In June 2005, the Connecticut General Assembly passed Public Act No. 05-142, An Act Concerning the Minimum Water Flow Regulations. Signed into law by Governor Jodi Rell, the act directs the Connecticut Department of Environmental Protection (DEP) to issue new minimum instream flow regulations. The current minimum instream flow regulations, requiring dam operators and water diverters to release water to maintain a minimum daily flow, are antiquated, not based on good science, and limited only to rivers and streams that the DEP stocks with fish for recreational angling. While maintaining a certain level of flowing water in a stocked river or stream is beneficial for fishing, there are many other benefits of expanded and better minimum instream flow standards, including water flow for natural fish species, other wildlife, the environment, aesthetic beauty, and recreational uses, such as canoeing or swimming. If not enough water is kept instream and flowing, non-consumptive beneficial uses of rivers and streams, such as those above, can become impaired or outright extinguished.

At the time of writing, the DEP has not yet finalized the new instream flow regulations. Proposed regulations were only recently published in October 2009 and were awaiting public comment at the end of January 2010. Even so, the legislation authorizing the DEP to issue the regulations provides guidance as to the content of the regulations. The statute offers an opportunity to assess a state’s recent attempt to grapple with the delicate balance that must be struck between consumptive use of water and the need to keep water instream for ecological, recreational, and other beneficial uses.

I. BACKGROUND AND LEGISLATIVE HISTORY

When thinking about water crises in the United States, Connecticut does
not often come to mind. Generally, Connecticut has quite abundant water resources, with an average annual precipitation of forty-seven inches.\(^1\) Nonetheless, Connecticut is not immune from problems relating to water. In August 2005, it experienced severe drought conditions.\(^2\) A report in 2000 from the DEP highlighted “mounting concern and conflict regarding the quantity of water available to meet the state’s needs.”\(^3\) Connecticut as a whole has enough water to meet water demand, but “water is not always available where or when it is needed.”\(^4\) Seasonal variation in water supply, particularly in the summer, coupled with growth and shifting demand means that “there is not always enough water supply to meet the demands of the public in certain areas”\(^5\) and water users are left to compete for an “increasingly limited amount of water.”\(^6\) Also worrisome was the DEP’s conclusion that “the short supply of water in certain areas has caused adverse environmental impacts, as there is often not enough water in particular water bodies to support a healthy fishery, resource, recreational boating, swimming, and other needs.”\(^7\) Connecticut’s problems, however, are not limited to occasional water supply issues and instead reveal a more systematic defect in the state’s water allocation scheme.

A. Connecticut’s Inadequate Water Allocation Regime

When it comes to management of water resources, Connecticut is a “regulated riparian” state.\(^8\) Connecticut originally was a common-law riparian state when it came to water rights, but in 1982, the Connecticut General Assembly passed the Connecticut Water Diversion Act, which requires a

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3. CONN. DEP’T. OF ENVT’L PROT., supra note 1, at 1.
4. Id. at 5.
5. Id. at 10.
6. Id. at 12.
7. Id.
9. There are two basic systems of water allocation in the United States: prior appropriation and riparian. Prior appropriation is simplistically explained with the phrase: first in time, first in right. Anyone who starts using water from a river at a given time earns the right to the water, subject to the superior rights of appropriators who came before them. In a riparian system, water use is defined in association with ownership of land, so that only those whose land adjoins a body of water can have the right to use the water. See ROBERT H. ABRAMS ET AL., LEGAL CONTROLS OF WATER RESOURCES: CASES AND MATERIALS 12-13 (4th ed. 2006).
permit from the DEP for “any activity which causes, allows or results in the withdrawal from or the alteration, modification or diminution of the instantaneous flow of the waters of the state.”

On its face, the Diversion Act is a comprehensive water management scheme. Applicants for permits must justify their needs for the water, show that there are no reasonable alternatives, and show that they have a long-term water conservation plan. The applicant is required to state the effect of the proposed diversion on other factors, including the environment, water quality, and recreation. When deciding whether to grant the permit, the DEP has to consider the effect on other existing and proposed uses of water, existing water conditions, fish, wildlife, navigation, the necessity of the proposed diversion, and whether there are alternatives, including conservation, which would satisfy the need for water. The DEP is also free to place any conditions on a permit. Most permits run from five to ten years, which allows the DEP to assess water uses over time and, as circumstances change, make alterations when permits are up for renewal.

In reality, however, less than twenty percent of all water diverters in Connecticut have permits. When the Diversion Act was passed, it grandfathered in all water diversions held before July 1, 1982, so that they would have to register with the DEP but did not have to apply for permits. Therefore, an estimated eighty-four percent of water diversions are considered “registered diversions” that are not subject to DEP regulation under the Diversion Act.

The 2000 DEP report lamented that the “registered diversions may continue indefinitely, regardless of their environmental effects and their impact on the water needs of others.” While the DEP can limit negative impacts of permitted diversions, the report stated that the DEP does not have “the authority to prevent or stop a registered diverter from impacting or completely drying up a river, nor require registered diverters to avoid wasting water by

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10. CONN. GEN. STAT. §§ 22a-368(a), -367(2) (2008). The statute therefore covers any activity that involves the appropriation of water in such a way that will reduce water in a river, including the pumping of wells.
11. § 22a-369.
12. Id.
13. § 22a-373.
14. Id.
16. The estimated percentages come from a public information session offered by the Connecticut DEP in December 2009. Information Session on Proposed Stream Flow Standards and Regulations at the Connecticut Department of Environmental Protection in Hartford, Conn. (Dec. 21, 2009) (notes on file with author) [hereinafter Information Session].
metering, leak protection and repair, or other basic conservation measures.”

The DEP even lacks the ability “to retire unused or defunct registrations.”

This registration remains on the books even if abandoned and acts as a further obstacle to Connecticut’s ability to issue new permits and implement a comprehensive water allocation policy. Furthermore, the DEP expressed frustration that it lacked the scientific information “necessary to engage in meaningful water use management and planning.” The 1982 Diversion Act may have created an effective regime to adequately control future water appropriators, but as the DEP Report highlights, serious problems with water flow continue to exist because of grandfathered registered diverters.


The 2000 Report was not entirely accurate when it claimed that the DEP lacked the authority to stop a registered diverter from drying up a river. The DEP has the authority to require water diverters to keep a certain amount of flowing water in rivers and streams that the DEP artificially stocks with fish.

In 1979, the DEP released minimum stream flow standards that required dam operators and water diverters to release certain amounts of water to keep a minimum amount of water flow in stocked rivers and streams. Currently, only five percent of rivers and streams in Connecticut are stocked by the DEP. Most rivers and streams are therefore not subject to the minimum stream flow standards and can technically be drained dry by registered appropriators without any legal repercussions under the Diversion Act and the stream flow regulations.

Litigation that began in 1997 between the Connecticut municipalities of Waterbury and Washington revealed further limitations of the current minimum stream flow standards. Since 1921, Waterbury had been withdrawing water from the Shepaug River under a contract with Washington. The Shepaug

18. Id. at 19.
19. Id.
20. Id. at 24.
22. The regulation is understood to include dam operators, direct water diverters (those who directly take water out of rivers and streams), and well pump operators (those who reduce surface flow because of the connection between the groundwater they pump and the surface flow of the river).
24. Information Session, supra note 16.
25. Where I refer to “appropriators,” I mean to include all three water “diverters,” including dam operators, direct water diverters, and pump operators.
River is used for various recreational activities, including hiking, fishing, swimming, and canoeing.\textsuperscript{27} By 1997, Waterbury was under pressure from the DEP and civic groups who suspected that its Shepaug diversion was leading to “extremely low flows in summer months, diminishing its natural beauty, reducing it as a habitat for fish and river organisms, and limiting its value for fishing and other recreation.”\textsuperscript{28} In response to the criticism, Waterbury and Washington sued each other. One of the issues was whether Waterbury had unreasonably impaired the flow of the Shepaug.\textsuperscript{29}

After several years of litigation, the case reached the Connecticut Supreme Court in 2001.\textsuperscript{30} The final decision raised serious questions about the suitability of the streamflow standards to protect stocked rivers and streams. After assuming that the Shepaug was stocked by the DEP, the Court concluded that the minimum flow statute was the standard by which the trial court was to consider whether Waterbury’s water diversion had unreasonably impaired the Shepaug.\textsuperscript{31}

Washington argued that “regardless of the intent behind the minimum flow statute, the regulations as drafted have no ecological underpinnings, and do not adequately protect the health of the Shepaug River.”\textsuperscript{32} In fact, no documents could be found that explained the basis for the water flow numbers in the regulations,\textsuperscript{33} and two DEP employees testified that they did not believe that the numbers had any ecological justification or basis.\textsuperscript{34} Nonetheless, the court concluded that absent evidence that DEP had failed to meet its statutory obligations, the minimum flow regulations were presumed to be correct. The court curtly advised that if the DEP felt its standards were inadequate, “it [was] free to craft new regulations.”\textsuperscript{35}

Waterbury and Washington did not return to court following the decision and eventually reached a settlement in 2005;\textsuperscript{36} however, the case highlighted serious gaps in Connecticut water law and spurred legislators to action.


\textsuperscript{27} Id. at 1114 (quoting Waterbury, 2000 WL 226564, at *1).
\textsuperscript{28} Id. at 1115 (quoting Waterbury, 2000 WL 226564, at *1).
\textsuperscript{29} See id. at 1115.
\textsuperscript{30} Id. at 1102.
\textsuperscript{31} See id. at 1139-40.
\textsuperscript{32} Id. at 1144.
\textsuperscript{33} Id.
\textsuperscript{34} Id. at 1144 n.40.
\textsuperscript{35} Id. at 1145.
C. PA 05-142: An Act Concerning the Minimum Water Flow Regulations

The stage had been set for legislators. Connecticut sorely needed something more effective than a water allocation regime that lacked the authority to review and control most water appropriators and a minimum flow standard that failed to even adequately protect the few rivers covered. The bill’s legislative history reveals several key purposes that provide guidance for the DEP.

First and foremost, legislators had the long litigation in Waterbury v. Washington on their minds. One of the cosponsors of the bill declared that it was “a response to the past ten years, where we have very expensive, convoluted, difficult court fights over diversion.” 37 The first purpose, therefore, was to “avoid long, expensive court fights” and instead have “an orderly process” to resolve water issues and conflicts. 38

Another major purpose was to make the standards more universal and apply stream flow protections to all streams and rivers. 39 Recognizing that the current standards were antiquated and ecologically unsound, the cosponsors of the bill sought to “make it as accurate as it can be, and as scientific as it can be.” 40 The bill was also intended to give the DEP “flexibility for extreme circumstances.” 41 Lastly, the bill called for the DEP to adequately balance the various uses of water, including protection of aquatic life, agricultural use, public recreation, and public water supply. 42

D. The Key Changes in PA 05-142

PA 05-142 makes several key changes and revisions. The new statute directs the DEP to adopt flow standards that apply to all river and stream systems, rather than only to stocked systems. 43 As with the previous law, the statute still directs the DEP to balance all of the needs and requirements of uses of water, including water supply, industry, water ecology, public recreation, and natural aquatic life. 44 The law further mandates that the regulations be based, “to the maximum extent practicable, on natural variation of flows and

38. Id. at 6218.
39. Id. at 6225.
40. Id. at 6242.
41. Id. at 6286.
43. CONN. GEN. STAT. § 26-141b (2008).
44. Id.
A DELICATE BALANCE

water level levels” and “on the best available science.” The natural variation of flows refers to seasonal variation in the flow in natural rivers. Rather than have one single level to be maintained throughout the year, water users will be able to vary the amount that they are required to release or leave instream, depending on the season.

The law also provides for “special conditions or exemptions” that include “extreme economic hardship or other circumstance[s],” thereby providing for users who would face true hardship in meeting the regulations. Additionally, to encourage various water users to collaborate and cooperate to meet the standards, the statute also requires the DEP to exempt any flow management plans to which the DEP is a party.

Lastly, the law retains the enforcement mechanisms of the previous statute, so that the DEP can order violators to comply with the standards. If a water user still does not comply with the stream flow regulations, the DEP may ask the Attorney General to bring action to enjoin a water user from restricting water flow in violation of the standards.

II. EVALUATING PA 05-142: A MAJOR STEP IN REFORM, BUT SOME ISSUES LINGER

PA 05-142 is a forceful attempt to solve Connecticut’s water problems and ensure that rivers and streams are used in a way that best balances all the competing uses of water. While there are a few issues with the legislation as enacted, and though it does not change the underlying situation of Connecticut’s inadequate water allocation regime, it is a significant step forward and provides a starting point for reform in the future.

Extending the protections of the standards to all rivers and streams is an important step. The 2000 DEP Report underlined the ineffectiveness of a system in which the DEP is unable to review and mandate changes affecting the vast majority of water users. Various parties felt that the underlying

45. § 26-141b(5)-(6).
46. While dam operators will have to “release” water downstream, direct diverters and well pump operators will have to “leave” water instream by diverting or pumping less water.
47. § 26-141b(6).
48. Id. The purpose of the exception for the flow management plans is to encourage all diverters from a certain river or stream to come together and have a planning process that will deal with water flow issues in a comprehensive and collaborative way. As the DEP describes it, a flow management plan “might impose different requirements on dam operators or groundwater withdrawals keyed to the unique characteristics of the watershed. This can be achieved by tailoring flow management to the specific characteristics of the system.” CONN. DEP’T. OF ENVT’L PROT., STREAMFLOW: BALANCING WATER USE FOR FUTURE GENERATIONS 3 (2009), available at http://www.ct.gov/dep/lib/dep/water/watershed_management/flowstandards/streamflow_balance_future.pdf. So far, three flow management plans have been created, including one for the Shepaug River. Id.
49. § 26-141c (2008).
problem of permitted and registered users should have been addressed with a complete overhaul of Connecticut’s water allocation scheme. While the statute does not change the fundamental fact that registered users do not have to seek permit approval, for the first time all water users face the requirement to maintain certain instream flows. Such a move is a monumental shift in the treatment of registered water users in Connecticut, who will now face some regulatory conditions and limitations on their ability to use water. However, the statute does so without altering their underlying water rights. Indeed, some fundamental weaknesses of Connecticut water regulation remain. Defunct registrations still cannot be retired. Registered diverters still do not have to justify the reasons for their water consumption, face DEP renewal approval every five to ten years, or even consider alternatives to their appropriation, as permitted diverters do.

The move to regulations with a sound scientific basis and natural variation in streamflows is a laudable step to bring antiquated standards into the twenty-first century. The previous statute had led to the unsatisfactory result of streamflow regulations that failed to adequately protect water flows. The requirement of “best available science” provides solid ground for the DEP to build a scientifically based set of standards. Once the regulations are finally promulgated, the DEP envisions a process by which it will spend five years studying and classifying the major watersheds, so that every stream and river in Connecticut will be fully mapped and measured. The legislation therefore ensures that the standards will be as accurate as possible, so as to not disadvantage either the environment or water users with unscientific requirements.

The natural variations in required flows are also a step forward in terms of setting scientifically based standards. The provision recognizes that rivers and streams do not have one constant flow of water throughout a year, but rather vary according to the seasons. Such a move not only ensures that aquatic life will have enough water during key lifecycle stages, but will also benefit water users, who will not have to leave as much water in rivers during summer

50. See, e.g., J. Comm. on the Environment on S.B. 1294, Pub. Act 05-142, at 3521 (Conn. 2005) (statement of John Hudak, Environmental Planning Manager for the South Central Connecticut Regional Water Authority) (on file at the Bill Room at the Connecticut State Library and on file with the author); J. Comm. on the Environment on S.B. No. 1294, Pub. Act 05-142, at 3558 (Conn. Mar. 21, 2005) (statement of David Radka, Manager of Water Resources and Planning for Connecticut Water Services) (on file at the Bill Room at the Connecticut State Library and on file with the author). A complete overhaul of the entire allocation scheme would probably involve doing away with the registered diverters and forcing everyone to become a permitted diverter. Such a move would likely raise constitutional takings questions with regards to the registered diverters’ water rights and would probably involve costly litigation, costly buyouts of the registered diverters, or, more likely, both. For a general discussion of the problems associated with changing water law principles and doctrines, see ABRAMS ET AL., supra note 9, at 325-92.

51. Information Session, supra note 16.
months, when water demands are highest.

One potential question is whether groundwater users are covered under the statute. The DEP’s official position is that the statutory authority includes groundwater pumpers, and one could read the act to include groundwater wells, since it includes any “other structure [that] affects the flow of water.” Nonetheless legislators could have written the act to more clearly include groundwater pumping that is connected to, and affects, surface flow. It remains to be seen whether litigation will arise over the regulation of groundwater wells.

The inclusion of a hardship variance and the exemption for flow management plans are good, practical provisions that provide for alternative ways to meet the regulation standards and allow variances for users who cannot comply without economic hardship. The economics and cost of compliance pose a serious issue for the statute. Registered diverters previously had no legal obligation to meter water, institute conservation measures, or upgrade their infrastructure. Their obligations will change because of the law and proposed regulations.

To comply, some registered water users will have to reduce the amount of water they divert, dam, and pump from wells. To do so, those diverters will have to upgrade their infrastructure, install leak detection systems, put in water meters for their customers, and find ways to conserve the water they can withdraw. Currently, water suppliers in Connecticut lack the infrastructure to distinguish potable drinking water from gray water (non-sewage wastewater that could be recycled for other uses). Moreover, since most public water suppliers don’t have two sets of pipes that could carry potable water and treated wastewater for other uses, very few suppliers supply recycled wastewater. The costs for such upgrades to infrastructure will be significant.

The costs will be especially great for operators of wells. Although direct diverters can easily determine their impact on the surface flow of a river, groundwater withdrawal is not directly correlated to an equal decrease in the amount of surface water; the effect of pumping is much more incremental and less immediate. Groundwater management and regulation generally run into the problem of informational limits, and determining the behavior of groundwater is expensive. The DEP itself admits that quantifying well impact on streams is expensive and data-intensive. Although the DEP has stated that it will supply guidelines for wells and provide support for implementation and

52. Id.
53. § 26-141a.
55. Id.
56. For a general discussion of groundwater and the problems it engenders, see Abrams et al., supra note 9, at 393-411.
57. Information Session, supra note 16.
compliance.58 As the law stands now, the costs of compliance are solely borne by water suppliers, dam operators, and well pumpers, and there is no apparent public financial support.

This leads to a broader public policy debate about who should pay for compliance. On the one hand, higher costs for water suppliers, which will be passed on to customers, are not necessarily bad. Higher costs encourage water conservation and a reduction in water waste. Both conservation and reduction in demand are good measures that the DEP would otherwise be unable to ask of registered diverters. However, there will be members of the public who are able to enjoy the aesthetic, recreational, and environmental benefits of rivers and streams without paying, because they do not get their water from public water suppliers. Such a positive externality suggests that since the benefits will accrue to everyone, the costs of compliance should be publicly financed and spread among the entire population of Connecticut through taxes. A countervailing consideration is that publicly financing the costs of compliance would, in a sense, be a windfall for public water suppliers who have not had to justify the amount used, conserve water, or curb water waste. Although there was some discussion during committee hearings on the costs and where they should fall, with some arguing that the costs of the process should be “equitably borne by all users in order to be fair,”59 it is not at all apparent that the General Assembly spent any significant time considering the policy arguments. Although impractical in an economic climate where state budgets have been slashed, in an ideal world the government and water suppliers would share the costs. Such an arrangement would ensure that everyone pays something to be able to enjoy flowing rivers, but it also incentivizes diverters to lessen their use and conserve and recycle water.

Lastly, some have argued that courts are the best way to resolve Connecticut’s inadequate water allocation regime.60 An explicit reason for PA

58. Id.
60. Scott B. Simpson argues that since the legislature has proven to be a failure in creating a statutory solution to the differing treatment of registered and permitted diverters, courts, armed with the doctrine of “reasonable flow,” could be the way to challenge unreasonable registered diverters who escape DEP control. Scott B. Simpson, Note, Forging Connecticut’s Water Policy Future: Registered Diversions, Riparian Rights and the Courts after Waterbury v. Washington, 8 CONN. PUB. INT. L.J. 85, 127-29 (2009). This argument, however, is built on the assumption that PA 05-142 does not apply to registered diverters. See id. at 106-12. The DEP’s official position is that the statute and regulations apply to all water appropriators, including registered diverters. Information Session, supra note 16. Such a position is the only logical one: permitted diverters already face review of the effect of their appropriations on the environment, fish, wildlife, and recreational uses of rivers. If registered diverters were not covered by PA 05-142, the new minimum instream standards would be redundant regulation of permitted appropriators. Moreover, the current minimum
05-142 was to prevent lengthy and expensive court battles and provide a reasoned, scientific method to balance the demand for water and the need to keep an ecologically-sound amount of water in rivers. A further benefit of the law is that it covers every river and stream, as compared to piecemeal litigation over individual bodies of water, which would take much longer to resolve. Additionally, the statute reflects the consideration of policy issues by the legislature, a better and more open forum in which to decide how to solve these water issues. Moreover, the law will ensure more accurate standards by moving the process from generalist courts and costly suits to an expert agency that will take the time to make scientifically based standards. The result will be a more effective resolution that will be more likely to actually protect instream flows as balanced against consumptive demands on water.

CONCLUSION

Changing the minimum flow standards is not a panacea and does not fix the fundamental problem that the existence of registered diverters prevents Connecticut from being able to implement a comprehensive water allocation policy. Nonetheless, PA 05-142 is a major step forward in modernizing, and expanding the coverage of, Connecticut’s water scheme. The law reflects a cogent attempt to scientifically and effectively balance the demands of water users with the benefits of flowing waters. By mandating the best available science, Connecticut will be able to build data on its rivers and streams that will make it easier to discuss reform of the water allocation regime and ensure that Connecticut’s rivers and streams provide benefits to all in the future.