Potential Strategies
to Meet Environmental Flow Standards

updated 2/2012

Senate Bill 3 (SB3) mandates that each bay/basin area stakeholder committee: 1) develop recommendations for environmental flow standards, and 2) develop recommendations for strategies to meet these standards.

The first portion of this charge—the **recommendations on environmental flow standards**—is primarily the stakeholder committee's own version of their expert science team's environmental flow recommendations: **a schedule of flow amounts and the associated timing and frequency of those flows that they recommend be protected.** Stakeholders are recommending that the Texas Commission on Environmental Quality (TCEQ) adopt these as the environmental flow protection standards that will then be used to set conditions on new water use permits granted in their bay/basin. **Although, in the permitting process, these "standards" will only be applied to new water use permits, they also represent a larger statement of what environmental flow protection goals should exist in a basin regardless of permitting activity.**

The second part of the stakeholder committee's initial task is to recommend **"strategies to meet these standards."** In this context, "strategies" refers to the **various ways the water needed to fulfill these recommended environmental flow protection standards could be made available** for that purpose. Thus, **"strategies" are distinct in that they can address environmental flow problems that may already exist due to existing water use permits.**

Stakeholders' recommended environmental flow protection standards: amounts & timing

+ Strategies that could provide water to fulfill recommended flow amounts & timing

= September 1, 2012 Nueces Stakeholders' Report to TCEQ
(then used to adopt environmental flow standards that will be applied to new permits)

In an effort to bring to light examples of strategies that might be available to help meet the stakeholder committee's recommended environmental flow standards, here is a brief description of some potential strategies, followed by a short Q & A section.

Strategies to Meet Environmental Flow Standards

1. **Donation, Sale or Lease of Existing Water Permits**
    - Willing water permit holders donate, sell or lease all or part of their permit so that that water could stay in the stream for environmental flow protection. Permit would be changed to add instream protection as an authorized use. To be most effective, these permits would need to be firm water that is fairly senior.
    - Use of a water trust can be helpful for keeping track of things: the money for leasing/purchasing permits, the resulting tax deductible contributions, etc.
    - Examples of existing Texas water trusts are the Texas Water Trust, the Guadalupe-Blanco River Trust, and the Trans-Pecos Water Trust.

2. **Voluntary Dedication of Wastewater Return Flows from Current Permits**
    - This could be a dedication of some or all of the wastewater return flows associated with a permit. This strategy would be most effective with firm water permits.
    - Example: City of Houston 50% direct reuse agreement; Houston Chronicle article: http://www.texaswatermatters.org/pdfs/news_655.pdf

3. **Dry Year Option (for Irrigation Permit)**
    - Farmer is compensated for not planting (and not watering) crops during a dry year. This approach reduces water use during critically dry periods in order to increase flows by allowing the water to stay in the stream.
    - Example: Edwards Aquifer Recovery Implementation Program is considering the Voluntary Irrigation Suspension Program http://earip.org/Article.aspx?ID=19.

4. **Increase New Project's Storage Capacity, then Dedicate a Portion to Environmental Flows**
    - This could potentially allow for releases to support the river/bay system during low flow periods when flow is so needed.
    - Resulting reductions in yield/increase in project cost could potentially be compensated.
    - The incremental cost associated with constructing larger storage to augment environmental flows may be relatively small.

5. **Voluntary Dedication of Conserved Water from Current Permits to Environmental Flows**
    - Most applicable to Agricultural or Municipal water permit holders
    - Possible EQIP funding for conservation practice/s and other federal funding available
    - Example: In Washington, the Dungeness River Agricultural Water Users Association agreed to withdraw no more than 50 percent of the river's flow at any given time. Additionally they have committed to a long-term conservation and efficiency program.http://www.sustainablenorthwest.org/stories/dungeness-river-watershed-restoration/

6. **Dam Reoperation**
    - Redesigning a dam's schedule of releases can help provide environmental flows. The amount and timing of releases can attempt to better mimic the natural flow patterns of the river system, thereby protecting environmental flows. This can be done for an individual dam or for multiple dams in a watershed for an additive effect.
    - Example: Green River Dam in Kentucky: http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/kentucky/placesweprotect/green_river_plan_approved_oct_20061.pdf
    - Example: The Nature Conservancy's Sustainable Rivers Project: http://www.nature.org/ourinitiatives/habitats/riverslakes/sustainable-rivers-project.xml

7. **Water Right Management**
    - The existing geographic and temporal arrangement of water rights in the basin may inhibit opportunities for better resource management that could help support environmental flows.
    - Combinations of opportunities may exist whereby water right diversion points could be relocated, older rights used in conjunction with new water rights, or new water rights used in conjunction with currently unused rights to improve delivery efficiencies to both water users and the environment. Contractual agreements will be necessary.

- Example: In the Entiat River in Washington, conservation groups worked with willing landowners to move diversion points to better maintain flows during summer low flows. http://www.warivers.org/entiat.html

8. **Set-Asides of Unappropriated Water**
   - In basins where there is still water available for permitting beyond what has been given out in existing permits, some or all of that water can be taken off the table from future permitting and left in the river to provide environmental flows. SB3 contemplates set-asides of unappropriated water by TCEQ.
   - Example: Instream flow protections exist in one form or another in most western states. http://www.blm.gov/nstc/WaterLaws/stateflowsummary.html

9. **Restrictions on Groundwater Pumping**
   - Restricting Groundwater pumping in a drought can allow springs to provide river baseflows.

10. **Private Land Stewardship Programs**
    - Incentives for landowners to use good land management practices which will put more water into the water table.
    - There are numerous programs both at the state and federal level

11. **Voluntarily Placing Conditions on Existing Permits**
    - Some permit holders may be willing to have conditions placed on their permits, such as a certain percent or set amount of the water being dedicated to provide environmental flows.
    - If this was anything but voluntary, it would likely be very controversial.
    - Example: Such a strategy was used in Washington's Methow basin: http://www.warivers.org/methow2.html

12. **Cancellation of Unused Water Permit/s by TCEQ**
    - TCEQ does have the power to cancel water permits that have not been used for 10 years (full cancelation), or the portion of the permit that has not been used for 10 years (partial cancelation). This does not include water rights for projects within regional water plans. However, this has rarely been done in Texas, and would, undoubtedly, be highly controversial.
    - Cancelation of unused rights could make more water available for projects and for environmental flow protection.

Questions and Answers

1) **What role will strategies play in stakeholder deliberations about how to balance human and environmental water needs?**
Some may view a lack of water availability as a barrier to recommending strong flow protection

standards. This lack of availability may be due to the amount of permits already granted within a basin. Or, it might be because the yield and/or cost impacts to potential future projects when applying the flow standards is perceived as being too great. Either way, it would be easy to conclude that the only option is to whittle away at the set of protections that stakeholders are contemplating. But this is not the only path. **A suite of strategies could potentially add up to meet the stakeholder committee's preferred level of flow protection while still allowing for future water development. Strategies allow us to take a second look at how to provide the preferred level of protections, regardless of how much water is available.**

2) **What does a stakeholder committee's strategy recommendation look like?**
The strategies recommendation piece of the report may be nothing more than a laundry list of ideas that the stakeholder committee comes to agreement on as having some potential to help meet their recommended protection goals. Or, it may be a more extensive effort to determine, on a site specific basis, which strategies can effectively be used to fulfill which parts of the flow regime recommendations. Neither the Trinity/San Jacinto stakeholder committee nor the Sabine/Neches stakeholder committee got to the point of including strategy recommendations in their reports. The Guadalupe/San Antonio and the Colorado/Lavaca stakeholder committees both included a list of potential strategies in their recommendations reports. Additionally, the Guadalupe/San Antonio committee also made an effort to quantify the effects of a few select strategies and included that analysis in their report.

3) **How can the standards that stakeholders recommend help address existing environmental flow shortfalls that are a result of water permits already issued? How can the strategies address existing problems?**
Because the standards will be used when granting new water permits, these will not directly address any flow shortfalls that exist due to existing water permits. However, the standards are more than just restrictions on new permits, they are flow protection goals that can then also be worked towards through other means. Strategies are those other means. So the combination of the standards, plus strategies to meet them, can help address shortfalls due to existing permits.

4) **How does the level of appropriation within a basin affect the usefulness of strategies?**
In river basins that have substantial unappropriated flow - thus water for new permits - the environmental flow protections placed on those permits may prove to be an effective vehicle to meet some or all of the adopted SB3 standards. In other basins, especially those with little or no unappropriated flow, there may be significant gaps in meeting some or all of the adopted environmental flow standards. And in between, even in river basins where there is still limited water available for future permits, we will likely still come up short in providing flows to meet all the various components of the environmental flow standards. These cases are where the environmental flow strategies can provide a means to bridge some of these gaps through other approaches not related to new permit conditions.

5) **How will strategies recommendations be used?**
Strategies recommendations will likely be the first step in creating a road map for how to get to the recommended standards, or protection goals, the stakeholders envision for their bay/basin area. Recommended strategies might be used by water planners, by state and/or federal agency staff, by legislators, by water permit holders, by non-profit organizations, by water supply entities, and anyone else who might pursue the protection goals set out by the stakeholder committees.