

**ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River**  
**May 4, 2016**

---

**Outline of Report:**

1. Purpose Statement and Anticipated Changes...1
  2. Information Available and Reviewed to-date...2
  3. Information Not Yet Available for Review...8
  4. Assumptions Made...8
  5. Regulatory Requirements...9
  6. Expected Changes Due to Relicensing...11
- 

**1. Purpose Statement and Anticipated Changes**

This report is intended to provide the Vermont Hydropower Working Group with information regarding the Federal Energy Regulatory Commission (FERC) licensing and Section 401 certification process for three TransCanada dams on the lower Connecticut River and potential reductions in generation or revenue to these facilities that may occur as a result of this process.

The Vermont Agency of Natural Resources (ANR) has limited information regarding these facilities and has therefore made assumptions in order to make a recommendation. TransCanada has not yet submitted a preliminary application to FERC or completed all environmental studies necessary for the resource agencies to commence environmental review. Once the reports are received, it could take over a year for the resource agencies to complete their review and it is possible that the resource agencies will request additional studies. In addition, these facilities implicate waters regulated by both Vermont and New Hampshire. As a result, the New Hampshire Department of Environmental Services (NHDES) will need to conduct its own environmental review of the facilities and may impose conditions in addition to the conditions that Vermont is likely to require.

ANR offers recommendations based on recent relicensing processes undergone by hydroelectric facilities in Vermont, as well as the information available regarding the TransCanada facilities. Based on this information, TransCanada's facilities will likely be required to reduce or eliminate peaking operations and operate the facilities in a manner that is more consistent with run-of-river flows. These changes will have a significant impact on the amount of electricity generated.

The facilities' current licenses are decades old and therefore the facilities have not undergone environmental review under modern environmental law. Contemporary environmental law is significantly more stringent and typically requires higher minimum conservation flows and the reduction or elimination of water level fluctuations associated with peaking practices. In recent

# **ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River**

**May 4, 2016**

**Page 2 of 12**

cases where older facilities have undergone environmental review associated with relicensing, ANR has required significant increases in minimum conservation flows and reductions in water level fluctuations in order to find reasonable assurance that the facilities will not violate applicable water quality standards. The impacts of increased conservation flows could be reduced generation or reduced revenue due to timing restrictions. In addition, other infrastructure investments may be necessary to implement these required operational changes.

As a result, ANR recommends that the Vermont Hydropower Working Group anticipate that the relicensing process for TransCanada's dams on the lower Connecticut River will result in a significant reduction in revenue for these facilities, potentially as much 30 percent.

## **2. Information Available and Reviewed to-date**

Current Status of the FERC Licenses:

### Lower Connecticut River

- TransCanada owns and operates three facilities on the Lower Connecticut River with FERC licenses that will expire in April 2019. These facilities are Wilder, Bellows Falls, and Vernon. Each facility currently operates under its own FERC license.
- FERC's licensing review process is currently underway, but TransCanada has not yet filed the license application. The applicant's preliminary licensing proposal is due to FERC in December 2016 and the FERC license proposal is due in April, 2017.
- The applicant has completed the field work necessary for the environmental review process, but the resource agencies and FERC have not received all of the reports yet and do not expect to receive them until August, 2016. Once these reports are received, the resource agencies will review and request additional studies if they determine that additional studies are necessary. For example, the resource agencies submitted a comment letter to FERC on May 2, 2016 requesting that FERC require the applicant to do an additional year of study to assess upstream eel passage at all three of the lower Connecticut River facilities, as well as an additional aesthetics study at the Bellows Falls facilities. The resource agencies include Vermont Agency of Natural Resources (ANR), as well as the U.S. Fish & Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA), NHDES, and the New Hampshire Fish and Game Department (NH Fish & Game).

### Deerfield River

- TransCanada owns and operations eight facilities on the Deerfield River. Three of the facilities are in Vermont (Somerset, Searsburg, and Harriman) and five are located in Massachusetts (Sherman, Deerfield No. 2, Deerfield No. 3, Deerfield No. 4, and Deerfield No. 5).

# **ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River**

**May 4, 2016**

**Page 3 of 12**

- FERC issued a 40-year license for all of the facilities as part of one project license on April 4, 1997. As a result, the license will expire in the year 2037 and the relicensing process will begin 5.5 years prior to the license expiration. The 2000 revisions to the Vermont Water Quality Standards added new requirements that affect hydropower facilities, such as the hydrology policy, the hydrology criteria, and more specifics regarding aquatic biota and habitat. Therefore, the relicensing process will likely result in required operational changes to comply with modern environmental law.

## Upper Connecticut River

- TransCanada owns Fifteen Mile Falls, which is a complex of three facilities (Moore, Comerford, and McIndoes) on the Connecticut River.
- FERC issued a 40-year license for all of the facilities as part of one project license on April 8, 2002.<sup>1</sup> As a result, the license will expire in the year 2042 and the relicensing process will begin 5.5 years prior to the license expiration. Since the license was issued after the 2000 amendments to the Vermont Water Quality Standards but as the result of a settlement agreement, it is likely that the relicensing process for this complex will still require some operational changes to comply with modern environmental law.<sup>2</sup>

## Site-Specific Information about the Lower Connecticut River Facilities:

### Vernon Facility

- The Vernon facility is currently operated as a peaking plant.<sup>3</sup> The minimum flow required under the current license is 1250 cfs and the peak generation flow is 14,250 cfs.
- The Vernon facility's maximum generation capacity is 32.4 MW and the facility's average annual generation is 137,344 MWH.<sup>4</sup>

---

<sup>1</sup> The water quality certification issued to the Fifteen Mile Falls complex was the result of a settlement agreement between USGenNE (the previous owner of the facilities), the State of Vermont, the State of New Hampshire, U.S. Fish & Wildlife Service, the Environmental Protection Agency, the National Park Service, Appalachian Mountain Club, the Connecticut River Joint Commission, the Connecticut River Watershed Council, Conservation Law Foundation, the New Hampshire Rivers Council, the New Hampshire Council of Trout Unlimited, and the Northeast Chapter of Vermont Trout Unlimited.

<sup>2</sup> For example, the license requires that the Licensee conduct studies on water quality and develop a number of different management plans that address fisheries, plant communities, threatened and endangered species, recreation, and cultural resources. Depending on the studies done as part of the relicensing process, Vermont and New Hampshire may determine that the management plans are insufficient to meet water quality standards and additional conditions are necessary.

<sup>3</sup> It is unclear to ANR whether the facility is designed to operate strictly as a peaking plant or whether it could operate over the course of more hours at lower output during those hours, as opposed to optimizing production during peak hours.

<sup>4</sup> This data and the data presented in tables regarding average generation and average discharges at the Vernon facility is extracted from pages 2-36 and 2-37 of TransCanada's October 2012 Pre-Application Document for the Vernon Project.

# ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River

May 4, 2016

Page 4 of 12

- The environmental concerns applicable to this facility include:
  - Reservoir water level fluctuations. The facility currently operates as a peaking plant that requires significant fluctuations to the reservoir level. The resource agencies are very likely to require a reduction in water level fluctuations in order to better protect littoral habitat. The amount of the reduction will depend on the information provided in the applicant's habitat studies.
  - Downstream flows. The facility's peaking regime results in pulsing flows downstream. The resource agencies are very likely to require an increase in minimum downstream flows, which will result in less water being stored in the reservoir during drier months. The specific flows requirements will depend on the information provided in the applicant's habitat studies.
  - Eel passage. The resource agencies have already identified that eel passage needs additional study and will be filing a comment letter to FERC requesting that FERC require the applicant to do an additional year of study to assess upstream eel passage at the Vernon facility. Depending on the information provided in these studies, the resource agencies may require modification or additional upstream passage facilities to provide safe, timely and effective passage for eels.
  - American Shad passage and spawning habitat. The resource agencies have not yet received reports on the adult and juvenile American Shad population. Depending on the information provided in these studies, the resource agencies may require modifications to the upstream fish passage facilities or habitat protection measures, such as flow requirements.

Average generation in MWH by month (years 2000-2012)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
12,269	10,041	13,903	13,144	15,375	12,389	9,325	8,692	6,547

Average generation in MWH by month (years 2000-2011)<sup>5</sup>

Oct	Nov	Dec						
9,955	12,746	12,959						

Average discharges in cfs by month (years 2000-2012)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
10436	7481	16804	29064	17725	11273	7083	6874	5303

---

<sup>5</sup> TransCanada had not yet collected data for October-December 2012 when assembling its October 2012 Pre-Application Document and therefore these monthly averages are based on data collected from years 2000-2011.

# ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River

May 4, 2016

Page 5 of 12

Average discharges in cfs by month (years 2000-2011)<sup>6</sup>

Oct	Nov	Dec					
11752	13367	14037	12821				

## Wilder Facility

- The Wilder facility is currently operated as a peaking plant.<sup>7</sup> The minimum flow required under the current license is 675 cfs and the peak generation flow is 12,000 cfs.
- The Wilder facility's maximum generation capacity is 36.6 MW and its average annual generation is 158,469 MWH.<sup>8</sup>
- The environmental concerns applicable to this facility include:
  - Reservoir water level fluctuations. The facility currently operates as a peaking plant that requires significant fluctuations to the reservoir level. The resource agencies are very likely to require a reduction in water level fluctuations in order to better protect littoral habitat. The amount of the reduction will depend on the information provided in the applicant's habitat studies.
  - Downstream flows. The facility's peaking regime results in pulsing flows downstream. The resource agencies are very likely to require an increase in minimum downstream flows, which will result in less water being stored in the reservoir during drier months. The specific flows requirements will depend on the information provided in the applicant's habitat studies.
  - Endangered species. The federally listed endangered Dwarf wedge mussel has been found downstream of the Wilder facility and upstream of the Bellows Falls facility. Therefore, USFWS will determine what critical habitat must be protected after the applicant files the report with FERC. In addition, the state listed endangered Cobblestone tiger beetle has been found to be present in waters affected by all three facilities, so ANR will need to assess the potential impacts of the project on this state listed species.

---

<sup>6</sup> TransCanada had not yet collected data for October-December 2012 when assembling its October 2012 Pre-Application Document and therefore these monthly averages are based on data collected from years 2000-2011.

<sup>7</sup> It is unclear to ANR whether the facility is designed to operate strictly as a peaking plant or whether it could operate over the course of more hours at lower output during those hours, as opposed to optimizing production during peak hours

<sup>8</sup> This data and the data presented in tables regarding average generation and average discharges at the Wilder facility is extracted from pages 2-34 and 2-35 of TransCanada's October 2012 Pre-Application Document for the Wilder Project.

# ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River

May 4, 2016

Page 6 of 12

Average generation in MWH by month (years 2000-2012)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
13,245	9,164	16,097	20,468	18,858	12,522	9,765	8,963	7,293

Average generation in MWH by month (years 2000-2011)<sup>9</sup>

Oct	Nov	Dec					
12,158	14,904	15,031					

Average discharges in cfs by month (years 2000-2012)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
5728	3754	5679	5702	5295	6874	6783	5563	7381

Average discharges in cfs by month (years 2000-2011)<sup>10</sup>

Oct	Nov	Dec					
6486	6234	699					

## Bellows Falls Facility

- The Bellows Falls facility is currently operated as a peaking plant.<sup>11</sup> The minimum flow required in the current license is 1083 cfs and its peak generation flow is 12,300 cfs.
- The Bellows Falls facility's maximum generation capacity is 40.8 MW and its average annual generation is 248,887 MWH.<sup>12</sup>
- The environmental concerns applicable to this facility include:
  - Reservoir water level fluctuations. The facility currently operates as a peaking plant that requires significant fluctuations to the reservoir level. The resource agencies are very likely to require a reduction in water level fluctuations in order

<sup>9</sup> TransCanada had not yet collected data for October-December 2012 when assembling its October 2012 Pre-Application Document and therefore these monthly averages are based on data collected from years 2000-2011.

<sup>10</sup> TransCanada had not yet collected data for October-December 2012 when assembling its October 2012 Pre-Application Document and therefore these monthly averages are based on data collected from years 2000-2011.

<sup>11</sup> It is unclear to ANR whether the facility is designed to operate strictly as a peaking plant or whether it could operate over the course of more hours at lower output during those hours, as opposed to optimizing production during peak hours.

<sup>12</sup> This data and the data presented in tables regarding average generation and average discharges at the Bellows Falls facility is extracted from pages 2-34 and 2-35 of TransCanada's October 2012 Pre-Application Document for the Bellows Falls Project.

# ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River

May 4, 2016

Page 7 of 12

to better protect littoral habitat. The amount of the reduction will depend on the information provided in the applicant's habitat studies.

- Downstream flows. The facility's peaking regime results in pulsing flows downstream. The resource agencies are very likely to require an increase in minimum downstream flows, which will result in less water being stored in the reservoir during drier months. The specific flows requirements will depend on the information provided in the applicant's habitat studies.
- Endangered species. The federally listed endangered Dwarf wedge mussel has been found downstream of the Wilder facility and upstream of the Bellows Falls facility. Therefore, USFWS will determine what critical habitat must be protected after the applicant files the report with FERC.
- Bypass reach flows. The Bellows Falls facility has a bypass reach in which TransCanada currently only passes leakage. The resource agencies are very likely to require minimum flows in the bypass reach, which may mean a reduction in power generation unless a turbine is installed.
- Historic Preservation. Petroglyphs are present in the bypass reach, so historical preservation measures may be required. Historic preservation is outside the scope of this report.

Average generation in MWH by month (years 2000-2012)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
22,204	16,795	24,484	27,755	28,438	22,458	16,485	14,323	11,406

Average generation in MWH by month (years 2000-2011)<sup>13</sup>

Oct	Nov	Dec						
18,317	22,674	23,547						

Average discharges in cfs by month (years 2000-2012)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
8565	6134	12674	24382	14492	9100	6108	5886	4299

---

<sup>13</sup> TransCanada had not yet collected data for October-December 2012 when assembling its October 2012 Pre-Application Document and therefore these monthly averages are based on data collected from years 2000-2011.

# ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River

May 4, 2016

Page 8 of 12

Average discharges in cfs by month (years 2000-2011)<sup>14</sup>

Oct	Nov	Dec					
9744	10675	11138					

### 3. Information Not Yet Available for Review

- Environmental studies are needed to establish a baseline for the state environmental review and not all studies have been completed.
- Information regarding the facilities' structural assessments are unavailable because this information is held as classified Critical Energy Infrastructure Information (CEII) under the Patriot Act. FERC requires licensees to conduct structural assessments under a FERC Part 12D inspection every five years, so the information exists but is inaccessible to ANR at present.

### 4. Assumptions Made and Caveats

#### Assumptions Made

- Based on recent relicensing processes, peaking will likely be reduced or eliminated and operations that are more consistent with run-of-river may be required, which will have a significant impact on the amount of electricity generated. Recent relicensing processes include Waterbury Dam and the Morrisville Water & Light facilities.
- Certain upgrades are likely needed to address environmental concerns at the three facilities:
  - Bellows Falls facility will need to ensure minimum flows are passed in the bypass reach. As a result, TransCanada may determine that a new bypass flow turbine should be installed to ensure flows being passed could also generate power.
  - Depending on the operational and flow management requirements set by the resource agencies, TransCanada may need to install different or additional turbines at the facilities to pass the appropriate flows. This situation would arise if a hydraulic gap exists between the lowest quantity of flows that can be passed by the peaking turbines and the maximum flows that can be passed by the current low flow turbines.
  - The fish ladder facilities will need to be operated and improved at all three projects to pass anadromous species in a safe, timely, and effective manner.

---

<sup>14</sup> TransCanada had not yet collected data for October-December 2012 when assembling its October 2012 Pre-Application Document and therefore these monthly averages are based on data collected from years 2000-2011.

# ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River

May 4, 2016

Page 9 of 12

- All facilities will need to upgrade the present track racks to trash racks with smaller openings to prevent fish entrainment and impingement. For example, the trash rack at Wilder is currently 5.5" and a 1" track rack is necessary to prevent fish mortality.

## Caveats

- TransCanada has not yet submitted a preliminary application to FERC or completed the requisite environmental studies, and the resource agencies have not received the reports necessary to commence environmental review. Once the reports are received, it could take over a year for the resource agencies to complete their review, and it is possible that the resource agencies will request that FERC require additional studies.
- The assumptions made in this report are based on the recent relicensing processes that have occurred in Vermont for hydroelectric facilities operating under older FERC licenses that did not require the current level of environmental review. These facilities include the Waterbury Dam and the Morrisville Water & Light dams.
- Other states may require additional conditions beyond those required by Vermont. New Hampshire will also need to review all licensing proposals for the Wilder, Bellows Falls, and Vernon facilities as well as the Fifteen Mile Falls facilities and Massachusetts will need to review all licensing proposals for the Sherman, Deerfield No. 2, Deerfield No. 3, Deerfield No. 4, and Deerfield No. 5 facilities on the Deerfield River. It is possible that these states may require additional conditions beyond those required by Vermont.
- The anticipated requirements to increase conservation flows and reduce water level fluctuations are likely to result in a reduction of generation capacity or timing restrictions. However, TransCanada could minimize these losses by investing in infrastructure upgrades, such as a turbine for the Bellows Falls bypass reach, that optimize power generation. Because the specific conditions necessary for compliance with modern environmental law are still unknown, it is impossible to speculate what amount of loss could be abated by infrastructure upgrades or other optimization measures.

## 5. Regulatory Requirements

### General Regulatory Requirements

#### Federal Law

- **Federal Power Act and the FERC Process.** FERC's jurisdiction to license hydroelectric facilities derives from the Federal Power Act. As part of the licensing review process, FERC must conduct an environmental assessment that analyzes the consequences of issuing a license and reasonable alternatives to issuing the license. FERC receives comments from resource agencies and issues a final EA prior to issuing a license. *See* attached flowchart.

## ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River

May 4, 2016

Page 10 of 12

- **Clean Water Act.** Under Section 401 of the Clean Water Act, states must certify or waive certification that federal license applicant facilities' operations will comply with substantive provisions of the Clean Water Act. Vermont and New Hampshire must both review and certify the facilities prior to facilities obtaining FERC licenses.
- **Endangered Species Act.** FERC is required to consult with USFWS and NOAA to ensure that the licensed activity will not jeopardize the continued existence of listed species or adversely impact listed species or their habitat. USFWS and NOAA share jurisdiction for implementing the ESA and USFWS is taking the lead in reviewing the TransCanada projects on the Lower Connecticut regarding the Dwarf wedge mussel. If USFWS determines that the listed species or their habitat may be adversely impacted, USFWS may set conditions to protect and recover the species in the form of reasonable and prudent alternatives (RPA) or measures (RPM). FERC typically includes such conditions in the issued license.

### State Law

- **Vermont Water Quality Standards.** The VWQS require that water uses are protected and maintained, that water quality criteria are achieved, and that high quality waters are maintained. The VWQS also include a hydrology policy and hydrology criteria that require that any interruption of natural flow regime or fluctuation of water levels resulting from the operation of dams, diversion, and other control structures not prevent the full support of uses. Applicants typically conduct a site-specific flow determination to make this demonstration.
  - The uses that must be protected and maintained at the Connecticut River waters include recreation, aesthetics, and aquatic biota, wildlife, and aquatic habitat.
  - The water quality criteria that must be achieved in the Connecticut River waters include the aquatic habitat, aesthetics, dissolved oxygen, and temperature criteria.
  - A 401 certification from Vermont is likely to include conditions such as minimum flows, water level fluctuation reductions or elimination, water quality monitoring, and other operational requirements necessary to ensure that the VWQS are met.
- **Vermont Endangered Species Act.** If there is a reasonable likelihood that the project will result in a take of the state listed species, such as the Cobblestone tiger beetle, then conditions to protect and recover the species will be required as part of the 401 certification. Such conditions might include a habitat conservation plan or operational changes that minimizes and mitigate harm to the impacted species during operations.
- **New Hampshire Water Quality Standards.** The NHWQS also require that water uses be protected, numeric and narrative criteria are achieved, and high quality waters

# **ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River**

**May 4, 2016**

**Page 11 of 12**

be maintained. However, ANR cannot opine on what NHDES may require as a result of its review process.

## **Site-Specific Regulatory Requirements**

- Based on the examples of the recent facilities that have undergone relicensing, the resource agencies are likely to require an increase in minimum stream flows downstream of the facilities and in the bypass reach at Bellows Falls, in order to protect aquatic biota and habitat, including the endangered species. The resource agencies will also likely require minimum flows to ensure that aesthetics and recreation uses are supported.
- For the same reasons listed above, the resource agencies are likely to require increased seasonal conservation flows.
- The resource agencies are also likely to require a reduction or elimination of water level fluctuations of the impoundments and generation flows. The reduction or elimination of water level fluctuations may be required to support littoral aquatic biota and habitat.
- The resource agencies are likely to require that TransCanada upgrade its track racks to protect aquatic life and biota by reducing fish entrainment or impingement.
- The resource agencies are likely to require that TransCanada improve fish passage upstream and downstream of the facilities by maintaining and operating fish ladders to provide safe, timely and effective passage of fish species.
- The resource agencies are requesting an additional year of study regarding eel passage at the three facilities. If current operations interrupt eel passage, the resource agencies are likely to require a habitat conservation plan or operational changes that minimizes and mitigates harm to the impacted species during operations.
- The resources agencies may require a recreation management plan. Recreation is a use under the Vermont Water Quality Standards that must be protected and maintained. Most recreational uses are supported by minimum flows necessary to support aquatic life and habitat, so ANR typically focuses on ensuring that the aquatic life and habitat use is supported and the aquatic life and habitat criteria are achieved. However, ANR does often include recreation conditions in its 401 certifications that are separate and apart from the conditions required to support aquatic life and habitat. For example, at Waterbury Dam, ANR required that the licensee develop a recreation management plan.

## **6. Expected Changes Due to Relicensing**

Although it is impossible to provide clear estimates of how much the relicensing process will reduce generation capacity or revenue, it is almost certain that some loss of revenue will occur. As explained above, TransCanada has not yet submitted a preliminary application to FERC or even completed all environmental studies necessary for the resource agencies to commence environmental review. Once the reports are received, it could take over a year for the resource agencies to complete their review and there is always the possibility that the resource agencies

**ANR REPORT: Natural Resources Issues for Relicensing TransCanada's Three Dams on the Lower Connecticut River**

**May 4, 2016**

**Page 12 of 12**

will request additional studies. Even once Vermont has reviewed these materials and determined the necessary conditions, it is possible that New Hampshire or USFWS may require additional conditions beyond those required by Vermont.

The recent relicensing processes undergone in Vermont serve as examples that older hydroelectric facilities must undertake significant operational changes in order to comply with modern environmental law. Based on these recent relicensing processes, peaking will likely be reduced or eliminated and operations that are more consistent with run-of-river are likely to be required, which will have a significant impact on the amount of electricity generated. In addition, these requirements may force the facilities to make structural and technological upgrades. Revenue may also decrease as a result of timing restrictions. Timing restrictions will not necessarily decrease generation, but will require that generation occur during non-peak hours, which will result in reduced revenue.

In light of the above-mentioned caveats provided and assumptions made, ANR recommends that the Vermont Hydropower Working Group anticipate that TransCanada's dams on the lower Connecticut River will see a reduction of up to thirty percent in revenue as a result of the relicensing process.