

COMPREHENSIVE WASTEWATER MANAGEMENT
CITIZENS ADVISORY COMMITTEE (CAC)

March 30, 2006
Town Hall Meeting Room
Main Street, Chatham, Massachusetts - 4:00 pm

PRESENT:

CAC: Fred Jensen, David MacAdam, Bob DePatie, Burt Segall, Scott Tappan, John Randall,
and Herb Bernard

CAC members not present: John Payson, Chuck Pollard, Phil Christophe, Didi Lovett

TAG: Bob Duncanson, Bill Redfield, Judith Giorgio

Others Present: Nate Weeks (Stearns & Wheler), Mary Chesnut, Larry Larned

The meeting was called to order at 4:00 pm.

Item 1: Minutes

Approval of the minutes was postponed, pending the arrival of enough committee members to constitute a quorum.

Item 2: Evaluation of wastewater and nitrogen management strategies for the Cockle Cove Creek area. (Nate Weeks, Stearns and Wheler)

Nate Weeks presented findings of recent studies being conducted by Stearns & Wheler. The presentation (attached) included the following:

Review of four methods of wastewater management

- Title 5 septic systems

- Individual nitrogen removal systems

- Community or Cluster Systems

- Centralized wastewater system

Title 5 systems result in a nitrogen-removal of approximately 20-25%. They are not designed for nitrogen removal.

Individual nitrogen-removal systems (Bio clear, FAST, Ruck, Nitrex are examples) result in a nitrogen-removal level of approximately 50%.

Community/Cluster Systems, which include a collection system, treatment system and effluent recharge system, results in a nitrogen-removal level of approximately 75%. (Examples cited were Chatham Bars Inn and Bailey's Path subdivision.)

The existing Chatham centralized treatment facility achieves a nitrogen-removal level of approximately 88%.

We are now proposing an expanded collection system, upgraded treatment system and expanded recharge system. The new facility will be designed to achieve a nitrogen-removal level of approximately 93% (down to 3 mg/l) which is the limit of today's technology for biological processes.

A map of the Cockle Cove Creek area showing three sub-areas. We are still awaiting the results of the Cockle Cove Creek and revised MEP studies to determine ultimate TMDLs for this area. It is hoped that the study results will allow for increased discharge of highly treated effluent in this area. Sewering of the area will produce greater capacity for discharge from the treatment plant by removing septic system discharges at high nitrogen content and replacing it with highly treated effluent at low nitrogen content.

A diagram of re-charge water tracks indicate that most of the discharge tracks to the south.

Not all nitrogen in the treated water is "bioavailable" (i.e. is not available for plant uptake). In a 3 mg/l effluent, approximately 1 mg/l is generally considered non-bioavailable. The Town and S&W will be discussing with the State how this should be accounted for in determining watershed nitrogen load.

Sewers in the Cockle Cove Creek area will provide added wastewater treatment recharge capacity.

Scott Tappan asked about the nitrogen that is not bioavailable. Nate Weeks explained the chemistry relative to this issue adding that Stearns & Wheler has been discussing the ramifications of this regarding TMDLs.

Burt Segall asked about the travel time of discharge from the plant (50 to 100 years in the diagram shown previously). The implication of the slowness of travel is that the water that is already there will continue to travel to the estuary for many years. Nate Weeks noted that pathogens which may be in the current septic flows will typically die-off within a year.

Fred Jensen questioned the accuracy of the information that nitrogen in the ground travels at approximately 1 foot per day. Nate Weeks responded that the modeling done to determine water flows has been carefully done and is accurate. He also noted that some of the travel time involves vertical travel as well as horizontal travel.

Fred Jensen asked about the three sub areas in the Cockle Cove Creek area. The map provided indicated that they require nitrogen removal of 55%, 52% and 0% (pending study results). Nate Weeks explained that even the "zero-removal" area will be sewered in order to increase the recharge capacity from the treatment plant.

Fred Jensen asked if the study results provide for no change in the TMDL, what will be the impact in this area. Nate Weeks explained that even with no change in the TMDL, sewerage will allow for an expanded flow by a factor of 5.

Fred Jensen asked when we might expect to receive the report (Cockle Cove Creek study) from DEP. Bob Duncanson said that Brian Howes has indicated that the report should be available in the next few weeks.

Fred Jensen noted that the Board of Selectmen will be reviewing the information about the Cackle Cove Creek area at its meeting on April 4, 2006.

Burt Segall made the following motion, seconded by John Randall:

“That the CAC endorse the study team’s recommendation that the Cackle Cove Creek area be sewerred with the objective to accommodate increased load from the treatment plant.”

In discussion, Herb Bernard asked about priorities for sewerred. It was explained that no priorities have yet been determined. Until we get the results of the Cackle Cove Creek study, it will not be possible to determine which areas would be the most appropriate for immediate sewer development. Bob Duncanson explained that there may be a variety of concerns which impact on the decision of which area to address first, i.e., amount of stress on the waters, visibility, and other resources such as shellfish. When comparing the Stage Harbor area to the Cackle Cove Creek area, much will depend on the results of the Cackle Cove Creek study regarding allowable discharge in the Cackle Cove Creek area.

The motion passed by unanimous vote.

Item 3: Update on Work in Progress

- a. Cackle Cove Creek – discussed in Item 2.
- b. Septic tank nitrogen loading issue (35.0 vs. 26.26 mg/l): Bob Duncanson indicated that the MEP is using 2.1 kg/person/day as its septic system load figure. Stearns & Wheler is working on a review of that figure.
- c. MEP’s Pleasant Bay Study: Bob Duncanson indicated that a draft of the report has been received for staff review. A public forum is scheduled for May 25, so the report should be available prior to that date.
- d. Re-runs of the water quality model for Chatham south-side embayments: Bob Duncanson reported that these should be completed by SMAST in the next few weeks.
- e. RFP for analysis of nutrient sources in Lover’s Lake and Stillwater Pond: Bob Duncanson said that the RFP is still being developed – new data is being incorporated -- and should be completed in the next few weeks.

Fred Jensen asked if there was any expected impact from the data included in the draft of the Pleasant Bay report. Bob Duncanson said that he does not expect any major changes as a result of this report. He added that they have been looking at pre-break conditions and considering the implications of a possible return to those conditions (less tidal flushing in Pleasant Bay.)

Item 1 – Minutes of the 3/16/06 Meeting.

Minutes were approved without corrections.

Next Meeting: April 20, 2006 at 4:00 p.m.

Adjournment: The meeting was adjourned at 5:15 p.m.

Recorder: Marie Williams