

Return Flows -- Permitting and Planning Implications  
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One of the least-discussed issues in Texas water law is that of the legal duty of appropriators to return unconsumed water to state streams. A significant portion of surface water diversions, as well as waters generated from groundwater pumpage, is often returned to the state's surface water system. These flows may come from wastewater treatment plants, industrial process waters, or agricultural operations. Historically, the law has addressed return flows in a sporadic fashion. Senate Bill 1 addresses them more extensively, but still leaves unanswered questions. This paper focuses on return flows as they impact permitting and the regional planning process.

## I. BACKGROUND

The law underlying return flows is that the “water of the ordinary flow ... of every flowing river, natural stream, and lake ... and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed in the state is the property of the state.”<sup>1</sup> When state water is appropriated under a permit, two questions arise: Is the appropriator under a legal duty to return unconsumed water to the river or stream? If so, does the water automatically become the property of the State again or may the appropriator retain certain rights to it?

The issue of returning unconsumed water to state waterways falls within a broader issue – the reuse of water. Reuse may be “direct” (the use of unconsumed water prior to discharge or release) or “indirect” ( the return of unconsumed water to a waterway followed by a subsequent diversion). The Water Code distinguishes between direct and indirect reuse:

[W]ater appropriated under a permit, certified filing, or certificate of adjudication may, *prior to its release into a watercourse or stream*, be beneficially used and reused by the holder of a permit, certified filing, or certificate of adjudication for the purposes and locations of use provided in the permit, certified filing, or certificate of adjudication. *Once water has been diverted under a permit, certified filing, or certificate of adjudication and then returned to a watercourse or stream, however*, it is considered surplus water and therefore subject to reservation for instream uses or beneficial inflows or to appropriation by others unless expressly provided otherwise in the permit, certified filing, or certificate of adjudication.<sup>2</sup>

Both types of reuse are “limited to the extent and purposes authorized in the water right.”<sup>3</sup>

## II. DIRECT REUSE

TNRCC rules define “reuse” as:

The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.<sup>4</sup>

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<sup>1</sup> TEX. WATER CODE ANN. § 11.021(a) (Vernon 1988).

<sup>2</sup> TEX. WATER CODE ANN. § 11.046(c) (Vernon Supp. 1998) (emphasis added).

<sup>3</sup> 30 Tex. Admin. Code § 297.45(a) (West 1998).

<sup>4</sup> 30 Tex. Admin. Code § 297.1. In a similar vein, “Secondary use” is defined as “[t]he reuse of state water for a purpose after the original, authorized use.” *Id.*

The essential elements are: (1) beneficial use of (2) unconsumed water (3) before that water is allowed to mix with state waters. “Beneficial use” is defined as “the amount of water which is economically necessary for a purpose authorized by this chapter, when reasonable intelligence and reasonable diligence are used in applying the water to that purpose and shall include conserved water.”<sup>5</sup> Recent amendments to the Water Code incorporate these elements and impose the additional requirement that the reuse must coincide with the same purposes and locations of use as the underlying water right.<sup>6</sup> At the same time, Senate Bill 1 increased the ability to reuse water by enlarging the allowable purposes. The old rule provided that the amount of water appropriated must be designated for a specific purpose.<sup>7</sup> The amended statute creates multi-use water right authorizations.<sup>8</sup>

Along with the general reuse definition, TNRCC has, arguably, defined “municipal use” to include two different types of reuse.<sup>9</sup> The first, “reclaimed water,” consists of municipal wastewater that is “under the direct control of the treatment plant owner/operator” and “treated to a quality suitable for a beneficial use.”<sup>10</sup> As long as reclaimed water is used within the municipality for domestic, recreational, commercial, or industrial purposes, or for watering golf courses, it can be marketed without amending the underlying municipal water right.<sup>11</sup> TNRCC’s proposed new regulations expand the category of reclaimed water to encompass industrial process water and treated irrigation tailwater.<sup>12</sup>

The second type of municipal reuse defined in the regulations consists of land application of sewage effluent by the permit holder. While this may properly be considered “disposal” of effluent, it is also a form of reuse. “Sewage effluent” is defined as: “Water-carried human or animal wastes from residences, buildings, industrial establishments, cities, towns, or other places, together with any groundwater infiltration and surface wastes with which it may be commingled.”<sup>13</sup> To qualify as “municipal use,” the effluent must be applied to land which is either: (1) owned or leased by the discharge permittee; or (2) within an area for which the TNRCC has imposed a no-discharge rule.<sup>14</sup> Since return flow is defined to include sewage effluent,<sup>15</sup> effluent discharged to a stream, whether emanating from surface waters or groundwaters, are clearly return flows subject to further appropriation by the State.<sup>16</sup>

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<sup>5</sup> TEX. WATER CODE ANN. § 11.002(4).

<sup>6</sup> TEX. WATER CODE ANN. § 11.046(c).

<sup>7</sup> TEX. WATER CODE ANN. § 11.023(e) (amended 1997).

<sup>8</sup> TEX. WATER CODE ANN. § 11.023(e).

<sup>9</sup> 30 Tex. Admin. Code § 297.1.

<sup>10</sup> 30 Tex. Admin. Code § 297.1. The marketing of reclaimed water implicates issues beyond the scope of this paper. The TNRCC regulates the use and marketing of reclaimed water under 30 Tex. Admin. Code Chapter 210.

<sup>11</sup> 30 Tex. Admin. Code § 297.1.

<sup>12</sup> Proposed Rule, 23 Tex. Reg. 10306, 10314 (Oct. 9, 1998).

<sup>13</sup> 30 Tex. Admin. Code § 297.1.

<sup>14</sup> *Id.* Although the reuse and sale of land-applied sewage effluent has been authorized by the TNRCC’s rules for a long time, such is not the case for other forms of municipal effluent. Before amended to read as it does today, the TNRCC’s rule regarding “return and surplus water” provided as follows:

[I]f an entity has used state water permitted for a municipal use, it shall not use or sell the effluent for any other purpose without first obtaining a permit from the commission; however, the application of municipal sewage effluent upon land sites is considered a municipal use of water, when conducted pursuant to a Water Code, Chapter 26, permit where [the land application fulfills certain specified criteria].

11 Tex. Reg. 255 (1986), *adopted* 11 Tex. Reg. 2330 (1986) (codified at 30 Tex. Admin. Code § 297.45(a)). All general references to municipal effluent have since been removed from that provision, although it now specifies that sewage effluent constitutes return water. 14 Tex. Reg. 6734 (1989), *adopted* 15 Tex. Reg. 3415 (1990) (codified at 30 Tex. Admin. Code § 297.45(a)).

<sup>15</sup> 30 Tex. Admin. Code § 297.1 (“Return flow includes sewage effluent.”).

<sup>16</sup> *See* TEX. WATER CODE ANN. § 11.046(c).

### III. INDIRECT REUSE

The other category of reuse concerns the discharge and subsequent diversion of return flows. An indirect reuse project involves three components: (1) the right to convey or store water in a natural watercourse or reservoir; (2) the right to divert conveyed or stored water for subsequent use; and (3) the right of subsequent use. The second element is the one at issue in this paper.

Return flow is defined in the regulations as “[t]hat portion of state water diverted from a water supply and beneficially used which is not consumed as a consequence of that use and returns to a watercourse.”<sup>17</sup> Return water must “conform to quality standards set by the state.”<sup>18</sup>

Until Senate Bill 1, it was unclear under Texas law whether an appropriator retained ownership of groundwater once that groundwater was mixed with surface water and returned to a watercourse. Senate Bill 1 made it clear that commingled surface water and groundwater becomes the property of the State once it is discharged into a watercourse.<sup>19</sup> In order to discharge groundwater and reuse it further downstream, one must obtain a “beds and banks” authorization from the Commission pursuant to Water Code § 11.042.<sup>20</sup> Diversion of existing return flows may be authorized for the amount released into the watercourse (minus carriage losses), and is “subject to special conditions if necessary to protect an existing water right that was granted based on the use or availability of these return flows.”<sup>21</sup> Diversion of future increases of groundwater-based return flows must be authorized prior to the increase in order to avoid implications to existing surface water rights.<sup>22</sup>

With regard to surface waters, the statute requires prior approval for diversion of return flows, through a bed and banks authorization. “The authorization shall allow to be diverted only the amount of water put into a watercourse or stream, less carriage losses and subject to any special conditions that may address the impact of the discharge, conveyance, and diversion on existing permits, certified filings, or certificates of adjudication, instream uses, and freshwater inflows to bays and estuaries.”<sup>23</sup> However, if the water is “conserved,” it may be transported via the bed and banks of any flowing natural stream to the diversion point of the appropriator or the point of use under a stored water contract without any special authorization.<sup>24</sup> “Conserved water” is defined as “that amount of water saved by a holder of an existing permit, certified filing, or certificate of adjudication through practices, techniques, and technologies that would otherwise be irretrievably lost to all consumptive beneficial uses arising from storage, transportation, distribution, or application.”<sup>25</sup>

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<sup>17</sup> 30 Tex. Admin. Code § 297.1.

<sup>18</sup> 30 Tex. Admin. Code § 297.45.

<sup>19</sup> TEX. WATER CODE ANN. § 11.042(b) (“A person who wishes to discharge and then subsequently divert and reuse the person’s existing return flows derived from privately owned groundwater must obtain prior authorization from the commission for the diversion and the reuse of these return flows.”)

<sup>20</sup> The TNRCC’s regulations for conveying stored water are set out at 30 Tex. Admin. Code § 297.91-.94. On the flip side, Senate Bill 1 directed the TNRCC to investigate the option of storing appropriated surface waters in underground aquifers. TEX. WATER CODE ANN. § 11.153(a).

<sup>21</sup> TEX. WATER CODE ANN. § 11.042(b).

<sup>22</sup> *Id.*

<sup>23</sup> TEX. WATER CODE ANN. § 11.042(c).

<sup>24</sup> TEX. WATER CODE ANN. § 11.042(a).

<sup>25</sup> TEX. WATER CODE ANN. § 11.002(9). The regulations define “conservation” as “[t]hose practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.” 30 Tex. Admin. Code § 297.1 (emphasis added). The proposed regulations keep that definition and additionally define “conserved water” as “[t]hat amount of water saved by a water right holder through practices, techniques, or technologies that would otherwise be irretrievably lost to all consumptive beneficial uses arising from the storage, transportation, distribution, or application of water. Conserved water *does not mean water made available simply through its non-use* without the use of such practices, techniques or technologies.” Proposed Rule, 23 Tex. Reg. 10306, 10313 (Oct. 9, 1998) (emphasis added).

The statute includes a grandfather clause exempting indirect reuse and groundwater retrieval that had been authorized prior to September 1, 1997.<sup>26</sup> The previous statutory provision merely stated that “a person supplying stored or conserved water under contract ... may use the bank and bed of any flowing stream” to deliver the water, with no mention of groundwater or non-contract diversions.<sup>27</sup>

Return flow includes both water that has been beneficially used but not consumed and “surplus water” -- “water in excess of the initial or continued beneficial use of the appropriator.”<sup>28</sup> The previous statutory provision on return of unused water merely stated that “[a] person who takes or diverts water from a running stream for the purposes authorized by this code shall conduct surplus water back to the stream from which it was taken if the water can be returned by gravity flow and it is reasonably practicable to do so.”<sup>29</sup> Senate Bill 1 retained this requirement and added additional provisions on returning surplus water. The statute specifies that “[i]n granting an application for a water right, the commission may include conditions in the water right providing for the return of surplus water, in a specific amount or percentage of water diverted, and the return point on a watercourse or stream as necessary to protect senior downstream permits, certified filings, or certificates of adjudication or to provide flows for instream uses or bays and estuaries.”<sup>30</sup> TNRCC has proposed regulations which echo these new statutory provisions.<sup>31</sup>

Thus, the statute specifically provides for permits to limit indirect reuse (through diversion of return flows) to protect downstream rights.<sup>32</sup> At the same time, subject to any permit conditions, the statute specifically authorizes reuse of water by the water rights holder “for the purposes and locations of use provided in the permit.”<sup>33</sup> This distinction between direct and indirect reuse is discussed further in Sections V and VI of this paper.

#### IV. HISTORICAL TREATMENT OF REUSE

The provisions of Senate Bill 1 relating to bed and banks authorizations and return of unused waters provide greater guidance on direct and indirect reuse than existed prior to its passage. Prior to Senate Bill 1, the Water Code and the caselaw were unclear as to whether an appropriator could recapture its return flows. Generally, an appropriator of water had a usufructuary right to the use of the State’s water, not an ownership interest, and could not retain ownership once the water was returned to a natural watercourse.<sup>34</sup> Under a traditional analysis, the appropriative right would be limited by the actual beneficial use made of the water. Hence, unless an appropriator could show an original intent to appropriate water that included the recapture of return flows, those waters would be deemed state water subject to further appropriation.<sup>35</sup>

Two cases show the traditional boundaries of reuse, to the extent that the courts ever addressed such boundaries. In *South Texas Water Co. v. Bieri*,<sup>36</sup> the court held that an appropriator could not claim ownership of water that had drained from his irrigated rice fields into a man-made drainage ditch and a natural watercourse. In contrast, in *Harrell v. Vahlsing, Inc.*,<sup>37</sup> the court held that drainage and seepage waters collected in artificial facilities designed to drain land under irrigation belong to the appropriator and are subject to recapture while on the appropriator’s land. The court reasoned that the irrigator had a usufructuary right to appropriate the water and put it to beneficial use. The appropriator was therefore entitled to recapture the drainage water while still on its land and apply it to beneficial use. Whether this reasoning would apply to municipalities and reuse of sewage effluent was not clear.<sup>38</sup>

<sup>26</sup> TEX. WATER CODE ANN. § 11.042(d).

<sup>27</sup> TEX. WATER CODE ANN. § 11.042 (Vernon 1988) (amended 1997).

<sup>28</sup> TEX. WATER CODE ANN. § 11.002(10). The TNRCC’s current definition of “surplus water” differs slightly from the new statutory definition, and the proposed new rules, among other things, would bring the definitions in line. Proposed Rule, 23 Tex. Reg. 10306, 10308 (Oct. 9, 1998).

<sup>29</sup> TEX. WATER CODE ANN. § 11.046 (Vernon’s 1988).

<sup>30</sup> TEX. WATER CODE ANN. § 11.046(b).

<sup>31</sup> Proposed Rule, 23 Tex. Reg. 10306, 10324 (Oct. 9, 1998).

<sup>32</sup> TEX. WATER CODE ANN. § 11.046(b).

<sup>33</sup> TEX. WATER CODE ANN. § 11.046(c).

<sup>34</sup> Wells A. Hutchins, *THE TEXAS LAW OF WATER RIGHTS* 551 (1961).

<sup>35</sup> Frank S. Skillern, *TEXAS WATER LAW* 83-84 (1986).

<sup>36</sup> 247 S.W.2d 268 (Tex. Civ. App.—Galveston 1952, writ ref’d n.r.e.).

<sup>37</sup> 248 S.W.2d 762 (Tex. Civ. App.—San Antonio 1952, writ ref’d n.r.e.).

<sup>38</sup> Frank S. Skillern, *TEXAS WATER LAW* 85 (1986).

In the arena of groundwater, as a result of the “rule of capture,” Texas had no historical common law or statutory limit on the use of beds and banks for groundwater transportation.<sup>39</sup> In *City of Corpus Christi v. City of Pleasanton*,<sup>40</sup> the Supreme Court held that it was not “waste” to transport groundwater down a natural stream bed even though approximately 75% of it was lost due to evaporation, transpiration and seepage, so long as it was used for lawful purposes when redirected. Senate Bill 1 now requires non-appropriators of state water (*i.e.* groundwater users) to secure authorization from the state to use the bed and banks of streams to deliver groundwater-based effluent downstream.<sup>41</sup>

## V. IMPLICATIONS FOR PERMITTING

Return flows have serious implications for both new and existing surface water appropriations. Historically, most permits have not required specific amounts of return flow.<sup>42</sup> At the same time, however, TNRCC has taken into account return flows in its water availability analyses. As a result, many water rights are dependent on return flows as the source of their appropriations. Thus, reuse of surface waters by upstream appropriators may sometimes have significant implications to downstream water interests.

In an application for a new or amended water right, TNRCC will apply the “no injury rule.”<sup>43</sup> The no-injury rule is designed to protect both senior and junior water rights holders against changes in permits as they existed when the water right was granted. The change could be measured in two different ways – against historical use of the right or against what the right legally authorizes. TNRCC’s proposed rules implementing the provisions of Senate Bill 1 adopt the second approach, comparing the “full, legal exercise of the existing water right with the proposed amended right.”<sup>44</sup> Where a permit contains no limits on consumption and no requirements for return flow, no injury would be deemed to result even if the rights holder significantly reduced return flows through a reuse program.

In deciding whether to grant a permit, TNRCC will review the applicant’s water conservation plan.<sup>45</sup> The plan must include data and information which “evaluates other feasible alternatives to new water development, including, but not limited to, ... recycling and reuse .... It shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.”<sup>46</sup> TNRCC’s proposed rules to implement the provisions of Senate Bill 1 retain this burden of proof standard.<sup>47</sup>

## VI. IMPLICATIONS FOR REGIONAL PLANNING

Conserved or reused water may provide attractive future sources of supplies. Reuse of effluent, whether surface water-based or groundwater-based, extends available water supplies for nonpotable uses. Treated effluent can be used for a variety of beneficial purposes, including use as an industrial water supply, for landscape and agricultural irrigation, to recharge drinking water aquifers, and to enhance coastal wetlands.

In the past, there has been less demand for effluent because of water quality concerns and the associated stigma of reusing effluent. No more than 5% of treated municipal effluent and less than 1% of industrial effluent generated in

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<sup>39</sup> *City of Corpus Christi v. City of Pleasanton*, 276 S.W.2d 798 (Tex. 1955).

<sup>40</sup> 276 S.W.2d 798 (Tex. 1955).

<sup>41</sup> TEX. WATER CODE ANN. § 11.042(b).

<sup>42</sup> *Harrell v. F.H. Vahlsing, Inc.*, 248 S.W.2d 762 (Tex. Civ. App.—San Antonio 1952, writ ref’d n.r.e.). Older permits more often contained the return flows. See, e.g., *Halsell v. Texas Water Comm’n*, 380 S.W.2d 1 (Tex. Civ. App.—Austin 1964, writ ref’d n.r.e) (discussing a permit which included a return provision).

<sup>43</sup> Proposed Rule, 23 Tex. Reg. 10306, 10310 (Oct. 9, 1998).

<sup>44</sup> Proposed Rule, 23 Tex. Reg. 10306, 10323 (Oct. 9, 1998).

<sup>45</sup> TEX. WATER CODE ANN. § 11.1271(a).

<sup>46</sup> 30 Tex. Admin. Code § 297.55(b)(3) (emphasis added). The specific requirements for water conservation plans are set out in 30 Tex. Admin. Code Chapter 288.

<sup>47</sup> Proposed Rule, 23 Tex. Reg. 10306, 10324 (Oct. 9, 1998) (proposed § 297.50)

Texas is currently reused.<sup>48</sup> However, treatment levels are now so stringent, and the quality of effluent, particularly municipal effluent, is so high, that effluent has value and is readily marketable.<sup>49</sup> The Texas Water Development Board has estimated that the potential for reuse can grow from 520,000 acre-feet in the year 2000 to as much as 835,000 acre-feet by 2050.<sup>50</sup>

Water suppliers are already looking to both direct and indirect reuse to help supplement their water supplies. In an example of direct reuse, the San Antonio Water System is constructing a water recycling project which will, when completed, deliver up to 35,000 acre-feet of water per year for non-potable purposes. The program is designed so that it would replace almost 20% of SAWS' annual demand for Edwards Aquifer water.<sup>51</sup> In the indirect reuse category, the Tarrant Regional Water District has already incorporated large-scale reuse plans into its long-range water supply planning efforts. The District plans to allow discharged effluent to travel south of the Metroplex via the Trinity River, and then divert the water into existing reservoirs for additional treatment through a system of artificial wetlands. The rediverted water will then be included in existing reservoirs. Current projections indicate that the plan could augment the District's water reservoirs by 115,500 acre-feet.<sup>52</sup>

At the same time, for downstream users, reuse constricts supplies. The distinction between direct and indirect reuse is irrelevant from the perspective of downstream users. It is the continued level of water flow that matters, not the manner in which the flow may be reduced. Both early caselaw,<sup>53</sup> and the current statute and regulations, draw this distinction. The Water Code's provision on return flows allows reuse of water for the specified purposes "prior to its release into a watercourse or stream," but once the water has been "returned to a watercourse or stream" it is considered state waters again "unless expressly provided otherwise in the permit, certified filing, or certificate of adjudication."<sup>54</sup> Less obviously, but in the same vein, TNRCC's proposed rules provide that new permits shall contain an "express provision that the water available for the water right is dependent upon potentially interruptible return flows or discharges" if the water right is granted based upon return flows which may cease because of new or increased direct reuse; the proposed rules do not make any such provision for indirect reuse.<sup>55</sup>

Under Senate Bill 1, the Texas Water Development Board must adopt a comprehensive state water plan by September 1, 2001.<sup>56</sup> The state water plan is to "provide for the orderly development, management and conservation of water resources and preparation for and response to drought conditions toward the goal of insuring that sufficient water is available at a reasonable cost to protect public health, safety, and welfare, further economic

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<sup>48</sup> Lynn Sherman, "Water Marketing-Senate Bill 1: A New Chapter in Texas Water Law," in *Texas Water Law Conference*, at E-8 (Oct. 15-16, 1998). About 2.5 million acre-feet of treated effluent is discharged each year, and this amount is projected to increase to more than 3.8 million af/yr by 2040. *Id.*

<sup>49</sup> Some Texas cities have already taken advantage of this opportunity. For example, the City of El Paso and El Paso WID No. 1 entered into a memorandum of understanding on April 23, 1992 wherein the City has agreed to provide the District with two parts of treated effluent for each part of Rio Grande Project water that the District delivers to the City via the American Canal. *Id.* at E-8, n. 45.

<sup>50</sup> A. Sayeed & H. Hoffman, "The Potential for Water Reuse in Texas," in *Proceedings of the 24<sup>th</sup> Water for Texas Conference: Research Leads the Way*, at 259 (1995). Sayeed and Hoffman estimate that the total potential for reuse by industry, agriculture, and municipalities, combined, could reach 1.04 million af/yr by 2000 and 1.67 million af/yr by 2050. However, they also state that the "real potential" is probably half to a third of these estimates when economic, environmental, and institutional factors are taken into account. The figures in this paper, therefore, have been reduced by 50%.

<sup>51</sup> Russell S. Johnson, "SB-1 Regional Planning," in *Texas Water Law Conference*, at P-3 (Oct. 15-16, 1998).

<sup>52</sup> James M. Oliver, General Manager of the Tarrant Regional Water District, "Regional Water Supply Planning in Texas: Building Bridges or Barriers?," in *Texas Water Law Conference*, at O-2 & O-3 (Oct. 15-16, 1998).

<sup>53</sup> The distinction between direct and indirect reuse can be seen in the differing results in the two cases discussed before: *South Texas Water Co. v. Bieri*, 247 S.W.2d 268, 272-73 (Tex. Civ. App.—Galveston 1952, writ ref'd n.r.e.) and *Harrell v. Vahlsing, Inc.*, 248 S.W.2d 762 (Tex. Civ. App.—San Antonio 1952, writ ref'd n.r.e.). In *Bieri*, the water appropriator had no further claim once the water drained into a natural watercourse. In *Harrell*, the appropriator retained a claim so long as it was still on his land.

<sup>54</sup> TEX. WATER CODE ANN. § 11.046(c).

<sup>55</sup> Proposed Rule, 23 Tex. Reg. 10306, 10323 (Oct. 9, 1998).

<sup>56</sup> TEX. WATER CODE ANN. § 16.051(a).

development and protect agricultural and natural resources of the entire state.”<sup>57</sup> The Board is to adopt guidance principles for the state water plan, giving due consideration to the construction and improvement of surface water resources and the application of principles that result in voluntary redistribution of water resources.<sup>58</sup> The plan must include legislative recommendations that the Board believes are needed and desirable to facilitate more voluntary water transfers.<sup>59</sup>

Senate Bill 1 amended sections 16.053 through 16.057 of the Water Code to elaborate the process by which regional water plans are to be developed, the criteria for content of regional water plans, and the process for resolving conflicts between regional plans. The Board is then to integrate the regional plans into the final state water plan,<sup>60</sup> in a new bottom-up approach.

The statutory provisions related to regional water plans reflect the importance of direct and indirect reuse. The statute requires that regional water plans include consideration of “all potentially feasible water management strategies, including but not limited to improved conservation, reuse, and management of existing water supplies, acquisition of available existing water supplies, and development of new water supplies.”<sup>61</sup> At the same time, the plan must consider “protection of existing water rights.”<sup>62</sup> Thus, return flow issues, principally issues related to indirect reuse projects, will also be relevant to the development of regional water plans.

The Regional Water Planning Guidelines issued by the Water Development Board<sup>63</sup> indirectly implicate both direct and indirect reuse. Plan development includes calculation of current and projected water demands,<sup>64</sup> which will depend in part on the extent of direct reuse of the water; the regulations specifically require evaluation of reuse of wastewater.<sup>65</sup> The regional planning groups are to estimate the region’s current water supplies,<sup>66</sup> then compare the projected water demand with the water supply to estimate future surpluses or needs.<sup>67</sup> However, reuse of water, whether direct or indirect, may seriously influence the need for and amount of future water supplies. Although the statute and regulations tend to limit indirect reuse to protect downstream users and environmental needs, fewer protections exist where the upstream user directly reuses its water. Neither the Senate Bill 1 nor TNRCC regulations provide significant guidance to the planning groups as to how to deal with these important issues.

## VII. CONCLUSION

As noted, there is significant conflict in the Water Code and TNRCC regulations over reuse of water. On the one hand, direct reuse is encouraged as a “conservation” measure, and as a logical environmental course of action. On the other hand, there is a recognition that reuse, both direct and indirect, may lessen the availability of water, impinging on other water rights and possibly causing environmental problems downstream. Water Code provisions and TNRCC regulations seek to balance these concerns by providing limits on indirect reuse to protect downstream users. However, the distinction between direct and indirect reuse may be illusory. Direct and indirect reuse projects may have the same impact on downstream users and downstream environments. The challenge for water users, state regulators and environmental interests will be to determine how to best balance the reduction in return flows so as to conserve water resources through reuse with the implications of such conservation efforts.

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<sup>57</sup> *Id.*

<sup>58</sup> TEX. WATER CODE ANN. § 16.051(d).

<sup>59</sup> TEX. WATER CODE ANN. § 16.051(e).

<sup>60</sup> TEX. WATER CODE ANN. § 16.051(a).

<sup>61</sup> TEX. WATER CODE ANN. § 16.053(e)(4)(C).

<sup>62</sup> TEX. WATER CODE ANN. § 16.053(e)(4)(D).

<sup>63</sup> 31 Tex. Admin. Code § 357.1-357.14.

<sup>64</sup> 31 Tex. Admin. Code § 357.7(a)(2).

<sup>65</sup> 31 Tex. Admin. Code § 357.7(a)(6)(B).

<sup>66</sup> 31 Tex. Admin. Code § 357.7(a)(3).

<sup>67</sup> 31 Tex. Admin. Code § 357.7(a)(4).