



# Legislative Task Force

Meeting #14

Friday October 31, 2014

8:00 – 10:00 AM

**Room 280, 2nd Floor**

Department of Environmental Management  
235 Promenade Street Providence, RI

## Agenda

- 8:00** Welcome and Overview of Agenda – *Kevin Flynn, DOP*
- 8:05** Review/feedback on meeting notes for September 16<sup>th</sup> and 26<sup>th</sup>, 2014 – *(All)*
- 8:15** A. Presentations: None
- B. Working Draft: 10.22.14 additions- *N.Hess, DOP*
- C. Task Force Discussion of Recommendations – *All - moderated by Kevin Flynn*
- 9:55** Next Steps– *Nancy Hess, DOP*
- A. Request for comments & edits on Working Draft
- B. Next meeting November 18<sup>th</sup>, Tuesday - DEM
- 10:00** Adjourn



# Legislative Task Force Meeting #12

Tuesday, September 16, 2014

8:00 AM – 10:00 AM

Rhode Island Department of Environmental Management

Room 300, 235 Promenade Street, Providence, RI



**Task Force members in attendance:** James Boyd (Coastal Resources Management Council), Joseph Casali (Civil Engineer Representative), Russell Chateaneuf (Civil Engineer Representative), Alicia Good (DEM), Thomas D'Angelo (Builder's Trade Association), Gary Ezovski (Business Community Representative), Kevin Flynn (DOP-Associate Director), Lorraine Joubert (Environmental Entity Representative), Thomas Kravitz (Municipal Representative–Burrillville), Tom Kutcher (Wetlands Biologist), Scott Moorehead (Business Community Representative), Doug McLean for Vincent Murray (Municipal Representative-S Kingstown) Eric Prive (Civil and Environmental Engineering Representative), Scott Rabideau (Business Community Representative), and Nancy Scarduzio (DOA-Office of Regulatory Reform).

**Agency staff members present:** from DOP; Sean Henry & Nancy Hess, from DEM; Brian Moore, Carol Murphy, and Ernie Panciera.

Mr. Flynn opened the meeting by requesting comments and or feedback on meeting notes for July 17, 2014. There was none. He introduced N.Hess who gave an overview of the Working Draft dated 9.12.14. She reviewed how the draft was created with the help of the working group. The same group which has been helping with agendas, meeting, topics, soliciting speakers and conducting the literature review.

The working draft is laid out into 4 parts; Part 1: Introduction, Part 2: Current Regulatory Framework in RI, Part 3: Today's Science as We Know It, and Part 4: Conclusion and Recommendations. The Introduction contains an issue statement, a description of the RI General Law that created the Task Force, a description on how the Task Force was assembled by the DOP, the scope of work agreed upon and the historical background of previous wetland task forces and committees in the State. Part 2 gives an overview of the existing RI General Laws, DEM Rules and Regulations, CRMC Rules and Regulations, a snapshot of what municipal ordinances with wetland and or OWTS buffers are in existence, and a summary of other New England laws on wetland / OWTS buffers. Part 3 details the scientific information which was presented to the Task Force either through technical presentations by guest and agency speakers or through the Literature Review. It will include a summary of key scientific findings which will be presented later in today's meeting. Finally the draft concludes with a conclusion / recommendation section which has yet to be written. This section is proposed to answer the legislative charge to ensure that standards are protective, to eliminate duplication of efforts, to clarify terminology and to ensure adequate funding for implementation. It will also include a section for those ideas from the parking lot related to wetlands and OWTS but were not necessarily buffer issues and too complex to address in the limited time frame of the group. General feedback from the Task Force was this was a good format for the report. N.Hess asked that any members who wished to send in comments / edits / typos, etc. please do so at any time via email.

The next item discussed was presentation of summaries of the key scientific findings for wetland buffers and OWTS buffers by C. Murphy & E. Panciera, both of DEM. C. Murphy went first and suggested key scientific findings for wetland buffers. She reminded the Task Force of the functions & values of wetlands which are:

- Flood protection
- Water quality protection
- Wildlife and habitat
- Surface water and groundwater quality
- Recreation and aesthetics.

Ms. Murphy used these functions and values to frame the key scientific findings suggested for the report. She stressed that the presentations and the literature said that that vegetated buffer zones adjacent to wetlands and surface waters are needed to protect the functions and values and to minimize effects of nearby land uses. Minimum buffer widths range depend upon what was the selected item studied, i.e., the wetland types, function, wildlife group and other factors. Buffer zones may moderate the effects of climate change and protect property. Buffer distances for water quality range depend upon what was the selected item studied but numerous studies recommended a minimum buffer width of 100 feet for water quality purposes. Buffers that are larger than 50 feet are "likely necessary". There may be situations where larger buffers are appropriate for:

- Drinking water reservoirs
- Tributaries to drinking water reservoirs
- Rare wetland types
- Wetlands that known to have rare plants or rarer animals
- Streams that support cold water fisheries
- Sensitive wetlands such as bogs, fens, Atlantic White Cedar Swamps, vernal pools and scenic rivers.

E. Panciera then outlined suggested key scientific findings for OTWS buffers. He reminded the Task Force that wastewater from an OWTS moves downward through the soil carrying pollutants into groundwater which can transport the pollutants to wetlands and waterbodies. OWTS are very situational and soil specific. Primary pollutants of concern from OWTSs are pathogens and nutrients. Pathogenic bacteria and viruses can cause human sickness from ingestion of contaminated drinking water, recreational contact or the consumption of contaminated shellfish. Nutrients such as Nitrogen (N) and Phosphorus (P) have a fertilizing effect on water quality providing nutrients that if present in sufficient quantities can fuel excess algae growth. Nitrogen has the most impact on salt waters, whereas phosphorus will impact freshwaters. Also of growing concern are algal blooms of cyanobacteria (blue-green algae) from excess nutrients in freshwater, which release toxins that are harmful to humans, pets and livestock.

Mr. Panciera further explained that the characteristics of the subsurface through which the groundwater flows will greatly influence the contamination risk and variability of buffers needed. Sands and gravels will generally have high flow rates, while compact till soils will have slower flow rates. Subsurface characteristics are highly variable across the state. He reminded the Task Force that internationally renowned expert, Dr. Gold of URI, explained that characterizing subsurface flow requires extensive (and expensive) field work. The primary factor controlling removal of pathogens in the groundwater is filtration by the soil and time in aerobic soils to facilitate pathogen die off. OWTS derived nitrogen impacts are a more significant concern in RI than phosphorus impacts from OWTSs. Impacts from OWTS on water quality and wetlands are in most instances the result of cumulative loadings from many individual OWTSs. Increased separation distances between an OWTS and wetlands and waterbodies will allow for more opportunities for pollutant interactions in the soil and greater treatment potential.

K. Flynn then opened the meeting to discussion by asking if the working group has captured the key points for the group. Various points of concern were presented and discussed on the findings as presented concerning the wording of the findings. Details on the differences between N and P in RI soils and how they are mitigated were discussed. Using specific numbers verses ranges were debated. Issues on sediment and stormwater management were discussed but generally the wider the buffer the more protection from sediment. Another issue was how the new Stormwater 2010 Manual provides other wetland protection beyond buffers but it was agreed that this would be placed in the parking lot of "other topics". There was also discussion on how the Section should summarize all the science not just the Literature Review. How detailed should it be? The Literature Review will be included in the report as an appendix and is available on the DOP website for the Task Force. All of the technical presentations are on the DOP website as well. It was agreed that this should be a sort, bulleted section; one page for wetland buffers and one page for OWTS buffers. Most likely people will not read the entire section but just these two critical pages.

Discussion of the key findings, forming recommendations and relevancy of what to say in the report took place. S. Rabideau pointed out that the audience for the report has to be kept in mind when forming recommendations; the General Assembly and the Governor. It is most likely that staff for each will read the report

and summarize it for them. Staff will look for the science behind the recommendations and also what other New England states are doing. G. Ezovski concurred and it is hard to just “pick a number” and suggested instead a “broad number” and be careful on how we characterize the existing protection. E. Prive thought that for OWTS the current regulations have many factors of safety built into them, the towns standards vary, and the setbacks standards should stay with the State.

Task Force Member, Lorraine Joubert, expressed concerns on an article from the RI Builders Association concerning the presentations from the Maryland consultants on OWTS & Biomats at the July meeting of the Task Force. She asked if the Task Force would consider a respectful request to the editor to clarify certain points about Biomats. It was agreed to discuss this item again at the next meeting.

The meeting concluded with a review of the next steps by N.Hess. She assigned a homework task for Members for the next meeting on September 26, 2014. The homework consisted of two parts. The first was to identify adequacies and or gaps in existing state protection (buffers) which need to be addressed. The second was to quantify what buffers are needed to fill the gaps. Additionally, she asked again that any members with comments and or edits on the working draft to please email them to her.

## **Adjourn**

10:00 AM

DRAFT

# Legislative Task Force Meeting #13

Friday, September 26, 2014

8:00 AM – 10:00 AM

Rhode Island Department of Environmental Management

Room 300, 235 Promenade Street, Providence, RI



**Task Force members in attendance:** Jeff Willis for James Boyd (Coastal Resources Management Council), Joseph Casali (Civil Engineer Representative), Russell Chateaufneuf (Civil Engineer Representative), Janet Coit (DEM), Thomas D'Angelo (Builder's Trade Association), Gary Ezovski (Business Community Representative), Kevin Flynn (DOP-Associate Director), Lorraine Joubert (Environmental Entity Representative), Thomas Kravitz (Municipal Representative–Burrillville), Tom Kutcher (Wetlands Biologist), Scott Moorehead (Business Community Representative), Doug McLean for Vincent Murray (Municipal Representative-S Kingstown) Eric Prive (Civil and Environmental Engineering Representative), Scott Rabideau (Business Community Representative), and Nancy Scarduzio (DOA-Office of Regulatory Reform).

**Agency staff members present:** from DOP; Nancy Hess, from DEM; Brian Moore, Carol Murphy, Ernie Panciera, Charles Horbert, and Marty Wencek.

Mr. Flynn opened the meeting with discussion of the *RI Builder Report* Sept. newsletter, specifically the article on the 7/17/14 meeting of the Task Force. L Joubert will be writing an article for the newsletter on Biomats at a later date. It was agreed no further discussion or action was needed by the Task Force.

Mr. Flynn introduced a presentation on a statewide E-Permitting project which was brought to his attention by Task Force Member, N. Scarduzio. There were two guest speakers from the Department of Administration (DOA), Office of Management & Budget (OMB), Derrick Pelletier and Patrick Marr. They gave a status report on implementing a program to standardize statewide permits for the RI Building Commissioner, the State Fire Marshal offices and 10 pilot communities. The project goals are to modernize; building plans, permit management, and building inspections through e-permitting. OMB has been working since 2013 with the Office of Digital Excellence. They have gone out to bid and final award is eminent. In 2014, the selected consultant will work with the pilot communities. Launch is scheduled for 2015. Discussion ensued about the project. J. Coit mentioned the EPA E- Enterprise project her agency was working on and a desire to coordinate. Terry Grey is in charge of that. The discussion ended with concerns that ongoing financing will be needed to support the long term implementation.

The next item discussed was review of the homework assignment on identifying adequate protection and gaps. Members were to identify what gaps existed in the current system and what adequate protection should be moving forward. N.Hess distributed 2 charts with the various protections existing for wetlands and OWSTs. The 1<sup>st</sup> chart showed what the current state buffers are by wetland type. The 2<sup>nd</sup> showed the current state buffers for OWTS. On each chart there was also the municipal range for additional protections for that feature, what the state NE averages are for the features, a column for the members to make an individual recommendation and a final column for a consensus recommendation. K.Flynn suggested taking 10 minutes to work on and then discuss where the group falls with proposed numbers and begin the process in coming up with recommendations.

S.Moorehead offered an alternative approach for the Task Force to consider. The registered engineers on the Task Force grouped together to propose that rather than trying to set individual buffers for individual resources that legislation should establish jurisdictional zones and let the agencies set the buffers through rule making. This would be easier, need fewer details and much simpler for the Legislature, DEM and CRMC. K.Flynn asked how a municipality with a standard higher than DEM's would feel about the idea. Where would the process end up compared to what they have now?

S. Moorehead further outlined the proposal; that the proposed jurisdictional zones should be established from the current regulated wetlands and DEM would set the buffers within the zones by rule making. This is modeled on the CRMC system. Municipal regulations would be given a sunset date. Municipalities would be allowed to petition DEM for additional protection within the rule making for identified resources much like the critical resources areas that exist now.

Much debate took place on the proposal. Members discussed that merits and drawbacks of a proposed system where DEM would make all permit decisions not local zoning boards. The intent is science-based, clear, predictable and reliable decisions. The expertise at the state agency would make the permit decisions including any special provisions the municipalities can ask for through rule making. Collectively decisions could be standardized by watersheds which cross municipal lines which does not occur now. The permits would be based on environmental standards not zoning standards and truly about the functions and values of wetlands.

T. Kravitz described Burrillville's Zoning Section 30-153, *Lots Containing Wetlands*, setback provision of 200 feet. Upon researching variance applications, Tom located 15 petitions since 2006 that were all granted except for one which was overturned in Superior Court. The average relief granted was 140 feet yielding an average setback of 60 feet. A commonality to all applications was that they were legal non-conforming lots in most cases. The only difference is that Zoning Boards would not review wetland decisions for these types of applications.

Discussion centered on whether local applications actually provide more environmental protection or just required the applicants to go through more review and expenses. Being able to petition DEM for the enhanced protection should give the municipalities what they are looking for in a clear, straightforward way. K. Flynn asked what should the jurisdictional limits should be? G. Ezovski proposed:

- 200 feet from stream and drinking water supply areas
- 100 feet from all other wetlands including vernal pools
- All other setbacks stay as is but are promulgated by DEM within jurisdictional area

Various points of views were presented and discussed concerning this proposal and the suggested numbers. Members generally agreed that the current OWTS setbacks are protective enough with additional critical resource areas that should be added. Addressing how other impacts would be addressed was raised. Jamestown needing to address localized flooding problems was cited as an example. Items required locally and not by DEM typically are; limiting impervious coverage, prohibiting basements, prohibiting excessive filling and grading, and higher level stormwater controls. It is very rare for a Zoning Board to deny these applications but the additional standards are met by the applicants are set as conditions of approval.

Since most wetland applications are insignificant alterations which the towns do not see, how will Towns comment or give input to specific permits? Where in the process would Towns like to weigh in? Ideas for soliciting municipal input considered were; notification of permits to town staff, identifying permit thresholds that would be appropriate for notices, consideration of abutter notifications, incorporating all of the additional local standards into the State regulations, and the ability to recommend conditions for the lot as a whole. Towns would have 2 ways of interacting; one would be to get a notice of applications and make comments and the other would be to recommend to DEM the specific areas they want enhanced protection for. It was agreed it is mandatory to include the towns in rulemaking in some way as it is not realistic to leave them out entirely.

The local zoning ordinance could still require other mitigation requirements but just not wetland setbacks and buffers. Examples of communities with greater drainage standards than DEM were cited (SK and Jamestown). None of these zoning requirements would go away. DEM will address only the functions and values of wetlands and ensure that the same resources get the same protection on a watershed based system not municipal boundaries. Zoning can still do all the other items for zoning purposes. Better BMPs for these items should also be included in DEM's regulations by the rule making process.

The size of the proposed jurisdictional areas was discussed and debated. Should it be 200 or 300 feet? Could critical resources areas be made part of the jurisdictional area by petition? Example was treating the Scituate Reservoir like the Salt Pond watersheds in the CRMC SAMPs. The intent is watershed based and uniform resource based protection standards. Don't ask the Legislature to set specific buffer numbers but let the agencies do through rule making. Legislation should say only that DEM/CRMC has to set standards but the standards are not considered the minimum and through rulemaking can adjust standards for the best protection necessary. Consideration of the time needed to do the necessary rule making should be included in recommendations. Also the legislation to be proposed should state that the municipalities are required to be consulted in the rule making process.

Discussion of recommendations and relevancy of what to say in the report took place. A big topic was what to say about vernal pools and the current lack of protection for these resources. It was agreed that vernal pools should be added to the resources to be protected. DEM should set buffers through rule making for vernal pools. All agreed that a summary of the science that was preformed should be included. It was pointed out that both the literature review and the summary of key scientific findings would be included based on the 9.12.14 working draft. Members felt it would also be important to acknowledge that creating this new system may create more work for DEM. An acknowledgement that additional resources would be needed to implement the new system. It was suggested that there be a page of suggestions for the new agency rules to consider.

There seemed to be a preliminary consensus that the proposal by the engineers would be a good solution, would answer the charge to the Task Force, and simplify some very complex issues for the General Assembly to address. There would need to be 2 changes; a statutory revision and then regulatory revisions. There should also be a recommendation of more support for DEM in both staff and financial resources to implement the new system. There was overall agreement that there was good progress today on recommendations.

The meeting concluded with a review of the general time line by N.Hess. The final report is due on December 31, 2014. N.Hess will continue to work with the Working Group to write up the ideas discussed today. The next meeting is scheduled for October 31, 2014. The topic will be continued review of the working draft report regarding the recommendations and other homework ideas that were discussed today. Ms. Hess asked Task Force members to email their homework to her and she will post the ideas to the website. She also asked for Members to email her any edits to the working draft.

**Adjourn**

10:00 AM



**Summary of Municipal Ordinances (2013 – 2014)**  
 For full survey see Appendix C

Community	Setback From	Applicability (type of use/ activity)	Type of Wetland	Setback Distance (ft)
Barrington (Wetlands setback & OWTS Overlay)	Building, structure or sign		wetland, waterbody, stream	100 (±)
			flowing water > 10 ft wide	200 (±)
	Land Disturbance	New/ re construction, expansion of buildings or new / modified uses of property	Coastal and freshwater wetlands ≥ 1/2 acre	100 (±)
Bristol (OWTS setback & HWF setback)	Hazardous waste management facilities and related pavement and disturbance		Fresh water wetlands, steep slopes ≥ 5% percent, other water-related environmentally sensitive areas.	1,000
	OWTS	OWTS shall comply with DEM and CRMC regulations		
Burrillville (Wetlands setback & aquifer zoning)	OWTS	Any lot with > 40% wetland area, including buffer.	Within 200 horizontal feet of a "fresh water wetland" or "river" as defined in RIGL.	200 (±)
Charlestown (Wetlands setback)	OWTS		Freshwater or coastal wetlands as defined in RIGL: river /intermittent stream < 10 ft wide.	100 (±)
			River ≥ 10 ft. wide	200 (±)
			floodplain -A or V zone	
Coventry (Wetlands setback)	OWTS		Freshwater wetland, stream, river, pond or lake	75 (±)
	Structure		Freshwater wetland, stream, river, pond or lake	50 (±)
Exeter (Wetlands setback)	Proposed Project within 300 feet of wetland	New site plans	Freshwater Wetland (As defined by RIDEM)	100 (±)
Foster (OWTS setback & Industrial PS)	Sewerage Disposal System		Freshwater wetland	200 (±)
	Proposed Project within 300 feet of wetland	Commercial and/or Industrial site plans	Freshwater wetland	100 (±)
Jamestown (OWTS setback & High water table district)	OWTS	Development - any manmade change including buildings or other structures, mining, dredging, filling, paving, excavation, or drilling on the lot.	freshwater wetland	
		Lots < 40,000 sf in mapped overlay district	na	
Little Compton (Wetlands setback)	All structures & septic systems		Freshwater and coastal wetlands	100 (±)
Middletown (Wetlands setback)	Disposal trench, cesspool, septic tank, or other leaching facility		Any bog, marsh, swamp or pond	50 (±)
			Freshwater wetlands and flowing bodies less than 10 feet wide	100 (±)
			Any river or flowing body 10 feet wide or greater	200 (±)
Narragansett (OWTS setback, Coastal and freshwater wetlands overlay district, Coastal resources overlay district)	Individual sewage disposal systems		Any coastal feature adjacent to Narrow River, Pt. Judith Pond, Wesquage Pong or other poorly flushed estuarine waters	200
	Coastal and freshwater wetlands		Any coastal or freshwater wetland	150
	Tidal waters, coastal salt ponds, and shoreline features		Tidal waters, coastal salt ponds, and shoreline features	200 (±)
New Shoreham (OWTS setback)	OWTS		150 ft. from freshwater wetland and coastal features. 200 ft from drinking water supply reservoirs and contiguous wetlands.	150, 200
Newport (Wetlands setback)	All development		Designated wetlands and coastal features	75 (±)





**Summary of Municipal Ordinances (2013 – 2014)**  
 For full survey see Appendix C

Community	Setback From	Applicability (type of use/activity)	Type of Wetland	Setback Distance (ft)
<b>North Kingstown (OWTS Setback, overlay districts)</b>	Any wastewater treatment system components	All lots created after effective date	All surface water bodies, wetlands, and coastal features, mean high tide line	150
		groundwater overlay district		
		Post Road Business District		
		Compact Village Development District		
<b>North Smithfield (Wetlands and OWTS Setbacks)</b>	OWTS (within surface water supply watersheds and town-owned school WHPAs)		freshwater wetlands	150 (>)
			Drinking water supply impoundment or tributary	200 (≥)
	Structures and Impervious Surfaces (within surface water supply watersheds and town-owned school WHPAs. Except zoning Districts RS20, MU1, and MU2, and all nonconforming RS40 lots <= 20,000 sq.ft.)		freshwater wetlands	100 (>)
<b>Portsmouth (Overlay District)</b>		High risk uses	All critical environmental areas, including reservoirs and their tributaries	95
		OWTS	reservoir	200 (≥)
<b>Scituate (Wetlands Setback)</b>	Building or structure		Any pond or stream	75
	Sewage disposal facilities			150
	All construction	subdivisions	Any wetland	100
<b>Smithfield (Wetlands Setback)</b>	All structures		Freshwater Wetlands	100 (>)
<b>South Kingstown (OWTS Special Use Permit)</b>	OWTS	construction of new dwelling or complete replacement of existing	fresh water and coastal wetlands	150 (>)
<b>Tiverton (Wetlands Setback and Overlay District)</b>	OWTS* town except Stafford Pond drinking water supply watershed	Townwide EXCEPT Stafford Pond Watershed	Several named (but not limited to) freshwater and coastal wetlands, unnamed perennial streams on UGSG map, and any other waters or wetlands defined	125 ft - single family homes; 200 ft all other uses, except where exceeded by state requirements. (≤)
	Development	Stafford or Nonquit Ponds and their direct tributaries		200 (≥)
<b>Warren (Wetlands Setback)</b>	All development		Any wetland, water body, coastal feature, or stream	50 (≤)
	ISDS			100
	Sewage disposal facilities			150
<b>Warwick (Coastal and Wetlands Setbacks)</b>	All structures, impervious surfaces, ISDS, and underground utilities		Coastal features	50 (=)
	All structures, impervious surfaces, ISDS, and underground utilities		Freshwater wetlands	50 (=)
<b>West Greenwich (OWTS Setback)</b>	Sewage disposal facilities		Any pond or stream	200 (≥)
<b>Westerly (Hazardous Facility Zoning)</b>	Hazardous Waste Management Facilities		Freshwater wetlands and other water-related sensitive areas	1,000



### Key Scientific Findings: Wetland Buffers

Wetlands perform specific functions & values including:

- Flood protection
- Water quality protection
- Wildlife and habitat
- Surface water and groundwater quality, and
- Recreation and aesthetics.

A buffer zone is a naturally vegetated protective area adjacent to wetlands and to rivers, streams, lakes, and ponds. Buffer zones protect and maintain the functions and values of these resources, minimize adverse effects of nearby land uses, and they provide additional benefits.

The minimum sizes for buffer widths (and the ranges of widths) that are recommended varies depending upon the item studied, i.e., the wetland type and functions, the wildlife species, the sensitivity of the wetland type to disturbance, and other factors. In general, wider buffers are more protective than narrow buffers.

Flood protection – a vegetated buffer zone assists with flood storage by intercepting precipitation and runoff, allowing for infiltration and reducing flow to a wetland or water resources. Climate change will lead to increased frequency, intensity, and duration of storm events. Buffer zones may moderate the effects of climate change and protect property. Buffer widths for flood attenuation range from 66 feet to 492 feet. The RI Low Impact Development Manual recommends a 25-foot buffer adjacent to the FEMA 100-year floodplain boundary to allow for variability in flood model results at a site level and to allow for changing climate.

Water Quality Protection – Buffers remove sediment from water flowing through them; they treat water by plant uptake and by transformation of nutrients into other forms; they allow for infiltration; they bind pollutants onto soil particles; and they maintain water temperatures.

Factors that influence the buffer zone effectiveness are: width, slope, slope length, soil type, surface roughness, and adjacent land uses. Buffer distance for water quality range depend upon what was the selected item studied:

- for sediment removal = 30 feet to > 100 feet
- for phosphorous removal = 30 feet to > 100 feet
- for nitrogen removal – 100 feet to > 160 feet
- **Numerous studies recommended a minimum buffer width of 100 feet for water quality purposes.**
- Maximum removal of sediment and nutrients from surface flow occurs via sheet flow through a vegetated buffer with a shallow slope <5 percent.

Wildlife and Wildlife Habitat – Buffer zones reduce disturbance to wetland-dependent wildlife caused by noise, lights and pets, provide areas for nesting, breeding and food, serve as corridors for dispersal and travel, and areas for escape from flooding.

Factors that contribute to a buffer zone's effectiveness for habitat protection include the wildlife species, the buffer width, its vegetation characteristics, and the intensity of adjacent land uses. Ranges exist from 43 feet (noise attenuation) to >5000 feet (birds) Upland riparian habitat requirements range from 10 feet to > 3 miles.



Larger buffers are required for wildlife habitat protection than are required for other wetland functions (Lichtin 2008, Environmental Law Institute 2003 and 2008), and widths may vary by wildlife species. A 100-foot minimum buffer zone provides some habitat needs for certain species, widths greater than 328 feet and is commonly recommended by scientists.

Ninety percent of Massachusetts wetland-dependent reptiles, 96% of amphibians, 100% of mammals, and 55% of wetland dependent birds have upland habitat requirements. Of 65 wetland-dependent species, 50 use from the wetland edge to 100 feet, 38 use to 200 feet, and 34 species use from the wetland edge to beyond 200 feet.

RI authors summarized general wildlife habitat as fair to good with a 250 foot buffer, good with a 328 foot buffer, and excellent with a larger buffer to almost 2000 feet.

There may be situations where larger buffers are appropriate for:

- Drinking water reservoirs
- Tributaries to drinking water reservoirs
- Rare wetland types
- Wetlands that known to have rare plants or rarer animals
- Streams that support cold water fisheries
- Sensitive wetlands such as bogs, fens, Atlantic White Cedar Swamps, vernal pools and scenic rivers.



### Key Scientific Findings: Onsite Wastewater Treatment System (OWTS)

Wastewater from an OWTS moves downward through the soil carrying pollutants into groundwater which can transport the pollutants to wetlands and waterbodies. Primary pollutants of concern from OWTSs are pathogens and nutrients.

#### Pathogens:

- Pathogenic bacteria and viruses can cause human sickness from ingestion of contaminated drinking water, recreational contact or the consumption of contaminated shellfish.

#### Nutrients:

- Nitrogen and phosphorus have a fertilizing effect on surface waters providing nutrients that if present in sufficient quantities can fuel excess algae growth resulting in adverse water quality impacts. Nitrogen has the most impact on salt waters, whereas phosphorus will impact freshwaters.
- Of growing concern are algal blooms of cyanobacteria (blue-green algae) from excess nutrients in freshwater, which release toxins that are harmful to humans, pets and livestock.
- Nitrogen is also a potential contaminant in drinking water supplies with a federal drinking water standard set at 10 mg/l nitrate.
- The impacts of increased nutrients on vegetated wetland systems are not as well documented. Nutrients transported into wetlands will be utilized by the plant community with the result that over time there are likely to be changes in the community structure reducing species richness and often favoring non-native species (Wetlands in Washington State, March 2005).

The characteristics of the subsurface through which the groundwater flows will greatly influence the contamination risk. Sands and gravels will generally have high flow rates, while compact till soils will have slower flow rates. Subsurface characteristics are highly variable across the state.

- "Characterizing subsurface flow requires extensive (and expensive) field work" (Dr. Gold).

The primary factor controlling removal of pathogens in the groundwater is filtration by the soil and time in aerobic soils to facilitate pathogen die off.

Nitrogen (in the form of nitrate-NO<sub>3</sub>) is very soluble in groundwater and does not adsorb onto soils and can travel hundreds of feet with groundwater. The mechanisms for removal are plant uptake and denitrification. Denitrification is a microbial process that converts nitrate to nitrogen gas.

- Denitrification requires an environment with a lack of oxygen and organic matter. These conditions are typical of wetland (hydric) soils and may also occur in riparian areas bordering wetlands and waterbodies.

Phosphorus in the subsurface can bind to soil particles in aerobic soils – more removal will occur in finer soils. However, there is concern that the sites for soil adsorption can reach capacity allowing continued transport of phosphorus. A more permanent removal mechanism for phosphorus is precipitation out of the flow system into a mineral form.

- OWTS derived nitrogen impacts are a more significant concern in RI than phosphorus impacts from OWTSs.

Impacts from OWTS on water quality and wetlands are in most instances the result of cumulative loadings from many individual OWTSs.

Increased separation distances between an OWTS and wetlands and waterbodies will allow for more opportunities for pollutant interactions in the soil and greater treatment potential.



## Part 4: Conclusions / Recommendations

This Section presents the conclusions and recommendations that the Task Force came to a consensus upon to answer the Legislative charge to:

1. Assess the adequacy of protection afforded to wetlands and/or waters of the State under RI General Laws § 2-1-18-25, Agricultural Functions of Department of Environmental Management, § 42-17.1, Department of Environmental Management, and § 42-64.13-10, The Rhode Island Regulatory Reform Act.
2. Identify gaps in protection for septic disposal and various wetlands.
3. Recommend statutory and/or regulatory changes that are required to protect wetlands statewide.

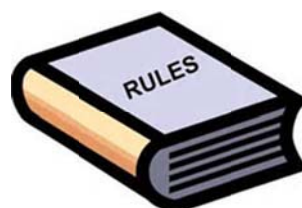
During the process the Task Force focused only on wetland buffers and OWTS setbacks. The Task Force discussions raised other issues related to wetlands and OWTS regulatory programs that were not included as part of the scope of work of the LTF. While identified, the LTF did not have sufficient time to research and discuss these additional issues. A listing of recommendations by individual members about additional topics is included in Appendix F, Other Topics.

The LTF heard from many experts offering views on the latest science which was used to assess adequacy of protection and identify gaps. In addition, the group acknowledged issues concerning conflicting standards and the need for applicants to seek and obtain, in addition to a state permit, a local variance caused by inconsistencies between State regulations and municipal ordinances in regards to protection of wetlands, lakes and ponds, and/or drinking water resources. Through the LTF discussions/deliberations, four primary themes emerged:

1. ensure that requirements for buffers are protective
2. strive to eliminate application of different wetland buffer and setback standards in state and local permitting processes
3. clarify terminology, and
4. ensure adequate funding for implementation i.e. new funding and full time employees.

There was a strong consensus to clarify terminology used in various RI State and local regulations. The term buffer in particular is used interchangeably to mean an area of naturally vegetated land adjacent to a wetland resource that must remain undisturbed, or an area where an OWTS or a building may not be located, or an area where a lawn is allowed but no structures. A recommended list of terms is enclosed as Appendix E, Glossary.

Finally, the fourth theme is funding. Providing adequate funding for the implementation of this report was flagged as a need early in the meetings. The series of recommendations in this report represents an evolution in how wetlands should be protected in RI. To truly implement this proposed system for the benefit of the State, more staff and resources will be required by the DEM. Without acknowledging this and without acting on it will doom the implementation of the new system to inefficiency which could be worse than the status quo for wetland protection.





### The Legislative Charge

1. Assessing the Adequacy of Protection.
2. Identification of Gaps in Protection.

The Task Force finds:

**The 1971 Wetlands Act as amended contains significant gaps and is not adequate to protect wetlands.** The areas adjacent to wetlands that are needed to fully protect the functions and values of all wetlands vary widely and, based on the scientific literature review and presentations, are generally greater than currently provided by either State or local current regulations. **The science indicates that water quality can be significantly improved in many cases if at least a 100-foot buffer is maintained.** Larger buffers are generally required for protection of habitat for wetland-dependent wildlife. Currently, State wetland regulations have only a 50-foot perimeter from most wetlands other than rivers and streams.

Some wetlands may be deserving of added protection because of their unique characteristics or importance to the public. However, there is no clear process by which to facilitate providing greater protection to these wetlands. Most small size wetlands such as vernal pools often have no perimeter wetland under State law and rules, and are essentially unprotected. Some small wetlands perform important functions, and some have limited value such that a buffer requirement may be waived with proper justification and consultation/approval. **Existing regulations are inadequate to protect small wetlands that are important for biodiversity and may help filter, infiltrate and store floodwaters.** These areas may not be mapped since they are small, and FEMA and other maps focus on larger systems, not small wetlands.

**In general, setbacks for OWTS established in the State OWTS regulations are felt to be sufficiently protective of the State's water resources.** These setbacks are greater for critical resource areas (drinking water supplies and coastal salt ponds) and for systems with large design flows.

There needs to be consistency between State agencies and municipalities to promote a clear, predictable and reliable regulatory system within the state of RI that is easy to follow. Currently, 25 municipalities have adopted ordinances that set forth requirements related to wetland buffers and OWTS setbacks that are considered more protective of water and wetland resources. Reflecting their lead role in regulating land use, local wetland buffer ordinances are established as authorized under State Law consistent with § 45-24- 30, General Purposes of Zoning Ordinances, which includes:

(3) Providing for orderly growth and development which recognizes:

- ii) the natural characteristics of the land, including its suitability for use based on soil characteristics, topography, and susceptibility to surface or groundwater pollution; and
- iii) the values and dynamic nature of coastal and freshwater ponds, the shoreline, and freshwater and coastal wetlands.

**As noted above, science concerning the function of natural vegetated buffers with respect to water quality and wildlife habitat provides justification for larger buffers and a sound rationale for the local ordinances.** Local ordinances also allow the municipality to apply local knowledge to the review of applications. The existence of varying State and local requirements for buffers and setbacks is considered problematic in that it leads to duplicative reviews of the same aspect of a proposed application for development or other alteration. This situation results in additional costs being expended during the application review process as well as additional uncertainty due to the varying manner in which variances to buffer requirements are authorized at the local level.



Finally, the Task Force discussed that municipalities generally lack scientific expertise that is available within the staff of the State wetlands regulatory programs. High turnover and different levels of expertise among volunteer boards and or committees (generally Zoning boards or Conservation Commissions) may result in weak findings of fact and poor decisions on applications for variances or special use permits involving wetland buffers at the municipal level.

To eliminate duplicative reviews, the State authority for regulating land development and other alterations in proximity to wetlands (and surface waters) should be enhanced by modifying RI General Law and agency rules to increase State jurisdiction. This would expand protection through the designation of larger buffer areas where warranted to achieve appropriate resource protection. However, municipalities must have assurance that state regulations for freshwater wetlands and OWTS are protective of local municipal interests to eliminate dual (state and local) permitting processes.

Currently, State approvals of freshwater wetland “insignificant alterations” exclude a process for local participation and thereby may limit the use of local knowledge of existing problems and potential impacts. Examples include drainage problems affecting municipal roads and neighboring properties, water quality impairments, and important wetland values. This is a serious concern since most State freshwater wetlands approvals are issued as “insignificant alterations” without local review. With respect to wetland buffers, proposed changes to State law to eliminate conflicting standards and duplicative review needs to recognize the value of local input and should clarify the role of local governments in the State permitting processes in order to assuage community concerns. As part of the transition to a system that eliminates duplicative reviews, municipalities should be afforded the opportunity to seek to have the State apply additional protection to designated resources in their community through State regulations. Furthermore, where larger buffers or setbacks are established to provide additional protection, as feasible they should be applied equally to all qualifying resources; e.g. larger buffer around tributary streams to drinking water supply reservoirs.

Based on the above assessment and identification of gaps, the Task Force recommends the following legislative and regulatory changes:

#### Statutory Changes

- S** Revise state law to define or redefine the terms “jurisdictional area”, “buffer”, and “setback” as they apply to wetlands regulation. The jurisdictional area should designate the resource to be protected (vegetated wetland, type of waters, etc.) and lands adjacent to the resource where activities are directly regulated. The jurisdictional area is a regulated area containing buffers and setbacks. Strict avoidance and minimization policy would apply to buffer areas within the jurisdictional area. Certain activities within the jurisdictional area may be allowed by permit or exemption as provided for in regulation. Buffer areas would designate lands intended to be maintained in an undisturbed, natural vegetated condition.
- S** Revise state law to provide state agencies with additional authority and jurisdiction in order to allow for the adoption of strengthened protective requirements for freshwater wetlands as well as the lands adjacent to these resources. (Note: As used herein the term freshwater wetlands is inclusive of flowing rivers and streams, and standing water bodies, including ponds.) The statutes affected include the Freshwater Wetlands Act, state laws establishing DEM and CRMC, as well as potentially other statutes as may be identified during legal review and bill preparation.



- Establish a jurisdictional area of 200 feet from all rivers and streams regardless of size and from drinking water supply reservoirs.
- Establish a jurisdictional area of 100 feet from all vegetative wetlands and standing bodies of water. This action would afford proper protection to lakes and ponds and other wetlands, and critical protection to vernal pools.

**DISCUSSION POINT:** What re the appropriate distances to be used to define jurisdiction; e.g. 200 feet or 300 feet?

- S** Revise state law to eliminate the terms perimeter wetlands and riverbank wetlands within the definition of freshwater wetland and instead establish the jurisdictional areas with respect to vegetated wetlands and rivers and streams. The purpose of the law would be revised to reflect protection of wetlands and adjacent areas. Other definitions should be clarified as needed to support this change.
- S** Revise state law to clarify that vernal pools are included in the definition of freshwater wetland.
- S** Revise state law to reflect a sunset provision that would phase out local authority for ordinances related to wetland buffers and OWTS setbacks and specify a definitive time deadline by which appropriate changes to both state regulations and municipal ordinances would be made in order to end the application of varying duplicate standards.

#### Regulatory Changes

- R** Revise state (DEM, CRMC) regulations to improve consistency on the use of the terms “buffer” and “setback”. Clarify and simplify the definitions used in wetland regulations where feasible.
- R** Revise state regulations to establish and specify requirements for buffers (undisturbed areas) and setbacks within the limits of authorized jurisdictional areas. Opportunities for municipal input shall be provided during rule-making process. The designation of buffers would reflect the resource characteristics and watershed protection needs and take into account existing land use.
- R** Revise regulations to include a provision in the wetland and OWTS regulations to enable petition by local communities for the identification of “Critical Resource Areas” that may need added protection.

**DISCUSSION POINT:** In order to be protective, in certain circumstances, the State may need to designate the entire jurisdictional area as a buffer area.

#### Funding

In order to implement the recommendations of this report, additional resources will be needed. Legislation must be drafted, and regulations will have to be developed, and some policies will have to be changed.

- F** Increase funding for DEM to budget for program needs and to hire additional staff in order to carry out changes.
- F** Ensure there is adequate state staff to ensure compliance with wetland buffers and conditions of approval during and after construction.





## Appendix F: Other Topics

The following are a list of other topics that came up during discussion of the Task Force but were not wetland buffer or OWST setback items. The Task Force could not address these within the limited time frame assigned to them by the Legislature but thought they were worthy of recording. These are merely related ideas generated through discussions and have not been subject to the extensive review and consensus process of the Task Force. Where possible the author of the idea is cited should anyone wish to pursue the thought further.

- The challenge presented to this Legislative Task Force resulted in review and discussion of multiple aspects of the development permitting process at both the state and local level. As the recommendations section of this report indicates, there are aspects of the process at the State level that can and should be changed to encourage our regulatory system to provide the clear, predictable and reliable paths to approvals for economic development that will also afford appropriate protection of our wetlands and water resources. The Task Force stands by those recommendations as important steps to a better process, but we must also make it very clear that changes on the State level alone will not achieve the desired outcome unless equal effort is made at the municipal level to assess the worthiness and efficiency of local processes which have too often evolved out of reaction to unattractive individual proposals and/or inadequate planning. Local zoning and land planning processes must in themselves be adequate to guide community planning and growth so environmental regulations can exist for the specific purpose of protecting wetlands and water resources without being used as de facto tools for control of density or management of utility services. [Task Force Member - Gary Ezovski]
- State regulations do not address the cumulative effects of multiple wetland alterations, OWTS approvals, and stormwater discharges within a watershed or neighborhood over time (except to some degree in CRMC SAMP areas). [Task Force Member - Lorraine Joubert]
- The Freshwater wetland regulations provide guidance on minimizing and avoiding impacts but compliance can be subjective. In addition, the guidelines are generic for all types of wetlands and sites. The previous wetlands task force recommended measurable performance standards. [Task Force Member - Lorraine Joubert]
- Consider eliminating municipal veto of FWW permits and develop better preliminary/conceptual plan review to engage local community for input during state review process of major projects. Alternatively, develop specific criteria for substantive objection only based on biological impacts under which the local community could veto. [Task Force Member – James Boyd]
- Consider establishing jurisdictional area around streams and rivers along with associated buffers based on stream order. Prioritized protection for upper order streams (headwaters). [Task Force Member – James Boyd]
- Setback reduction/credit for enhanced leach-field treatment beyond the primary treatment unit, including Cat 1 soils. [Task Force Member – Thomas D'Angelo]
- Mechanism for further reducing or crediting future advanced treatment technologies and credit / reduction for stormwater BMP are employed. [Task Force Member – Thomas D'Angelo]
- Rules should consider differing standards for existing lots of record, enhanced streamline permitting for variances, which would otherwise be approved anyway. Eliminate owner financial/ time burden. [Task Force Member – Thomas D'Angelo]