COHASSET STORMWATER ADVISORY COMMITTEE
MEETING MINUTES
5 AUGUST 2010

Present: Noel Collins, Ross Rosano, Jim Fitzgerald
Absent/Excused: None
Invited Guests: Daniel Coughlin P.E. (CES, LLC)

1. CALL TO ORDER

The meeting convened on 5 August 2010 at 7:25 PM in the Cohasset Town Basement Meeting Area (meeting was originally scheduled for 9 August 2010 but was rescheduled).

2. PREVIOUS MINUTES

The Committee reviewed the 28 July 2010 meeting minutes.

Upon a motion duly made, seconded and approved the Committee accepted the 28 July 2010 meeting minutes as presented.

3. TREAT'S POND DISCUSSION

The Committee invited Dan Coughlin (Coughlin Environmental Services, LLC) to the meeting. Coughlin was the primary author of the Town 2008 Flooding Survey Report and was invited to the meeting because of his understanding/knowledge of the stormwater and salt marsh restoration options reviewed for Treat's Pond. The Chairman indicated he had informed Ms. Quigley, Mr. Dormitzer and Mr. Nee by telephone of Mr. Caughlin's attendance at this meeting.

Prior to discussions Ross Rosano disclosed to the Committee he and his company has worked with Dan Coughlin and his company in the past and could work with him in the future, including potential assignments in the Treat's Pond watershed.

A working draft of a summary table (provided as an attachment) had been prepared by the Committee summarizing various options for addressing Treat's Pond stormwater flooding. This table provided a basis of the discussion of Treat's Pond alternative evaluated. (Note: the Town 2008 Flooding Survey Report focused on stormwater flooding only.)

According to Mr. Coughlin:

- Approximately six properties are subject to flooding from Treat's Pond.
- To address Treat's Pond stormwater flows only via Sandy Cove would require a 36" to 42" diameter line and would need to take into consideration the beach sand accretion and storm wave action. CES had estimated installation of the upgraded line with an outfall beyond the point of sand accretion and properly anchored to the sea floor would range between $1.5 M to $2.5M.

- Estimates of costs to prepare a formal conceptual design of any Sandy Cove outfall option (including sea floor survey to identify potential ledge outcrops, etc.) was estimated at $45K and the cost to prepare a detailed design package based on the conceptual design is between $15K to $25K.
- No evaluation of a suitably sized drainage line discharging above the sand accretion point was evaluated.
- Gooseneck and extension of existing drain line were evaluated and determined to not be suitable as gooseneck pipe would be difficult/impossible to keep free from sand/debris and extending existing pipe might address sand blockage concerns, but pipe would still be undersized for design flows.
- Storm surge flooding in the vicinity of Treat's Pond would not be eliminated by any of the proposed drainage options (stormwater or salt marsh restoration) based on tide surge elevations and ground elevations.
- CES had evaluated stormwater only drainage options from Treat's Pond to Cohasset Harbor and Whale's Point. These lines primarily followed same route as USACE salt marsh restoration lines but are at a higher elevation as they don't need to convey saltwater flow back to Treat's Pond.
- Discussed need for additional studies to evaluate impacts of additional fresh water flows to Cohasset Harbor.

Committee also discussed Dan Coughlin's understanding of the USACE options for salt marsh restoration and some of the issues (land taking, hydraulics, permitting, maintenance, etc.) associated with the various options.

The Committee thanked Mr. Coughlin for volunteering his time (at no cost to the Town) attending this meeting.

Following discussions with Dan Coughlin the Committee considered if it was appropriate to revisit the 2010 Annual Stormwater Report, specifically related to the Committee recommendation for hiring an engineer to evaluate all options associated with a stormwater only conveyance from Treat's Pond via Sandy Cove. Following discussion, the Committee determined no further action was required.

4. FUTURE MEETINGS

The upcoming meeting schedule was reviewed and modified as follows:

- 11 August 2010 meeting at 7:00 PM (Noel Collins to post).

5. ACTION ITEMS

Action items are discussed in the meeting minutes above.

6. NEXT MEETING

Upon a motion duly made, seconded and approved the next meeting of the Stormwater Advisory Committee was scheduled for 7:00 PM on 11 August 2010.

Meeting adjourned at 10:50 PM.

Upon a motion duly made, seconded and approved the Committee accepted the above meeting minutes during the 11 August 2010 Committee meeting.

Attested

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James D. Fitzgerald
Secretary

Attachment: Treat's Pond Stormwater Options Review Summary Table – Working Draft dated 5 August 2010

Treat's Pond Stormwater Options Review
Summary Table

Option	Description	Advantages	Disadvantages	Further Action	Total Capital Cost	Cohasset Capital Cost
No Action	Existing 24" diameter line (might be 18" diameter in certain locations along path) with outfall located in area subject to sand blockage	• Treat's Pond is located on private property	• Flooding in vicinity of Treat's Pond remains uncontrolled and continues with any storm event in excess of 5 year frequency. • Town continues to expend time and effort clearing existing outfall pipe.		$0	$0
Upgradient Stormwater Retention/Diversion Alternatives	Install approximately 36 BMPs in Treat's Pond watershed including rain gardens/ roadside detention swales and infiltration basins along Beach Street and Atlantic Avenue and additional stormwater detention in current wooded areas.	• Reduces runoff rates into Treat's Pond Brook and ultimately Treat's Pond allowing for existing drainage line to better handle flows.	• During peak storm events, even with implementation of all identified BMPs, flooding at Treat's Pond would still occur. • Stormwater detention areas are located on private property. • On-going maintenance of BMPs. • Concerns associated with adverse bacteria (indicated by elevated coliform counts) impacts to Inner Harbor where efforts are already underway to improve Inner Harbor water quality. • Town continues to expend time and effort clearing existing outfall pipe.	Incomplete/partial solution.	$120,000	$120,000
Upgradient Stormwater Retention/Diversion Alternatives including diversion to Little Harbor	Implementation of above BMP plus installation of an outfall near Cunningham Bridge.	• Diverts a potion of stormwater flow from Treat's Pond Brook and ultimately Treat's Pond.	• Little Harbor already has concerns for high bacteria (indicated by elevated coliform counts) and diversion from Treat's Pond watershed could add to this. • Could have been more cost effective if done concurrent with ongoing water/sewer/drainage project along Atlantic Ave. • Town continues to expend time and effort clearing existing outfall pipe.		$120,000	
Upgradient Stormwater Retention/Diversion Alternatives including diversion to Little Harbor	Implementation of above BMP plus installation of an outfall near Cunningham Bridge. Pipe placed at sufficient depth to draw flow from Treat's Pond Brook to Little Harbor.	• Diverts a greater portion of stormwater flow from Treat's Pond Brook and ultimately reduces flow toward Treat's Pond.	• Area were drainage pipe would be placed is known for ledge which will increase cost. • Little Harbor already has concerns for high bacteria (indicated by elevated coliform counts) and diversion from Treat's Pond watershed could add to this. • Could have been more cost effective if done concurrent with ongoing water/sewer/drainage project along Atlantic Ave. • Town continues to expend time and effort clearing existing outfall pipe.		>$600,000	>$600,000
Treat's Pond Capacity Improvements	Phragmites and other freshwater species encroachment have reduced storage capacity of Treat's Pond requiring mechanical removal and soil treatment to control.	• Increased Treat's Pond storage capacity will minimize flooding events. •	• Requires Conservation approval to implement.		$800,000	$800,000

Option	Description	Advantages	Disadvantages	Further Action	Total Capital Cost	Cohasset Capital Cost
Stormwater Only Outfall via Sandy Cove with modification of existing outfall	Extend existing Sandy Cove outfall pipe approximately 100', pipe extension would need to properly anchored to protect against storm surges	• Pipe outfall would be significantly less impacted by sand accretion. • Minimal disruption to abutter properties and can be implemented under existing easement.	• Pipe capacity would still be significantly below peak flow requirements (estimate would only be suitable for 5 year frequency storm event). • Pipe outfall subject to storm surge and other impacts.		$80,000	$80,000
Stormwater Only Outfall via Sandy Cove with modification of existing outfall	Relaying and raising the 780' Sandy Cove outfall pipe along current path to discharge at beach surface (4.0 NGVD)	•	• Elevation of Treat's Pond weir (3.73 NGVD) and the Pond bank overflow (6.7 NGVD) are not high enough to provide sufficient hydraulic gradient to convey storm event flows from Treat's Pond.	Not viable.		
Stormwater Only Outfall via Sandy Cove with modification of existing outfall	Installing a gooseneck (invert pipe) or some other screen at the Sandy Cove discharge to mitigate sand/debris blockage.	•	• Gooseneck would be above 4.0 NGVD and hydraulic gradient would not be sufficient to convey storm event flows from Treat's Pond. • Ongoing maintenance would be required to keep gooseneck clear of debris.	Not viable.		
Stormwater Only Outfall via Sandy Cove via new outfall pipe		• Provides sufficient hydraulic capacity to address peak storm events. • Addresses concerns associated with potential adverse impacts for stormwater (freshwater, nutrients and coliform) entering Inner Harbor.	• Possible concerns existing easement doesn't permit Town to make required alterations to drainage outfall.			
Stormwater Only Outfall via Inner Harbor	Install a 36" to 42" stormwater interceptor line along Atlantic Avenue with outfall near Howard Gleason Road and Margin Street. Interceptor would allow stormwater to bypass Treat's Pond. Invert of interceptor line would be higher than salt marsh restoration option since tidal flow to Treat's Pond is not required.	• Provides sufficient hydraulic capacity to address peak storm events. • Existing outfall would address drainage in immediate vicinity of Treat's Pond.	• Fecal coliform impacts on harbor ecosystem have not been fully evaluated (note, impacts could significantly be reduced with ongoing sewer extension project along Atlantic Avenue).			
Stormwater Only Outfall via Outer Harbor	Route similar to USACE salt marsh restoration but would require a smaller line and invert would be higher than salt marsh restoration option since tidal flow to Treat's Pond is not required.	• Improvements would also address some local flooding issues and poor condition drainage pipe in the vicinity of Whitehead Road.	• Fecal coliform impacts on harbor ecosystem have not been fully evaluated (note, impacts could significantly be reduced with ongoing sewer extension project along Atlantic Avenue). • Pipeline would need to cross private lands and private property owners have not been supportive. Cost of "eminent domain" taking of land would be Town expenses.			
Stormwater Only Pump Station with Sandy Beach Outfall	Construction of a stormwater pumping station near Treat's Pond and new discharge pipe in vicinity of existing Sandy Cove drainage line.	• Conveyance of stormwater from Treat's Pond no longer limited to hydraulic gradients (i.e., gravity flow).	• Requires ongoing operation and maintenance of mechanical pump station. • Requires easements for pump station. • Station would need to be flood-proof and would be unable to address coastal flooding situations. • Requires regulatory approval. • Outfall structure would need to be properly designed for surge conditions.		$700.000 to $1,200,000	$700.000 to $1,200,000

Option	Description	Advantages	Disadvantages	Further Action	Total Capital Cost	Cohasset Capital Cost
Salt Marsh Restoration via Sandy Cove	USACE Alternative 2A – 2' by 5' box culvert along existing outfall	• USACE believe would be effective for salt marsh restoration but tidal inflow would be limited to a couple of cycles per month.	•			
Salt Marsh Restoration via Sandy Cove	USACE Alternative 2B – 2' by 10' box culvert along existing outfall	• USACE believe would be effective for salt marsh restoration but tidal inflow would be limited to a couple of cycles per month.	•			
Salt Marsh Restoration via Inner Harbor	USACE Alternative 3A – 36" diameter pipe along Atlantic Avenue with outfall near Howard Gleason Road and Margin Street	• USACE preferred option for salt marsh restoration funding. • Concurrent stormwater management and salt marsh restoration in Treat's Pond. • Salt marsh restoration represents a positive impact to harbor ecosystem. •	• Bacteria (indicated by elevated coliform counts) impacts on harbor ecosystem have not been fully evaluated (note, impacts could significantly be reduced with ongoing sewer extension project along Atlantic Avenue). • Fresh water and nutrient load impacts on harbor ecosystem have not been fully evaluated. • Redirects stormwater from Treat's Pond watershed into Inner Harbor.			
Salt Marsh Restoration via Inner Harbor	USACE Alternative 3B – 48" diameter pipe along Atlantic Avenue with outfall near Howard Gleason Road and Margin Street	• USACE preferred option for salt marsh restoration funding. • Concurrent stormwater management and salt marsh restoration in Treat's Pond. • Salt marsh restoration represents a positive impact to harbor ecosystem.	• Bacteria (indicated by elevated coliform counts) impacts on harbor ecosystem have not been fully evaluated (note, impacts could significantly be reduced with ongoing sewer extension project along Atlantic Avenue). • Redirects stormwater from Treat's Pond watershed into Inner Harbor.		$1,700,000 (does not include cost of land taking which would be Cohasset's responsibility)	$600,000 (does not include cost of land taking)
Salt Marsh Restoration via Outer Harbor	USACE Alternative 4A – 42" diameter pipe along Atlantic Avenue with outfall to Whale's Meadow	• USACE modeling indicates slightly better "in-harbor" coliform counts than Inner Harbor discharge. • Improvements would also address some local flooding issues and poor condition drainage pipe in the vicinity of Whitehead Road.	• Bacteria (indicated by elevated coliform counts) impacts on harbor ecosystem have not been fully evaluated (note, impacts could significantly be reduced with ongoing sewer extension project along Atlantic Avenue). • Pipeline would need to cross private lands and private property owners have not been supportive. Cost of "eminent domain" taking of land would be Town expenses.			
Salt Marsh Restoration via Outer Harbor	USACE Alternative 4B – 42" diameter pipe along Atlantic Avenue with outfall to Whale's Meadow	• USACE modeling indicates slightly better "in-harbor" coliform counts than Inner Harbor discharge. • Improvements would also address some local flooding issues and poor condition drainage pipe in the vicinity of Whitehead Road.	• Bacteria (indicated by elevated coliform counts) impacts on harbor ecosystem have not been fully evaluated (note, impacts could significantly be reduced with ongoing sewer extension project along Atlantic Avenue). • Pipeline would need to cross private lands and private property owners have not been supportive. Cost of "eminent domain" taking of land would be Town expenses.			