AQUATIC RESOURCE MITIGATION FUND DOCUMENTATION FOR THE PIKE PROPERTY



Prepared for:

Southeast Land Trust of NH 6 Center Street Exeter, NH 03833

Prepared by:



48 Stevens Hill Road, Nottingham, NH 03290 603-734-4298 ♦ mark@westenv.net

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A. Wetland Evaluation Data Forms

1. INTRODUCTION

West Environmental, Inc. (WEI) has prepared this report to document the wetland and upland resources proposed for protection on the site known as the Pike Property on Packers Falls Road in Durham, NH.

This 37.4-acre property borders 1,230 feet of the Lamprey River surrounded by conservation land. This property has a diverse landscape including horse pastures, forest, intermittent streams and eight potential vernal pools. There are a total of 11 wetlands ranging in size from a 1.7 acre forested drainage to 0.03 acre vernal pools. There are two intermittent streams on the property totaling 1,150 feet that drain from the under grazed pasture which is designated as Highest Ranked Wildlife Habitat. There are four floodplain vernal pools and four other pools all within 200 feet of the river providing feeding habitat for Blanding's, wood and spotted turtles. The river and its floodplain are also Highest Ranked Wildlife Habitat and all of the wetlands rank high in Ecological Integrity due to the intact landscape. Other Key wetland functions include Floodflow Alteration, Groundwater Discharge, Sediment/Toxicant/Pathogen Retention and critical Sediment Shoreland Stabilization of the river backs. This portion of the river is influenced by the Wiswalll Dam located 1,200 feet down stream which increases the rivers flood storage capacity and provides slow moving water for the rare turtle species. This reach of the river is visible from the scenic outlook of the Wiswall Bridge and provides canoe kayak opportunities for the local residents.

This project through the partnership of the Southeast Land Trust of NH (SELT) and the property owner would permanently protect all of these wetland resources and the uplands surrounding them.

A complete inventory and evaluation of all the wetlands is included in this report. WEI has also provided wildlife observations, plant community data, soils and hydrology information and photo documentation of wetlands.

A Spring 2015 ortho-photo map has been included with wetland boundaries interpreted and digitized by a qualified wetland scientist based on aerial photos, LIDAR and field reconnaissance. These photos show approximate property boundaries based on the digitizing of tax map information. This map also includes wetland IDs and vernal pools.

2. UPLAND PLANT COMMUNITY DESCRIPTION

Pasture

Shrub: Speckled alder, multiflora rose, autumn olive,

Herb: fescue, red clover, bluegrass, redtop, sedges, ragweed, thistle, milkweed

Upland Forest

Canopy: red oak, white pine, sugar maple, beech, black birch, white ash and shagbark hickory,

and American elm

Sapling: Canopy species

Shrub: witch hazel, beech, eastern hemlock, hazelnut, barberry, multiflora rose

Herb: Canada mayflower, starflower, teaberry, bracken fern, hayscented fern New York fern Wildlife Species noted: Grey squirrel, red-white breasted nut hatch, squirrel, deer, chipmunk.

3. WETLAND EVALUATION

Eleven wetland systems were evaluated for this project and this information is displayed in the Function Assessment Table. In some cases similar wetlands and wetlands with several components were evaluated together. Details of the data presentation and methodology are described below. All work was performed by Mark West NH Certified Wetland Scientist who has over 30 years of experience evaluating over one thousand wetlands in New Hampshire.

The wetlands were evaluated utilizing a wetland assessment methodology developed by WEI based in part on the US Army Corps of Engineers New England Divisions Highway Methodology Workbook Supplement and the NH Method for Comparative Evaluation of Wetlands. This evaluation is based on collection of data on the physical characteristics of the wetland through field inspections, research of existing information and best professional judgment. This methodology provides a better understanding of the physical characteristics of each wetland for both its functions and values.

The Wetland Evaluation Data Form includes watershed, soils, vegetation, hydrology and wildlife habitat observations. A photolog of the various wetland components is included to illustrate the physical features of each wetland. The physical features were evaluated to determine if a function is present. The wetland is then evaluated to determine if the function present is a principal function of that wetland based on comparison to other wetlands in the region and using professional judgment. Wetland Inventory Functional Value Assessment Data Forms were completed for each wetland/group (See Appendix A). This assessment evaluates the following wetland functions:

- Groundwater Recharge/Discharge This function includes the ability of a wetland to provide recharge of surface water into the ground and/or discharge groundwater into surface waters.
- **Flood-flow Alteration** This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.
- Sediment/Toxicant/Pathogen Retention The presence of this function reduces or prevents degradation of water quality because the wetland acts as a trap for sediments, toxicants or pathogens.
- Nutrient Removal/Retention Transformation This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering surface waters or aquifers.
- Product Export This function relates to the effectiveness of the wetland to produce food or usable products for human or other living organisms.
- Sediment/Shoreline Stabilization This function relates to the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.
- Wildlife Habitat This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with the wetland and the wetland edge (includes resident and migratory species) and Fish and Shellfish Habitat.

The following values of each wetland were evaluated: Ecological Integrity Waterbased Recreational Value Education /Scientific Value Uniqueness/Heritage Value Scenic Quality

5. PRESERVATION PARCEL

i. Wetland Plant Community, Soils and Wildlife Observations

Wetland 1 – (PEM1/PSS1/FO1E) Pasture Drainage feeding intermittent stream

Shrub: Speckled alder, multiflora rose*, glossy buckthorn*, Autumn olive*, silky dogwood, gray dogwood,

Vines: Virginia creeper.

Herb: tear-thumb, rough-stem goldenrod, small-white aster, Bidens, leady's thumb, redtop grass, blue iris, sweetflag, bluejoint grass, milkweed, milkvetch, sensitive fern, smartweed, joe pye weed, umbrella sedge, bugleweed, field horsetail, broad leaned cattail, royal fern, buttercup, willow herb.

Soils: Poorly drained silt loam

Hydrology: Seasonally flooded saturated with a 2-foot wide stream channel

Wildlife Species noted: field moose, gray fox, great blue heron, grackle, song sparrow, robin, barn swallow, catbird, house wren, broad winged hawk, eastern blue bird.

Wetland 2 – (PFO1E)

Trees: Red maple, Elm, Quaking aspen.

Shrub: Speckled alder, glossy buckthorn*, multiflora rose*, northern arrowwood, maleberry.

Herbs: Sensitive fern, woodfern, horsetail, bristly dewberry.

Soils: Poorly drained silt loam

Hydrology: stream channel 4-5' wide.

Wildlife Species noted: green frog, red bellied woodpecker

Wetland 3 – (R2UBH)

Trees: White Pine Red Maple

Shrub: maleberry, winterberry, glossy buckthorn*, button bush.

Herb:

Soils: poorly drained silt loam with pockets of muck

Hydrology: River channel 50'wide impounded by Wiswall Dam

Birds: Great blue heron, wood duck.

Wildlife Species noted: painted turtle, northern water snake,

Wetland 4a + 4b - (PFO1E)

Trees: red maple.

Shrub: maleberry, winterberry, glossy buckthorn*, buttonbush.

Herb: tussock sedge, deer tongue, cinnamon fern, royal, fern, interior sedge, grasses.

Soils: poorly drained silt loam with pockets of muck

Hydrology: Seasonally flooded to

Birds: northern chickadee.

Wildlife Species noted: grey squirrel, red-white breasted nuthatch, red squirrel, deer, chipmunk.

Wetland 5 – (PFO1/4E)

Trees: red maple, white pine, beech, elm.

Shrub: maleberry, winterberry, glossy buckthorn*, muscle wood, barberry*.

Herb: wood fern, sensitive fern, cinnamon fern,

Soils: Poorly drained silt loam

Hydrology: Seasonally flooded shallow Wildlife Species noted: Raven, blue jay.

Wetland 6 – (PFO1C)

Trees: red maple, white pine.

Shrub: maleberry, winterberry, glossy buckthorn*, silky dogwood, highbush blueberry,

buttonbush.

Herb: sensitive fern, marsh fern, smartweed, royal fern, eastern bur reed, jack in the pulpit,

violets.

Soils: very poorly drained muck

Hydrology: floods to 24" deep. Potential vernal pool.

Wetland 7 – (PFO1/SS1E)

Trees: red maple, white pine, red oak.

Shrub: winterberry, buttonbush.

Herb: royal fern, marsh fern, interior sedge.

Soils: very poorly drained muck

Hydrology: vernal pool floods to 4 feet deep. Wildlife Species noted: 12 wood frogs, 4 froglets.

Wetland 8a + 8b - (PFO1C)

Trees: red maple.

Shrub: winterberry, buttonbush.

Vines: green briar.

Herb: tussock sedge, marsh fern grasses, hop sedge, false nettle, eastern bur reed, royal fern,

grasses, arrow arum Soils: Very poorly drained muck

Hydrology: holds up to 3' of water. Wildlife Species noted: 4 wood frogs.

Wetland 9 – (PFO4/1E)

Trees: red maple, hemlock, black birch.

Shrub: winterberry, maleberry.

Herb: sensitive fern, false nettle, wood fern, cinnamon fern.

Soils: very poorly drained muck Hydrology: floods to 18' inches. Wildlife Species noted: 6 wood frogs

Wetland 10 – (PEM1/FO1E) old beaver pond abandoned.

Marsh:

Herb: grasses, wild lettuce, dark green bulrush, woolgrass, scirpus, reed canary grass, blue vervain*, silky dogwood, glossy buckthorn*,

Soils: very poorly drained muck

Hydrology: recently drained beaver pond.

Wooded swamp:

Trees: red maple, elm, shagbark hickory.

Shrub: winterberry, glossy buckthorn*, multiflora rose*

Herb: sensitive fern, grasses, violets, aster, willowherb, sedges, swamp dewberry.

Soils: poorly drained silt loam Hydrology: floods to 16' inches.

Wildlife Species noted: Crow, yellow-bellied sapsucker

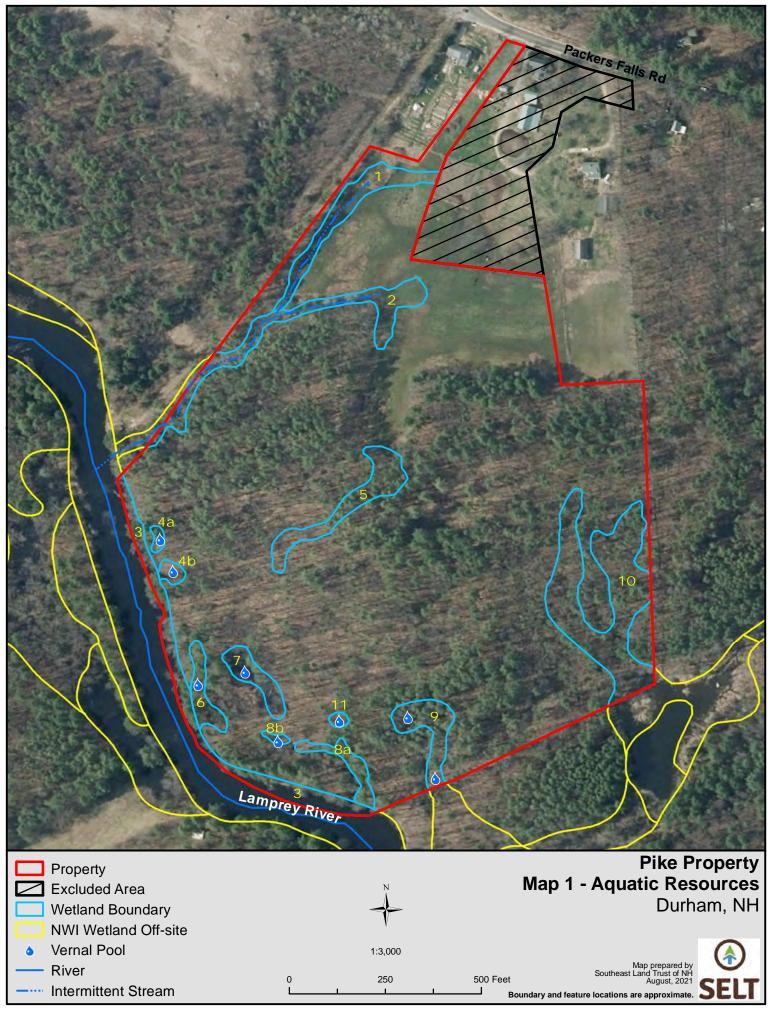
Wetland 11 – (PFO1E)

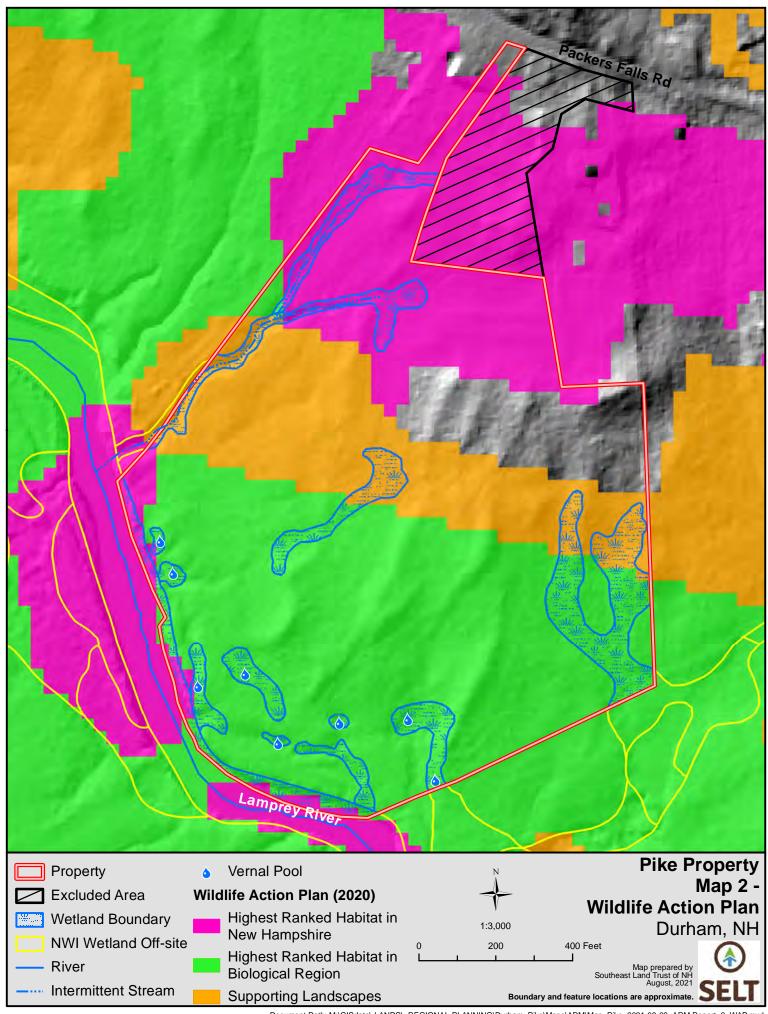
Trees: red maple.

Soils: poorly drained silt loam

Hydrology: vernal pool holds up to 2.5 feet of water. Wildlife Species noted: 6 wood frogs, 2 froglets.

ii. Ortho Photo Maps





iii. Wetland Evaluation Table

Principle Wetland Function Table

Wet ID	Acreage	Groundwater Recharge / Discharge	Floodflow Alteration	Sediment/ Toxicant/ Pathogen Retention	Nutrient Removal/ Retention	Prod. Export	Sediment/ Shoreland Stabilize.	Wildlife Habitat	Eco Integrity
1 &2	1.27	yes	no	no	no	yes	yes	yes	yes
3	1.0	no	yes	yes	no	yes	yes	yes	yes
4a+4b+6	0.34	no	yes	yes	no	yes	yes	yes	yes
5 + 10	2.21	no	no	no	no	no	no	yes	yes
7 +9+11	0.66	no	no	yes	no	yes	no	yes	yes
8a + 8b	0.23	yes	yes	yes	yes	yes	yes	yes	yes
		5.71							

FISH AND SHELLFISH HABITAT

Total

acres

Wetland 3 has this function as it has a diverse warm water fish community with over 10 different species.

VALUES

Scenic Value Wetlands 3, 4, 6, and 8 have scenic value as they are along the river with a view.

Water based Recreation Value

Wetland 3 has this value as landowners along the river can swim and paddle.

Education/Scientific Value

There is no parking for access to provide education. The river has been studies extensively by UNH scientists.

Uniqueness and Heritage Value There do not appear to be confirmed rare species on this site and any historic or archeological sites have not been documented.



1. Looking north at the center of the Wetland 1- the west side of the pasture.



2. Looking west at the upper portion of Wetland 1 with the alder thicket in the background.

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3. This is a view of the stream portion of Wetland 1 before it joins Wetland 2.



4. This is a view of the upland forest adjacent Wetland 2.



5. This is a view of the pasture between Wetlands 2 and 5.



6. The stream channel in Wetland 2 is 4 to 5 feet wide.



7. A green frog in a pool in the stream.



8. Looking downstream in Wetland 2.



9. A view of the Lamprey River from the western corner of the site.



10. Looking east at the riverfront forest in the western corner of the site.



11. Grey Blue Heron feeding in the marsh along the – of the Lamprey River (wetland 3).



12. Looking south (downstream) from the southern riverfront area.



13. Looking north at the river frontage from the water.



14. A northern water snake in the river.



15. Wetland 4a is a floodplain vernal pool.



16. Wetland 5 is a forested drainage with no stream channel.



17. Wetland 6 is another floodplain pool.



18. Wetland 7 is a classic large vernal pool.



19. This is a view of the southern end of this pool.



20. This pool is filled with buttonbush and loafing logs.





21. This is a wood frog froglet adjacent wetland.



22. Wetland 8a is connected to the river by a small channel.



23. Wetland 8a is also located in the active floodplain of the river. `



24. Wetland 8b is another floodplain vernal pool.





25. This is an iron culver connecting Wetland 8b and 8a.



26. This is a view of the upper portion of wetland 9.





27. This is a view of the southern pool in wetland 9.



28. Wetland 10 is a recently abandoned beaver pond.





29. The northern portion of wetland 10 is a forested drainage with no defined stream channel.



30. Wetland is a small vernal pool that holds up to 2.5 feet of water when full.



31. The upland forest is dominated by mature red and white oak and white pine.



32. Looking southwest across the pasture.

APPENDIX A

WETLAND EVALUATION DATA FORMS

WETLAND ID: 1 + Z	0.52 +	0.75 acres PRO	JECT Pike ARM	WET SCI M	ark West
GROUNDWATER RECH	IARGE/DISCHA	RGE			
Geology Restrictive Layer? Subsoil Type Present	Yes □No iltloan	Hydrology Groundwater Relationship? Variable Water Levels?	Yes No	Function Present Yes No	Principal Function Yes No
Other Geologic Features:	Elay)	Springs/Seeps Observed? Contains Only Inlet/Outlet?	Yes No	suflet Disch	arge system
FLOODFLOW ALTERA	TION				
Watershed Information Size: 16 acces. Adjacent Land Cover 10% Forest		Topographic Information Topography of Watershed: Stope 5 Topography of Wetland: ge	utle 5 lops	Function Present Ves No	Principal Function Yes No
30% Residential Comm/Industr. 50% Agricultural Assoc. w/ Water Course? Other Catch. Storage?	Gyes No	High Degree of Impervious Surfaces in Wet.Watershed? Downstream Protection?	Yes Wo	road to wall	e enterdrane 5 ide. modernegged the east
Contains Hydric A Soils? Watershed Position	Yes No	flow survey	su system	di. te	sthe east.
SEDIMENT/TOXICANT	/PATHOGEN R				
Soils	□Yes ☑No	Setting & Hydrology	Wes No	Function Present	Principal Function Yes No
Organic Soils? Broad Boundary Trans.?	Yes No	Upstream Sources of Poll.? Erosion/Sed. Observed?	Tyes No		Name of the Party
Vegetation		Diffuse Flows/Slow Water?	Yes No u	pper patrin s	hallaw.
Dense Vegetation? Herbaceous Vegetation?	Yes No	Does Wetland Flood? Long Water Retention?	Yes No W	spee parian s	V
NUTRIENT REMOVAL	RETENTION T				
Hydrology Open Water Present?	MYes MNo	Transformers Organic Soils?	Yes WNo	Function Present Yes No	Principal Function Yes No
Slow Moving Water? Nutrients Upslope?	Yes No	Aquatic Vegetation? Abundant Vegetation?	Yes No	low retention	
PRODUCTION EXPORT	Г				
Interspersion:	Yes No	Export Detritus? Aquatic Plants? Berry Producing Shrubs? Nectar Sources? Seed/Mast Sources?	Yes No Yes No Yes No Yes No Yes No	Function Present Ves No Prey habit	Principal Function ☑ Yes ☐ No ☑ L.
SEDIMENT/ SHORELIN				water Land	Santa La igna
Assoc. w/ surface water? Perennial or Intermittent	Yes No	Description of Stream Settin	ng	Function Present	Principal Function P Yes No
If No, STOP, if yes, strear Elev. Change Present? High Flows Present? Channelized Flow? Open Water Fetch?		Stream Course in Wetland? Stream Course in Upland? Bank Vegetated? Bank Eroded? Steep Bank?	Yes No Yes No Yes No		
Open water reten-	1 03 110	Stabilized Bank?	Yes No	whibit ch	amel evosion
		Steep Bank? Stabilized Bank? pathns of we up to 3' deep	p.	W	EST TRONMENTAL

WETLAND ID: 1+2	PROJECT Pike ARM
WILDLIFE HABITAT	
Existing Critical Habitat	Yes No Type: Gale + Schrub Shub. Function Present Principal Function
	Bat feeding habitat Wes No Gyes No habit
	Yes No Specific Habitat Features: W/ pahis over grown No moins
Diversity	Connectivity
Aquatic Insect Habitat? Yes	
Amphibian Habitat?	
	WNo Upland Connectivity?
Cavity Trees?	
Food Sources?	
Cover?	The Mix of Evest + pasture w/ suny-suns carparens
ALIMAN SECTION	No Strengths of Upland Habitat: No Mix of Evest + pastive w/ Sculy-Shuch carparents Alder Hirchet Potential Far Habitat Degradation 80 of Buffer W/Encroschmant: 2.030
Vegetated Buffer	Habitat Degradation Wood cock.
Type: pasture + fives	% of Buffer W/Encroachment: 2000 Great Bue hera
Width: 100-200'	Activities Adversely Affecting
100-200	Activities Adversely Affecting Wildlife Function: No Significant Disturbance? Tyes WNo.
Buffer Provides Shade to Yes	□No Significant Disturbance? □Yes ☑No
a Stream?	Structures Obstructing Yes Yoo
Buffer Safeguards Yes	No Wildlife Movement?
Wetland?	□No Wildlife Movement? Prox. to Beaver/Mink/Otter? ✓Yes □No but domishean pahir
ECOLOGICAL INTEGRITY	Function Present Principal Function
Invasives Present/Type	re 5 table but mame impacts present acces road a patrin undishisad but water an indanel acces road adjace and med 5, multiflaa wse, antumoline,
WETLAND VALUES	and preserve, and a second preserve and a se
Waterbased Recreational Value	Restoration Stabilization Potential Value
Parking Available? Yes	
Watercraft Access?	
	□No? H20 Quality Degradation
Walking/Biking Trails? Yes	Who H20 Quality Degradation Wyes No Who minor from stable pastive well vegetated but manure from horses present.
ALL COLUMN TO THE COLUMN TO TH	but maure from horses present.
Educational/Scientific Value	Value
Unique Habitats/Species?	es No possible.
	es No ho access.
Parking/Access?	es No
44.4	
Uniqueness/Heritage	Comments: Value
Urban Upland/Proximity?	es Mo
Rapid Develop. Upland?	INO nessible based on NHL LIST.
Critical Habitat/End. Sp?	2 INO V
Archaeological Sites?	
C4	es No? Scenic Quality USS Open pastue.
Stonewalls Present?	es No? Scenic Quality yes open pastue.
- (1) (14일 : G. 14 : G. 14] (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	es No possible based on NHI list. es No possible based on NHI list. es No? Scenic Quality yes open pastue. es No?

WETLAND ID: 3	lacre ala	is river PRO	OJECT Pike ARM	M WET SCI M	Iark West
GROUNDWATER REC	CHARGE/DISCH	ARGE			
Geology Restrictive Layer? Subsoil Type Present	¥Yes□No 5:1+1clay	Hydrology Groundwater Relationship? Variable Water Levels?	Yes No	Function Present Yes No	Principal Function Ves No
Other Geologic Features:		Springs/Seeps Observed? Contains Only Inlet/Outlet?	Yes No	flow than	sh butdom
FLOODFLOW ALTER	ATION				
Watershed Information Size: 50 Sq. wile Adjacent Land Cover	.5	Topographic Information Topography of Watershed:	conte slopes	Function Present Ves No	Principal Function Ves No
70% Forest 20% Residential Comm/Industr.		Topography of Wetland: Constricted Outlet? High Degree of Impervious	Yes No	visuall Dam	١.
(Agricultural Assoc. w/ Water Course?		Surfaces in Wet.Watershed? Downstream Protection?	□Yes □No □Yes □No	but upstrea	nyes.
Other Catch. Storage? Contains Hydric A Soils? Watershed Position	Yes No Yes No H M	E Wa	jyear	Flood plan	
SEDIMENT/TOXICAN	T/PATHOGEN R	ETENTION			
Soils Organic Soils? Broad Boundary Trans.? Vegetation	Yes No	Setting & Hydrology Upstream Sources of Poll.? Erosion/Sed. Observed? Diffuse Flows/Slow Water?	Yes No Yes No	Function Present Yes No	Principal Function Ves No
Dense Vegetation? Herbaceous Vegetation?	Yes No	Does Wetland Flood? Long Water Retention?	UYes □No UYes □No	due to Wisu	oll Dam.
NUTRIENT REMOVA	L/RETENTION T	RANSFORMATION			
Hydrology Open Water Present?	Yes \ No	Transformers Organic Soils?	₩ es No	Function Present Ves No	Principal Function Ves No
Slow Moving Water? Nutrients Upslope?	Yes No	Aquatic Vegetation? Abundant Vegetation?	Yes □No □Yes □No	too much	open water
PRODUCTION EXPO	RT				
Vegetation Food Source? Density:	Yes No	Export Detritus? Aquatic Plants?	Yes No	Function Present Yes No	Principal Function ✓ Yes ☐ No
Interspersion:	H M DL	Berry Producing Shrubs? Nectar Sources? Seed/Mast Sources?	Yes □No Yes □No Yes □No	Fishenes	Habitat.
SEDIMENT/ SHOREL		TION			
Assoc wasurface water?		Description of Stream Setti	ing	Function Present	Principal Function Ves No
If No, STOP, if yes, street Elev. Change Present? High Flows Present? Channelized Flow? Open Water Fetch?		Stream Course in Wetland? Stream Course in Upland? Bank Vegetated? Bank Eroded? Steep Bank? Stabilized Bank?	Yes No Yes No Yes No Yes No Yes No		
		No evosión o		XV/	EST
					VIRONMENTAL

WETLAND ID: 3	PROJECT Pike AR	PROJECT Pike ARM			
WILDI FEE HADITAT					
WILDLIFE HABITAT	NI Transition	Andrew Street Street Street			
Potential Habitat Myes Defended wood Turket Bat Feeding habita	Blanding Turke	Function Present Principal Function Ves No Ves No			
Critical Habitat Features Yes Veval pools Next to	No Specific Unbited Features:	Highest Rauled Habital. en hang loafing logs			
Diversity	Connectivity	9 3 3			
Aquatic Insect Habitat?	Corridor (through or adj.)?	FISH/SHELLFISH -			
		warm was for fichery			
Amphibian Habitat? Yes No Fisheries Habitat? Yes No	Wetland Connectivity? Upland Connectivity? Yes No	wam water fishery			
Cavity Trees?	opinia estilleativity.				
Food Sources?	Strengths of Upland Habitat:	- 1			
Cover?	woodland with west	ver 500 feet and/venal pool systems			
Vegetated Buffer	Habitat Degradation				
Type: Revest.	% of Buffer w/Encroachment: 0%6	except to water unruchum			
Width: 1000 + Feet.		except for water untuchun souchne.			
,	Wildlife Function:				
Buffer Provides Shade to Yes No	Significant Disturbance? Yes No				
a Stream? Buffer Safeguards □Yes □No	Structures Obstructing Yes No				
	Wildlife Movement? Prox. to Beaver/Mink/Otter? ✓ Yes ☐ No				
Wetland?	Prox. to Beaver/Mink/Otter?				
Signs of Degradation Not al	les carstenati land No ans River loseved close to viver	very high			
WETLAND VALUES					
Wotonboard Descriptional Value	Destroyation Carbillocation Described	Weller			
Waterbased Recreational Value Parking Available? Yes	Restoration Stabilization Potential	Value			
Watercraft Access?	Describe:				
Fishing Available? Yes No	Describe.				
	7 H20 Quality Degradation Yes No				
Walking/Biking Trails? Yes WNo	elvayale + Fishing occurs				
Educational/Scientific Value		Value			
Unique Habitats/Species?	0	□ H □ M □C			
Diverse Wildlife Habitat?	0				
Parking/Access?	0				
Uniqueness/Heritage	Comments	Velez			
Urban Upland/Proximity? Yes	Comments:	Value WH M M L			
Rapid Develop. Upland? Yes Yes					
Critical Habitat/End. Sp?					
Archaeological Sites?	3 Scenic Quality	5-1100 5-1			
Stonewalls Present?	yes very se	enic view roun.			
	likely uiswall A	enic view Form. d. Bridge			
Ecological Health/Vigor? Yes N	a succession	U			

WETLAND ID: 42= 0.04, 460.0	7, 6 = 0.23 ans PRO	JECT Pike ARM	WET SCI M	ark West
GROUNDWATER RECHARGE/DISCHA				
Geology	Hydrology		Function Present	Principal Function
Partrictive Laver? Wes No	Groundwater Relationship?	Yes No	Yes No	☐ Yes ☐ No
Subsoil Type Present 5:11/clay	Variable Water Levels?	Yes No		
Subsoil Type Present Other Geologic Features:	Springs/Seeps Observed?	Yes No .	calabed or can	shicked hiver
River Floodplain welluds.	Contains Only Inlet/Outlet?	Fes No	301-0	shicked hiver outlet
FLOODFLOW ALTERATION				
111 1 1 1 1 T P	Topographic Information	11-1-	Function Present	Principal Function
Size: 2-3 acre watersteds but	Topography of Watershed:	Moderate	Yes No	Yes No
TOTAL TOTAL CONTRACTOR OF THE PARTY OF THE P	res vive Flood pravu.	slopes.		
(00% Forest Residential	Topography of Wetland: Constricted Outlet?	Yes No		
Comm/Industr.	High Degree of Impervious	E I es E Ivo		
Agricultural	Surfaces in Wet.Watershed?	TYes Mo		- C CI 0
Assoc. w/ Water Course? Yes No	Downstream Protection?	Yes No	ina excep	- Far Flood cardins
Other Catch. Storage? Yes No				carairing
Contains Hydric A Soils? Yes No _				
Watershed Position	JL			
SEDIMENT/TOXICANT/PATHOGEN R	ETENTION			
Soils /	Setting & Hydrology		Function Present	Principal Function
Organic Soils? Yes No	Upstream Sources of Poll.?	Yes WNo	Ves No	Yes No
Broad Boundary Trans.? Yes No	Erosion/Sed. Observed?	Yes No		
Vegetation	Diffuse Flows/Slow Water?	Yes No		
Dense Vegetation? Yes No	Does Wetland Flood?	VYes □No		
Herbaceous Vegetation? ☐Yes ☐No	Long Water Retention?	Yes No		
NUTRIENT REMOVAL/RETENTION T				amm names
Hydrology Open Water Present?	Transformers Organic Soils?	TYES NO	Function Present	Principal Function Yes No
Open Water Present? Yes No Slow Moving Water? Yes No	Aquatic Vegetation?	Tes □No	Let les No	LI TES LA INO
Nutrients Upslope?	Abundant Vegetation?	Tyes \ \ \ No		
училоно орозорет				
DRODUCTION EVRORE				
PRODUCTION EXPORT Vegetation	Export		Function Present	Principal Function
Food Source? Yes No	Detritus?	TYES PNO	Yes No	Yes No
Density:	Aquatic Plants?	Yes No	1045	D D
Interspersion:	Berry Producing Shrubs?	WYOS NO.	vernal pool	
Diversity: H M L	Nectar Sources?	Yes No		
	Seed/Mast Sources?	Yes No		
SEDIMENT/ SHORELINE STABILIZAT	TION			
Assoc w surface water? Ves No	Description of Stream Settin	ng	Function Present	Principal Function
Perennial or Intermittent adjacen			Yes No	Yes No
If No, STOP, if yes, stream characteristics:	Stream Course in Wetland?	Yes No		
Elev. Change Present? High Flows Present? Yes Mo	Stream Course in Upland? Bank Vegetated?	Yes No		
Channelized Flow?	Bank Froded?	Yes Do		
Open Water Fetch? Yes No	Steep Bank?	Yes No		
in vover	Stabilized Bank?	Ves No		



WETLAND ID: 4a, 46	+ 6 PROJECT Pike ARM	
WILDLIFE HABITAT Existing Critical Habitat Polendia Jona Floodpla Critical Habitat Features Venual Pool 5	Yes No Type: Legol a yacent ina. Yes No Specific Habitat Features:	
Aquatic Insect Habitat? Amphibian Habitat? Fisheries Habitat? Cavity Trees? Food Sources?	Connectivity .	FISH in him
a Stream?	Habitat Degradation % of Buffer w/Encroachment: Activities Adversely Affecting Wildlife Function: Yes No Significant Disturbance? Yes No Structures Obstructing Yes No Wildlife Movement? Prox. to Beaver/Mink/Otter?	6 + wood frog observed in each wellar
Signs of Degradation NO Invasives Present/Type NO	loped Block along Laubrey Rvia	Principal Function Yes very high vadvs
Watercraft Access? Fishing Available? Hunting Permitted?	Yes No Yes No	Value □ H □ M ☑L
	Yes No Yes No Yes No	Value □ H ☑ M □ L
Critical Habitat/End. Sp? Archaeological Sites?	Comments: Floodplain pools. Yes No Yes No Wes No Scenic Quality profected river buffer Yes No? I. Keh,	Value ☑H□M□L

	= 1.69 aves	PROJECT Pike ARM	WET SCI Ma	rk West
aces	COULDER.			
GROUNDWATER RECHARGE/DI Geology Restrictive Layer? Subsoil Type Present Other Geologic Features:	Hydrology No Groundwater Relation	ls? Yes \ No Yes \ Do Yes	Function Present Yes No Starea IIIA dischuse	Principal Function Yes No
Adjacent Land Cover Forest Residential	Topographic Inform Topography of Water Topography of Wetla Constricted Outlet? High Degree of Impe	rshed: Lope S und: Yes No rvious	Function Present Yes PNo Does Not	Principal Function Yes No Flood Modes
	No chave M □L	on? Yes Yoo 5	loping	
SEDIMENT/TOXICANT/PATHOGOUS Soils Organic Soils? Broad Boundary Trans.? Vegetation Dense Vegetation? Herbaceous Vegetation? Yes Yes Yes Yes Yes Yes Yes Yes	No Setting & Hydrolog Upstream Sources of No Erosion/Sed. Observe Diffuse Flows/Slow No Does Wetland Flood	Poll.? Yes No ed? Yes No Water? Yes No ? Yes No	Function Present Yes No Sony Shalloin	Principal Function Yes No
NUTRIENT REMOVAL/RETENT! Hydrology Open Water Present? Yes Slow Moving Water? Yes Nutrients Upslope? Yes	No Organic Soils?	Yes No	Function Present Yes No No vetenhi	Principal Function Yes No
PRODUCTION EXPORT Vegetation Food Source?	Export No Detritus? Aquatic Plants? L Berry Producing Shri L Nectar Sources? Seed/Mast Sources?	Yes	Function Present Yes □ No Few	Principal Function Yes No
SEDIMENT/ SHORELINE STABIL Assoc. w/ surface water? Yes Perennial or Intermittent If No, STOP, if yes, stream characteric Elev. Change Present? Yes High Flows Present? Yes Channelized Flow? Yes Open Water Fetch? Yes	No Description of Stream istics: Stream Course in We No Stream Course in Up No Bank Vegetated? No Bank Eroded?	etland? Yes No	Function Present Yes No	Principal Function Yes No



WETLAND ID: 5+10	PROJECT Pike ARM	
WILDLIFE HABITAT Existing Critical Habitat Yes		Function Present Principal Function Yes No Yes No
Critical Habitat Features Yes	No Specific Habitat Features:	in Bro Regien
Aduatic Insect Habitat? Amphibian Habitat? Fisheries Habitat? Cavity Trees? Food Sources? Cover? Yes N Yes N Yes N	Connectivity Corridor (through or adj.)? Yes No Wetland Connectivity? Ves No Upland Connectivity? Strengths of Upland Habitat:	FISH/SHELLFISH
Vegetated Buffer Type: Fores // pashue. Width: 300+	Habitat Degradation % of Buffer w/Encroachment: Activities Adversely Affecting Wildlife Function:	ashue.
Buffer Provides Shade to a Stream? Buffer Safeguards Wetland?	Structures Obstructing Yes Who	
ECOLOGICAL INTEGRITY Landscape Position adjaces Adjacent Development	r conseverin land on	on Present Principal Function 3 5 des yes.
Signs of Degradation No		
	ultiflaa vose, barbeny, a	uhu olive
WETLAND VALUES		
Waterbased Recreational Value Parking Available?	lo Describe: lo H20 Quality Degradation Yes No	Value H M ML
Walking/Biking Trails? Yes No Seducational/Scientific Value Unique Habitats/Species? Yes Diverse Wildlife Habitat?	2No 3No	Value □ H □ M □ L
Parking/Access?		

The second secon		JECT Pike AR	M WET SCI M	ark West
	cies acres			
GROUNDWATER RECHARGE/DISCHARGEOLOGY Restrictive Layer? Yes No Subsoil Type Present Sil++ Clau Other Geologic Features: Near River Flood plan	Hydrology Groundwater Relationship?	Yes No Yes No Yes No	Function Present Yes No	Principal Function Yes No too 5mall
FLOODFLOW ALTERATION				
Watershed Information Size: 7-1 ac., 9-3ac, 11-0.1ac. Adjacent Land Cover Forest 10070 Residential Comm/Industr. Agricultural Assoc. w/ Water Course? Yes No Other Catch. Storage? Yes No Contains Hydric A Soils? Yes No	Topographic Information Topography of Watershed: Gentle Slopes Topography of Wetland: Constricted Outlet? High Degree of Impervious Surfaces in Wet.Watershed? Downstream Protection?	□Yes ☑No □Yes ☑No □Yes ☑No	Function Present Yes No Lucvenetal	Principal Function Yes No Shouge
SEDIMENT/TOXICANT/PATHOGEN R	ETENTION			
Soils Organic Soils? Broad Boundary Trans.? Vegetation Dense Vegetation? Herbaceous Vegetation? Sparse	Setting & Hydrology Upstream Sources of Poll.? Erosion/Sed. Observed? Diffuse Flows/Slow Water? Does Wetland Flood? Long Water Retention?	Yes No Yes No Yes No Yes No	Function Present ☑ Yes □ No	Principal Function ✓ Yes ☐ No
NUTRIENT REMOVAL/RETENTION T	PANSFORMATION			
Hydrology Open Water Present? Slow Moving Water? Nutrients Upslope? Yes No	Transformers Organic Soils? Aquatic Vegetation? Abundant Vegetation?	es No Yes No Yes No	Function Present Yes No	Principal Function Yes No
PRODUCTION EXPORT				
Vegetation Food Source? Density: Interspersion: Diversity: Yes No Density: H M L L Diversity: H M L	Export Detritus? Aquatic Plants? Berry Producing Shrubs? Nectar Sources? Seed/Mast Sources?	Yes No	Function Present Ves No when bey, blueba	Principal Function ✓ Yes □ No
SEDIMENT/ SHORELINE STABILIZAT	TION			
Assoc. w/ surface water? Yes No Perennial or Intermittent If No, STOP, if yes, stream characteristics: Elev. Change Present? Yes No High Flows Present? Yes No Channelized Flow? Yes No Open Water Fetch? Yes No	Description of Stream Settin Stream Course in Wetland? Stream Course in Upland? Bank Vegetated? Bank Eroded? Steep Bank? Stabilized Bank?	Yes No Yes No	Function Present Yes No	Principal Function Ves No

WEST ENVIRONMENTAL

WETLAND ID: 7, 9	, 11	PROJECT Pike ARM	
WILDLIFE HABITAT Existing Critical Habitat	Yes ON	o Type: is adjacent River System	Function Present Principal Function Yes \(\sum \) No \(\sum \) Yes \(\sum \) No
Diversity. Aquatic Insect Habitat? Amphibian Habitat? Fisheries Habitat? Cavity Trees? Food Sources? Cover? Vegetated Buffer Type: Fares Fed Width: 300 b Buffer Provides Shade to a Stream? Pool Buffer Safeguards Wetland?	Yes No Yes No Yes No Yes No Yes No	Connectivity Corridor (through or adj.)? Wetland Connectivity? Upland Connectivity? Strengths of Upland Habitat: Large Conservation block	FISH/SHELLFISH 7+9 1.
Adjacent Development Signs of Degradation Invasives Present/Type WETLAND VALUES	uge cans		tion Present Principal Function YES
Waterbased Recreationa Parking Available? Watercraft Access? Fishing Available? Hunting Permitted? Walking/Biking Trails?	Value Yes No Yes No Yes No Yes No	Restoration Stabilization Potential Yes No Describe: H20 Quality Degradation Yes No	Value H M ML
Educational/Scientific Va Unique Habitats/Species? Diverse Wildlife Habitat? Parking/Access?	llue		Value H M L
Uniqueness/Heritage Urban Upland/Proximity? Rapid Develop, Upland? Critical Habitat/End. Sp? Archaeological Sites? Stonewalls Present? Historic Sites? Ecological Health/Vigor?	Yes No Yes No Yes No Yes No Yes No Yes No	Comments: These 3 pools han Exactures and are h Scenic Quality Theolism These 3 pools han Support	ve classic HIM DL ighly likely to breeding wood hogs + salamaders.



WETLAND ID: 8a,	86	PRO.	JECT Pike ARM	WET SCI Ma	rk West
0.20	ac 0.03 ac		March with Carlett		
	ARGE/DISCHA Yes \ No If clay	RGE Hydrology Groundwater Relationship? Variable Water Levels? Springs/Seeps Observed? Contains Only Inlet/Outlet?	Yes No Yes No Yes No	Function Present Yes No Description	Principal Function Ves No
	court i				
Watershed Information Size: 1.2 accs Adjacent Land Cover Forest Loogo Residential Comm/Industr. Agricultural Assoc. w/ Water Course? Other Catch. Storage? Contains Hydric A Soils? Watershed Position		Topographic Information Topography of Watershed: Slope S Topography of Wetland: Constricted Outlet? High Degree of Impervious Surfaces in Wet. Watershed? Downstream Protection?	Yes No	Function Present Yes No Now can into u 100-ye 86 canest	Principal Function Yes MNo back up etund. ar Hoodphii ed to 8a culvert.
SEDIMENT/TOXICANT/	PATHOGEN RI	ETENTION			
	Yes No Yes No Yes No	Setting & Hydrology Upstream Sources of Poll.? Erosion/Sed. Observed? Diffuse Flows/Slow Water? Does Wetland Flood? Long Water Retention?	Yes No Yes No Yes No Yes No Yes No	Function Present Yes No	Principal Function Yes No
		a	me ac acc		
NUTRIENT REMOVAL/I Hydrology Open Water Present? Slow Moving Water? Nutrients Upslope?	RETENTION TI	RANSFORMATION Transformers Organic Soils? Aquatic Vegetation? Abundant Vegetation?	Yes □No □Yes □No □Yes □No	Function Present Ves \(\sum No \) 8 a venal pa	Principal Function Ves No
PRODUCTION EXPORT Vegetation Food Source? Density: H Interspersion: H Diversity: H	Yes No	Export Detritus? Aquatic Plants? Berry Producing Shrubs? Nectar Sources? Seed/Mast Sources?	Ves No Ves No Ves No Ves No Ves No	Function Present Yes No	Principal Function Yes No
		2222			
SEDIMENT/ SHORELIN Assoc. w/ surface water? Perennial or Intermitted If No, STOP, if yes, stream Elev. Change Present? High Flows Present? Channelized Flow? Open Water Fetch?	Flow inho	Description of Stream Settin	g Yes No Yes No Yes No Yes No Yes No	Function Present Yes No For Small	Principal Function Yes No

WEST ENVIRONMENTAL

WETLAND ID: 8a+8b.		PROJECT Pike ARM			
WILDLIFE HABITAT Existing Critical Habitat Pool and ague	Yes No	Type: Next to	hver.	Function Present Yes No	Principal Function Yes No
Diversity Aquatic Insect Habitat? Amphibian Habitat? Fisheries Habitat? Cavity Trees? Food Sources?	Yes No Co Yes No Co Yes No We Yes No Up Yes No	Specific Habitat Featur POSS - Die Verweite onnectivity orridor (through or adj.)? etland Connectivity? oland Connectivity? rengths of Upland Habita	Pool. Yes No Yes No	FISH/SHELLFISH	ble venal poor
a Stream?	Yes □No W Yes □No W	abitat Degradation of Buffer w/Encroachment ctivities Adversely Affectin ildlife Function: gnificant Disturbance? ructures Obstructing ildlife Movement? ox. to Beaver/Mink/Otter?	g	old dump.	
Adjacent Development No. Signs of Degradation old Invasives Present/Type No.	ter of c	Cursovatir 6	acle. Fun	ction Present	Principal Function YES Naced's clean up in Small area of adjaced upland.
Watercraft Access? Fishing Available? Hunting Permitted?	Yes UNO Yes UNO De Yes UNO	estoration Stabilization Po escribe: 20 Quality Degradation	tential Yes No		alue] H
	Yes No Yes Ne Yes No			part of the same o	alue] H LM L
Critical Habitat/End. Sp? Archaeological Sites? Stonewalls Present? Historic Sites?	Yes No Yes No Yes No	old road cr to viver may he Scenic Quality River is			alue H M L

