

Vermont Department of Environmental Conservation*Agency of Natural Resources*

Commissioner's Office

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To: Senator Brian Collamore and Representative Maida Townsend, Co-Chairs, Government Accountability Committee

From: Emily Boedecker, Commissioner, Department of Environmental Conservation

Date: December 6, 2017

Re: Population Level Outcomes and Indicators: Outcome 3 - Vermont's Environment is Clean and Sustainable

Here is additional information to support the changes we discussed during the committee meeting on November 14, 2017. Specially, there was interest among the committee members to reduce the number of indicators under Outcome 3 – Vermont's Environment is Clean and Sustainable. The Department's proposed revisions and answers to several questions raised during my testimony are included below. Please note one change from the revisions discussed last week under indicator (D), we proposed to delete the reference to inland waters and replace it with "rivers and lakes (excluding Lake Champlain)"

Proposed edits to current Indicators:

- (A) percent of public drinking water supplies in compliance with health based standards
- (B) total greenhouse gas (GHG) emissions per capita, in units of annual metric tons of "equivalent carbon dioxide" (CO₂e) per capita
- (C) percent of Vermont retail electric sales from renewable energy [Moved to Outcome #9 - Not reported by DEC]
- (D) percent of Vermont's rivers and lakes ~~inland waters (excluding Lake Champlain)~~ that meet State water quality standards;
 - ~~Aquatic (fishable)~~ for fishing
 - ~~Recreation (swimmable)~~ for swimming
- ~~(E) percent of Lake Champlain that meets State water quality standards;~~
 - ~~• Aquatic (fishable)~~
 - ~~• Recreation (swimmable)~~
- (F) Changes in total phosphorus loading to Lake Champlain from Vermont sources (metric tons/year)

(G) ~~total n~~Number of days with air alerts quality in Vermont posed a moderate or greater risk to sensitive populations;

(H) disposal rate of municipal solid waste in pounds per person per day

~~(I) total number of acres that has been or will be cleaned up/redeveloped based on sites enrolled in the Brownfields reuse environmental liability limitation act~~

Questions related to water quality indicators.

Question: Is it possible to provide (D) percent of Vermont's rivers and lakes (excluding Lake Champlain) this as one number instead of reporting separately as "fishable" and "swimmable"?

Response: Yes, it is possible to combine values for fishable and swimmable however, we propose to keep them separated to track trends over time. The standards applied to determine fishable and swimmable are different and this is how the Department currently tracks information.

Question: How are standards for fishable and swimmable different?

Response: Vermont water quality standards are used to assess the condition of waterbodies, and if the condition supports the waterbodies' designated uses. Support of the swimmable designated use is typically assessed based on pathogens (measured by E.coli) to determine if water quality is safe to human health for swimming. Swimmable may also be assessed based on aesthetics, such as clean water and lack of excessive algae or invasive plants. Support of the healthy aquatic life designated use (fishable) is typically assessed directly by measuring the types and diversity of biota in the water. Excessive levels of nutrients, sediment, or metals are often the types of pollution that negatively affect aquatic biota, thus fishing. Poor habitat condition can also limit a waterbody meeting water quality standards for "fishable."

Question: Why isn't Lake Champlain considered an inland water and can we change this to say "Percent of inland waters (excluding Lake Champlain) that meet water quality standards?"

Answer: Lake Champlain water quality condition is assessed differently than inland lakes. Percent of lakes meeting water quality standards is calculated based on acres. Including Lake Champlain with other lakes skews the data because of the size of Lake Champlain.