March 22, 2010



MOYSE ENVIRONMENTAL SERVICES, INC. SOIL AND LAND USE CONSULTING DAVID MOYSE, PRESIDENT Soil Scientist and Site Evaluator 42 Pleasant View Ave. Bangor, ME 04401 Phone: (207) 945-6179 Fax: (207) 433-7225 Waldo County Emergency Management Agency Attn: Mr. Dale Rowley, Director 45A Congress Street Belfast, ME 04915

RE: Protected Resource Report Proposed Emergency Operation Center Site Congress Street and Miller Street Belfast, Maine

INTRODUCTION

Environmental Services, As Movse Inc. completed requested, an investigation of the proposed Waldo County Emergency Operation Center (EOC) site in Belfast, Maine for protected resources. We understand that the new EOC and Sheriff's Office is proposed for this site, which is where the current Sheriff's Office and County Jail is located, bordering Congress Street and Miller Street (see Site Location Map attached). The purpose of this investigation was to conduct both an off-site review of published mapping and complete an on-site evaluation of the site's characteristics to determine if any natural resources exist that could be impacted by the proposed These resources commonly include freshwater wetlands, vernal project. pools, brooks or streams and valuable wildlife habitat that may be protected by local, state and federal environmental regulations. There presence could pose restrictions to the development of this site and require permitting with all or some of the regulatory agencies. Therefore, it is prudent for landowners to have their property investigated for these resources prior to final development plans being established.

Moyse Environmental Services completed our off-site review on March 11th, and subsequently conducted our on-site investigation on March 18, 2010. The primary focus of our field work was obviously within the undeveloped portion of the site, where we understand the new building will be located. This is a nearly level, grassed area located in the northwesterly corner and the open areas of primarily lawn with a few trees around the existing Dispatch Center. We used a site plan provided to us by WBRC Architects-Engineers of Bangor as a reference to guide our investigation. This plan contained the existing site conditions, including the property boundaries, buildings, roads, contour mapping ands similar features.

Our wetland identification was based on the criteria and procedures outlined in the <u>1987 Army Corps of Engineers Wetlands Delineation Manual</u>, but a formal wetland delineation was <u>not</u> conducted. The Maine Department of Environmental Protection (DEP) also requires this procedure for the identification of wetlands under the <u>Natural Resources Protection Act</u> (NRPA), Chapter 310 Wetland Protection Rules. For an area to be a jurisdictional "wetland", it must possess three criteria:

- 1. Predominance of hydrophytic vegetation
- 2. Predominance of hydric soils
- 3. *Predominance of wetland hydrology*

The identification of vernal pools is based on the presence of specific amphibian "Indicator Species" during their breeding season. Specifically, each potential vernal pool is evaluated for the presence of egg masses deposited by "Indicator Species". The presence of egg masses in a vernal pool means that those amphibians are actively using the pool environment for breeding purposes. The optimal identification period in this region according to the current guidance documents is during the months of April and May. Wood frogs are typically active earlier in the spring and for only about a two-week period after they start. The salamander activity typically occurs a little later and over a longer period of time, often in to late May or early June. Given that our work was done in March, but with no snow cover, we would identify potential vernal pools (PVP's), if present, which would then need to be investigated further in the late spring during the breeding season.

Streams or brooks are identified in accordance with the definition outlined in the Maine Natural Resources Protection Act (NRPA. For a drainageway to be called a "stream", it must have a channel between defined banks. The channel is created by the action of surface water and has to posses 2 or more of the following charteristics:

- It is depicted as a solid or broken line on the most recent 7.5' USGS topographic map
- It contains or is known to contain flowing water continuously for at least 6 months of the year in most years
- The channel bed is composed primarily of mineral material such as sand and gravel, parent material or bedrock, that has been deposited or scoured

- The channel contains aquatic animals, such as fish, aquatic insects or mollusks in the water, or if no surface water is present, within the stream bed
- The channel contains aquatic vegetation and is essentially devoid of upland vegetation

Based on the information available and our observations, the only protected resource that we found was a small area of freshwater wetland in the extreme northeasterly corner of the undeveloped, grassed area portion of the site. The wetland boundaries were marked with labeled, blue-glo fagging. We located the wetland flags using a mapping grade Global Positioning System (GPS) unit. This data was processed, and then overlaid on to the base plan provided by WBRC using CAD software to create the attached Wetland Delineation Map.

Most of this forested wetland is located off-site to the northwest, which correlates with the USDA Sol Conservation Service's soil map of the area as it identified the soils there as the poorly drained Brayton series, which are *hydric*. The National Wetland Inventory (NMI) maps did not identify any wetlands on or adjacent to the site. This wetland is not a wetland of special significance (WOSS) and only a very small portion, about 289 sq. ft, actually lies on the site. Most of the wetland lies within the adjacent, undeveloped and wooded right-of-way (Franklin Street) shown on the site plan and then extends further to the northwest.

In summary no additional investigations need to be conducted and no permits for the alteration of protected resources are required, even if this small area of wetland is altered by cutting or filling. Both the federal and state wetland protection rules were revised significantly on September 29, 1995. The U.S. Army Corps of Engineers regulates activities within all waters of the United States. Their authority over all freshwater wetlands is pursuant to Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act (1977), Section 103 of the Marine Protection, Research & Sanctuaries Act and the State of Maine Programmatic General Permit-PGP (most recently renewed October, 2005). The Maine Department of Environmental Protection (DEP) administers the Wetland Protection Rules (Chapter 310) at the state level pursuant to the Maine Natural Resources Protection Act - NRPA. Chapter 310 was most recently revised January 26, 2009, and the NRPA statute was most recently revised June 30, 2008.

Wetland alterations are reviewed by the regulatory agencies on a "project" basis. For example, a facility like the proposed EOC is considered to be one project, even though it may contain several buildings and associated

development and be constructed over time. The permit thresholds for wetland alterations are total alterations for the entire project, <u>not</u> per construction phase.

Both the DEP and the Corps hold the developer responsible for knowing where the wetlands are on the site prior to each phase of development. Permit approvals for wetland alterations are possible, however, the regulatory agencies initially assume that the project planning and design will avoid and minimize wetland alterations where practicable. Minor alterations of freshwater wetlands (less than 4,300 square feet in total) that do not alter wetlands of special significance (WOSS) do not need a permit from the DEP and <u>no</u> notification is required.

Please contact us if you have any questions or comments. We appreciate the opportunity to assist Waldo County with this phase of their EOC project.

Sincerely,

MOYSE ENVIRONMENTAL SERVICES, INC.

David W. Moyse, CSS, LSE President

Cc: File





PUBHN PUBHN PUBHN PUBHN PSS1E PSS1E PSS1E PSS1E PSS1E PSS1E PSS1E	ESSIE
MIE PEMAC	REMIE RUBHX PUBHX
Sheet Tilte: NATIONAL WETLAND INVENTORY MAP Congress St. & Miller St., Belfast, Maine	Project: WALDO COUNTY - EMERGENCY OPERATION CENTER/SHERIFF'S OFFICE
0 Norse Environmental Services, Inc. Soli and Land Use Consulting 12 Pleasant View Avenue, Bargor, ME 04401 Phone (207) 945-6179 Fax (207) 433-7225	500 1,000 500 1,000 File No.: 10-10WSP_WBRC_Waldo Cty EOC 1 inch = 500 feet WBRC A&E

· . 5 - UNKNOWN PERENNIAL FO -- FORESTED OW -- OPEN WATER/ Unknown Battom OW -- OPEN WATER/ Unknown Bottom RS - ROCKY SHORE US - UNCONSOLIDATED SHORE 1 Cobbla-Gravel 2 Sand 3 Mud 4.Organic 1 Bread-Leaved 2 Needia-Leaved Decidious Becidious 3 Bread-Leaved Evergrean 5 Paed 6 Deciduous 7 Evergreen ...EM - EMERGENT 2 Nonpersistant SS - SCRUB-SHRUB **4** – INTERMITTENT 1 Broad-Leaved Deciduous 2 Meedio-Luaved Evergreen Evergreen Evergreen 5 Dead 1 Bedrock 2 Rubble Deciduous 3 Broad-Lawed 6 Deciduous 7 Evergrach - INTERTIDAL RF — REEF UB --- UNCONSOLIDATED -SB --- STREAMBED AB --- AQUATIC BED RS --- ROCKY US -- UNCONSOLIDATED BOTTOM SHORE SHORE *STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM. **EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS. 1 Coral 3 Worm EM - EMERGENT 1 Cobble-Gravel 2 Send 3 Mud 4 Organic 5 Vegetated 1 Persistent 2 Nonpersistent 1 Algsi 3 Rooted Vascular 5 Unknown Submergent N AB - AQUATIC BED **3 – UPPER PERENNIAL** US - UNCOMSOUDATED ML - MOSS-SHORE UICHEN 1 Moss 2 Lichen - RIVERINE P-PALUSTRINE 1 Bedrock 2 Rubble UB --- UNCONSOUDATED AB -- AQUATIC BED AF -- REEF OW -- OPEN WATER/ BOTTOM 1 Algal 1 2 Aquatic Moas 21 3 Rosta Vascular 4 Floating Vascular 5 Unknown Submargent 8 Unknown Surface M-MARINE 02 1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated 2 - LOWER PERENNIAL 1 Coral 3 Worm AB - AQUATIC BED 1 Algal 2 Aquata Mosa 3 Rooted Vescular 4 Floating Vescular 5 Unknown 5 Unknown Surface 6 Unknown Surface 1 Bedroct 2 Rubble 2 Sobble-Gravel 4 Sand 5 Mud 7 Vegetated 1 Algal 3 Rooted Vascular 5 Unknown Submergent UB -- UNCONSOLIDATED BOTTOM - SUBTIDAL 1 Cabbie-Gravel 2 Sand 3 Mud 4 Organic 1 Cobble-Grand 2 Sand 3 Mud 4 Organic 1 Cobbie-Gravai 2 Sand 3 Mud 4 Organic RB - ROCK BOTTOM 1 - TIDAL RB - ROCK BOTTOM RB - ROCK BOTTOM 1 Bedrock 2 Rubble 1 Bedrock 2 Rubble 1 Bedrock 2 Rubble SUBSYSTEM SUBSYSTEM SYSTEM SYSTEM SYSTEM Subclass CLASS Subclass Subclass CLASS CLASS

E – ESTUARINE

		UB FO - FORESTED 1 Broad-Leaved Decidaute 2 Noodia-Leaved 3 Broad-Leaved 3 Broad-Leaved	A Module-Leaved Evergreen 5 Dead 6 Dead 7 Evergreen	OW - OPEN WATER	a provinsi de la constance de l
		 SS SCRUB-SHR SS SCRUB-SHR Broad-Learwed Broad-Learwed Record-Learwed Record-Learwed Record-Learwed Record-Learwed 	4 mercent-Levra Evergraan 8 Decelours 7 Evergraan	M EMERGENT . Nonpersistant	
		2 čM – ENERGENT 1 Persistent 2 Monpensistent		CONSOLIDATED E ORE Grawei 2 Grawei 2	
	ITIDAL	T US UNCONSOLIDATEC SHORE SHORE 1 Cobble-Gravel 2 Sand 3 Mud 3 Mud 0 Graenic		RAL - ROCK US - UN - ROCK US - UN - ROCK US - UN - ROCK -	
	2 - INTER	D RS - ROCKY 1 Bedrock 2 Rubble		2 – LTTO VTC RS. Ass 2 R. Ass 2 R. Submorgent Submorgent	
		1 SB STREAMBEI 1 Cobbie-Gravel 2 Sand 3 Mud 4 Organic		ATED AB - AOLA BED, 4 1 AUgal - A 1 AUgal - A 2 Aquatic M 2 Cutanown 5 Unacrown 5 Unacrown	DIFIERS
		CD RF HEEF		LI - UNCONSOLID UR - UNCONSOLID BOTTOM 1 CODDIA-CEAMA 3 Mud 4 Organic	MOL
		A — AQUATIC BE Agai – AQUATIC BE 3 Rooted Vetcular 4 Flooten Statular 5 Unknown Starfac	LACUSTRINE	RB – ROCK BOTFOM - 1 Bedrock 2 Rubble	
	1	OR watter Urtrown Battorn		ON - OPEN WATER/ Unknown Bottom	
		3 RF REEF 2 Moliute 3 Worm		– ACUATIC BED BEL Balic Moss ored Vascular biown Suthergent biown Suthergent	
an and a second s	IDAL	AB ACULATIC BE 3 Rooted Vascular 5 Rooted Vascular 5 Unanown Sutrace B Unanown Sutrace	WNELIC	6 CC	
	1 - SUBT	CONSOLIDATED ITTOM Gravel	اسے سو	US UNCON US UNCON - Cable-Gran 2 Sand 3 Mui 4 Organia	
	na tiny ingenistikan di samaning sebist semena	OM UB		RB - ROCK B - ROCK 1 Bodrock 2 Rubble	00 Tableto 0027-00
		HB ROCK Bottock 1 Bedrock 2 Rubble			

b Beever h Diked/Impounded d Perially Drained/Dikched r Antificial Substrate f Farmed x Sprificial Substrate x Excavated SPECIAL MODIFIERS in order to more adoquately describe wetland and deepwater habitats one or more of the water regime, water chemistry. Soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological System. g Organic n Mineral SOIL Coastal Halinity Inland Salinity pH Modifiers for a Acid 1 Circumreutral i Alkalino WATER CHEMISTRY K Arriticially Flooded *S Temporary-Tidal 1 Hyperhaline 7 Hypersaline L Subidat Rescantantial 2 Eutraline 3 Hypersaline Regulary Flooded *V Permoarent-Tidal 3 Aknonaline 18 action 9 Microsoline I Regulary Flooded *V Permanent-Tidal 3 Aknonaline 0 Fresh I Regulary Flooded *U *Unicrown* 6 Oligonaline 6 Oligonaline 0 Fresh "These water regimes are only used in tidally influenced, freshwater systems. Tidal WATER REGIME A Temporarity Flooded H Permanentity Flooded L Saturated J Internitiently Flooded L Saturated K Artifically Flooded M D Satescaudy Flooded W Internitently Weill Drained Second V Internitently Weill Drained V Saturated Samipermanent Saturated Flooded I Internitently Saturated Second I Internitently Saturated Second I Internitently Saturated Second V Conded I Internitently Conded I Internitently Conded V Conded V Saturated Samipermanent Non-Tidal

MIC MIE

MkB MkC MkE MrB

MrC

Ms8 MsC Mw8

МyВ

Marlow extremely story fine sandy loam, 3 to 15 percent slopes Marlow extremely story fine sandy loam, 15 to 45 percent slopes Masardis fine sandy loam, 0 to 8 percent slopes Masardis fine sandy loam, 8 to 15 percent slopes Masardis fine sandy loam, 15 to 45 percent slopes

Mesardis Variant fine sandy loam, very rocky, 3 to 8 percent slopes

Masardis Variant line sandy loam, very rocky, 8 to 15 percent slopes Masardis Variant-Rock outcrop complex, 3 to 8 percent slopes Masardis Variant-Rock outcrop complex, 8 to 15 percent slopes

Monarda slightly stony silt loam, 0 to 8 percent slopes

Monarda very stony silt loam, 0 to 8 percent stopes

SOIL LEGEND

1/The first letter, always a capital, is the initial letter of the soll name. The second letter is a small letter. The third letter, B, C, D, or E is the slope class. Most symbols without a letter for slope class are for nearly level soils but these are for units containing miscellaneous areas. The number 3 shows that the soil is severely eroded.

SYMBOL	NAME	SYMBOL	NAME
AdB	Adams loamy line sand, 3 to 8 percent slopes	PaB	Peru line sandy loam, 3 to 8 percent slopes
AdC	Adams loamy fine sand, 8 to 15 percent slopes	PaC	Peru fine sandy losm. 8 to 15 percent slopes
AdO	Adams loamy line sand, 15 to 25 percent slopes	PbB	Peru very stony fine sandy loam. 3 to 8 percent slopes
		PhC	Peru very story fine sandy inam 8 to 15 nement slopes
Ba8	Bangor silt loam, 3 to 8 percent slopes	PcB	Peru extremely stony line sandy harm 3 to 8 nercent clones
BaC	Bangor silt loam, 8 to 15 percent slopes	PcC	Peril extremely stony fine carris ham. 9 to 15 percent stopes
BaD	Bangro silt loam, 15 to 25 percent slopes	PcD	Parti avtramply story fine sendy team, 5 to 20 percent support
BbB	Bankor very stony silt loam, 3 to 8 percent slopes	Pa	Pite ground and eand
вьс	Bangor very stony silt foam, 8 to 15 percent slopes	P _v	Podunk line zandy kam
BbD	Bangor very stony silt loam, 15 to 25 percent slopes	•,	i owards the savay roats
8e	Braches	On	Quarry
Bf	Biddeford mucky neat	¥*	20017
808	Boothbay silt learn, 3 to 8 percent slopes	0.	Pock outcrop
BoC	Boothbay silt loam. 8 to 15 percent slopes	pmC	Pack auternal uman complex 2 to 15 percent sizes
BoD	Boolabay silt loam 15 to 25 percent clopes	DmE	Derk euteren Lunen ermeler. 16 in 10 percent siepes
BoE3	Boothbay silt loam 25 to 45 percent slopes severely ended	rome.	nork ontrop-ryman complex, 15 to 60 bercant slopes
BnB	Boothbay very story silt from 3 to 8 nerrent storage	C %	Same upon time cando term
Bs	Bornsanrists panded	Sa Ca	Constant much mast
818	Bravion line candy loam 0 to 8 percent slopes		and apply in the prof. Sufficient to a contraction to a start of
RvR	Brayton view stony line sandy loam A to 8 percent elemen	30 C.u	Consecution and South Statists, in addentity incoded
A _Y A	Bravion extremely story line randy loam, a to a personal super-	34	Swarrand 201 (031)
Brick	braston excended story rine sandy warn, o to b percent supes	THO	Thereadles Mineral complete the descent of a
Dv8	Diverset sill large 3 to 8 account starses	100	Instructive-Winnecook complex, 3 to 8 percent slopes
DyC .	Diversit sit intern. S to 16 screent slopes	1 MG	I nornalike-winnecook complex, 8 to 15 percent slopes
nue.	Dismont vary rights filt loam, 2 to 2 percent slopes	inu Tho	Inorndike-Winnecook complex, 15 to 25 percent slopes
0,0	Division very story sit learn, 3 to 8 percent slopes	180	I norndlike-Rock outcrop complex, 3 to 8 percent slopes
0,0	contribut very study ant loant, o to 15 percent stopes	INC	Inornalke-Hock outcrop complex, 8 to 15 percent slopes
cio	Eldertedore time marchs towns. I be to an even to be a	IKE	Inbrindike-Hock outcrop complex, 15 to 45 percent slopes
610	Eldridge fine sundy loan, 3 to 5 percent slopes	irb	Lundridge-Lyman complex, 3 to 8 percent slopes
£10	cruituge line sandy loam, 8 to 15 percent slopes	IFC	Lunbridge-Lyman complex, 8 to 15 percent slopes
LLoQ	Anomaly marked beam to be dearanged alaran	IrD	Tunbridge-Lyman complex, 15 to 25 percent slopes
neo HaC	Hermon sanoy loam, 3 to 8 percent stopes		
neo uno	riermon sanoy loam, 8 to 15 percent slopes	Ud	Udorthents-Urbaniand complex
510	nermon very stony sandy loam, a to 15 percent slopes		
HID	riermon very stony sandy loam, 15 to 25 percent slopes		
HgC	Hermon extremely stony sandy loam, 8 to 15 percent slopes		
rigu	Hermon extremely slony sandy loam, 15 to 25 percent slopes		
l k	l imerick and Rumpey toils		
L r B	Euman Dask nutring complex 2 to 8 percent clener		
LIC	Lymminicul outerop complex, 3 to 5 percent stopes		
178	Lyman-Nock outcop complex, b to 10 percent slopes		
Let in	Lyman-Kock butcrop complex, 15 to 60 percent slopes		
MaB	Madawaska line sandy loam, 3 to 8 percent slopes		
MbB	Marlow fine sandy loam, 3 to 8 percent slopes		
MbC	Marlow line sandy loam, 8 to 15 percent slopes		
MbD	Marlow fine sandy loam, 15 to 25 percent slopes		
MeB	Marlow very stony fine sandy loam, 3 to 8 percent slopes		
MeC	Marlow very stony fine sandy loam, 8 to 15 percent slopes		
MeD	Marlow very slony line sandy loam, 15 to 25 percent slopes		
MeE	Marlow very stony line sandy loam, 25 to 45 percent slopes		

MAINE GEOLOGICAL SURVEY SAND & GRAVEL AQUIFER

AQUIFER_POLYGONS contains polygons of significant aquifers (glacial deposits that are a significant ground water resource) for Maine mapped at a scale 1:24,000, from the Department of Conservation, Maine Geological Survey. Printed maps published by the Maine Geological Survey on USGS 7.5' quadrangle bases. Aquifer boundaries delineated and digitized by the Maine Geological Survey from data compiled on USGS 7.5' quadrangle bases. Aquifer polygons coded by yield expected from a properly constructed well (ATYPE = 0 area not mapped as aquifer; ATYPE = 1 10-50 gallons-per-minute; ATYPE = 2 greater than 50 gallons-per-minute; ATYPE = 3 island of non-aquifer material within an area mapped as aquifer).

Significant aquifers are defined as bodies of coarse grained glacial material with the potential to yield 10 or more gallons-per-minute (GPM) to a properly constructed well. Aquifer boundaries are drawn based on field observations of surficial materials in gravel pits, stream banks, road cuts, and other exposures. This surficial geology mapping is supplemented with seismic-refraction studies and the installation of observation wells and test borings and information from water-company exploration, large construction projects, town well inventories, and other sources. This information, along with aerial photography and previously published maps, allows the geologist to define the boundaries of favorable surficial deposits and estimate how well the deposits will yield water to a well.

The boundaries of favorable surficial deposits do not necessarily coincide with the aquifer boundaries. In some areas, a thin cover of favorable coarse-grained material may overlie fine-grained sediments, till, or bedrock. A well in that material would not be able to sustain a yield of 10 gpm, so the area would not be mapped as an aquifer. In other areas, fine-grained sediments or till may overlie favorable coarse-grained sediments and the subsurface deposit may not be recognized as an aquifer. Single- and 12-channel seismic-refraction studies are conducted to determine the saturated thickness of a deposit by establishing the depth to water table and bedrock surface. Installing monitoring wells and drilling test borings provide direct information about the aquifer characteristics of a deposit. This work provides information on the depth to water table and bedrock surface, water quality, and how easily the sediment transmits water. The information is compiled on a USGS 1:24000 topographic map. The aquifer contacts are based on an interpretation of information described above by a geologist and the aquifer contacts drawn on a stable Mylar base.

Entity and Attribute Information: ATYPE: Aquifer polygon classification

ATYPE = 0 area not mapped as aquifer ATYPE = 1 10-50 gallons-per-minute ATYPE = 2 greater than 50 gallons-per-minute ATYPE = 3 island of non-aquifer material within an area mapped as aquifer

*Significant aquifers are defined as bodies of coarse grained glacial material with the potential to yield 10 or more gallons-per-minute (GPM) to a properly constructed well.

Sheet Tilte:	Project:
INLAND WADING BIRD & WATERFOWL HABITAT Congress St. & Miller St., Belfast, Maine	WALDO COUNTY - EMERGENCY OPERATION CENTER/SHERIFF'S OFFICE
Moyse Environmental Services, Inc. Soli and Land Use Consulting 42 Pleasant View Avence, Bangor, ME 04401 Phone (207) 945-6179 Fax (207) 433-7225	2,0004,000Date: March 24, 20102,0004,000File No.: 10-10WSP_WBRC_Waldo Cty EOC1 inch = 2000 feetApplicant: WBRC A&E

Maine Department of Inland Fisheries and Wildlife

Purpose: To identify boundaries of Inland Waterfowl / Wading Bird Habitats (IWWHs) those qualify under Municipal Shoreland Zoning (MSZ). This layer is the official definition of IWWH under MSZ.

<u>IWWH</u> --

Wetland complex identification number, Feature ID for relating to MDIFW ACCESS database of Inland Waterfowl and Wading Bird Habitats, except those starting with "UMO" which indicates they were generated by Heather L. Rustigian and William B. Krohn, University of Maine, Maine Cooperative Fish and Wildlife Research Unit.

This layer represents Inland Waterfowl / Wading bird Habitat (**IWWH**) that qualify under Municipal Shoreland Zoning. To qualify, each IWWH must be a Significant Wildlife Habitat defined under Maine's Natural Resources Protection Act (NRPA; http://www.maine.gov/dep/blwq/docstand/nrpapage.htm). Polygons with a high or moderate rating meet the Significant Wildlife Habitat definition and are protected under NRPA; low-rated polygons do not meet the definition and are not protected under NRPA. NRPA Iwwhs with a wetland acreage (which does not include forested wetlands) of at least 10 acres qualify under Municipal Shoreland Zoning. Boundaries and attributes of polygons in organized townships were updated in 2008 by MDIFW staff using recent (2001-2007), high-resolution (<=1 m), color orthoimagery. For most polygons, multiple images from different years and seasons were used. Polygons in unorganized townships were mapped by MDIFW regional staff in the 1990s from lower-resolution orthoimagery, various wetland data sets, and field visits or via an automated process developed by Heather Rustigian and William Krohn (USGS Biological Resources Division) using statewide digital NWI (National Wetlands Inventory) data, aerial imagery, and hydrology data. Each IWWH boundary includes a 250-foot upland zone around the wetland perimeter. Upland zones were edited to exclude areas of intensive development, slivers crossing major roads into non-wetland habitat, and shorelines >250 ft from a vegetated, non-forested wetland on a Great Pond. This update was completed Nov 20, 2008.

<u>RATING</u> -

Rating of the IWWH (moderate and high-value polygons are considered as candidate NRPA habitats). See the Supplemental Information section of the layer description for rating criteria.

Supplemental Information: Five criteria are used to assess IWWHs: <u>Dominant wetland type, Diversity of wetland</u> types, Size, Interspersion, and Amount of open water. A high to moderate value inland habitat is an inland wetland complex including a 250 ft upland habitat zone that, through a combination of the five criteria listed above, meets MDIFW guidelines or is an inland wetland complex. For further information on this rating system please refer to the following document: "GIS-Based Evaluation of Waterfowl and Wading Bird Habitats in Maine" by Heather L. Rustigian and William B. Krohn, University of Maine, Orono, Final Contract Report to the Maine Dept. Inland Fisheries and Wildlife, Augusta, Maine, June 2002. Not all ratings have been field verified.

Sheet Tilte: IF&W DEER WINTERING AREAS Congress St. & Miller St., Belfast, Maine		Project: WALDO COUNTY - EMERGENCY OPERATION CENTER/SHERIFF'S OFFICE			
Moyse Environmental Services, Inc. Soli and Land Use Consulting 42 Pleasant View Avenue, Bangor, ME 04401 Phone (207) 945-6179 Fax (207) 943-7225	0	2,000 4,000 1 inch = 2000 feet	Date: March 24, 2010 File No.: 10-10WSP_WBRC_Waldo Cty EOC Applicant: WBRC A&E		

Maine Department of Inland Fisheries and Wildlife

Deer Wintering Areas

Mapped deer wintering areas (DWAs), rated high, moderate or indeterminate, in organized towns statewide (see Deer Wintering Area and Travel Corridor document, MDIFW, 12/22/99). DWAs were mapped by regional biologists and were then transferred to mylar 7.5 minute quads for digitizing. This data set was developed in accordance with Maine's Natural Resources Protection Act (NRPA). Under this act, the Maine Department of Inland Fisheries and Wildlife (MDIFW) are designated as the authority for determining significant wildlife habitats (SWHs). It is further specified that MDIFW must first map SWHs before they are offered for protection under the law except when they occur in another protected resource.

A deer wintering area is defined as a forested area used by deer when snow depth in the open/hardwoods exceeds 12 inches, deer sinking depth in the open/hardwoods exceeds 8 inches and mean daily temperatures are below 32 degrees Fahrenheit. Non-forested wetlands, non-stocked clear-cut's, hardwood types, and stands predominated by Eastern Larch are included within the DWA only if less than 10 acres in size. Agricultural and development areas within DWAs are excluded regardless of size. Evaluation (rating procedure): Deer wintering areas are evaluated based on three criteria: 1) quality of softwood shelter, 2) intensity of deer use, and 3) size. Information on the quality of softwood shelter and intensity of deer use are based on ground survey plots within the final boundary of the DWA being evaluated. The acreage of the DWA is determined after the final outline of the DWA has been drawn. The final rating of the DWA is determined by summing the scores for the three criteria and assigning a rating as follows: high (score of 10-12), moderate (score of 7-9.9) or low (score of 0-6.9). A regional biologist may recommend a rating change with justification and approval by the management section supervisor. No delisting criteria for regulated NRPA DWAs have been developed. **Currently all DWAs are rated as indeterminate**.

		AE VE	A A A A A A A A A A A A A A A A A A A
SITE	KIOUTI		X
			×
Sheet Tilte: FEMA FLOOD PLAIN MAP Congress St. & Miller St., Belfast, Maine		Project: WALDO COUNTY - EMERGENCY OPERATION	CENTER/SHERIFF'S OFFICE
Moyse Environmental Services, Inc. Sofi and Land Use Consulting 42 Piessant View Avenue, Bangor, ME 04403 Phone (207) 445-6179 Fax (207) 433-7225	0	2,000 4,000 1 inch = 2000 feet	File No.: 10-10WSP_WBRC_Waldo Cty EOC Applicant: WBRC A&E

SERVICES, INC.	
Soli and Land Use Consulting and View Avecuse Bandor, ME 044	01
Phone (207) 945-6179	
Fax (207) 433-7225	

FEMA Flood Plain

FIRM is Q3 Flood Data derived from the Flood Insurance Rate Maps (FIRMs) published by the Federal Emergency Management Agency (FEMA) mapped at 1:24000 scale. The file is georeferenced to the earth's surface using the Universal Transverse Mercator (UTM) projection and a zonal coordinate system (units in meters). Specifications for the horizontal control of Q3 Flood Data files are consistent with those required for mapping at a scale of 1:24000.

Purpose: The FIRM is the basis for floodplain management, mitigation, and insurance activities for the National Flood Insurance Program (NFIP). Insurance applications include enforcement of the mandatory purchase requirement of the Flood Disaster Protection Act, which "requires the purchase of flood insurance by property owners who are being assisted by Federal programs or by Federally supervised, regulated, or insured agencies or institutions in the acquisition or improvement of land facilities located or to be located in identified areas having special flood hazards" (Section 2 (b) (4) of the 1973 Flood Disaster Protection Act). In addition to the identification of Special Flood Hazard Areas (SFHAs), the risk zones shown on the FIRMs are the basis for the establishment of premium rates for flood insurance coverage offered through the NFIP. Q3 Flood Data files convey certain key features from the existing hard copy FIRM. Edge-matching errors, overlaps and deficiencies in coverage, and similar problems are not corrected during digitizing or post-processing. The Q3 Flood Data files are intended to provide users with automated flood risk data that may be used to locate SFHAs. More detailed information may be obtained from the paper FIRM.

Printed maps, hardcopy Flood Insurance Rate Maps used as the source of this data, published by the Federal Emergency Management Agency 11/1974-6/1996

ZONE - flood hazard zone designation FEMA FIRM, multiple Codes refer to "Q3 Flood Data Specifications"

A:

An area inundated by 100-year flooding, for which no Base Flood Elevations (BFES) have been determined; IN Special Flood Hazard Area (SFHA).

AE:

An area inundated by 100-year flooding, for which Base Flood Elevations (BFES) have been determined; IN Special Flood Hazard Area (SFHA).

AO:

An area inundated by 100-year flooding (usually sheet flow on sloping terrain), for which average depths have been determined; flood depths range from 1 to 3 feet; IN Special Flood Hazard Area (SFHA).

AH:

An area inundated by 100-year flooding (usually an area of ponding), for which Base Flood Elevations have been determined; flood depths range from 1 to 3 feet; IN Special Flood Hazard Area (SFHA).

VE:

An area inundated by 100-year flooding with velocity hazard (wave action); Base Flood Elevations (BFES) have been determined; IN Special Flood Hazard Area (SFHA).

X500:

An area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 100-year flooding; OUT Special Flood Hazard Area (SFHA).

X:

An area that is determined to be outside the 100- and 500-year floodplains; OUT Special Flood Hazard Area (SFHA).

ANI:

An area that is located within a community or county that is not mapped on any published FIRM; OUT Special Flood Hazard Area (SFHA).

UNDES:

A body of open water, such as a pond, lake, ocean, etc., located within a community's jurisdictional limits that has no defined flood hazard; OUT Special Flood Hazard Area (SFHA).

D:

An area of undetermined but possible flood hazards; OUT Special Flood Hazard Area (SFHA).

PO Box 1237 15 Shaker Rd. Grav, ME 04039

207-657-6910 FAX: 207-657-6912 E-Mail:mailbox@gorrillpalmer.com

May 21, 2010

Mr. John Kenney, PE, LEED AP WBRC Architects-Engineers 44 Central Street Bangor, ME 04401

Subject: Traffic and Parking Evaluation Waldo County Emergency Operations Center – Belfast, Maine

Dear John,

1

Gorrill-Palmer Consulting Engineers, Inc. has completed an assessment of the traffic impacts associated with the Waldo County Emergency Operations Center Campus located in Belfast, Maine. Our findings are summarized as follows:

<u>Project Understanding</u>

The project site is bounded by Miller Street to the south with Congress Street to the east, private property to the west, and undeveloped land/Franklin Street to the north. The site will maintain access via two existing full movement driveways, one each onto Miller Street and Congress Street, thus not creating any new curb cuts. The project will include the redevelopment of a campus that currently includes: Regional Communications Center / Waldo County Emergency Operations Center / Pre-Release Center / Sherriff's Office. A proposed new building will be constructed to house a modern Emergency Operations Center and Sheriff's Office, with approximately 4,500 square feet of existing space currently occupied by the Sheriff's Office being converted to general office use. The area currently being occupied by the Operations Center (basement of Pre-release center) will be absorbed by the Corrections Department.

Existing Turning Movement Volumes

Our office completed turning movement counts at the following locations and times to determine the peak hours:

>	Miller Street / Site Driveway:	May 5, 2010, 7:45 - 9:15 AM May 5, 2010, 3:00 - 6:00 PM
4	Congress Street / Site Driveway:	May 6, 2010, 7:45 – 9:15 AM May 5, 2010, 3:15 – 6:00 PM
۶	Congress Street / Sheriff's Office Parking Facility:	May 6, 2010, 7:45 – 9:15 AM May 5, 2010, 3:15 – 6:00 PM

The peak hour volumes are summarized on Figures 1 and 2 enclosed with this letter.

Mr. John Kenney May 21, 2010 Page 2 of 7

Existing Roadway Conditions

Congress Street is a two lane, paved road approximately 25 feet wide, with a posted speed limit of 25 MPH. There is a ditch and esplanade on the west side of the street which is approximately 10 feet wide, as well as a 4-foot wide sidewalk, also on the west side of the street. Miller Street is a paved, two lane road with a posted speed limit of 25 MPH and a total width of 30 feet. The cross-section of Miller Street consists of two 10-foot travel lanes with a five-foot shoulder/bicycle lane on each side. There is also a five-foot sidewalk on the north side of the street, separated from the roadway by an approximately 10-foot grassed esplanade.

Other Development

Based on conversations with the Belfast Planning Office, there are no other projects either underway or recently approved that would have an impact on traffic flow in the vicinity of this site.

Estimated Pre-Development Traffic Volumes

Seasonal Adjustment

MaineDOT utilizes highway classifications of I, II, or III for state and local roadways. Type I roadways are defined as urban roadways, or those roads that typically see commuter traffic and experience little fluctuation from week to week throughout the year. Type II roadways, or arterial roadways are those that see a combination of commuter and recreational traffic and therefore experience moderate fluctuations during the year. Type III roadways, or recreational roadways are typically used for recreational purposes and experience dramatic seasonal fluctuation.

Both Congress and Miller Streets are considered Type I roadways by MaineDOT. Therefore, the raw volumes have been seasonally adjusted by 8% to reflect the 30th highest hour (typically occurring in July or August) of traffic volumes in accordance with MaineDOT guidelines. Adjusting these volumes to peak summer volumes is conservative since school is not in session during the summer, but was in session when the counts were completed.

Annual Growth

The proposed development is anticipated to be fully operational in 2011. The 2010 seasonally adjusted volumes were increased by one percent per year to reflect traffic increases in the area. The one percent is based on historic MaineDOT traffic counts, which showed a slight decline in volumes from 2002 to 2005, followed by growth of approximately two percent per year from 2005 to 2007, the most recent year available.

Pre-Development Volumes

The raw volumes shown in Figures 1 and 2 were seasonally and annually adjusted to result in the 2011 pre-development volumes shown in Figures 3 and 4.

Mr. John Kenney May 21, 2010 Page 3 of 7

Trip Generation

The following identifies both the existing uses on the site as well as the proposed changes:

Existing - The existing site currently houses the following:

- Emergency Communications Center
- > Sheriff's Department
- > Pre-Release Center
- > Waldo County Emergency Operations Center

<u>Proposed</u> - The proposed 10,750 square foot building will house the Emergency Operations Center and Sheriff's Office, which are both already on campus. Waldo County plans to reuse the space currently occupied by the Sheriff's Department as general office space. The area currently being occupied by the Operations Center (basement of Pre-release center) will be absorbed by the Corrections Department for their use.

As a result of the moving of uses on the same campus, the only increase in trip generation from the campus is anticipated to come from the new uses which would occupy the area currently occupied by the Sheriff's Office. In addition, there may be some slight redistribution of traffic due to the relocation of the uses on site, but this is expected to be minimal.

For the purposes of this review, the approximately 4,500 square feet of space being vacated by the Sheriff's Office was assumed to become general office space. The proposed net increase in trip generation as a result of this additional use is shown in the following table.

Trip Generation Summary for Office Use

Land Use	Weekday	AM peak hour	PM peak hour	
LUC 710 – General Office	5 0	7	15	

This increase in traffic volumes does not meet the minimum requirements for a Traffic Movement Permit from the MaineDOT.

<u>Trip Distribution – New Office Use</u>

The trip distribution (i.e. entering versus exiting traffic) was based on the Institute of Transportation Engineers (ITE), 7^{th} Edition for Land Use Code 710 – General Office Building. The table below shows the trip distribution.

Time Period	Enter	Exit	Enter	Exit			
	%	%					
AM Peak Hour	90%	10%	6	1			
PM Peak Hour	15%	85%	2	13			

Trip Distribution – Office LUC 710

Mr. John Kenney May 21, 2010 Page 4 of 7

Trip Composition and Assignment

For the purposes of this assessment, all net increase in trips has been assumed to be primary in nature, i.e. the trips are new to the transportation network. The trip assignment was based on existing traffic patterns obtained from the turning movement counts with adjustments as necessary to account for location on the campus, and is shown on Figures 5 and 6.

<u>Trip Re-Distribution – Sheriff's Office</u>

The relocation of the Sheriff's Office on the site will likely shift some traffic from Congress Street to Miller Street. Based on our observations, a shift of four vehicles in the AM peak hour and five vehicles in the PM peak hour from Congress Street to Miller Street is anticipated. This is a 2.5% to 3% increase in traffic volume.

Estimated Post-Development Traffic Volumes

The 2011 adjusted volumes shown on Figures 3 and 4 have been combined with the forecast increase in trips and the forecast redistribution of trips associated with this project (Figures 5 and 6), resulting in the 2011 postdevelopment volumes, shown on Figures 7 and 8.

This combination of new and redistributed traffic results in a slight increase in traffic on Miller Street of approximately five vehicles in the AM peak hour, and six vehicles in the PM peak hour. This is a 2.5% to 3% increase in traffic volume.

Capacity Analyses

Gorrill-Palmer Consulting Engineers, Inc. completed capacity analyses for the three study area intersections identified previously.

The analysis was completed utilizing the Synchro/SimTraffic software. Levels of service rankings are similar to the academic ranking system where an 'A' has little control delay and an 'F' represents extensive delay. At an unsignalized intersection, if the level of service falls below a 'D', an evaluation should be made to determine if an alternative form of traffic control may be advisable.

The following tables summarize the relationship between delay and level of service for unsignalized intersections:

Level of Service	Control Delay per Vehicle (sec)
Α	Up to 10.0
В	10.1 to 15.0
С	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
ظرير <u>المحمد المحمد ا</u>	Greater than 50.0

Level of Service Criteria for Unsignalized Intersections

Mr. John Kenney May 21, 2010 Page 5 of 7

The results of the capacity analyses, based on the SimTraffic results, are summarized as follows, with the detailed analysis sheets included with this letter.

Level of betwee for buchin's Faiking Lot at Congress Succe									
<u></u>	2011 AM Peak Hour				2011 PM Peak Hour				
Approach/Movement	Predevelopment Post		Postdevelo	ostdevelopment		Predevelopment		Postdevelopment	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	
Parking Lot EB LT/RT	9	A	N/A	N/A	9	Α	N/A	N/A	
Congress St NB LT/TH	0	А	N/A	N/A	0	А	N/A	N/A	
Congress St SB TH/RT	0	A	N/A	N/A	0	Α	N/A	N/A	

Level of Service for Sheriff's Parking Lot at Congress Street

Level of Service for Congress Street at Site Driveway/Spring Street

	2011 AM Peak Hour				2011 PM Peak Hour				
Approach/Movement	Predevelopment		Postdevelopment		Predevelopment		Postdevelopment		
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	
Congress St NB	0	Α	1	A	0	Α	0	A	
Congress St SB	0	A	0	A	0	А	0	A	
Site Driveway EB	9	Α	9	A	9	Α	9	A	
Spring St EB	9	A	9	A	9	A	9	A	

Level of Service for Miller Street at Site Driveway

	2011 AM Peak Hour				2011 PM Peak Hour			
Approach/Movement	Predevelopment		Postdevelopment		Predevelopment		Postdevelopment	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
Miller St EB LT/TH	0	A	0	A	0	Α	0	A
Miller St WB TH/RT	0	A	0	A	0	A	0	A
Site Driveway SB LT/RT	9	A	9	A	9	A	10	A

Based on the findings of the analyses, the intersections should remain operating at a level of service 'A'.

Crash Data

In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define High Crash Locations (HCL). Both criteria must be met in order to be classified as an HCL.

- 1. A critical rate factor of 1.00 or more for a three-year period. (A Critical Rate Factor {CRF} compares the actual accident rate to the rate for similar intersections in the State. A CRF of less than 1.00 indicates a rate less than average) and:
- 2. A minimum of eight crashes over the same three-year period.

Based on the MaineDOT crash summaries for this area, there was only one location that met one of those criteria. That was the intersection of Congress Street at Miller Street which had a critical

Mr. John Kenney May 21, 2010 Page 6 of 7

rate factor (CRF) of 1.17 and 2 crashes. Because this intersection did not also have at least eight crashes during the three year period, this intersection is not classified as a High Crash Location.

Parking Observations

During the times of traffic counts on May 5th and May 6th, 2010, our office also observed parking usage. Parking demand throughout the site remained relatively constant throughout both time frames that we were on site. There were eight to ten vehicles parked in the parking areas opposite the Communications Center and closest to Miller Street. Of the 26 available parking spaces closer to Congress Street and the Pre-Release Center, demand fluctuated from 10 to 18 parked vehicles. Parking demand in the Sheriff's parking lot varied from a low of two vehicles in the late afternoon to a high of ten vehicles around mid-morning. Based on our observations, on site parking appears to be adequate.

Pedestrians and Bicyclists

During the times of traffic counts on May 5th and May 6th, 2010, our office also observed pedestrian and bicycle activity along Miller Street. There were more pedestrians and bicyclists in the AM peak hour (46 total), than in the PM peak hour (15 total). Many of the pedestrians and bicyclists were in groups of three or more, walking or bicycling to/from school. This corresponds to the time of day that school begins/ends, as compared to the peak hour for traffic. Both Congress Street and Miller Street have sidewalks which are being used. The City of Belfast maintains marked crosswalks at the Congress Street/Miller Street intersection as well as at the Miller Street/School Street intersection. Also, Miller Street does have 5-foot wide, marked bicycle lanes, which are being used by students and their parents on the way to/from school, as well as by other bicyclists. There is adequate sight distance for people walking and/or bicycling along Miller Street to see any vehicles that may be entering or exiting the site driveway.

Sight Distance Review

As part of this review, Gorrill-Palmer Consulting Engineers reviewed the sight distances of the site driveway at Miller Street, the site driveway at Congress Street, and the Sheriff's parking lot at Congress Street. Congress Street and Miller Street were both posted 25 MPH, which MaineDOT requires 205 feet of intersection sight distance. The City of Belfast requires a minimum of 150 feet of sight distance for a 25 MPH road. The results of the review are summarized as follows:

<u>Site Drive / Miller Street</u> – Exiting the driveway, the sight distance to the left is 220 feet, and the sight distance to the right is 300 feet. Sight distance from this driveway exceeds the City's minimum.

<u>Site Drive / Congress Street</u> – The sight distance exiting the driveway to Congress Street and looking left is greater than 350 feet. Looking to the right, sight distance exceeds 250 feet, which is through the Miller Street intersection.

Mr. John Kenney May 21, 2010 Page 7 of 7

<u>Sheriff Parking Area / Congress Street</u> – The sight distance exiting the driveway to Congress Street and looking left is greater than 350 feet. Looking to the right, sight distance exceeds 300 feet, which is through the Miller Street intersection.

<u>Closing</u>

Based on a review of the traffic and parking-related data, it is the opinion of our office that the local transportation network can accommodate the new and redistributed traffic associated with the reconfiguration of the Waldo County Emergency Operations Center and Sheriff's Office. It is our opinion that the proposed project "will not result in unreasonable traffic congestion or unsafe conditions on a road in the vicinity of the proposed development" as stated in Section 90-42 of the Belfast Ordinance, Criteria for review by Planning Board.

If you have any questions please contact our office.

Sincerely,

Gorrill-Palmer Consulting Engineers, Inc.

11, llens for

Thomas Gorrill, P.E., PTOE President

Enclosures

TLG/red/jlw/JN2416/kenney5-21-10.docx

Waldo County Emergency Operations Center Environmental Assessment

This page left blank

SECTION 7: APPENDICES

7.1. Maps and Diagrams

- 7.1.1. Geology map in Waldo County area map
- 7.1.2. Simplified Bedrock Geologic Map of Maine
- 7.1.3. Surficial Materials, Belfast Quadrangle, Maine
- 7.1.4. Coastal Landslide Hazards, Belfast Quadrangle, Maine
- 7.1.5. Coastal Bluffs, Belfast Quadrangle, Maine
- 7.1.6. Earthquakes in Maine
- 7.1.7. Hurricane Tracks in Waldo County area map
- 7.1.8. Tropical Storm Tracks in Waldo County area map
- 7.1.9. Flood Insurance Rate Map, Belfast, Maine Panel 8 of 20
- 7.1.10. Mapped Wetlands near Proposed Project Site
- 7.1.11. Maine Endangered and Threatened Fish and Wildlife Species List
- 7.1.12. Significant Sand and Gravel Aquifers, Belfast Quadrangle, Maine
- 7.1.13. City of Belfast Land Use and Zoning Map
- 7.1.14. Site Plan, Proposed New EOC Alternative

Mapping Information Platform

7.1.1. Geology

175

3km

Lincolnville Islesbore

Legend

KNOX

235

Hope

W

173

Thursday, 14 January 2010 09:13

0.

2mi

0

Mapping Information Platform

7.1.6. Hurricane Tracks

This Map Is For Advisory Purposes Only

Areas

Legend

	Hurricane Tracks 1851-2001	\mathcal{N}	Category 1 Hurricane 74-95 MPH		Land
			Watershed (HUC)	_	US
N_{-}	Under 40 MPH	$\sim N_{\odot}$	Watershed (noc)		Other
\mathcal{N}_{i}	40 - 80 MPH		Major Roads		
N	80 - 120 MPH	N	Major Highways		
N	120 - 160 MPH	N	Highways		
N	160 - 200 MPH	×.	Major Roads		
N	County Boundary	1	States		
N	Category 5 Hurricane >155 MPH	·	Cities		
			Towns, 10.00030.000		
N	Category 4 Hurricane		Small Cities, 30.000100.000		
	131-155 MPH		Medium Cities.		
	Cotomore 2 Honrisone	•	100.0001.000.000		
\mathcal{N}_{i}	111-130 MPH	•	Large Cities > 1.000.000		
		$\sim N$	Minor Rivers		
N	Category 2 Hurricane	1	Lakes, Major Rivers		
	30-110 MF/1		Lakes, Major Rivers		

Thursday, 14 January 2010 09:09

Mapping Information Platform

7.1.7. **Tropical Storm Tracks**

This Map Is For Advisory Purposes Only

Legend

N	Tropical Storm 39 - 73 MPH		Medium Cities, 100.0001.000.000 Large Cities > 1.000.000
N	Tropical Depression < 39 MPH	Ň	Minor Rivers Lakes, Major Rive
N	Subtropical Storm Subtropical Depression		Lakes, Major Rivers
N	County Boundary Watershed (HUC) Major Roads		US Other Countries
**	Major Highways Highways Major Roads States		
•	Cities Towns, 10.00030.000 Small Cities, 30.000100.000		

(cont)

PARTA **FEMA** Thursday, 14 January 2010 09:08

7.1.9.

