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HOUSE BILL 1743*
Committee Substitute Favorable 5/26/10
Committee Substitute #2 Favorable 6/9/10
Senate Agriculture/Environment/Natural Resources Committee Substitute Adopted
6/29/10
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Short Title: Improve River Basin Modeling.

(Public)

Sponsors:

Referred to:

May 18, 2010

1 A BILL TO BE ENTITLED
2 AN ACT TO DIRECT THE DEPARTMENT OF ENVIRONMENT AND NATURAL
3 RESOURCES TO DEVELOP BASINWIDE HYDROLOGIC MODELS, AS
4 RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION.

5 The General Assembly of North Carolina enacts:

6 SECTION 1. G.S. 143-350 reads as rewritten:

7 "§ 143-350. Definitions.

8 As used in this Article:

9 ...

10 (3) "Essential water use" means the use of water necessary for firefighting,
11 health, and safety; water needed to sustain human and animal life; and water
12 necessary to satisfy federal, State, and local laws for the protection of public
13 health, safety, welfare, the environment, and natural resources; and a
14 minimum amount of water necessary to ~~maintain~~ support and sustain the
15 economy of the State, region, or area.

16"

17 SECTION 2. G.S. 143-355 is amended by adding a new subsection to read:

18 "(o) Basinwide Hydrologic Models. – The Department shall develop a basinwide
19 hydrologic model for each of the 17 major river basins in the State as provided in this
20 subsection.

21 (1) Definitions. – As used in this subsection:

22 a. "Ecological flow" means the stream flow necessary to protect
23 ecological integrity.

24 b. "Ecological integrity" means the ability of an aquatic system to
25 support and maintain a balanced, integrated, adaptive community of
26 organisms having a species composition, diversity, and functional
27 organization comparable to prevailing ecological conditions and,
28 when subject to disruption, to recover and continue to provide the
29 natural goods and services that normally accrue from the system.

30 c. "Groundwater resource" means any water flowing or lying under the
31 surface of the earth or contained within an aquifer.



1 d. "Prevailing ecological conditions" means the ecological conditions
2 determined by reference to the applicable period of record of the
3 United States Geological Survey stream gauge data, including data
4 reflecting the ecological conditions that exist after the construction
5 and operation of existing flow modification devices, such as dams,
6 but excluding data collected when stream flow is temporarily
7 affected by in-stream construction activity.

8 e. "Surface water resource" means any lake, pond, river, stream, creek,
9 run, spring, or other water flowing or lying on the surface of the
10 earth.

11 (2) Schedule. – The Department shall develop a schedule for basinwide
12 hydrologic model development. In developing the schedule, the Department
13 shall give priority to developing hydrologic models for river basins or
14 portions of river basins that are experiencing or are likely to experience
15 water supply shortages, where the ecological integrity is threatened or likely
16 to become threatened, or for which an existing hydrologic model has not
17 been developed by the Department or other persons or entities.

18 (3) Model. – Each basinwide hydrologic model shall:

19 a. Include surface water resources within the river basin, groundwater
20 resources within the river basin to the extent known by the
21 Department, transfers into and out of the river basin that are required
22 to be registered under G.S. 143-215.22H, other withdrawals,
23 ecological flow, instream flow requirements, projections of future
24 withdrawals, an estimate of return flows within the river basin,
25 inflow data, local water supply plans, and other scientific and
26 technical information the Department deems relevant.

27 b. Be designed to simulate the flows of each surface water resource
28 within the basin that is identified as a source of water for a
29 withdrawal registered under G.S. 143-215.22H in response to
30 different variables, conditions, and scenarios. The model shall
31 specifically be designed to predict the places, times, frequencies, and
32 intervals at which any of the following may occur:

33 1. Yield may be inadequate to meet all needs.

34 2. Yield may be inadequate to meet all essential water uses.

35 3. Ecological flow may be adversely affected.

36 c. Be based solely on data that is of public record and open to public
37 review and comment.

38 (4) Ecological flow. – The Department shall characterize the ecology in the
39 different river basins and identify the flow necessary to maintain ecological
40 integrity. The Department shall create a Science Advisory Board to assist the
41 Department in characterizing the natural ecology and identifying the flow
42 requirements. The Science Advisory Board shall include representatives
43 from the Divisions of Water Resources and Water Quality of the
44 Department, the North Carolina Wildlife Resources Commission, the North
45 Carolina Marine Fisheries Commission, and the Natural Heritage Program.
46 The Department shall also invite participation by the United States Fish and
47 Wildlife Service; the National Marine Fisheries Service; representatives of
48 organizations representing agriculture, forestry, manufacturing, electric
49 public utilities, and local governments, with expertise in aquatic ecology and
50 habitat; and other individuals or organizations with expertise in aquatic
51 ecology and habitat. The Department shall ask the Science Advisory Board

1 to review any report or study submitted to the Department for consideration
2 that is relevant to characterizing the ecology of the different river basins and
3 identifying flow requirements for maintenance of ecological integrity. The
4 Department shall consider such other information, including site specific
5 analyses, that either the Board or the Department considers relevant to
6 determining ecological flow requirements.

7 (5) Interstate cooperation. – To the extent practicable, the Department shall
8 work with neighboring states to develop basinwide hydrologic models for
9 each river basin shared by North Carolina and another state.

10 (6) Approval and modification of hydrologic models. –

11 a. Upon completion of a hydrologic model, the Department shall:

12 1. Submit the model to the Commission for approval.

13 2. Publish in the North Carolina Register notice of its
14 recommendation that the Commission approve the model and
15 of a 60-day period for providing comment on the model.

16 3. Provide electronic notice to persons who have requested
17 electronic notice of the notice published in the North Carolina
18 Register.

19 b. Upon receipt of a hydrologic model, the Commission shall:

20 1. Receive comment on the model for the 60-day period noticed
21 in the North Carolina Register.

22 2. Act on the model following the 60-day comment period.

23 c. The Department shall submit any significant modification to an
24 approved hydrologic model to the Commission for review and
25 approval under the process used for initial approval of the model.

26 d. A hydrologic model is not a rule, and Article 2A of Chapter 150B of
27 the General Statutes does not apply to the development of a
28 hydrologic model.

29 (7) Existing hydrologic models. – The Department shall not develop a
30 hydrologic model for a river basin for which a hydrologic model has already
31 been developed by a person or entity other than the Department, if the
32 Department determines that the hydrologic model meets the requirements of
33 this subsection. The Department may adopt a hydrologic model that has been
34 developed by another person or entity that meets the requirements of this
35 subsection in lieu of developing a hydrologic model as required by this
36 subsection. The Department may make any modifications or additions to a
37 hydrologic model developed by another person or entity that are necessary to
38 meet the requirements of this subsection.

39 (8) Construction of subsection. – Nothing in this subsection shall be construed
40 to vary any existing, or impose any additional regulatory requirements,
41 related to water quality or water resources.

42 (9) Report. – The Department shall report to the Environmental Review
43 Commission on the development of basinwide hydrologic models no later
44 than November 1, of each year."

45 **SECTION 3.** The first report required by G.S. 143-355(o), as enacted by Section 2
46 of this act, is due no later than November 1, 2011.

47 **SECTION 4.** This act is effective when it becomes law.