** 41 ° 50 ' 18 " **LONG** 72 ° 42 ' 52 " **LMK** ____		**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☐ Residential

MATERIAL:
- ☐ Plastic
- ☐ Paper
- ☐ Metal
- ☐ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☒ Automotive
- ☐ Other:

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☒ Illegal dump
- ☐ Local outfall

LOCATION:
- ☐ Stream
- ☒ Riparian Area
  - ☐ Lt bank
  - ☒ Rt bank

LAND OWNERSHIP:
- ☐ Public
- ☒ Unknown
- ☐ 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 #*)

5	4	3	2	1
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	

NOTES: very old CAR - Relatively intact, may require machinery for removal

REPORTED TO AUTHORITIES ☐ YES ☒ NO

Reach Level Assessment **RCH**

SURVEY REACH ID: BBE 04	WTRSHD/SUBSHD: BEAMAN BROOK E.	DATE: 12/3/09	ASSESSED BY: BG + CM

START	END	GPS ID:
TIME: 8 30 AM/PM LMK: ____	TIME: ~~2 30~~ AM/PM ? LMK: ____	
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: ☑ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS: ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☑ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☑ Suburban/Res ☑ Forested ☐ Institutional ☐ Golf course ☑ Park ? ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 25-50 % ☑ 75-100%

DOMINANT SUBSTRATE
- ☑ Silt/clay (fine or slick)
- ☐ Sand (gritty)
- ☐ Gravel (0.1-2.5")
- ☐ Cobble (2.5 –10")
- ☐ Boulder (>10")
- ☐ 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 — TOO TURBID TO SEE

WILDLIFE IN OR AROUND STREAM: (Evidence of) ☐ Fish ☐ Beaver ☑ Deer ☐ Snails ☑ Other: RED-TAILED HAWK

STREAM SHADING (water surface): ☑ Mostly shaded (≥75% coverage) ABOVE WINDROW/BERM ☐ Halfway (≥50%) ☐ Partially shaded (≥25%) ☑ Unshaded (< 25%) BELOW WINDROW/BERM

CHANNEL DYNAMICS: ☑ Unknown
- ☐ Downcutting
- ☐ Widening
- ☐ Headcutting
- ☐ Aggrading
- ☐ Sed. deposition
- ☐ Bed scour
- ☐ Bank failure
- ☐ Bank scour
- ☐ Slope failure
- ☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
- Height: ~~LT~~ bank 3 (ft)
- ~~RT~~ bank ____ (ft)
- Width: ~~Bottom~~ 12 (ft)
- ~~Top~~ ____ (ft)

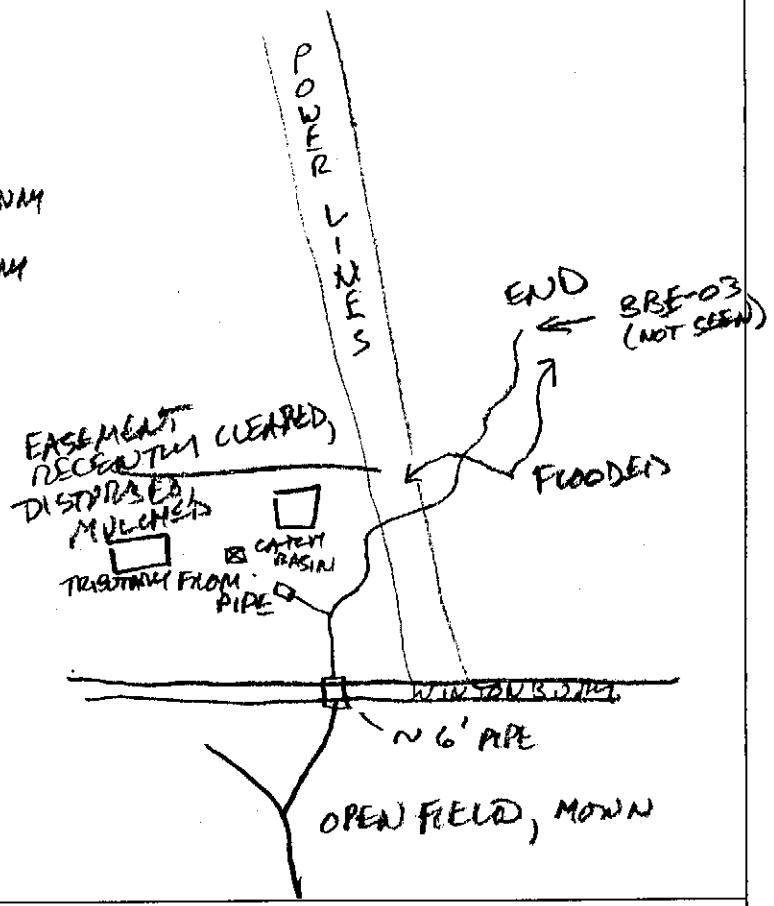
REACH ACCESSIBILITY

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

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



NOTES: *(biggest problem you see in survey reach)*
MOWN LAWN + PIPED TRIBUTARY (R) BANK N. OF WINDROW/BERM.
HEAVY SEDIMENT LOAD ON 12/3
INVASIVE PLANTS (PACHYSANDRA, PHRAGMITES, ROSA MULTIFLORA, etc).

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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

Stream Crossing **SC**

WATERSHED/SUBSHED: BBE | **DATE:** 12/03/09 | **ASSESSED BY:** CM + BG

SURVEY REACH ID: 04 | **TIME:** 8:45 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PC0300 /# 93

SITE ID: (*Condition-#*) SC- | **LAT** 41 ° 50 ' 09 " **LONG** 72 ° 43 ' 09 " **LMK** ____ | **GPS** (*Unit ID*)

↑ Winthrop Ave.

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 5' (ft)
Height: ____ (ft)
Culvert length: ____ (ft)
Width: ____ (ft)
Roadway elevation: ____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: ____ (in)
☐ Flow too shallow Water Depth: ____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: BBE		**DATE:** 12/03/09	**ASSESSED BY:** CM+BG
SURVEY REACH ID: 04	**TIME:** 8:55 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC0300	/# 04
SITE ID (*Condition-#*) **OT-**____	**LAT** 41°56'11" **LONG** 72°43'07"	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☐ None ☒ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter:____(in)

SUBMERGED: ☒ No ☐ Partially ☐ Fully

☐ Open channel — ☐ Concrete ☐ Earthen ☐ Other: — ☐ Trapezoid ☐ Parabolic ☐ Other: — Depth: ____(in) Width (Top):____(in) " (Bottom):____(in) — *NOT APPLICABLE*

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
	TURBIDITY:	☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque
	FLOATABLES:	☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:
OTHER CONCERNS:		☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 driveways. Prochysandra + periwinkles here too

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Reach Level Assessment **RCH**

SURVEY REACH ID: BBW-03	WTRSHD/SUBSHD: BEAMAN BROOK WEST	DATE: 12/3/09	ASSESSED BY: BG/CM

START	END	GPS ID:
TIME: 9:50 AM/PM LMK: ____	TIME: 10:15 AM/PM LMK: ____	
LAT 41°50'08" LONG 72°43'11"	LAT 41°50'20" LONG 72°43'18"	
DESCRIPTION: CONFLUENCE WITH BBE-04	DESCRIPTION: BEND BEHIND HOUSES	

RAIN IN LAST 24 HOURS: ☑ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS: ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☑ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☑ Suburban/Res ☐ Forested ☑ Institutional (ELEM. SCHOOL) ☐ Golf course ☑ Park? (BEHIND WINTON RD) ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 25-50 % ☑ 75-100%

DOMINANT SUBSTRATE
- ☑ Silt/clay (fine or slick)
- ☐ Sand (gritty)
- ☐ Gravel (0.1-2.5")
- ☐ Cobble (2.5 –10")
- ☐ Boulder (>10")
- ☐ 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 (NO VISIBILITY) Floating: ☑ none ☐ some ☐ lots

WILDLIFE IN OR AROUND STREAM: (Evidence of) ☐ Fish ☐ Beaver ☐ Deer ☐ Snails ☐ Other:

STREAM SHADING (water surface):
- ☑ Mostly shaded (≥75% coverage) (ABOVE WINTON RD)
- ☐ Halfway (≥50%)
- ☑ Partially shaded (≥25%) (BELOW WINTON RD)
- ☐ Unshaded (< 25%)

CHANNEL DYNAMICS: ☑ Unknown
- ☐ Downcutting
- ☐ Widening
- ☐ Headcutting
- ☐ Aggrading
- ☐ Sed. deposition
- ☐ Bed scour
- ☐ Bank failure
- ☐ Bank scour
- ☐ Slope failure
- ☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
- Height: LT bank 4 (ft)
- RT bank ____ (ft)
- Width: Bottom 16 (ft)
- Top BANKFULL ____ (ft)

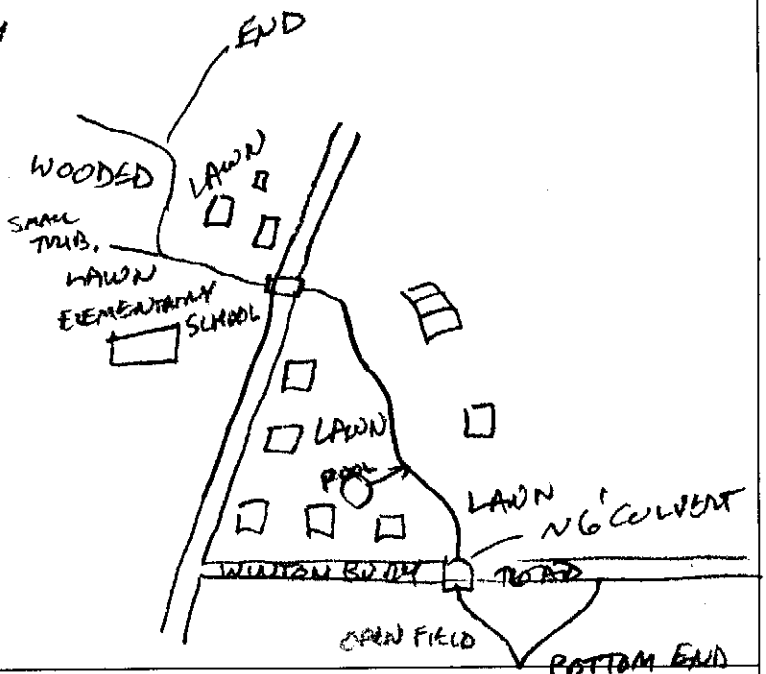
REACH ACCESSIBILITY

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

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



NOTES: *(biggest problem you see in survey reach)* SUBURBIA: 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 *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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). NOT VISIBLE	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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected. SOME AREAS NOT VISIBLE	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 SOME SHRUBBY AREAS
	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 IN LAWNS	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 Encroach-ment	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: 37 /80 = **Total** Survey Reach 94 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: BBW		**DATE:** 12 / 03 / 09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 02	**TIME:** 10 : 00 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC0300	/# 16
SITE ID: (*Condition-#*) SC-____	**LAT** 41 ° 51 ' 16 " **LONG** 72 ° 43 ' 17 " **LMK**____		**GPS** (*Unit ID*)

↑ FILLEY St.

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 5' (ft)
Height: _____ (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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 for ~30'. Headwalls consists of Rip-RAP.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Impacted Buffer **IB**

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

SURVEY REACH: 07 **TIME:** 9 : 55 (AM)/PM **PHOTO ID:** (*Camera-Pic #*) PC300 /# 12

SITE ID: (*Condition-#*) IB- A

START **LAT** ___° ___' ___" **LONG** ___° ___' ___" **LMK** ___

END **LAT** ___° ___' ___" **LONG** ___° ___' ___" **LMK** ___

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☒ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☐ Other:

LAND USE: (*Facing downstream*)

	Private	Institutional	Golf Course	Park	Other Public
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 (50%) ☐ 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):	~50'	~50'
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
(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: unknown land use - PARK?

Impacted Buffer **IB**

WATERSHED/SUBSHED: 6BW | **DATE:** 12/03/09 | **ASSESSED BY:** CMtBG

SURVEY REACH: 62 | **TIME:** 10:00 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PC0300 /# 15

SITE ID: (*Condition-#*) IB- 6

START **LAT** 41 °50 '13 " **LONG** 72 °43 '14 " **LMK** ____

END **LAT** ___ ° ___ ' ___ " **LONG** ___ ° ___ ' ___ " **LMK** ____

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☐ RT ☐ Both

REASON INADEQUATE: ☐ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☒ Other: See below

LAND USE:

(*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	____	~ 30'
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: yard waste piled up on Right Bank + home owner is draining their pool directly into brook.

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: BBN		**DATE:** 12/03/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 02	**TIME:** 10 : 00 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC0300	/# 18
SITE ID (*Condition-#*): **OT-** MW ONE	**LAT** 41 °50 ' 16 " **LONG** 72 °43 ' 19 "	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe

MATERIAL: ☐ Concrete ☒ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☒ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter:____(in)

SUBMERGED: ☐ No ☒ Partially ☐ Fully

☒ Open channel — ☐ Concrete ☒ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____(in)
Width (Top):____(in)
" (Bottom):____(in)

NOT APPLICABLE

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY	**COLOR:**	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:
	TURBIDITY:	☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque
	FLOATABLES:	☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 RB

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Reach Level Assessment **RCH**

SURVEY REACH ID: 1	WTRSHD/SUBSHD: WBS	DATE: 12/1/09	ASSESSED BY: CM/BG

START TIME: 1 : 30 AM/PM LMK: ____
LAT 41 ° 50 ' 37 " LONG 72 ° 44 ' 33 "
DESCRIPTION: Convergence with WBS-5 (Brick condos Along Left Bank)

END TIME: 3 : 00 AM/PM LMK: ____
LAT 41 ° 51 ' 06 " LONG 72 ° 44 ' 27 "
DESCRIPTION: Confluence with WBN-7/WBN-6

GPS ID: CM0

RAIN IN LAST 24 HOURS ☐ Heavy rain ☒ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☒ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75%
☐ 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) MALLARDS, RT WARK
☐ Fish ☐ Beaver ☒ Deer
☐ Snails ☒ Other: MUSSELS, RACCOON

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)* Bankfull

Height: ~~LT bank~~ 3' (ft)
~~RT bank~~ ____ (ft)
Width: ~~Bottom~~ 15' (ft)
~~Top~~ ____ (ft)

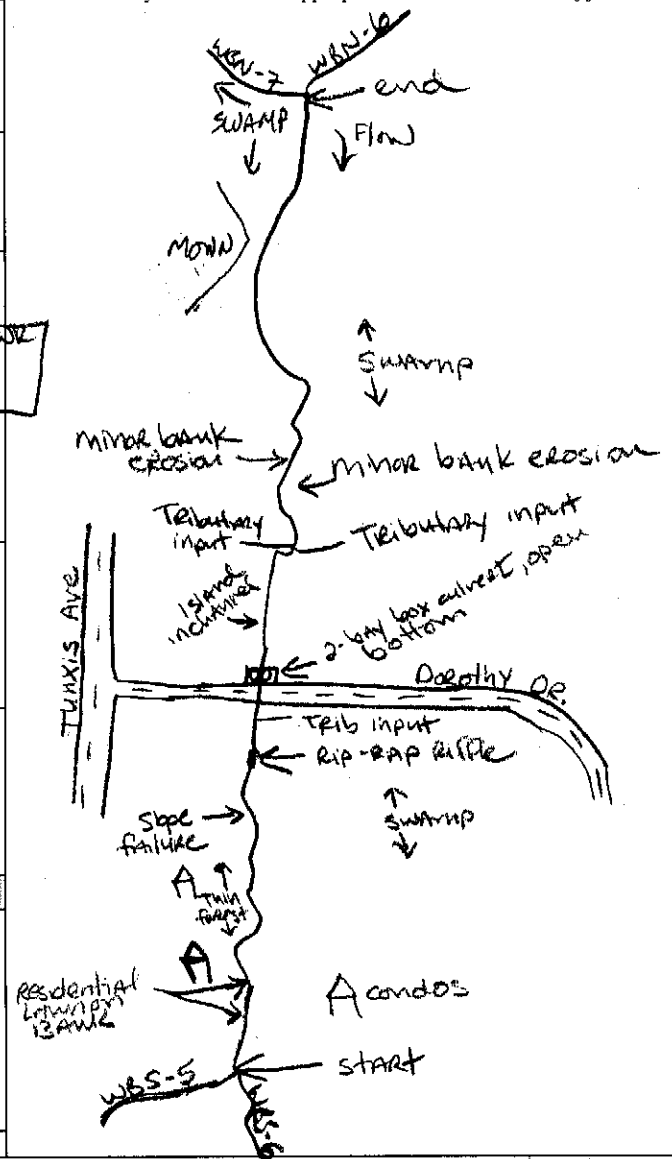
REACH ACCESSIBILITY

Good:	Fair:	Difficult.
Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	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

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



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

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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: 60 /80 + Buffer/Floodplain: 67 /80 = **Total** Survey Reach 127 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: WRS | **DATE:** 12/01/09 | **ASSESSED BY:** CM/BG

SURVEY REACH ID: 01 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) PC0100 /# 35

SITE ID: (*Condition-#*) SC-___ | **LAT** ___° ___' ___" **LONG** ___° ___' ___" **LMK**___ | **GPS** (*Unit ID*)

↑ Dorothy OR.

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☒ Other: NA TYRAP bottom

 # BARRELS:
☐ Single
☒ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 12' (ft)
Height: 8' (ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☒ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ Obvious (>5°)

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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☒ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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:

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

Impacted Buffer **IB**

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

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

	LT BANK	RT
Length (ft):	100	100
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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 lawns come up to edge to brook @ 41°50'39"/72°44'34" Approx. 100' length

Reach Level Assessment **RCH**

Survey Reach ID: 6	Wtrshd/Subshd: WBN	Date: 12/1/09	Assessed by: CM/BG

START	END	GPS ID:
Time: 3:00 AM/PM LMK: ____	Time: 4:20 AM/PM LMK: ____	
Lat 41°51'06" Long 72°44'27"	Lat 41°51'31" Long 72°43'56"	
Description: Confluence with WBN-7/WBS-1	Description: Confluence with WBN-5/WBN-4	

Rain in last 24 hours: ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ None ☐ Trace

Present conditions: ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☒ Overcast ☐ Partly cloudy

Surrounding land use: ☒ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

Average Conditions *(check applicable)*

Base Flow as % Channel Width: ☐ 0-25% ☐ 50%-75% ☐ 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: Mussels,

Stream Shading (water surface): ☒ Mostly shaded (≥75% coverage) ☐ Halfway (≥50%) ☐ Partially shaded (≥25%) ☐ Unshaded (< 25%)

Channel Dynamics ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

Channel Dimensions *(Facing Downstream)*
Bankfull
Height: LT bank 15" (ft)
~~RT bank~~ ____ (ft)
Width: Bottom 10' (ft)
~~Top~~ ____ (ft)

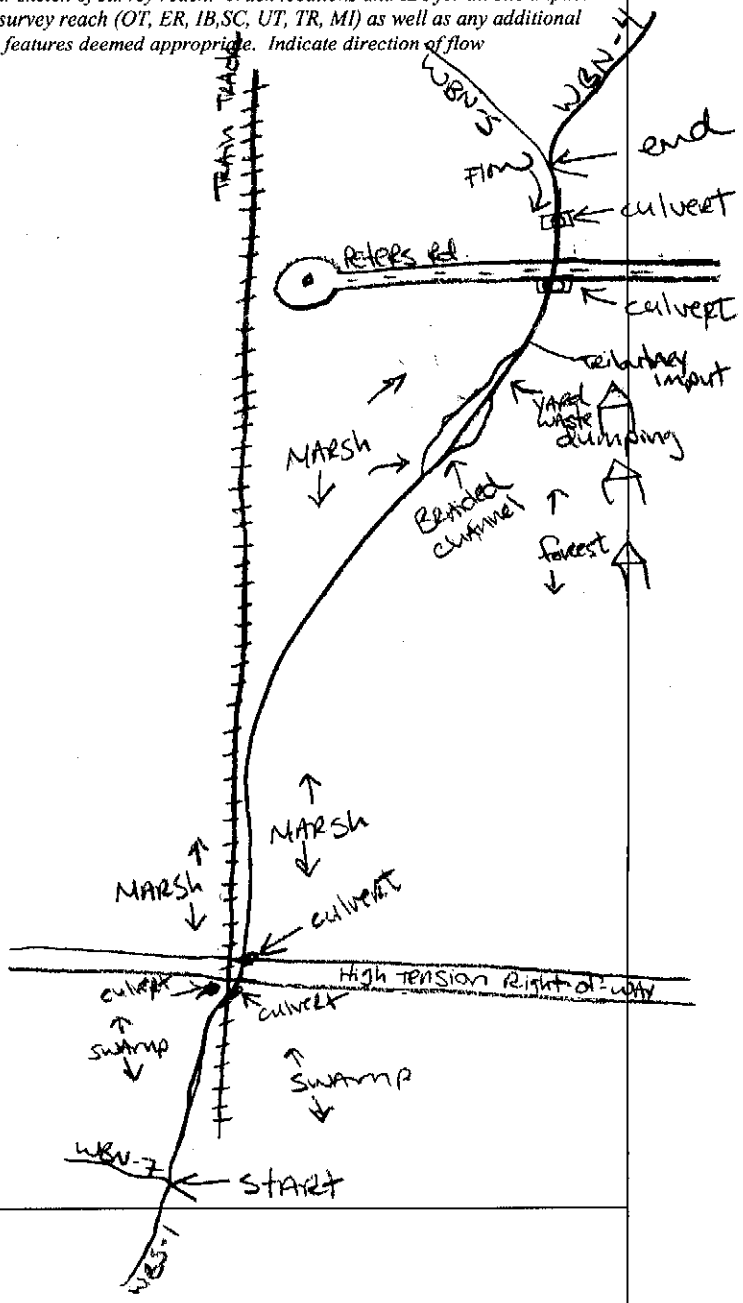
Reach Accessibility

Good	Fair	Difficult
Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	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)

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



Notes: *(biggest problem you see in survey reach)*
stone toe of RAILROAD TRACKS

Reported to Authorities ☐ Yes ☐ No

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 except when adjacent to train track	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 Due to train track mainly	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: 71 /80 + Buffer/Floodplain: 69 /80 = **Total** Survey Reach 140 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: WBN | **DATE:** 12/01/09 | **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" | **LONG** 070° 44' 23" | **LMK** ____ | **GPS** (*Unit ID*)

TYPE: ☐ Road Crossing ☒ Railroad Crossing ☐ Manmade Dam ☐ Beaver Dam ☐ Geological Formation ☒ Other: Power line R-o-W

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☒ Bottomless
☒ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single x3
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☑ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: See below (ft)
Height: _____ (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

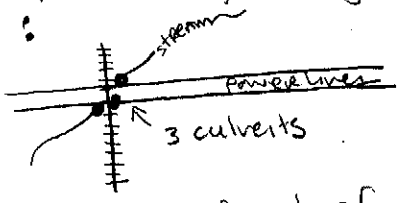
CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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:

→ 3 culverts @ intersection of the stream channel with the powerline 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 is 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

Stream Crossing **SC**

WATERSHED/SUBSHED: NRN | **DATE:** 12/01/09 | **ASSESSED BY:** Ant BO

SURVEY REACH ID: 6 | **TIME:** 4 : 15 AM/PM | **PHOTO ID:** (*Camera-Pic #*) P6010 0 /# 54, 55 + 56

SITE ID: (*Condition-#*) SC- 6 | **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:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: ? (ft)
Height: ____ (ft)
Culvert length: ____ (ft)
Width: ____ (ft)
Roadway elevation: ____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: ____ (in)
☐ Flow too shallow Water Depth: ____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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: There is A concrete, Round culvert under peters Road, And then Another concrete Rand culvert Approx 20' further upstream. There is constricted flow (these Must be insufficient size) As water pools. See photos

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Impacted Buffer **IB**

WATERSHED/SUBSHED: WB N		**DATE:** 12/01/09	**ASSESSED BY:** AMTB
SURVEY REACH: 6	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC010/# 045	
SITE ID: (*Condition-#*) IB-___ only 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 TRAX

LAND USE: (*Facing downstream*)

	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):		
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: 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 enforcement.

BHR-01

Reach Level Assessment **RCH**

SURVEY REACH ID: BHR-01	WTRSHD/SUBSHD: BLUE HILLS RES.	DATE: 12/8/09	ASSESSED BY: BG+CM

START	END	GPS ID:
TIME: 11:05 AM/PM LMK:	TIME: 12:00 AM/PM LMK:	CW0
LAT 41° 51' 25" LONG 072° 42' 39"	LAT 41° 51' 50" LONG 72° 42' 49"	
DESCRIPTION: ABOVE CATTAIL POND	DESCRIPTION: NORTHEND POND, N. OF RTE 187	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☑ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☑ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☑ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☑ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☑ 0-25% ☐ 25-50 % ☐ 50%-75% ☐ 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)* IRON STAINS BELOW RTE 187

AQUATIC PLANTS IN STREAM
Attached: ☐ none ☑ some ☐ lots
Floating: ☑ none ☐ some ☐ lots

WILDLIFE IN OR AROUND STREAM
(Evidence of) CAROLINA WREN, CHICADEE
☐ Fish ☐ Beaver ☑ Deer ☐ Snails ☑ Other: RACCOON

STREAM SHADING (water surface)
☑ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown
☐ Downcutting ☐ Widening ☐ Headcutting ☐ Aggrading ☑ Sed. deposition NEAR ROUTE 187
☐ Bed scour ☐ Bank failure ☑ Bank scour ☐ Slope failure ☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: Lt bank BANKFULL (ft)
Rt bank 0.5 (ft)
Width: Bottom 5 (ft)
Top (ft)

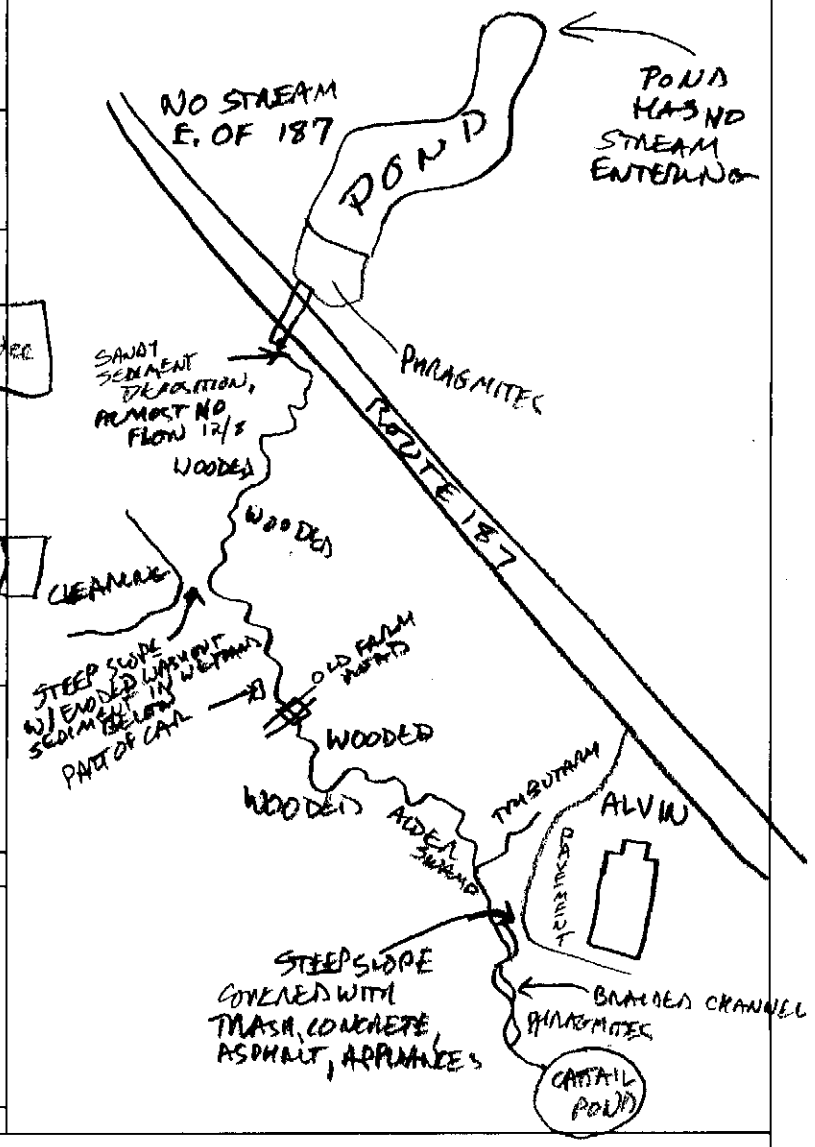
REACH ACCESSIBILITY

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

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



NOTES: *(biggest problem you see in survey reach)*
DUMPING + TRASH BEHIND ALVIN BLDG.
SANDY SEDIMENT DEPOSITION FROM ROUTE 187 AND DUDLEY TOWN ROAD INDUSTRIAL SITE.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

BHR-01 BACK SIDE

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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. UNSTABLE SECTION	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. ONE BAD SECTION EACH BANK	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 Encroach-ment	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: 52 /80 = **Total** Survey Reach 120 /160

Trash and Debris **TR**

WATERSHED/SUBSHED: BHR		**DATE:** 12/08/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 01	**TIME:** 11 : 40 (AM)/PM	**PHOTO ID:** (*Camera-Pic #*) PC080 /# 086	
SITE ID: (*Condition-#*) **TR-** A	**LAT** 41 ° 51 . 26 " **LONG** 72 ° 42 . 41 " **LMK** ____		**GPS:** (*Unit ID*)

TYPE:
- [X] Industrial
- [ ] Commercial
- [ ] Residential

MATERIAL:
- [X] Plastic
- [X] Paper
- [X] Metal
- [X] Tires
- [X] Construction
- [ ] Medical
- [X] Appliances
- [X] Yard Waste
- [X] Automotive
- [ ] Other:

SOURCE:
- [ ] Unknown
- [ ] Flooding
- [X] Illegal dump ALVIN
- [ ] Local outfall

LOCATION:
- [X] Stream
- [X] Riparian Area
  - [X] Lt bank
  - [ ] Rt bank

LAND OWNERSHIP:
- [ ] Public
- [ ] Unknown
- [X] Private - Alvin

AMOUNT (*# Pickup truck loads*): ~10

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

If yes for trash or debris removal

EQUIPMENT NEEDED : [X] Heavy equipment [X] Trash bags [ ] Unknown

WHO CAN DO IT: [X] Volunteers [ ] Local Gov [ ] Hazmat Team [ ] Other

DUMPSTER WITHIN 100 FT: [ ] Yes [ ] No [X] Unknown

CLEAN-UP POTENTIAL: (*Circle #*)

5	4	(3)	2	1
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	

NOTES: very good candidate for ~~Restoration~~/cleanup. Prevention should be emphasized. Trash includes (among other things): washing machine, AC units, chunks of concrete + asphalt, chunks of metal pipe, old telephone poles, styrofoam, sheets of plastic, rolls of plastic, etc.

REPORTED TO AUTHORITIES [ ] YES [X] NO

Trash and Debris **TR**

WATERSHED/SUBSHED: BHR	**DATE:** 12/08/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 01	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC080 /# 090
SITE ID: (*Condition-#*) **TR-** B	**LAT** 41 ° 51 ' 32 " **LONG** 72 ° 42 ' 50 " **LMK** ____	**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☒ Residential

MATERIAL:
- ☐ Plastic
- ☐ Paper
- ☐ Metal
- ☐ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☒ Automotive
- ☐ Other:

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☐ Illegal dump
- ☐ Local outfall

LOCATION:
- ☒ Stream
- ☒ Riparian Area
- ☐ Lt bank
- ☒ Rt bank

LAND OWNERSHIP:
- ☐ Public
- ☒ Unknown
- ☐ Private

AMOUNT (*# Pickup truck loads*): 1 or 2

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 #*)

5	4	3	2	1
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	

NOTES: Auto located in stream on upstream side of culvert.

REPORTED TO AUTHORITIES ☐ YES ☒ NO

Trash and Debris **TR**

WATERSHED/SUBSHED: BHR		**DATE:** 12/08/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 01	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC080 I# 091, 092	
SITE ID: (*Condition-#*) **TR-** C	**LAT** 41 ° 51 ' 37 " **LONG** 72 ° 42 ' 52 " **LMK** ___	**GPS:** (*Unit ID*)	

TYPE:
- ☐ Industrial
- ☒ Commercial
- ☐ Residential

construction site

MATERIAL:
- ☒ Plastic
- ☒ Paper
- ☐ Metal
- ☒ Tires
- ☒ Construction
- ☐ Medical
- ☐ Appliances
- ☒ Yard Waste
- ☐ Automotive
- ☒ Other: sediment washout

SOURCE:
- ☐ Unknown
- ☒ Flooding
- ☒ Illegal dump
- ☐ Local outfall

LOCATION:
- ☒ Stream
- ☒ Riparian Area
- ☐ Lt bank
- ☒ Rt bank

LAND OWNERSHIP:
- ☐ Public
- ☒ Unknown
- ☐ Private

AMOUNT (*# Pickup truck loads*): needs wetland restoration

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 #*)

5	4	3	2	1
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	

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

REPORTED TO AUTHORITIES ☐ YES ☒ NO

Trash and Debris **TR**

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- 0	**LAT** 41 ° 51 ' 41 " **LONG** 72 ° 42 ' 51 "	**LMK** ____	**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☒ Commercial
- ☐ Residential

MATERIAL:
- ☐ Plastic
- ☐ Paper
- ☒ Metal
- ☐ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☒ Yard Waste
- ☐ Automotive
- ☐ Other:

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☐ Illegal dump
- ☐ Local outfall

LOCATION:
- ☐ Stream
- ☑ Riparian Area
  - ☐ Lt bank
  - ☒ Rt bank

LAND OWNERSHIP:
- ☐ Public ☐ Unknown
- ☒ 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: ☐ 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 #*)

5	(4)	3	2	1
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	

NOTES: Mostly yard waste, but also metal scraps Private property - some kind of store.

REPORTED TO AUTHORITIES ☐ YES ☒ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: BHR		**DATE:** 12/08/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 01	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC080	#088, 091, 092
SITE ID (*Condition-#*): OT- only one seen	**LAT** ___° see reverse **LONG** ___° ___' ___"	**LMK** ___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☐ RT ☐ Head

FLOW: ☒ None (x1) ☒ Trickle (x1) ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe ☒ Open channel

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other: / ☐ Concrete ☒ Earthen ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other: / ☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: ___ (in) / Depth: ___ (in) / Width (Top): ___ (in) / " (Bottom): ___ (in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

NOT APPLICABLE

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☒ Other: erosion (x1)

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☒ Oily (x1) ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES: *see reverse side*

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

① A "Y" shaped split or tributary or stormwater input to LB @ the northern end of the building + parking lot AREA @ 41°51'28"/ 72°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 / enforcement on RB @ 41°51'37"/72°42'52". See photos PC080091 + 092.

Stream Crossing **SC**

WATERSHED/SUBSHED: BHR | **DATE:** 2/08/09 | **ASSESSED BY:** CM+BG

SURVEY REACH ID: 01 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) RC080 /# 089, 090

SITE ID: (*Condition #*) SC- A | **LAT** 41 ° 51 ' 32 " **LONG** 72 ° 42 ' 50 " **LMK** ____ | **GPS** (*Unit ID*)

old FARM ROAD w/no name

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 24" (ft)
Height: _____ (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

Stream Crossing **SC**

WATERSHED/SUBSHED: BHR		**DATE:** 12 / 08 / 09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 01	**TIME:** ___ : ___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC080	/# 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:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☒ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☒ Other: Soil Movement / clogged

BLOCKAGE SEVERITY: (*circle #*)

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

Reach Level Assessment **RCH**

SURVEY REACH ID: 3	WTRSHD/SUBSHD: WBS	DATE: 12/3/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 12 : 00 AM/PM LMK: ____	TIME: 12 30 AM/PM LMK: ____	GPS
LAT 41 ° 50 ' 27 " LONG 72 ° 45 ' 04 "	LAT 41 ° 50 ' 40 " LONG 72 ° 44 ' 59 "	
DESCRIPTION: culvert + dike	DESCRIPTION: confluence w/ Tributary on Right bank	

RAIN IN LAST 24 HOURS: ☒ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS: ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☒ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☒ Crop ☐ Pasture ☒ Other: wet meadow (Abandoned pasture)

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 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: hawk

STREAM SHADING (water surface)
☐ Mostly shaded (≥75% coverage)
☒ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

BANKFULL CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: ~~LT bank~~ 2' (ft)
~~RT bank~~ ____ (ft)
Width: ~~Bottom~~ 7.5' (ft)
~~Top~~ ____ (ft)

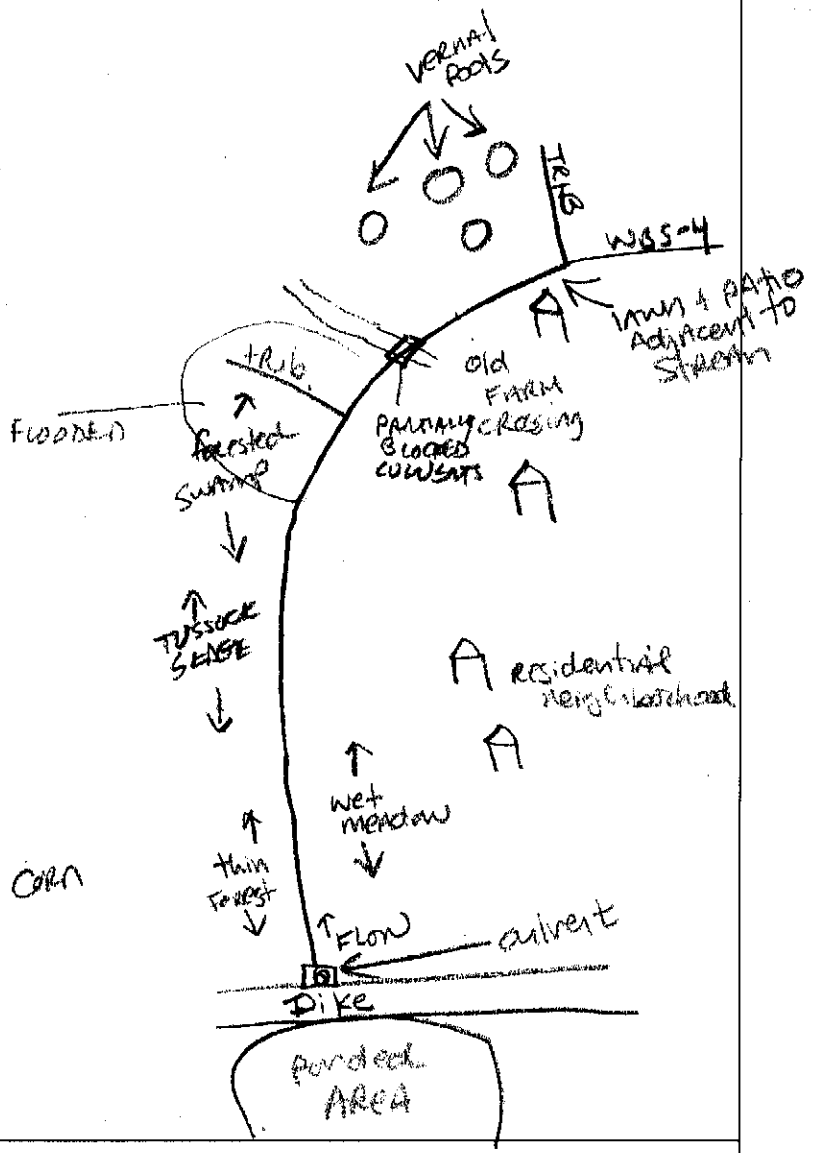
REACH ACCESSIBILITY

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

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



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 *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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~~ (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 **SC**

WATERSHED/SUBSHED: WBS | **DATE:** 12/03/09 | **ASSESSED BY:** BG/CM

SURVEY REACH ID: 03 | **TIME:** 12:00 AM/PM | **PHOTO ID:** (*Camera-Pic #*) none /#

SITE ID: (*Condition #*) SC-____ | **LAT** 41° 50' 27" **LONG** 72° 45' 04" | **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:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 5' (ft)
Height: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

Impacted Buffer **IB**

WATERSHED/SUBSHED: WBS | **DATE:** 12/03/09 | **ASSESSED BY:** CM/BG

SURVEY REACH: 3 | **TIME:** 12:30 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PC300 /# 27

SITE ID: (*Condition-#*) IB-____

START **LAT** 41 °50 '40 " **LONG** 72 °45 '01 " **LMK** ____

END **LAT** ____ ° ____ ' ____ " **LONG** ____ ° ____ ' ____ " **LMK** ____

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☒ RT ☐ Both

REASON INADEQUATE: ☐ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☐ Other:

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	Ø	~50'
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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 adj. to brook - RB

Reach Level Assessment **RCH**

SURVEY REACH ID: WBS04	WTRSHD/SUBSHD: WASH BROOK SOUTH	DATE: 12/3/09	ASSESSED BY: BG + CM

START	END	GPS ID:
TIME: 12 : 30 AM/PM LMK: ____	TIME: 1 : 00 AM/PM LMK: ____	
LAT 41 ° 50 ' 40 " LONG 72 ° 44 ' 59 "	LAT 41 ° 50 ' 36 " LONG 72 ° 44 ' 41 "	
DESCRIPTION: FROM CONFLUENCE ON (L)	DESCRIPTION: CULVERT, TERRY PLAINS ROAD	

RAIN IN LAST 24 HOURS: ☑ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS: ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☑ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☑ Suburban/Res ☑ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☑ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 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 (Bottom not visible) Floating: ☐ none ☑ some ☐ lots

WILDLIFE IN OR AROUND STREAM: (Evidence of) ☐ Fish ☐ Beaver ☐ Deer ☐ Snails ☑ Other: HAWK, GREENFROG

STREAM SHADING (water surface): ☐ Mostly shaded (≥75% coverage) ☐ Halfway (≥50%) ☑ Partially shaded (≥25%) ☐ Unshaded (< 25%)

CHANNEL DYNAMICS: ☑ Unknown
☐ Downcutting ☐ Widening ☐ Headcutting ☐ Aggrading ☐ Sed. deposition
☐ Bed scour ☐ Bank failure ☐ Bank scour ☐ Slope failure ☐ Channelized

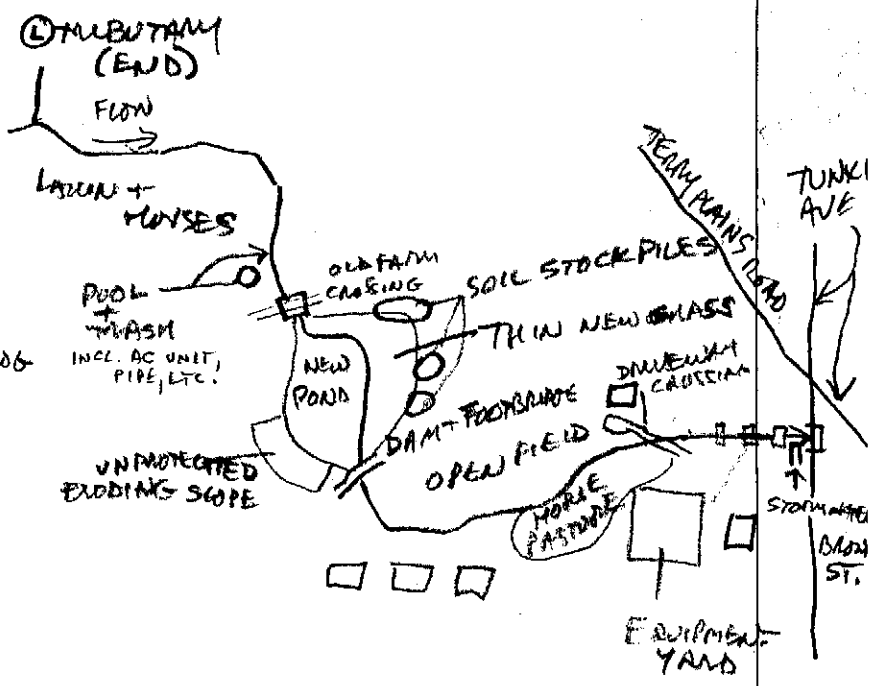
CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank 2' (ft) RT bank ____ (ft)
Width: Bottom 7' (ft) Top BANKFULL (ft)

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

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



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 *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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: 43 /80 + Buffer/Floodplain: 18 /80 = **Total** Survey Reach 61 /160

Trash and Debris **TR**

WATERSHED/SUBSHED: WBS		**DATE:** 12/03/09	**ASSESSED BY:** BG+CM
SURVEY REACH ID: 04	**TIME:** 12 : 30 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC0300 I# 38, 39, 41, 43	
SITE ID: (*Condition-#*) TR-only one	**LAT** * See below * " **LONG** ° ' " **LMK**	**GPS:** (*Unit ID*)	

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☒ Residential

MATERIAL:
- ☐ Plastic
- ☐ Paper
- ☐ Metal
- ☒ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☐ Automotive
- ☒ Other: Concrete

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☐ Illegal dump
- ☐ Local outfall

LOCATION:
- ☒ Stream
- ☐ Riparian Area
  - ☐ Lt bank
  - ☐ Rt bank

LAND OWNERSHIP:
- ☐ Public ☐ Unknown
- ☒ Private

AMOUNT (*# Pickup truck loads*): 6

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 #*)

5	4	3	2	1
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	

NOTES: Along A portion of this REACH there ARE stone slabs, old tractor tires + stone gristmill wheels placed in the stream channel between 41°50'35"/72°44'48" through 41°50'36"/72°44'41" Private Residence these items MAY have sentimental value + may have been added to channel to enhance setting.

REPORTED TO AUTHORITIES ☐ YES ☒ NO

+ channel Modification

Impacted Buffer **IB**

WATERSHED/SUBSHED: WB S		**DATE:** 12 / 03 / 09	**ASSESSED BY:** BG + CMM
SURVEY REACH: 04	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC0300 / # 31, 32, 34, 35, 36	
SITE ID: (*Condition-#*) IB- A	*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: Recent excavation in brook + no plantings see below

LAND USE:

(*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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: enforcement?

RESTORABLE AREA

	LT	BANK	RT
Length (ft):	~200' ±		~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	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
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:
→ 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 + waterfall with footbridge here as well

Impacted Buffer **IB**

WATERSHED/SUBSHED: WBS		**DATE:** 12/03/09	**ASSESSED BY:** CM + BG
SURVEY REACH: 04	**TIME:** 12:45 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC0300	/# 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: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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	LT BANK	RT
Length (ft):	~500	~500'
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: 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.

Stream Crossing **SC**

WATERSHED/SUBSHED: WRS		**DATE:** 12 / 03 / 09	**ASSESSED BY:** CMM + RG
SURVEY REACH ID: 04	**TIME:** 12 : 30 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PE0300 /#36 +34	
SITE ID: (*Condition-#*) SC- A	**LAT** ° see below **LONG** ° ' "	**LMK**____	**GPS** (*Unit ID*)

↑ Made by landowners?

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☒ Partial
☐ Temporary ☐ Unknown

CAUSE:
☒ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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°44'54" (see photos 34+36). Under bridges there are dams/waterfalls at both sites

REPORTED TO AUTHORITIES ☐ YES ☒ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: WBS		**DATE:** 12 / 03 / 09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 04	**TIME:** ___ : ___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC300 /# 39	
SITE ID: (*Condition-#*) **SC-** B	**LAT** 41 ° 50 ' 36 " **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:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

Stream Crossing **SC**

WATERSHED/SUBSHED: WBS		**DATE:** 12/8/09	**ASSESSED BY:** CM+BB
SURVEY REACH ID: 04	**TIME:** 1:00 AM/PM	**PHOTO ID:** (*Camera-Pic #*) DC0300 /# 43	
SITE ID: (*Condition-#*) SC-C	**LAT** 41°50'36" **LONG** 72°44'41"	**LMK**____	**GPS** (*Unit ID*)

↑ Brown Street

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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 (on RB)

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Reach Level Assessment **RCH**

SURVEY REACH ID: 6	WTRSHD/SUBSHD: WBS	DATE: 12/1/09	ASSESSED BY: JM/BG

START TIME: 12 : 30 AM/PM LMK: ____
LAT 41° 50 ' 15 " LONG 72° 44 ' 19 "
DESCRIPTION: Convergence of WBS-8 And WBS-7 Parked @ Geissler's Super Market

END TIME: 1 : 30 AM/PM LMK: ____
LAT 41° 50 ' 37 " LONG 72° 44 ' 33 "
DESCRIPTION: Convergence with WBS-5

GPS ID: (JM)

RAIN IN LAST 24 HOURS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ None ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☒ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75%
☐ 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) Raccoon
☐ Fish ☐ Beaver ☒ Deer
☐ Snails ☒ Other: Mallards, Mussels

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

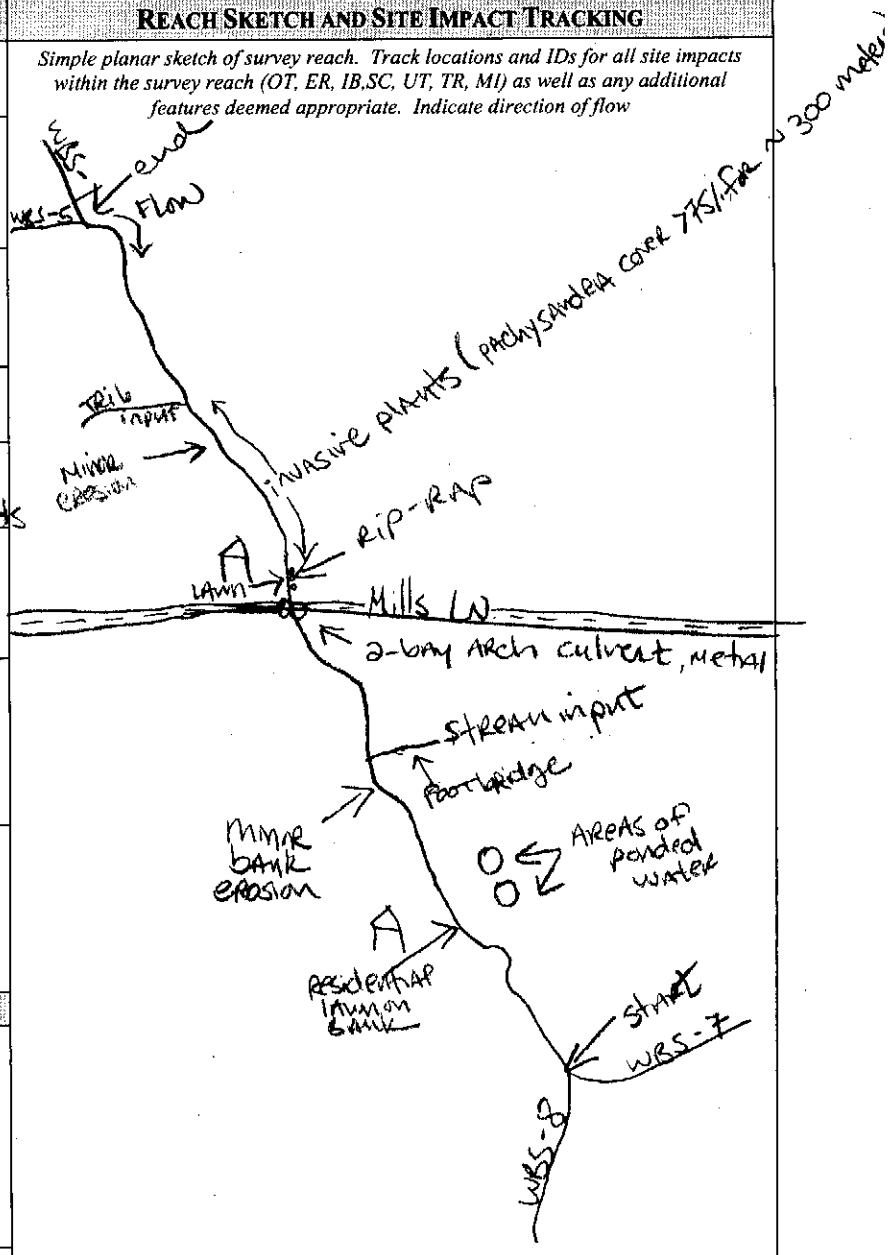
BankfullCHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: ~~LT bank~~ 4' (ft)
~~RT bank~~ ____ (ft)
Width: ~~Bottom~~ 23' (ft)
~~Top~~ ____ (ft)

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

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



NOTES: *(biggest problem you see in survey reach)* Overall this reach abuts residential homes. T garden "escapes" such as PACHYSANDRA + JAPANESE barberry are common + in some areas these plants dominate their strata.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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.
lots of invasives some residential areas →	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 (facing downstream)	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 But lots of invasives →	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 Encroach-ment	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: 60 /80 + Buffer/Floodplain: 66 /80 = **Total** Survey Reach 126 /160

2

Impacted Buffer **IB**

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 '195" **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: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	____	~100'
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: Private property.
- mown lawn up to top of bank for ~100'

Impacted Buffer **IB**

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

SURVEY REACH: 06 | **TIME:** 1:00 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PC010 /# 026 + 028

SITE ID: (*Condition-#*) IB- B

START **LAT** 41 ° 50 ' 25 " **LONG** 72 ° 44 ' 25 " **LMK** ____

END **LAT** __ ° __ ' __ " **LONG** __ ° __ ' __ " **LMK** ____

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☐ Lack of vegetation ☐ Too narrow ☒ Widespread invasive plants ☐ Recently planted ☒ Other: Residential lawns

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	~1,000'	____
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	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: Private property

stretch of approximately 300 m / 1,000 ft. where there is 75% cover of invasive plants (J. barberry, Japan knotweed, etc.) or residential lawn. Left bank is more impacted (invasives, residential, some RIP-RAP).

Stream Crossing **SC**

WATERSHED/SUBSHED: WBS		**DATE:** 12/01/09	**ASSESSED BY:** CM+BG
SURVEY REACH ID: 06	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC010	/# 025
SITE ID: (*Condition-#*) **SC-**___	**LAT** ___°___'___" **LONG** ___°___'___"	**LMK**___	**GPS** (*Unit ID*)

↑ Mills IN.

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☒ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☒ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 12' (ft)
Height: 7' (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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:

Intersection with Mills IN.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Severe Bank Erosion **ER**

WATERSHED/SUBSHED: WBS		**DATE:** 12/01/09	**ASSESSED BY:** CM + BG
SURVEY REACH: 06	**TIME:** 1:15 AM/PM	**PHOTO ID** (CAMERA-PIC #): PC010 /# 027 + 028	
SITE ID: (*Condition #*) ER- any one street	*START* **LAT** see below **LONG** ° ' "	**LMK**	**GPS:** (*Unit ID*)
	END **LAT** ° ' " **LONG** ° ' "	**LMK**	

PROCESS: ☐ Currently unknown

- ☐ Downcutting
- ☐ Widening
- ☐ Headcutting
- ☐ Aggrading
- ☐ Sed. deposition
- ☐ Bed scour
- ☒ Bank failure
- ☐ Bank scour
- ☐ Slope failure
- ☐ 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= ☐ 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) 1
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	(2) 1

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

P 1 of 2

WBS, REACH 11

Reach Level Assessment

RCH

SURVEY REACH ID: 11	WTRSHD/SUBSHD: WBS	DATE: 11/30/09	ASSESSED BY: CM/BG

START TIME: 12:15 AM/PM LMK: ____
LAT 41°48'54" LONG 072°44'00"
DESCRIPTION: old GRIST MILL behind Medium Center

END TIME: 2:00 AM/PM LMK: ____
LAT 41°49'18" LONG 072°44'07"
DESCRIPTION: intersection w/ tributary

GPS ID: CM

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☐ None ☒ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☒ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☒ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75%
☐ 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 (RACCOON)
☐ Snails ☒ Other: Elliptio Mussels,

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☑ Bank failure
☐ Headcutting	☑ Bank scour
☐ Aggrading	☑ Slope failure
☐ Sed. deposition	☐ Channelized

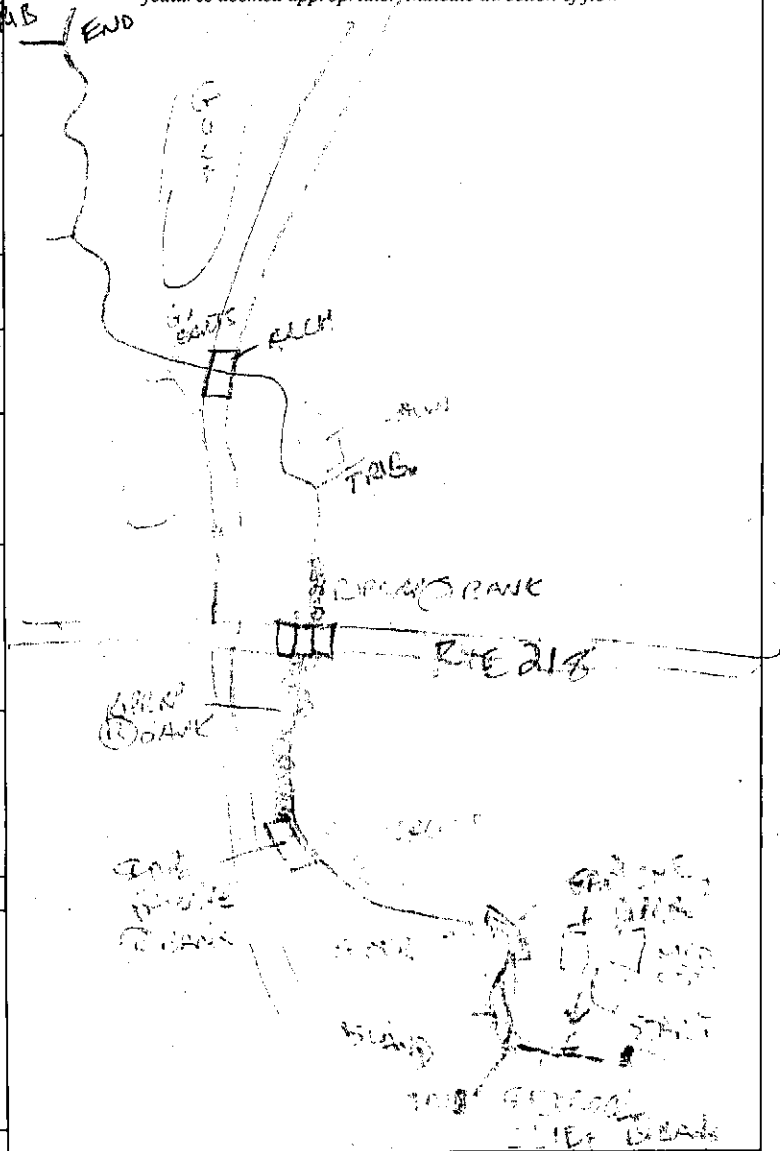
CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank _____(ft)
RT bank _____(ft)
Width: Bottom _____(ft)
Top _____(ft)

REACH ACCESSIBILITY

5	4	3	2	1
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.	

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



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

REPORTED TO AUTHORITIES ☐ YES ☐ NO

P-2-02
WBS Reach 11

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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: 60 /80 + Buffer/Floodplain: 63 /80 = **Total** Survey Reach 123 /160

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: WBS		**DATE:** 11/30/09	**ASSESSED BY:** CM + BG.
SURVEY REACH ID: 11	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID (*Condition-#*): OT- anyone sheet	**LAT** *See, Reverse* **LONG** ___ ° ___ ' ___ "	**LMK** ___	**GPS:** (*Unit ID*)

BANK: (Both) ☒ LT ☒ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☒ Single ☐ Double ☒ Circular ☒ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter: ____ (in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel

☐ Concrete ☒ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____ (in)
Width (Top): ____ (in)
" (Bottom): ____ (in)

~~NOT APPLICABLE~~

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES:

See Reverse

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

→ stormwater outfall pipe on (LB) from medical building parking lot. [see photo 149300-11] concrete, Round, 36" diam ~41°48'53"/72°44'01" Moderate flow, no unusual observations. Rip-Rap has been placed under outfall.

→ stormwater pipe from parking lot on (LB) ~41°48'52"/72°44'06"

→ outfall pipe on (RB) next to parking lot + building (church?) ~41°49'02"/72°44'15" elliptical, concrete, no unusual observations.

→ Tributary or open channel runoff input ~(LB) 41°49'05"/72°44'15" - water is clear but odor is sewagy

→ swale or open channel input adjacent to golf course on (RB) ~ 41°49'15"/72°44'27" sharp bend in brook here + erosion to LB.

Stream Crossing **SC**

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

+ covered footbridge

TYPE: ☐ Road Crossing ☐ Railroad Crossing ☐ Manmade Dam ☐ Beaver Dam ☐ Geological Formation ☒ Other: old gristmill site

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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: 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

Stream Crossing **SC**

WATERSHED/SUBSHED: WBS | **DATE:** 11 / 30 / 09 | **ASSESSED BY:** CM + RG

SURVEY REACH ID: 11 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) 149300 /# 17

SITE ID: (*Condition-#*) **SC-** 6 | **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:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☒ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 11' (ft)
Height: 10' (ft)
Culvert length: ___ (ft)
Width: ___ (ft)
Roadway elevation: ___ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):
↳ Rip-RAP

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: ____ (in)
☐ Flow too shallow Water Depth: ____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Stream Crossing **SC**

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

1 Bloomfield Ave

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☒ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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

Trash and Debris **TR**

WATERSHED/SUBSHED: WBS		**DATE:** 11/30/09	**ASSESSED BY:** CM+BG
SURVEY REACH ID: 11	**TIME:**___:___AM/PM	**PHOTO ID:** *(Camera-Pic #)* 149300 I# 15 + 16	
SITE ID: *(Condition-#)* TR-one only sheet	**LAT** ___° see below " **LONG** ___° ____ ' ____ " **LMK** ____		**GPS:** *(Unit ID)*

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☒ Residential

MATERIAL:
- ☒ Plastic
- ☒ Paper
- ☐ Metal
- ☐ Tires
- ☐ Construction
- ☐ Medical
- ☒ Appliances
- ☒ Yard Waste
- ☐ Automotive
- ☐ Other:

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☒ Illegal dump
- ☒ Local outfall

LOCATION:
- ☐ Stream
- ☒ Riparian Area
  - ☒ Lt bank
  - ☒ Rt bank

LAND OWNERSHIP:
- ☒ Public
- ☐ Unknown
- ☒ 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 #)*

5	4	3	2	1
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	

NOTES:
- → Behind the medical center there is trash/dumping, including a wheel chair, AC unit, golf balls, plastic bottles, etc.
- → Behind parking lot (church building?) there is yard waste dumping @ 41°41'02"/72°44'15"
- → Lots of golf balls where River flows adjacent to golf course

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Impacted Buffer **IB**

WATERSHED/SUBSHED: WBS		**DATE:** 11 / 30 / 09	**ASSESSED BY:** CM + BG
SURVEY REACH: 11	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) 149300 /# 15+16+17	
SITE ID: (*Condition-#*) All on one IB 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:

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	- See below -	
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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 (twin) behind condo units + residential lawns on other side & forested strip.

→ RB has Rip-RAP + severe erosion @ 41° 48' 56" / 72° 44' 15" LB here HAS 10' strip of forested buffer (twin) + 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 twin forested buffer + lawns opposite THAT (~10' wide fo. buffer) @ 41° 49' 02" / 72° 44' 15"

→ LB impacts @ 41° 49' 05" / 72° 44' 15" where lawn comes up to edge of brook + there is no buffer for ~30' length.

→ Both banks Adjacent to golf course fairways but LB worse, PARTICULARLY @ 41° 49' 14" / 72° 44' 26"

Severe Bank Erosion **ER**

WATERSHED/SUBSHED: WBS		**DATE:** 11/30/09	**ASSESSED BY:** CM+RB
SURVEY REACH: 11	**TIME:** ___:___ AM/PM	**PHOTO ID** (CAMERA-PIC #): 149300 /# 16	
SITE ID: (*Condition-#*) ER- on overSheet	*START* **LAT** 41 °48 '56 " **LONG** 72 °44 '15 " **LMK** ____		**GPS:** (*Unit ID*)
	END **LAT** ___ ° ___ ' ___ " **LONG** ___ ° ___ ' ___ " **LMK** ____		

PROCESS: ☐ Currently unknown

- ☐ Downcutting
- ☐ Widening
- ☐ Headcutting
- ☐ Aggrading
- ☐ Sed. deposition
- ☐ Bed scour
- ☒ Bank failure
- ☐ Bank scour
- ☐ Slope failure
- ☐ 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 Pure 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: ☐ No ☐ Grade control ☒ Bank stabilization ☐ Other:

THREAT TO PROPERTY/INFRASTRUCTURE: ☐ No ☒ Yes (Describe): Bloomfield Ave.

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

EROSION SEVERITY(*circle#*) Channelized= ☐ 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 1
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	2 1

NOTES/CROSS SECTION SKETCH:

Adjacent to Bloomfield Avenue.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

WBN-04

RCH

SURVEY REACH ID: WBN-04	WTRSHD/SUBSHD: WASH BROOK NORTH	DATE: 12/3/09	ASSESSED BY: BG+CM

START	END	GPS ID:
TIME: 2:14 AM/PM LMK: ____	TIME: 3:20 AM/PM LMK: ____	CWN
LAT 41° 51' 42" LONG 72° 43' 51"	LAT 41° 52' 04" LONG 72° 43' 33"	
DESCRIPTION: AT MUCKO ROAD	DESCRIPTION: AT POND OUTLET, E. OF WOODLAND AVE.	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☑ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☑ Suburban/Res ☑ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 25-50 % ☐ 50%-75% ☑ 75-100%

DOMINANT SUBSTRATE
☐ Silt/clay (fine or slick) ☑ Sand (gritty) ☐ Gravel (0.1-2.5") ☐ Cobble (2.5 –10") ☐ Boulder (>10") ☐ 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:

STREAM SHADING (water surface)
☑ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS

☐ Downcutting	☐ Bed scour	☑ Unknown STABLE
☐ Widening	☐ Bank failure	
☐ Headcutting	☐ Bank scour	
☐ Aggrading	☐ Slope failure	
☐ Sed. deposition	☐ Channelized	

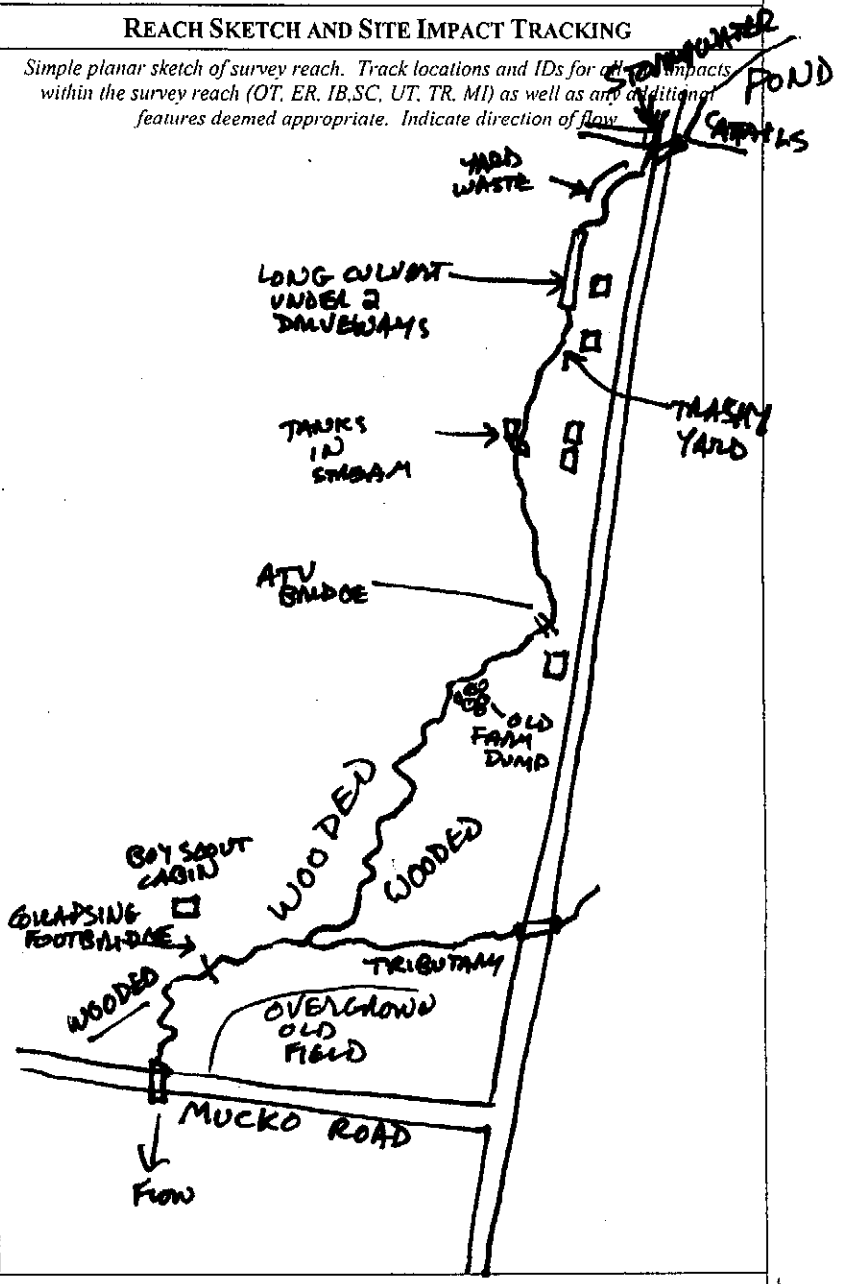
CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank ____ 1 (ft); RT bank ____ (ft)
Width: Bottom 4 (ft)
6' WIDE, 1.5' HIGH BEDON CONFLUENCE IN MIDDLE

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	

REACH SKETCH AND SITE IMPACT TRACKING

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



NOTES: *(biggest problem you see in survey reach)* very long culvert + trash-dumping on left bank (includes trees, old car, stove, old furniture, broken pipe. Another dump area at 45 Woodland Ave (includes plastic bottles etc).

REPORTED TO AUTHORITIES ☐ YES ☐ NO

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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. SOME AREAS <50	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: 73 /80 + Buffer/Floodplain: 65 /80 = **Total** Survey Reach 138 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: WBN | **DATE:** 8/03/09 | **ASSESSED BY:** CM/BB

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

SITE ID: (*Condition #*) SC- A | **LAT** 41 ° 51 ' 42 " | **LONG** 72 ° 43 ' 51 " | **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:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 24" (ft)
Height: ____ (ft)
Culvert length: ____ (ft)
Width: ____ (ft)
Roadway elevation: ____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☒ Other (*describe*): water ponded upstream culvert is too small

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ Obvious (>5°)

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

IS SC ACTING AS GRADE CONTROL ☐ No ☐ Yes ☐ Unknown

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: ____ (in)
☐ Flow too shallow Water Depth: ____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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 Boyscout camp + at least one residential home.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: WBN | **DATE:** 12/03/09 | **ASSESSED BY:** CM + BG

SURVEY REACH ID: 4 | **TIME:** ___:___ AM/PM | **PHOTO ID:** (*Camera-Pic #*) /# None

SITE ID: (*Condition-#*) SC- 6 | **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:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: 70' (ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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:

70 foot long culvert under driveway.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: WBN		**DATE:** 12/03/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 4	**TIME:** 3 : 20 AM (PM)	**PHOTO ID:** (*Camera-Pic #*) PC0300	/# 58
SITE ID: (*Condition-#*) **SC-** C	**LAT** 41 ° 52 ' 04 " **LONG** 72 ° 43 ' 33 "	**LMK** ____	**GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☐ Not flow-aligned
☒ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ Obvious (>5°)

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

IS SC ACTING AS GRADE CONTROL ☐ No ☐ Yes ☐ Unknown

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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 on (LB) here as well
→ Rip-Rap + pavement on both banks ~ 10' downstream of crossing + Mason headwall on upstream side.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Trash and Debris **TR**

WATERSHED/SUBSHED: WBN		**DATE:** 12/03/09	**ASSESSED BY:** BG/CMM
SURVEY REACH ID: 04	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# (See below)
SITE ID: (*Condition-#*) TR-only one sheet	**LAT** ___ * See below * ___' ___" **LONG** ___° ___' ___" **LMK** ___		**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☒ Residential

MATERIAL:
- ☒ Plastic
- ☒ Paper
- ☒ Metal
- ☒ Tires
- ☐ Construction
- ☐ Medical
- ☒ Appliances
- ☒ Yard Waste
- ☒ Automotive
- ☐ Other:

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☒ Illegal dump
- ☒ Local outfall

LOCATION:
- ☒ Stream
- ☒ Riparian Area
- ☒ Lt bank
- ☐ Rt bank

LAND OWNERSHIP:
- ☐ Public
- ☐ Unknown
- ☒ 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 #*)

5	(4)	3	2	1
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	

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

Reach Level Assessment **RCH**

SURVEY REACH ID: 2	WTRSHD/SUBSHD: BHR	DATE: 12/8/09	ASSESSED BY: CW/BG

START TIME: 10:20 AM/PM LMK: ____
LAT 41° 51' 09" LONG 072° 42' 38"
DESCRIPTION: Culvert + W. Dudley Town Rd Junction

END TIME: 11:00 AM/PM LMK: ____
LAT 41° 51' 23" LONG 072° 42' 38"
DESCRIPTION: Cattail MARSH

GPS ID: cm

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☒ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☒ Partly cloudy

SURROUNDING LAND USE: ☒ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☒ 50%-75%
☐ 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
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank _____(ft)
RT bank _____(ft)
Width: Bottom _____(ft)
Top _____(ft)

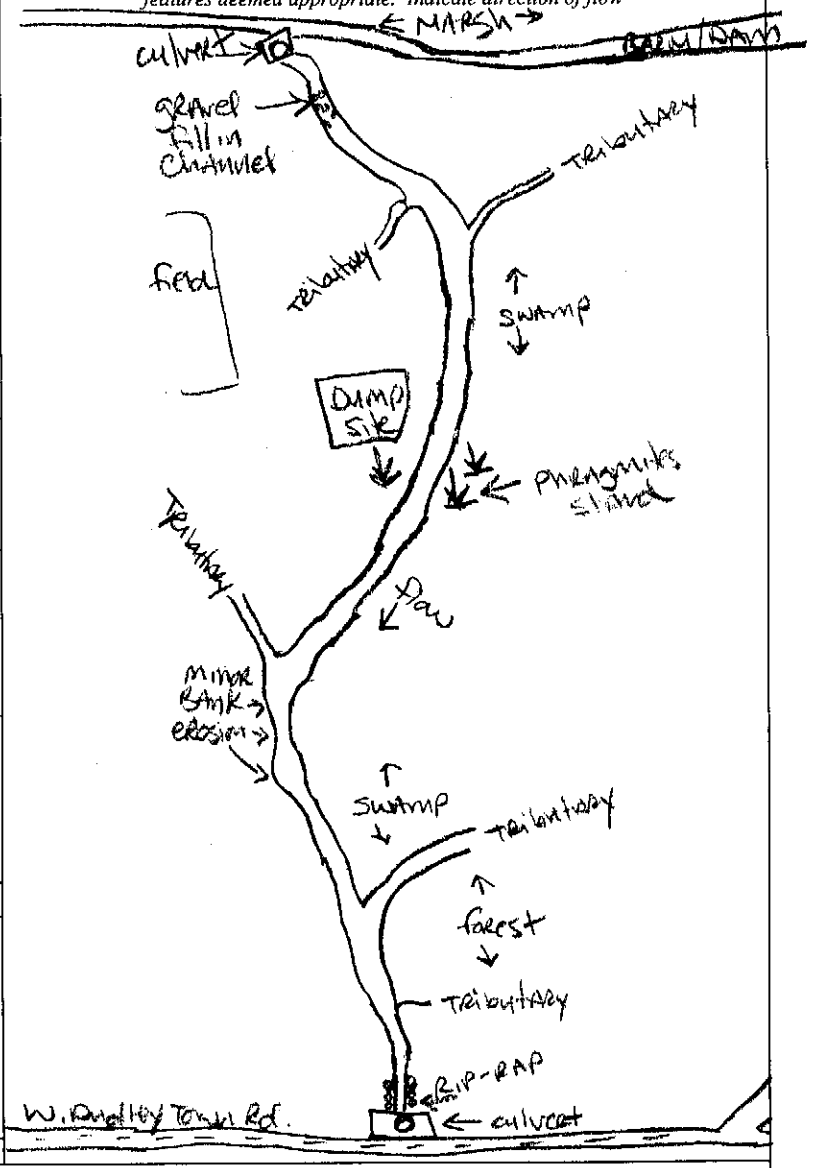
REACH ACCESSIBILITY

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)

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



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 *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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: 55 /80 + Buffer/Floodplain: 67 /80 = **Total** Survey Reach 122 /160

Trash and Debris **TR**

WATERSHED/SUBSHED: BHR		**DATE:** 12/08/09	**ASSESSED BY:** CM+BG
SURVEY REACH ID: 02	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC080 /# 081, 082	
SITE ID: (*Condition-#*) TR-only sheet	**LAT** 41 ° 51 ' 20 " **LONG** 72 ° 42 ' 37 " **LMK** ____		**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☒ Residential

MATERIAL:
- ☐ Plastic
- ☐ Paper
- ☒ Metal
- ☐ Tires
- ☐ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☒ Automotive
- ☒ Other: oil drums ?

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☒ Illegal dump
- ☐ Local outfall

LOCATION:
- ☐ Stream
- ☒ Riparian Area
- ☐ Lt bank
- ☒ Rt bank

LAND OWNERSHIP:
- ☐ Public
- ☒ Unknown
- ☐ Private

AMOUNT (*# Pickup truck loads*): 8 ?

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 #*)

5	4	3	(2)	1
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	

NOTES: dump site includes items such as oil drums, garbage cans + auto parts. Adjacent to a stand of Phragmites. Unsure of access

REPORTED TO AUTHORITIES ☐ YES ☒ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: BHR		**DATE:** 12/08/09	**ASSESSED BY:** CM+BG
SURVEY REACH ID: 02	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC080 # 083	
SITE ID (*Condition-#*): **OT-**___	**LAT** 41° 51' 23" **LONG** 72° 42' 38"	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☐ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☒ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:
☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:
☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter: 12" (in)
Depth: ___ (in)
Width (Top): ___ (in)
" (Bottom): ___ (in)
NOT APPLICABLE

SUBMERGED: ☒ No ☐ Partially ☐ Fully

CONDITION: ☐ None ☒ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☒ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☒ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☒ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☒ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY		
COLOR:	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	
TURBIDITY:	☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque	
FLOATABLES:	☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:	

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☒ Bank Erosion ☐ 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

Stream Crossing **SC**

WATERSHED/SUBSHED: BHR		**DATE:** 12/08/09	**ASSESSED BY:** CW/BG
SURVEY REACH ID: 02	**TIME:** 10:20 AM/PM	**PHOTO ID:** (*Camera-Pic #*) P6080	/# 074
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:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☒ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☒ Failing embankment
☐ Other (*describe*): Rip-Rap

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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 has been placed along the banks for ~10' downstream of the culvert passage.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: BHR | **DATE:** 2 08 09 | **ASSESSED BY:** CW/BG

SURVEY REACH ID: 02 | **TIME:** 11 : 00 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PC080 /# 083

SITE ID: (*Condition-#*) SC- 6 | **LAT** 41 ° 51 ' 23 " | **LONG** 72 ° 42 ' 38 " | **LMK** ____ | **GPS** (*Unit ID*)

berm or dike

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☐ Not flow-aligned
☒ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 24" ~~(W)~~
Height: 18" ~~(H)~~ over ground
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☒ Cracking/chipping/corrosion ☒ Downstream scour hole
☐ Sediment deposition ☒ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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:

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.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Channel Modification **CM**

WATERSHED/SUBSHED: BHR	**DATE:** 2/03/09	**ASSESSED BY:** CM/BG	
SURVEY REACH ID: 02	**TIME:** __:__ AM/PM	**PHOTO ID:** (*Camera-Pic #*) /#	
SITE ID: (*Condition-#*) CM- only one sweet	*START* **LAT** see below	**LONG** ___°___'___"	**LMK** ___
	END **LAT** ___°___'	**LONG** ___°___'___"	**LMK** ___

GPS: (*Unit ID*)

TYPE: ☐ Channelization ☒ Bank armoring ☐ concrete channel ☐ Floodplain encroachment ☐ Other:

MATERIAL:
☐ Concrete ☐ Gabion
☒ Rip Rap ☐ Earthen
☐ Metal
☐ Other:

Does channel have perennial flow?	☒ Yes	☐ No
Is there evidence of sediment deposition?	☒ Yes	☐ No
Is vegetation growing in channel?	☐ Yes	☒ No
Is channel connected to floodplain?	☐ Yes	☒ No

DIMENSIONS:
Height _____(ft)
Bottom Width _____(ft)
Top Width: _____(ft)
Length: _____(ft)

BASE FLOW CHANNEL
Depth of flow _____(in)
Defined low flow channel? ☐ Yes ☐ No
% of channel bottom _____%

ADJACENT STREAM CORRIDOR
Available width LT_____(ft) RT_____(ft)
Utilities Present? ☐ Yes ☐ No
Fill in floodplain? ☐ Yes ☐ No

POTENTIAL RESTORATION CANDIDATE ☐ Structural repair ☐ Base flow channel creation ☐ Natural channel design ☐ Can't tell ☐ no ☐ De-channelization ☐ Fish barrier removal ☒ Bioengineering

CHANNELIZATION 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 unchannelized stream reaches above and below impacted area.
	5	4	3	2	(1)

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

Reach Level Assessment **RCH**

SURVEY REACH ID: 1	WTRSHD/SUBSHD: WTR	DATE: 12/8/09	ASSESSED BY: CM/BG

START TIME: 9:40 AM/PM LMK: ____
LAT 41° 51' 44" LONG 72° 43' 08"
DESCRIPTION: North end of Dudley Town Road

END TIME: 9:50 AM/PM LMK: ____
LAT 41° 51' 46" LONG 72° 43' 09"
DESCRIPTION: culvert + old unnamed Farm Road

GPS ID: (CM)

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☒ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☒ Partly cloudy

SURROUNDING LAND USE: ☒ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☒ 50%-75%
☐ 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 (RT mink,)
☐ Snails ☒ Other: Raccoon, Mallard

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
stable
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☐ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

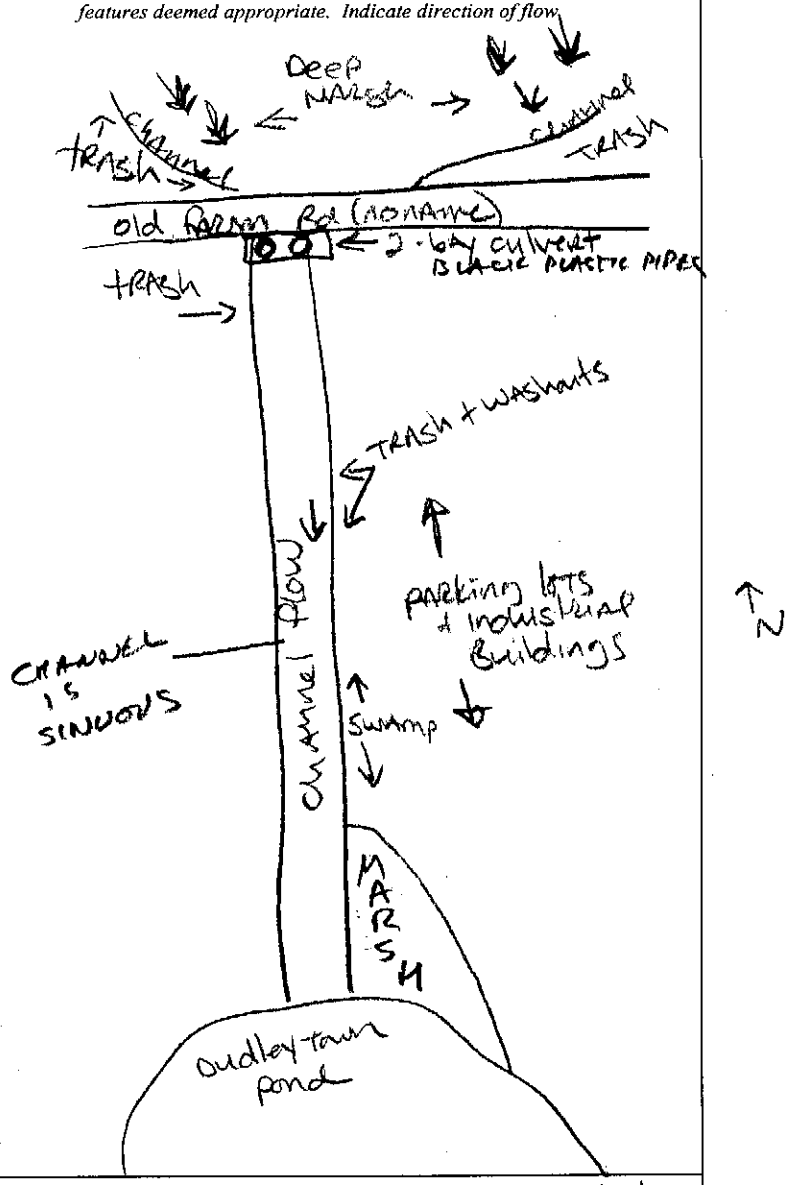
CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank _____(ft)
RT bank _____(ft)
Width: Bottom _____(ft)
Top _____(ft)

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

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.



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 *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: WTR		**DATE:** 2/08/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 01	**TIME:** 9:40 AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# none
SITE ID (*Condition-#*): **OT-** 002	**LAT** 41° 51' 44" **LONG** 72° 43' 08" **LMK**____		**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter:____(in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel

☐ Concrete ☒ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____(in)
Width (Top):____(in)
" (Bottom):____(in)

~~NOT APPLICABLE~~

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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.

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: WTK | **DATE:** 12/08/09 | **ASSESSED BY:** CM/BG

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

SITE ID: (*Condition-#*) SC-only one | **LAT** 41 °51 '46 " **LONG** 72 °43 '09 " **LMK**____ | **GPS** (*Unit ID*)

berm

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☐ Single
☒ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☐ Metal
☒ Other: plastic

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

Trash and Debris **TR**

WATERSHED/SUBSHED: WTR	**DATE:** 2/08/09	**ASSESSED BY:** CM/BG	
SURVEY REACH ID: 01	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*) /#	
SITE ID: (*Condition-#*) TR-only one	**LAT** ___°See, below"**LONG** ___°___'___"	**LMK** ___	**GPS:** (*Unit ID*)

TYPE:	**MATERIAL:**			**SOURCE:**	**LOCATION:**	**LAND OWNERSHIP:**
☒ Industrial	☒ Plastic	☒ Paper	☒ Metal	☐ Unknown	☐ Stream	☐ Public ☐ Unknown
☐ Commercial	☐ Tires	☐ Construction	☐ Medical	☐ Flooding	☒ Riparian Area	☒ Private
☐ Residential	☐ Appliances	☐ Yard Waste		☒ Illegal dump	☒ Lt bank	**AMOUNT** (*# Pickup truck loads*):
	☒ Automotive	☐ Other:		☐ Local outfall	☒ Rt bank	

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	**DUMPSTER WITHIN 100 FT:** ☐ Yes ☒ No ☐ Unknown
	WHO CAN DO IT: ☒ Volunteers ☒ Local Gov ☐ Hazmat Team ☐ 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:

REPORTED TO AUTHORITIES ☐ YES ☒ NO

TRASH + dumping is A problem throughout 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 **RCH**

SURVEY REACH ID: WTR-02	WTRSHD/SUBSHD: WINTONBURY RES,	DATE: 12/8/09	ASSESSED BY: BG+CM

START	END	GPS ID:
TIME: 8:35 AM/PM LMK:	TIME: 9:15 AM/PM LMK:	
LAT 41°51'21" LONG 72°43'25"	LAT 41°51'32" LONG 072°43'16"	
DESCRIPTION: OLD FARM ROAD	DESCRIPTION: OUTLET FROM POND DAM	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☑ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☑ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☑ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☑ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☑ 50%-75% ☐ 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 (Wood pecker) ☐ Snails ☐ Other: RACCOON

STREAM SHADING (water surface)
☑ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS (IN UPPER SECTION ONLY – LOWER SECTION STABLE)

☑ Downcutting	☐ Bed scour	☐ Unknown
☐ Widening	☐ Bank failure	
☐ Headcutting	☑ Bank scour	
☐ Aggrading	☐ Slope failure	
☐ Sed. deposition	☐ Channelized	

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)* (BANKFULL)
Height: LT bank 2 (ft); RT bank ____ (ft)
Width: Bottom 8 (ft); Top ____ (ft)

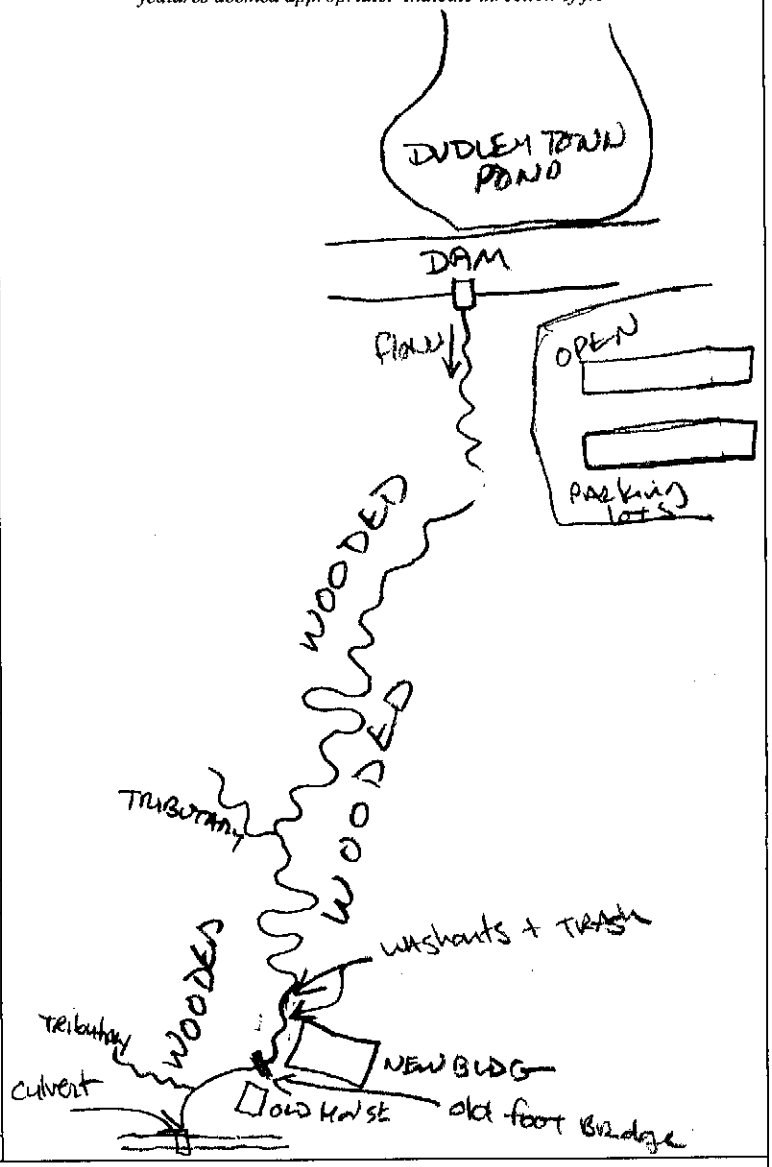
REACH ACCESSIBILITY

Good:	Fair:	Difficult.
Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	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

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



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 *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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. UPPER SECTION	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. UPPER SECTION	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 ENCROACH-MENT	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: 70 /80 + Buffer/Floodplain: 70 /80 = **Total** Survey Reach 140 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: WTR | **DATE:** 12/08/09 | **ASSESSED BY:** CM/BG

SURVEY REACH ID: 02 | **TIME:** 8 : 35 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PC080 I# 064

SITE ID: (*Condition-#*) SC- A | **LAT** 41° 51 ' 21 " **LONG** 72° 43 ' 25 " **LMK**____ | **GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☐ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: _____(ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

Stream Crossing **SC**

WATERSHED/SUBSHED: WTR		**DATE:** 12/08/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 01	**TIME:** 9:15 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC080 /# 072	
SITE ID: (*Condition-#*) **SC-** B	**LAT** 41° 51' 32" **LONG** 72° 43' 16"	**LMK**	**GPS** (*Unit ID*)

earthen hill / berm

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☑ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☐ Concrete
☒ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 3' (ft)
Height: 2' high (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☒ Downstream scour hole
☐ Sediment deposition ☒ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ Obvious (>5°)

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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

Trash and Debris **TR**

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 sheet	**LAT** 41°51'.22" **LONG** 72°43'.24" **LMK** ___		**GPS:** (*Unit ID*)

TYPE:
- ☐ Industrial
- ☐ Commercial
- ☒ Residential

MATERIAL:
- ☒ Plastic
- ☒ Paper
- ☐ Metal
- ☒ Tires
- ☒ Construction
- ☐ Medical
- ☐ Appliances
- ☐ Yard Waste
- ☒ Automotive
- ☒ Other: toilet

SOURCE:
- ☐ Unknown
- ☐ Flooding
- ☒ Illegal dump
- ☐ Local outfall

LOCATION:
- ☐ Stream
- ☒ Riparian Area
  - ☒ Lt bank
  - ☐ Rt bank

LAND OWNERSHIP:
- ☐ Public ☐ Unknown
- ☒ Private

AMOUNT (*# Pickup truck loads*): 12

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 #*)

5	4	3	2	1
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

NOTES: broken glass, tires, debris, toilet, easy access

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Impacted Buffer **IB**

WATERSHED/SUBSHED:		**DATE:** ___/___/___	**ASSESSED BY:**
SURVEY REACH:	**TIME:** ___:___AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/#
SITE ID: (*Condition-#*) IB-___	*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: erosion + soil movement from construction.

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):		
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:

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/o erosion control measures no GB.

p1 of 2
TDB, Reach 5

Reach Level Assessment **RCH**

SURVEY REACH ID: 5	WTRSHD/SUBSHD: TDB	DATE: 11/30/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 3:20 AM/PM LMK: ____	TIME: 3:55 AM/PM LMK: ____	
LAT 41°49'42" LONG 72°45'2"	LAT 41°49'50" LONG 72°45'11"	
DESCRIPTION: forested section	DESCRIPTION: Rt. 178/Mountain Ave.	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☐ None ☒ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☒ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 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, fox

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☒ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

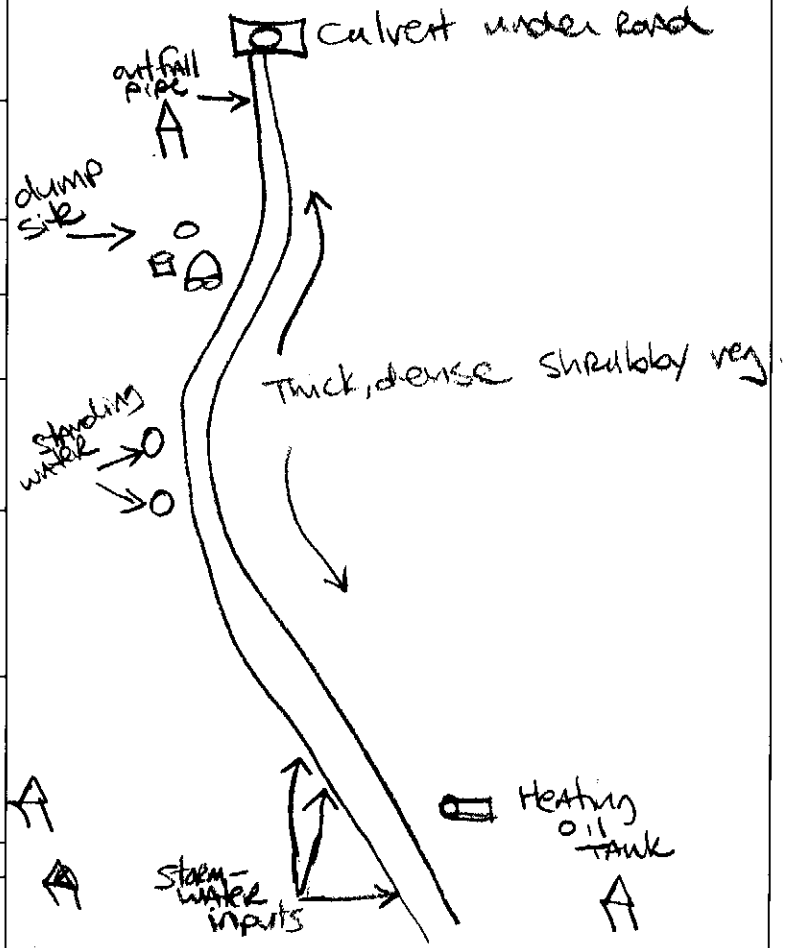
BANKFUL CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: ~~LT bank~~ 2' (ft); ~~RT bank~~ ____ (ft)
Width: ~~Bottom~~ 8' (ft); ~~Top~~ ____ (ft)

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)

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



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

REPORTED TO AUTHORITIES ☐ YES ☐ NO

P.2 of 2

TOB, REACH 5

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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: 65 /80 + Buffer/Floodplain: 60 /80 = **Total** Survey Reach 125 /160

Trash and Debris **TR**

WATERSHED/SUBSHED: T DB		**DATE:** 11/30/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 5	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# none
SITE ID: (*Condition-#*) **TR-** any one	**LAT** See below **LONG** ___° ___' ___"	**LMK** ___	**GPS:** (*Unit ID*)

TYPE:	**MATERIAL:**			**SOURCE:**	**LOCATION:**	**LAND OWNERSHIP:**
☐ Industrial	☒ Plastic	☒ Paper	☒ Metal	☐ Unknown	☐ Stream	☐ Public ☐ Unknown
☐ Commercial	☒ Tires	☐ Construction	☐ Medical	☐ Flooding	☒ Riparian Area	☒ Private
☒ Residential	☒ Appliances	☒ Yard Waste		☒ Illegal dump	☒ Lt bank	**AMOUNT** (*# Pickup truck loads*):
	☒ Automotive	☒ Other: sink + toilet		☐ Local outfall	☐ Rt bank	

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	**DUMPSTER WITHIN 100 FT:** ☐ Yes ☐ No ☐ Unknown
	WHO CAN DO IT: ☒ Volunteers ☒ Local Gov ☒ Hazmat Team ☐ 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: 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 ☐ YES ☒ NO

Stream Crossing **SC**

WATERSHED/SUBSHED: TOB | **DATE:** 11/30/09 | **ASSESSED BY:** CM + BG

SURVEY REACH ID: 5 | **TIME:** 3 : 50 AM/PM | **PHOTO ID:** (*Camera-Pic #*) /# none

SITE ID: (*Condition-#*) **SC-** one 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:
☐ Arch ☐ Bottomless
☐ Box ☐ Elliptical
☒ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 2 (ft)
Height: _____ (ft)
Culvert length: _____ (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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

P.1 of 2
TDB, Reach 6

Reach Level Assessment **RCH**

SURVEY REACH ID: TDB-6	WTRSHD/SUBSHD: TUMBLEDOWN BROOK	DATE: 11/30/09	ASSESSED BY: BG + CM

START	END	GPS ID:
TIME: 3:00 AM (PM) LMK: ____	TIME: 3:20 AM (PM) LMK: ____	
LAT ___° ____' ____" LONG ___° ____' ____"	LAT ___° ____' ____" LONG ___° ____' ____"	
DESCRIPTION: CONFLUENCE WITH TMB. (R)	DESCRIPTION: CONFLUENCE WITH TMB (R)	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☐ None ☐ Intermittent ☑ Trace

PRESENT CONDITIONS ☐ Heavy rain ☑ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☑ Suburban/Res ☐ Forested ☐ Institutional ☐ Golf course ☑ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 25-50 % ☐ 50%-75% ☐ 75-100%

DOMINANT SUBSTRATE
☑ Silt/clay (fine or slick) ☐ Sand (gritty) ☐ Gravel (0.1-2.5") ☐ Cobble (2.5 –10") ☐ Boulder (>10") ☐ 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 CATTAIL
Floating: ☐ none ☐ some ☐ lots

WILDLIFE IN OR AROUND STREAM
(Evidence of) ☐ Fish ☐ Beaver ☑ Deer ☐ Snails ☐ Other:

STREAM SHADING (water surface)
☐ Mostly shaded (≥75% coverage) ☐ Halfway (≥50%) ☑ Partially shaded (≥25%) ☐ Unshaded (< 25%)

CHANNEL DYNAMICS ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☑ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

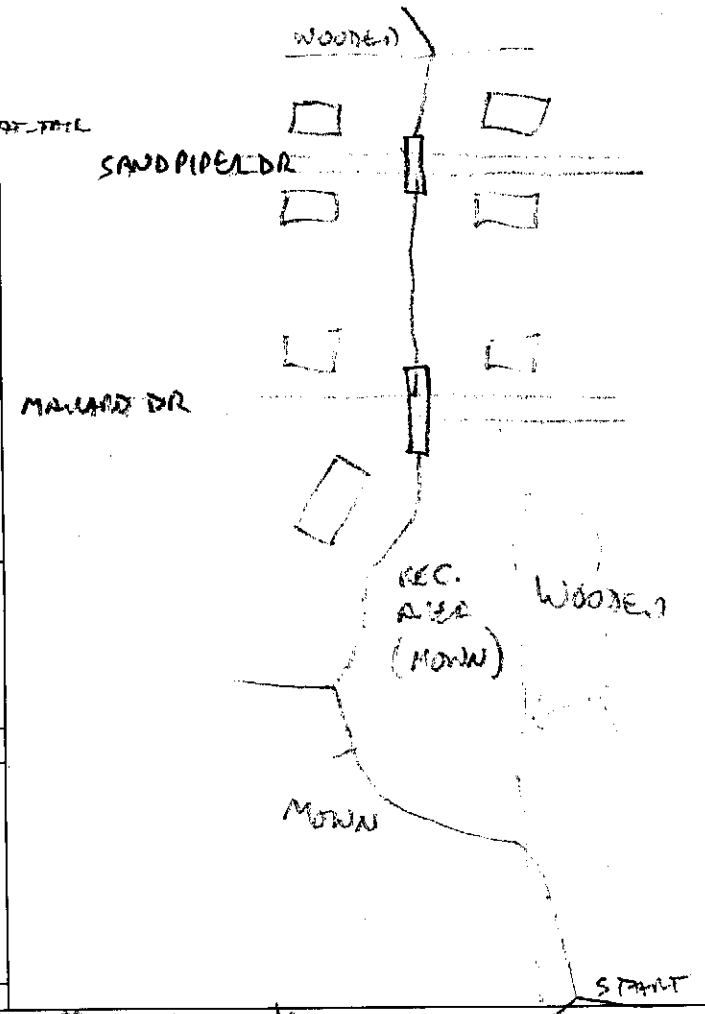
CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: LT bank 28" BANKFULL (ft); RT bank ____ (ft)
Width: Bottom 13' (ft); Top BANKFULL (ft)
MUCH NARROWER IN OPEN

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

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



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

REPORTED TO AUTHORITIES ☐ YES ☑ NO

P-202
IDB, REACH 6

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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. EXCEPT FOR LAST SECTION
	Left Bank 10 9	8 7 6	5 4 3	**(2)** 1 0 IN
	Right Bank 10 9	8 7 6	5 4 **(3)**	2 1 0 WOODS
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 ENCROACH-MENT	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

Storm Water Outfalls **OT**

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

BANK: ☐ LT ☒ RT ☐ Head

FLOW: ☒ None ☐ Trickle ☐ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter:____(in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel

☐ Concrete ☒ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____(in)
Width (Top):____(in)
" (Bottom):____(in)

~~NOT APPLICABLE~~

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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

Impacted Buffer **IB**

WATERSHED/SUBSHED: TDB | **DATE:** 11 / 30 / 09 | **ASSESSED BY:** CM/BG

SURVEY REACH: 6 | **TIME:** 3 : 00 AM/PM | **PHOTO ID:** (*Camera-Pic #*) 149200# 06, 07

SITE ID: (*Condition-#*) CM

IB- one sheet

START **LAT** ° ' " **LONG** ° ' " **LMK**

END **LAT** ° ' " **LONG** ° ' " **LMK**

GPS: (*Unit ID*)

IMPACTED BANK: ☐ LT ☐ RT ☒ Both

REASON INADEQUATE: ☐ Lack of vegetation ☐ Too narrow ☐ Widespread invasive plants ☐ Recently planted ☐ Other:

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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):	250	280
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 Athletic fields	Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:

0. Impact to LB+RB due to Athletic fields / mown lawn up to edge of bankfull
LB length of impact: ~250 meters
RB length of impact: ~280 meters

Stream Crossing **SC**

WATERSHED/SUBSHED: TOB		**DATE:** 11/30/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 6	**TIME:** ___:___ AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# none
SITE ID: (*Condition-#*) **SC-** A	**LAT** 41° 49' 35" **LONG** 72° 45' 05" **LMK**___		**GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☒ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 38" (ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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

Stream Crossing **SC**

WATERSHED/SUBSHED: FDB		**DATE:** 11/30/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 6	**TIME:** 3:20 AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# none
SITE ID: (*Condition-#*) SC- B	**LAT** 41° 49' 42"	**LONG** 72° 45' 02"	**LMK**____ **GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☑ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 40" (3')
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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. 1 of 2
TDB, REACH 8

Reach Level Assessment **RCH**

SURVEY REACH ID: 8	WTRSHD/SUBSHD: TDB	DATE: 11/30/09	ASSESSED BY: CM/BG

START	END	GPS ID:
TIME: 2 :30 AM/PM LMK: ____	TIME: 3 :00 AM/PM LMK: ____	CM
LAT 41 ° 49 ' 27 " LONG 72 ° 44 ' 57 "	LAT 41 ° 49 ' 28 " LONG 72 ° 45 ' 05 "	
DESCRIPTION: Medinah DR	DESCRIPTION: Tributary input (R Right Bank)	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☐ Steady rain ☐ None ☒ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☒ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☐ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☒ Suburban/Res ☐ Forested ☐ Institutional ☐ Golf course ☐ Park ☐ Crop ☐ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH
☐ 0-25% ☐ 50%-75%
☐ 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:

STREAM SHADING (water surface)
☒ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☐ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS
☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☒ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
BANK full

Height: ~~LT bank~~	22"	(ft)
~~RT bank~~	____	(ft)
Width: ~~Bottom~~	12'	(ft)
~~Top~~	____	(ft)

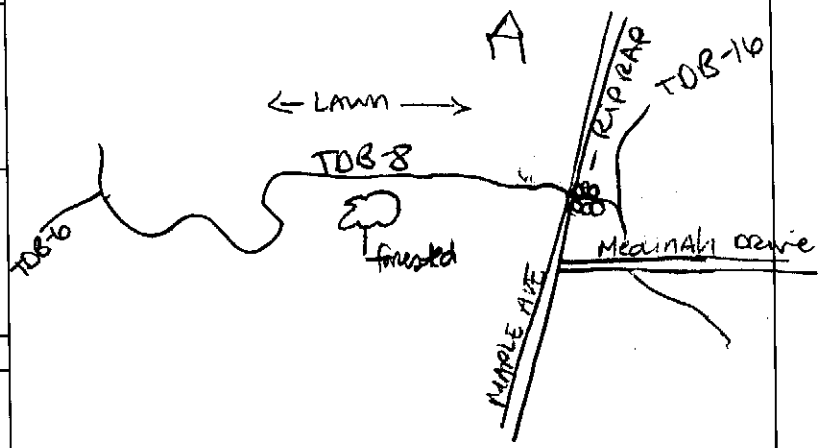
REACH ACCESSIBILITY

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 2 1

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



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
TOB, Reach 8

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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

Stream Crossing **SC**

WATERSHED/SUBSHED: TDB		**DATE:** 11/30/09	**ASSESSED BY:** CM+BG
SURVEY REACH ID: 8	**TIME:** 2:40 AM/PM	**PHOTO ID:** (*Camera-Pic #*) 14920/# 001, 002	
SITE ID: (*Condition-#*) SC-only one	**LAT** 41°49'28" **LONG** 71°45'00"	**LMK**____	**GPS** (*Unit ID*)

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

FOR ROAD/ RAILROAD CROSSINGS ONLY

SHAPE:
☐ Arch ☐ Bottomless
☐ Box ☒ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☒ Single
☐ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 4' (ft)
Height: _____(ft)
Culvert length: _____(ft)
Width: _____(ft)
Roadway elevation: _____(ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

5	4	3	2	1
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 along both banks downstream of culvert
Thin forested buffer on RB.

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Impacted Buffer **IB**

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-#*) IB-____	*START* **LAT** 41 ° 49 ' 28 " **LONG** 72 ° 4' 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

LAND USE: (*Facing downstream*)

	Private	Institutional	Golf Course	Park	Other Public
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

	LT BANK	RT
Length (ft):	~70	40
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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: ~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.

TDB, Reach 12

RCH

SURVEY REACH ID: 12	WTRSHD/SUBSHD: TDB	DATE: 12/1/09	ASSESSED BY: BG/CM

START TIME: 8:30 AM/PM LMK: ____
LAT 41° 48' 23" LONG 72° 45' 10"
DESCRIPTION: ~200' south of ~~Rt 44~~ Simsbury Rd.

END TIME: 9:30 AM/PM LMK: ____
LAT 41° 48' 37" LONG 72° 45' 04"
DESCRIPTION: Tributary junction on right bank

GPS ID: CM

RAIN IN LAST 24 HOURS ☐ Heavy rain ☒ Steady rain ☐ None ☐ Intermittent ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☒ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☒ Forested ☐ Institutional ☒ Golf course ☐ Park ☐ Crop ☒ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % / CHANNEL WIDTH: ☐ 0-25% ☐ 50%-75% ☐ 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) snake, small mammal scat, ☒ Fish ☐ Beaver ☒ Deer Rabbit ☐ Snails ☒ Other: mean, elliptio mussels

STREAM SHADING (water surface)
☐ Mostly shaded (≥75% coverage)
☐ Halfway (≥50%)
☑ Partially shaded (≥25%)
☐ Unshaded (< 25%)

CHANNEL DYNAMICS: mostly stable
☐ Unknown
☐ Downcutting ☐ Widening ☐ Headcutting ☐ Aggrading ☐ Sed. deposition
☐ Bed scour ☐ Bank failure ☑ Bank scour ☐ Slope failure ☐ Channelized

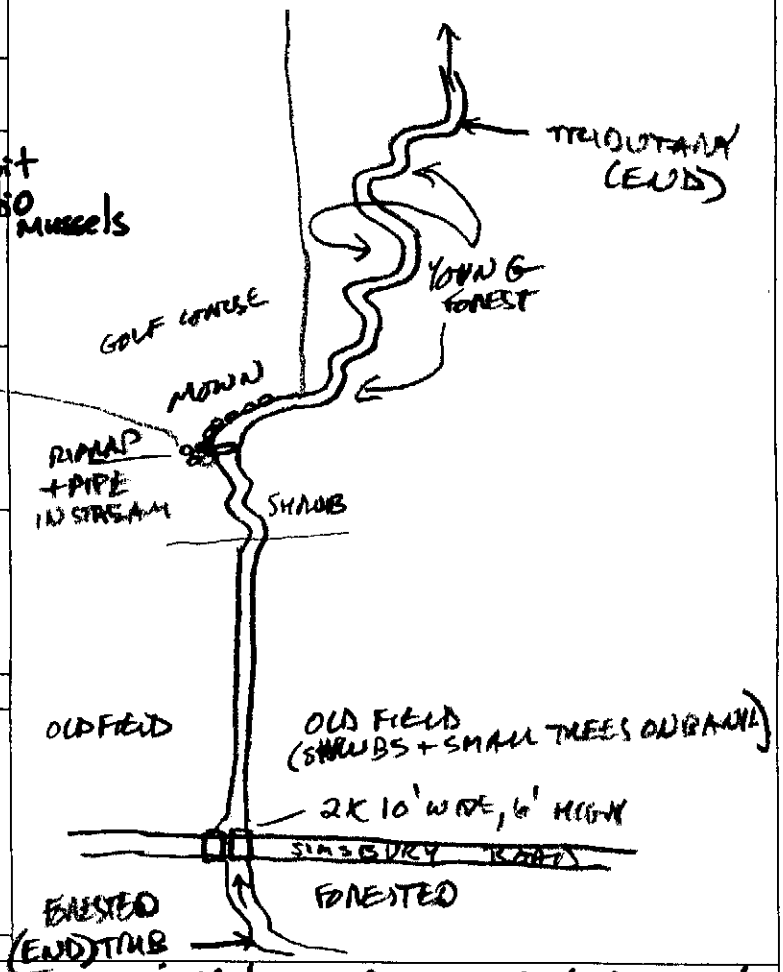
BANKFUL CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*
Height: ~~LT bank~~ 42" (ft); ~~RT bank~~ ____ (ft)
Width: ~~Bottom~~ 30' (ft); ~~Top~~ ____ (ft)

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

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



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

P.2 of 2
.TDB, REACH 2

OVERALL STREAM CONDITION

	Optimal	Suboptimal	Marginal	Poor
IN-STREAM HABITAT *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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: 62 /80 + Buffer/Floodplain: 47 /80 = **Total** Survey Reach 109 /160

Stream Crossing **SC**

WATERSHED/SUBSHED: TOB | **DATE:** 12/01/09 | **ASSESSED BY:** CMTBC

SURVEY REACH ID: 12 | **TIME:** 8:30 AM/PM | **PHOTO ID:** (*Camera-Pic #*) PC010 /# 001, 002

SITE ID: (*Condition-#*) SC-ain one | **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:
☐ Arch ☐ Bottomless
☒ Box ☐ Elliptical
☐ Circular
☐ Other:

 # BARRELS:
☐ Single
☒ Double
☐ Triple
☐ Other:

MATERIAL:
☒ Concrete
☐ Metal
☐ Other:

ALIGNMENT:
☒ Flow-aligned
☐ Not flow-aligned
☐ Do not know

DIMENSIONS: (*if variable, sketch*)
Barrel diameter: 10' (ft)
Height: _____ (ft)
Culvert length: 60' (ft)
Width: _____ (ft)
Roadway elevation: _____ (ft)

CONDITION: (*Evidence of...*)
☐ Cracking/chipping/corrosion ☐ Downstream scour hole
☐ Sediment deposition ☐ Failing embankment
☐ Other (*describe*):

CULVERT SLOPE:
☐ Flat
☐ Slight (2° – 5°)
☐ 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

If yes for fish barrier

EXTENT OF PHYSICAL BLOCKAGE:
☐ Total ☐ Partial
☐ Temporary ☐ Unknown

CAUSE:
☐ Drop too high Water Drop: _____ (in)
☐ Flow too shallow Water Depth: _____ (in)
☐ Other:

BLOCKAGE SEVERITY: (*circle #*)

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:

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

REPORTED TO AUTHORITIES ☐ YES ☐ NO

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: TDB		**DATE:** 12/01/09	**ASSESSED BY:** CM/BG
SURVEY REACH ID: 12	**TIME:** 9:15 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC010 # 007	
SITE ID (*Condition-#*): **OT-** only one sleeve	**LAT** 41° 48' 32" **LONG** 72° 45' 07"	**LMK**____	**GPS:** (*Unit ID*)

BANK: ☒ LT ☐ RT ☐ Head

FLOW: ☐ None ☐ Trickle ☐ Moderate ☐ Substantial ☒ Other: submerged

TYPE: ☒ Closed pipe ☐ Open channel

MATERIAL: ☐ Concrete ☐ Metal ☒ PVC/Plastic ☐ Brick ☐ Other:

☐ Concrete ☐ Earthen ☐ Other:

SHAPE: ☒ Single ☒ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

DIMENSIONS: Diameter:____(in)

Depth: ____(in) Width (Top):____(in) " (Bottom):____(in)

NOT APPLICABLE

SUBMERGED: ☐ No ☒ Partially ☐ Fully

CONDITION: ☐ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☒ Other: rust in water

ODOR: ☒ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

SKETCH/NOTES:

REPORTED TO AUTHORITIES: ☐ YES ☐ NO

Impacted Buffer **IB**

WATERSHED/SUBSHED: TDB		**DATE:** 12/01/09	**ASSESSED BY:** CM/CG
SURVEY REACH: 12	**TIME:** 9:15 AM/PM	**PHOTO ID:** (*Camera-Pic #*) PC010 /# 007	
SITE ID: (*Condition-#*) IB- on 1 one sheet	*START* **LAT** 41 °48'32" **LONG** 72 °45'07" **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

LAND USE: (*Facing downstream*)	Private	Institutional	Golf Course	Park	Other Public
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: ↑ Along GC

RESTORABLE AREA

	LT BANK	RT
Length (ft):	50	
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		Impacted area on private land where road; building encroachment or other feature significantly limits available area for planting
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:

① PASTURE (good quality habitat) but thin overstory ⇒ beginning
② LB impact due to RIP-RAP ~3' hi x 50' long ⇒ 41°48'32"/72°45'07"

p.1 of 2
TDB Reach 14

RCH

SURVEY REACH ID: TBD 14	WTRSHD/SUBSHD: TUMBLEDOWN BRK	DATE: 12/1/09	ASSESSED BY: BG+CM

START	END	GPS ID:
TIME: 9:30 AM/PM LMK: ____	TIME: 10:30 AM/PM LMK: ____	
LAT 41° 48' 37" LONG 72° 45' 04"	LAT 41° 48' 54" LONG 72° 45' 00"	
DESCRIPTION: CONFLUENCE (R)	DESCRIPTION: GOLF COURSE POND	

RAIN IN LAST 24 HOURS ☐ Heavy rain ☑ Steady rain ☐ Intermittent ☐ None ☐ Trace

PRESENT CONDITIONS ☐ Heavy rain ☐ Steady rain ☐ Intermittent ☐ Clear ☐ Trace ☐ Overcast ☑ Partly cloudy

SURROUNDING LAND USE: ☐ Industrial ☐ Commercial ☐ Urban/Residential ☐ Suburban/Res ☒ Forested ☐ Institutional ☒ Golf course ☐ Park ☐ Crop ☒ Pasture ☐ Other:

AVERAGE CONDITIONS *(check applicable)*

BASE FLOW AS % CHANNEL WIDTH: ☐ 0-25% ☐ 25-50 % ☐ 50%-75% ☑ 75-100%

DOMINANT SUBSTRATE
- ☑ Silt/clay (fine or slick)
- ☐ Sand (gritty)
- ☐ Gravel (0.1-2.5")
- ☐ Cobble (2.5 –10")
- ☐ Boulder (>10")
- ☐ 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: MUSSELS, HERON, OTHER BIRDS

STREAM SHADING (water surface)
- ☐ Mostly shaded (≥75% coverage)
- ☑ Halfway (≥50%)
- ☐ Partially shaded (≥25%)
- ☐ Unshaded (< 25%)

CHANNEL DYNAMICS: RELATIVELY STABLE ☐ Unknown

☐ Downcutting	☐ Bed scour
☐ Widening	☐ Bank failure
☐ Headcutting	☑ Bank scour
☐ Aggrading	☐ Slope failure
☐ Sed. deposition	☐ Channelized

CHANNEL DIMENSIONS *(FACING DOWNSTREAM)*

Height:	LT bank	BANKFULL 30" (2.5') (ft)
	RT bank	(ft)
Width:	Bottom	38' (ft)
	Top	(ft)

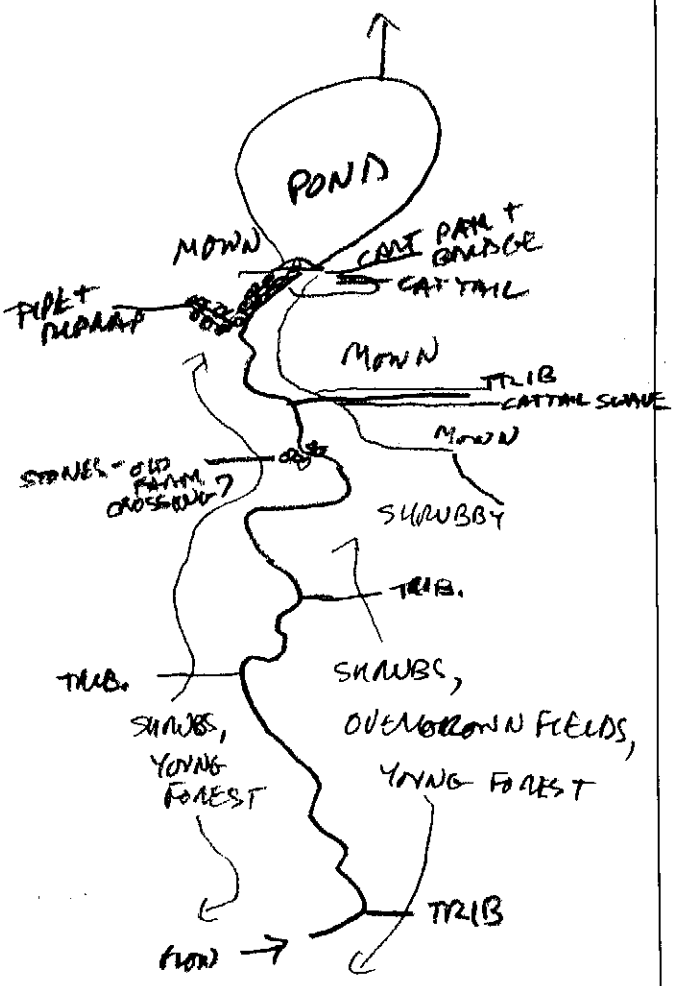
REACH ACCESSIBILITY

Good:	Fair:	Difficult:
Open area in public ownership, sufficient room to stockpile materials, easy stream channel access for heavy equipment using existing roads or trails.	Forested or developed area adjacent to stream. Access requires tree removal or impact to landscaped areas. Stockpile areas small or distant from stream.	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

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



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

REPORTED TO AUTHORITIES ☐ YES ☐ NO

p-2 62
TDB, Reach H

Overall Stream Condition

	Optimal	Suboptimal	Marginal	Poor
In-stream Habitat *(May modify criteria based on appropriate habitat regime)*	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 not new fall and not 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 *(score each bank, determine sides by facing downstream)*	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 (facing downstream)	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 Encroach-ment	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

Storm Water Outfalls **OT**

WATERSHED/SUBSHED: TDB		**DATE:** 12/01/09	**ASSESSED BY:** CM + BG
SURVEY REACH ID: 14	**TIME:** 9:45 AM/PM	**PHOTO ID:** (*Camera-Pic #*)	/# none
SITE ID (*Condition-#*): OT-___	**LAT** ___° See below ° ___' ___"	**LMK**___	**GPS:** (*Unit ID*)

BANK: ☐LT ☒RT ☐ Head

FLOW: ☐ None ☒ Trickle ☒ Moderate ☐ Substantial ☐ Other:

TYPE: ☐ Closed pipe

MATERIAL: ☐ Concrete ☐ Metal ☐ PVC/Plastic ☐ Brick ☐ Other:

SHAPE: ☐ Single ☐ Circular ☐ Double ☐ Elliptical ☐ Triple ☐ Other:

DIMENSIONS: Diameter:____(in)

SUBMERGED: ☐ No ☐ Partially ☐ Fully

☒ Open channel

☐ Concrete ☒ Earthen ☐ Other:

☐ Trapezoid ☐ Parabolic ☐ Other:

Depth: ____(in)
Width (Top): ____(in)
" (Bottom): ____(in)

NOT APPLICABLE

CONDITION: ☒ None ☐ Chip/Cracked ☐ Peeling Paint ☐ Corrosion ☐ Other:

ODOR: ☐ No ☐ Gas ☐ Sewage ☐ Rancid/Sour ☐ Sulfide ☐ Other:

DEPOSITS/STAINS: ☐ None ☐ Oily ☐ Flow Line ☐ Paint ☐ Other:

VEGGIE DENSITY: ☐ None ☐ Normal ☐ Inhibited ☐ Excessive ☐ Other:

PIPE BENTHIC GROWTH: ☐ None ☐ Brown ☐ Orange ☐ Green ☐ Other:

POOL QUALITY: ☐ No pool ☐ Good ☐ Odors ☐ Colors ☐ Oils ☐ Suds ☐ Algae ☐ Floatables ☐ Other:

FOR FLOWING ONLY

COLOR: ☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:

TURBIDITY: ☐ None ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque

FLOATABLES: ☐ None ☐ Sewage (toilet paper, etc.) ☐ Petroleum (oil sheen) ☐ Other:

OTHER CONCERNS: ☐ Excess Trash (paper/plastic bags) ☐ Dumping (bulk) ☐ Excessive Sedimentation ☐ Needs Regular Maintenance ☐ Bank Erosion ☐ 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 #)*

5	4	3	2	1
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.

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

Impacted Buffer **IB**

WATERSHED/SUBSHED: TDB | **DATE:** 12/01/07 | **ASSESSED BY:** CM/BG

SURVEY REACH: 14 | **TIME:** 10:30 AM/PM | **PHOTO ID:** (*Camera-Pic #*) R010 I# 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	☐	☐	☒	☐	☐ : + farm land
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

	LT BANK	RT
Length (ft):	____	____
Width (ft):	____	____

REFORESTATION POTENTIAL: (*Circle #*)

5	4	3	2	1
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

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

NOTES:

NBP-04

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/23/09	NBP-04	DOWNSTREAM END (PBR300)	7	AT CONFLUENCE WITH TRIBUTARY (R) BANK
			9	TYPICAL RIFFLE
			10	RESIDENTIAL LAWNS, (L) BANK
			11	PIPE + EROSION, NORTHERNMOST LAWN
		UPSTREAM END	12	LOOKING UPSTREAM @ PORTAGE CROSSING

COMMENTS:

NBP-09

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/23/09	NBP-09	DOWNSTREAM END	(PB2300) - 31	POND OUTLET UNDER CAMPUS ROAD, ISLAND ON (R)
			32	TOP END OF ISLAND
			33	OUTFALL FROM CAMPUS PIPE (R) BANK ABOVE PEDESTRIAN BRIDGE
			34	RIFFLE + PEDESTRIAN BRIDGE
			35	AT BEND ABOVE UPSTREAM CAMPUS BRIDGE (BEGINNING DOWNSTREAM OF BEDROCK SECTION)
			36	UPSTREAM END OF BEDROCK SECTION
		CLOSE TO UPSTREAM END	37	PIPE IN BEDROCK, (R) BANK

COMMENTS:

NBP-10

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/23/09	NBP-10	NEAR DOWNSTREAM END	(PB2300_) -22	TREE + LIMB DAM, ERODING BANK (SEE PB2300021 FOR DOWNSTREAM END OF NBP-10+11
			23	ERODING (L) BANK
			24	EROSION (L) + (R) BANKS
			25	DEBRIS DAM @ OX BOW, RIVER BREAKING THROUGH OLD BANK @ TREES
			26	DEBRIS IN RIVER DOWNSTREAM FROM PARKING
			27	LOGGING STORMWATER OUTFALL AT S. END OF PARKING, RIPRAP + CONCRETE
			28	ANOTHER STORMWATER OUTFALL FROM PARKING
			29	CALM STRETCH WITH PARKING IN BUFFER
		NEAR UPSTREAM END	30	CONDUIT CROSSING STREAM BELOW CAMPUS ROAD

COMMENTS:

NBP-11

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/23/09	NBP-11	ABOVE REACH	(PB2300) - 13	CONCRETE BANK ABOVE RR CULVERT
		UPSTREAM END	14	LOOKING UPSTREAM AT CULVERT
			15	100' DOWNSTREAM FROM RR CULVERT
			16	TRASH + DEBRIS DAM (BOTH COMMON)
			17	TYPICAL ENDED BANK ON (L)
			18	CULVERT UNDER MARK TWAIN DRIVE
			19	DOWNSTREAM M.T. DRIVE CULVERT, LOW IN WATER
			20	MORE STABLE STRETCH BELOW M. TWAIN
		DOWNSTREAM END	21	SILT-LADEN WATER ENTERING NORTH BRANCH

COMMENTS:

NBP-13

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/24/09	NBP-13	DOWNSTREAM END	(PB2400) 71	WETLAND, POTENTIAL VERNAL POOL, (R) BANK
			72	BROKEN PIPE + COLLAPSE BEHIND HEADWALL, (R) BANK
		UPSTREAM END	73	STONE STRUCTURE (REMAINS OF CROSSING/DAM) + RIFFLE, JUST BELOW RTE. 44 BRIDGE

COMMENTS:

NBP-14

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/24/09	NBP-14	FIRST BEND ABOVE DOWNSTREAM END	PB2900+ 58	ESTATE + LAWN, (R) BANK
			59	(L) BANK ARMORED BY TREE, CHAIN LINK FENCE, IRON-CONTAMINATED SEEP (PIPE?)
			60	STONE REMAINS OF DAM OR CROSSING
			61	TWO 54" BROKEN PIPES (L) BANK (LOOKING UPSTREAM) NEAR END OF WOODLAND DR
			62	ENDING BANKS ABOVE 54" PIPES
			63	TRASH TRAPPED AT DEBRIS DAM
			64	OUTFALL, (L) BANK (LOOKING UPSTREAM)
			65	FALLEN TREES + ERODING (R) BANK
			66	FAILING HEADWALL, (R) BANK
			67	TYPICAL RIFFLE
			68	DEN TREE, (R) BUFFER
		CLOSE TO UPSTREAM END	70	ESTATE + LAWN, (R) BANK, ABOVE STONE ABUTMENTS, ABANDONED BRIDGE

COMMENTS:

NBP-15

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: B6+CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/24/09	NBP-15	DOWNSTREAM END	PB24100-49	STORMWATER HEADWALL + ASYLUM AVENUE BRIDGE
			50	STORMWATER OUTLET BELOW PARKING-LOT, (L) BANK
			51	RESIDENTIAL ESTATE RETAINING WALLS, (R) BANK
			52	RIPARIAN WETLAND, (R) BANK
			53	HEADWALL + PIPE, (L) BANK
			54	OLD SWALE AND EROSION, (R) BANK
			55	ERODED SWALE W/ CONCRETE, (L) BANK
		UPSTREAM END	56	WETLANDS + TRIBUTARY (L) BANK
		UPSTREAM END	57	ERODING TOP OF ISLAND, (R) BANK

COMMENTS:

NBP-16

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/24/09	NBP-16	DOWNSTREAM END	~~PB24100-~~ 38	TERMINAL CULVERT, ARMORED BANKS
			39	ARMORED CHANNEL (RIPRAP), STEEP SLOPE (R) BANK
			40	SLOPE FAILURE + BROKEN PIPE, (R) BANK
			42	RIPRAPPED (R) BANK + SLOPE, ERODING (R) BANK
			43	ERODING (L) BANK + PIPE EXPOSED BY EROSION
			44	GABION WALL, (R) BANK, WITH CONCRETE STRUCTURE
			45	MALLARDS + WOOD DUCKS BY UNDERCUT BANK
			46	OUTFALL PIPE, (R) BANK
			47	CONCRETE STRUCTURE + ERODING (R) BANK
		NEAR UPSTREAM END	48	OUTFALL PIPE + HEADWALL (L) BANK, JUST BELOW ASYLUM AVE. BRIDGE

COMMENTS:

NBP-19

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233

Group: BG+CM

Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/23/09	NBP-19	DOWNSTREAM END	(BB23C 0) 1	EXCAVATED CHANNEL + CONCRETE WALL
			2	(L) BANK, EXC. CHANNEL
			3	BROKEN PIPE + COLLAPSED HEADWALL
			4	FALLEN TREE + DEBRIS DAM
		UPSTREAM END	5	CULVERT AT UPSTREAM END, LOOKING UPSTREAM
			6	STORMWATER OUTFALL WEST OF STREAM

COMMENTS:

FYB-02

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/24/09	FYB-02	DOWNSTREAM END	75	LOOKING UPSTREAM FROM MOUTH
			76	EROSION, TREES FALLING IN
			77	DEBRIS DAM
			78	ERODING BANKS, DEEP POOL
			79	PIPE, (R) BANK (HOUSING SIDE)
			80	ANOTHER DEBRIS DAM, WITH TRASH
			82	STORMWATER PIPE + TRASH (L) BANK (BELOW PARKING LOT)
		UPSTREAM END	83	CULVERT UNDER COTTAGE GROVE ROAD, LOOKING UPSTREAM
		UPSTREAM END	84	DOWNSTREAM FROM CULVERT

COMMENTS:

BBW-02

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/3/09	BBW-02	DOWNSTREAM END	PC0300- 12	FROM WINTON BLVD AVE. CULVERT, END AT TRIBUTARY ON (L) (BBE-04) BEHIND TREES
			13	WINTON BLVD AVE. CULVERT, FLOODED LAWN (L) OF PHOTO
			15	LAWNS IN BUFFER (R)
			16	FROM FILLEN STREET
			17	TURBID WATER ENTERING FILLEN STREET CULVERT
			18	TRIBUTARY ON (R), SCHOOL GROUNDS IN BACKGROUND
		UPSTREAM END	19	LAWN ON (L), BEFORE ENTERING WOODED SECTION

COMMENTS:

BBE-01

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/3/09	BBE-01	DOWNSTREAM END	PC0300 + 09	CONFLUENCE WITH TRIBUTARY ON (R)
			10	FROM CULVERT UNDER DIKE
		UPSTREAM END	11	INLET STRUCTURE E. OF DIKE, WITH FLOODING

COMMENTS:

BBE-02

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/3/09	BBE-02	NEAR DOWNSTREAM END	PC0300 06	FLOODING IN SCRUB/SHRUB WETLAND, NEAR CONFLUENCE WITH BBE-03
			07	TYPICAL WOODED SECTION, STREAM WITHIN BANKS
			08	ABANDONED CAR NEXT TO STREAM, (R) BANK

COMMENTS:

BBE-04

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/3/09	BBE-04	DOWNSTREAM END	PC0300-02	FROM WINTONBURN AVE. CULVERT, CONFLUENCE WITH BBW-02 AT TREES
			03	WINTONBURN AVE. CULVERT, WITH STREAM OVER BANKS
			04	STREAM OVER BANKS, TRIBUTARY FROM RESIDENCE ON (R)
			05	STREAM CROSSING DISTURBED POWER LINE EASEMENT, WITH FLOODING

COMMENTS:

WBS-03

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/3/09	WBS-03	DOWNSTREAM END	PC0300-28	CONFLUENCE WITH TRIBUTARY ON (L)
			27	LOOKING UPSTREAM @ YARD WITH PAVED AREA NEAR (R) BANK
			26	DOWNSTREAM FROM FARM ROAD CULVERT
			25	DEBRIS AT UPSTREAM SIDE OF BLOCKED FARM ROAD CULVERT
			24	IN FLOODED WOODS ABOVE CULVERT, FLOODED TRIBUTARY FROM (L)
			23	TUSSOCK SEDGE HUMMOCKS LEADING TO WOODS
			22	WET MEADOW
		UPSTREAM END	21	FROM CULVERT UNDER DIKE

COMMENTS:

WBS-04

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/3/09	WBS-04	DOWNSTREAM END	PCO300-43	CULVERT UNDER BROWN STREET, WITH STORMWATER PIPE (R), STONE+DEBRIS DAM
			42	CATTAIL MARSH + FLOODED SECTION ABOVE STONE+DEBRIS DAM
			41	ANOTHER STONE + DEBRIS DAM
			40	STORMWATER PIPE FROM EQUIPT. YARD
			39	FROM DRIVEWAY CROSSING
			38	DOUBLE DRIVEWAY CULVERTS
			37	STREAM IN CATTAIL MARSH, HORSE PASTURE ON (R)
			36	FOOTBRIDGE + DAM SPILLWAY + DOWNSTREAM
			35	BARREN, ENDING (R) BANK OF NEWLY REBUILT POND
			34	SMALL BRIDGE AND REBUILT POND WITH UNPROTECTED SOIL PILES + BANKS
			32	CULVERT ABOVE SMALL BRIDGE, W/ SM POOL AND EQUIPMENT
			31	JUNK ACROSS, IN, AND ON BANK OF STREAM, POOL IN (R) BACKGROUND
			30	PHRAGMITES, MULTIFLORA ROSE, AND AUTUMN OLIVE ON BOTH BANKS
		UPSTREAM END	29	FROM CONFLUENCE

COMMENTS:

WBN-04

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
3DEC09	WBN-04	DOWNSTREAM END	PC0300-45	STREAM ENTERING CULVERT UNDER MUCKO ROAD
			46	SINUOUS CHANNEL + FLOODING IN FLOODPLAIN N. OF MUCKO ROAD
			47	COLLAPSING FOOTBRIDGE TO BOY SCOUT CABIN
			48	CONFLUENCE WITH TRIBUTARY ON (L)
			49	MEANDER IN MOSS AND SKUNK CABBAGE FLOODPLAIN
			50	OLD CROSSING WITH BROKEN PIPE, OLD FARM DUMP IN BACKGROUND
			51	RESIDENTIAL YARD WITH UNDISTURBED BUFFER, (L) BANK
			52	ATV BRIDGE FROM SAME YARD
			53	MAN-MADE STONE BANK, SAME YARD
			54	TANKS IN STREAM AND ON (R) BANK
			55	VERY TRASHY YARD ON (L) BANK, FROM DOWNSTREAM END OF LONG CULVERT
			56	STREAM APPROACHING LONG CULVERT, UNDER 2 DRIVEWAYS AND LAWN BEHIND FENCE
			57	MOWN BUFFER (R) WITH JAPANESE KNOTWEED BOTH BANKS
			58	ROADSIDE CHANNEL WITH J. KNOTWEED, END OF CULVERT UNDER WOODLAND AVE.
		UPSTREAM END	59	CATTAIL MARSH LEADING TO WOODLAND AVE CULVERT, BEGIN POND E. OF ROAD

COMMENTS:

WTR-02

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/8/09	WTR-02	DOWNSTREAM END	PCOECO -64	CULVERT UNDER OLD FARM ROAD
			65	TRIBUTARY ON (R), SEDIMENT ON (L) (SMALL)
			66	OLD TIMBER BRIDGE (FOOTBRIDGE)
			67	SINUOUS CHANNEL, NEW FILL AND PIPE ON (L) (NEW OFFICE BUILDING)
			68	FENCES + FALLEN TREES ACROSS STREAM, NEW BUILDING IN BACKGROUND
			69	ALMOST-EQUAL TRIBUTARY ON (R)
			70	RELATIVELY STABLE UNDERCUT (L) BANK
			71	UNSTABLE BANK EROSION IN DOWNCUTTING UPSTREAM STRETCH
		UPSTREAM END	72	FLUM PIPE THROUGH DUDLEY POND DAM

COMMENTS:

WTR-01

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/8/09	WTR-01	DOWNSTREAM END	PC0800-73	STREAM ENTERING MARSH AT N. END OF DUDLEYTOWN POND
			74	TYPICAL SECTION IN MIDDLE
		UPSTREAM END	75	FROM CULVERTS UNDER OLD FARM ROAD

COMMENTS:

FYB-03

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233

Group: BG + CM

Camera: OLYMPUS 1 + DISPOSABLE

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/30/09	FYB-03	DOWNSTREAM END	002	BANK EROSION + CULVERT UNDER COTTAGE GROVE ROAD
			003	TYPICAL SHRUB STRETCH W/ALDERS, DOGWOOD
			004	RIFFLE WITH SAND BARS
			005	GRASSY NEW FLOODPLAIN BELOW OLD FLOODPLAIN (DOWNCUTTING?)
			006	PIPE + ERODED CHANNEL FROM SUBDIVISION; (R) BANK
			007	BANK EROSION AND SLOPE FAILURE (L)
DIGITAL CAMERA REPLACED WITH	LOST CHARGE, DISPOSABLE		DISP-08	RIPRAP (R) BANK
		UPSTREAM END	DISP-09	RIPRAP + MULTIFLORA ROSE FROM RR BED

COMMENTS:

FYB-01

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: DISPOSABLE

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/30/09	FYB01	DOWNSTREAM END	1493000-3	RR CULVERTS, CHANNEL ALONGSIDE RR
			4	CLEARED, GRADED, AND MULCHED (L) BANK AND BUFFER UNDER POWERLINE TOWER
			5	FROM PARK AVENUE, WITH TRASH
			6	PARK AVE. CULVERTS (3) FROM UPSTREAM
			7	TYPICAL MEADOW + SHRUB STRETCH
			8	TRIBUTARY FROM (R)
		UPSTREAM END	9	TOP END WITH MOWN MEADOW + SHRUBS

COMMENTS: SOME COLOR ANOMALIES FROM WET FILM

WBS-11

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: DISPOSABLE

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/30/09	WBS-11	DOWNSTREAM END	149300-10	COVERED FOOTBRIDGE AT FORK IN CHANNEL (AU FLOW TO (R))
			11	CULVERT FROM MEDICAL BLDG PARKING LOT
			12	BEDROCK SLOPE ON (R), BEDROCK AND GRAVEL STREAMBED
			13	(R) TRIBUTARY FROM (L) BANK
			14	EROSION AND SLOPE FAILURE (L) BANK BELOW GABION + RIPRAP SLOPE
			15	GABION, RIPRAP, + BLOCK ON (L) SLOPE
			16	(R) SLOPE FAILURE + RIPRAP NEAR BLOOMFIELD AVENUE
			17	COTTAGE GROVE ROAD CULVERTS
			18	TRIBUTARY (L), FROM (R) BANK
			19	OAKS ON ERODING (L) BANK
			20	ARCH CULVERT UNDER BLOOMFIELD AVE
			21	GOLF CART FOOTBRIDGE AND REMAINS OF DAM, BLOOMFIELD AVE. IN BACKGROUND
			22	TYPICAL STRETCH IN WOODS WEST OF GOLF COURSE

COMMENTS: DISCOLORATIONS FROM WET FILM, PHOTO AT UPSTREAM END RUINED

BHR-01

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/8/09	BHR-01	DOWNSTREAM END	P1080084	STREAM ENTERING CATTAIL POND
			85	ALDERS + PHRAGMITES ABOVE POND, STREAM CHANNEL DIFFUSE
			86	EXTENSIVE DUMPING (L) SLOPE BY ALVIN BUILDING
			87	TRIBUTARY (L) ABOVE ALVIN SLOPE
			88	ALDER SWAMP, ALVIN BLDG. IN BACKGROUND
			89	TYPICAL WOODED SECTION FROM OLD FARM ROAD
			90	STREAM ENTERING FARM RD. CULVERT, PART OF ABANDONED CAR ON (R)
			91	EXTENSIVE SEDIMENT DEPOSITION IN WETLAND, WASHOUT IN SLOPE FROM INDUSTRIAL SITE (R)
			92	IRON STAINS, SEDIMENT DEPOSITION, AND RACCOON TRACKS SOUTH OF ROUTE 187
			93	SEDIMENT FROM RTE 187 CULVERT, BARE TRICKLE OF FLOW, COON TRACKS
			94	SEDIMENTED STREAM FROM RTE 187
			95	RTE 187 CULVERT INVERT, PHRAGMITES AT EDGE OF POND
			96	CENTER OF POND
		UPSTREAM END	97	NORTH END OF POND, SEDGE MARSH, NO STREAMS FLOWING INTO POND

COMMENTS: NO STREAM, NO CHANNEL NORTH OF ROUTE 187

BHR-02

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/8/09	BHR-02	DOWNSTREAM END	P1080076	STREAM ENTERING CULVERT UNDER WEST DUDLEYTOWN ROAD
			77	NEARLY EQUAL TRIBUTARY ON (L)
			78	TYPICAL FORESTED STRETCH W/SAND BAR
			79	TRIBUTARY (R)
			80	BANK EROSION (MINOR) ON (L)
			81	PHRAGMITES AND BARRELS (R) BANK
			82	MORE BARRELS + TRASH (R) BUFFER (SAME DUMP)
		UPSTREAM END	83	2 PIPES IN CATTAIL POND DAM

COMMENTS:

TDB-05

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: DISPOSABLE

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/30/09	TBD-05	NEAR DOWNSTREAM END	14920-10	SLOPING LAWN (R) BANK ABOVE SANDPIPER DRIVE CULVERT
				(JUST BEFORE ENTERING UPSTREAM WOODS... NOT SURE WHERE TBD-05/06 BREAK IS)

COMMENTS: REMAINDER OF PHOTOS RUINED BY WATER ON FILM

TDB-06

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: DISPOSABLE

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/30/09	TDB-06	~200' ABOVE DOWNSTREAM END	149200-05	MOWN FIELD ON RIGHT (PARK?) UPSTREAM FROM LAST WOODED SECTION
			06	(L) TRIBUTARY IN CATTAIL MARSH
			07	FROM CULVERT NEAR (UNDER) MALLARD DRIVE

COMMENTS: REMAINING PHOTOS THIS SECTION MINED BY WATER ON FILM

TBD-08

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: DISPOSABLE

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
11/30/09	TBD-08	NEAR DOWNSTREAM END	149200-01	FROM MAPLE AVE. CULVERT, RIPRAP (R)+(L) BANKS+CHANNEL, CONFLUENCE BEYOND TREES
			02	ENTERING MAPLE AVE. CULVERT
			03	LAWN TO (L) BANK
		UPSTREAM END	04	CONFLUENCE ON (R)

COMMENTS: SOME PHOTOS LOST TO WET FILM IN 1ST DISPOSABLE CAMERA

TBD-12

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/1/09	TBD-12	DOWNSTREAM END	PC0100-09	CONFLUENCE W/TRIBUTARY ON (R), COMING OUT OF WOODED SECTION
			08	BANK SCOUR ON (R), WOODED SECTION
			07	RIPRAP ON (L) + PIPE FROM GOLF COURSE
			06	2 TYPES OF AQUATIC PLANTS SEEN
			04	TYPICAL SECTION BETWEEN OLD FIELDS
			03	FROM SIMSBURY ROAD CULVERT
			02	WOODED SECTION ABOVE SIMSBURY CULVERTS
		UPSTREAM END	01	TRIBUTARY ON (L)

COMMENTS: PHOTOS LISTED FROM DOWNSTREAM TO UPSTREAM END, BUT STREAM WAS WALKED UPSTREAM TO DOWNSTREAM

TDB-14

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/1/09	TDB-14	DOWNSTREAM END	RC0100-18	ENTERING GOLF COURSE POND, WITH NPDAP + PIPE ON (L) BANK
			17	WIDE + SLOW APPROACHING GOLF COURSE
			16	TRIBUTARY IN OPEN FIELD, (R) FROM BANK
			15	ALDER-COVERED BANKS ABOVE TRIBUTARY
			14	STONE AT OLD CROSSING?
			13	HERBACEOUS GROWTH NEAR BANK (ARROW ARUM?)
			12	TRIBUTARY ON (L) BANK
			11	ALDERS ON BANK IN OVERGROWN PASTURE
		UPSTREAM END	10	SHRUB/SCRUB SECTION, DOWNSTREAM FROM CONFLUENCE

COMMENTS: PHOTOS LISTED DOWNSTREAM → UPSTREAM, BUT WALKED UP → DOWN

WBN-06

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG+CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/1/09	WBN-06	DOWNSTREAM END	P0100-41	LOOKING DOWNSTREAM AT CONFLUENCE WITH WBN-07 → WBS-01
			42	SEDIMENT BAR AND MEANDER
			43	GRASSY AQUATIC VEGETATION
			44	LYTHRUM SALICARIA + RAILROAD TIES IN CHANNEL ON WEST SIDE OF RR
			45	FROM RR CULVERTS
			46	CATTAILS AND LYTHRUM S. ON EAST SIDE RR
			47	FROM DEEP MARSH INTO LARGE PATCH OF PHRAGMITES NEXT TO RR
			48	CHANNEL IN SHRUB THICKET BY DEEP MARSH
			49	TYPICAL SECTION IN WOODS, HOUSING TO (L) OUT OF PHOTO
			50	TRIBUTARY ON (R)
			51	WHAT LOOKS LIKE ANOTHER TRIBUTARY ON (R) IS SPLIT CHANNEL RE JOINING MAIN
			52	SPLIT IN CHANNEL UPSTREAM
			54	FROM CULVERT UNDER PETERS ROAD
			55	POOL BETWEEN CULVERTS N. OF PETERS RD.
			56	JUNC IN CHANNEL ABOVE 2ND CULVERT
COMMENTS:		UPSTREAM END	58	FROM CONFLUENCE IN WOODED SECTION

WBS-01

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/1/09	WBS-01	DOWNSTREAM END	PC0100-29	CONFLUENCE WITH WBS-05 ON (R)
			30	LAWNS ON (R) BANK + BUFFER
			31	STORMWATER GULLY AND EROSION (R) BANK
			32	RIPRAP RIFFLE
			33	SMALL TRIBUTARY ON (L) DRAINS SWAMP
			34	FROM DOROTHY DRIVE
			35	DOUBLE BOX CULVERT UNDER DOROTHY DR.
			36	MULTIFLORA ROSE ALONG OVER STREAM
			37	HAIRPIN OXBOW
			38	TYPICAL WOODED STRETCH
			39	STONE REMAINS OF OLD BEAVER DAM
		UPSTREAM END	40	CONFLUENCE WITH WBN-06 ON (L)

COMMENTS:

WBS-06

Photo Inventory

~~(By Camera)~~ → BY STREAM REACH

Project: 08-3233
Group: BG + CM
Camera: OLYMPUS 2

This field sheet is to be completed AS photos are taken in the field. The intent is to force us to organize pictures taken on a camera basis. Fill out one sheet per camera (add sheets as needed). Only fill in Date/Reach/Location ID when you start in a new spatial or temporal location.

Date	Stream/ Reach	Location ID	Photo #	Description
12/1/09	WBS-06	DOWNSTREAM END	PC0100-19	CONFLUENCE NEAR CONCRETE STONE
			20	LAWN ON (R) BANK (LOOKING UPSTREAM)
			21	WOODY DEBRIS + STONY (R) BANK (NATURAL?)
			22	TREE BRIDGE/DAM + PLASTIC DEBRIS
			23	FOOTBRIDGE OVER TRIBUTARY ON (L)
			24	FROM MILLS LANE
			25	CULVERTS UNDER MILLS LANE
			26	PACHYSANDRA (L) BANK, TRIBUTARY (R)
			27	MEANDER SECTION WITH BENCHES
		NEAR UPSTREAM END	28	MEANDER, POINT BAR, APARTMENTS, LOOKING UPSTREAM

COMMENTS: SEE PHOTO # 29 IN WBS-01 FOR CONFLUENCE AT UPSTREAM END