

Feedback on TN H₂O: Tennessee's Roadmap to Securing the Future of Our Water Resources
July 2019

The following are re-formatted comments received during the period the plan was posted for feedback.

Comment 1

Use the field below to provide comment on addressing current and impending infrastructure needs.

Thanks for your work in getting clean water for families that are living with a contaminated well. Because of bad water, I have suffered with salmonella and a fungul infection causing me to loose my eye. I am wishing you well on this project, and thanking you for all your work.

Comment 2

Use the field below to provide comment on addressing current and impending infrastructure needs.

For those of us that live on palamino dr clarksville tn: we have a stinky sewer issue. We've been told it's because the pipes aren't big enough to handle all the waste coming through them since we have grown. It would be nice to have someone fix the issue instead of trying to mask the smell and it's coming up thru our toilets. How can this be fixed in a timely manner and how can we be sure other areas of clarksville isnt or wont have the same smelly air.

Comment 3

Use the field below to provide comment on addressing current and impending infrastructure needs.

I think the need for this is obvious--I just want to make sure that major water users, as Koch Foods, are included in future discussions. I would hope that the group is aware of the daily volumes and the efforts companies, such as ourselves, take to be as efficient in our water use as we possibly can with modern technologies.

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

This will be your biggest challenge--tax dollars are already stretched, at least in how they are spent. Reevaluating expenditures and prioritizing the needs would help in this regard.

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Comment 4

Are there any other ideas or comments you would like to share?

Until such time as storm water requirements, inspections, etc. are enforced our waters are in danger. Current City, County, state agencies are not enforcing inspection requirements. This is enabling contractors, excavators and others to thumb the nose at state/fed requirements. I am an independent, state licensed storm water inspector. I see these abuses daily.

Comment 5

Use the field below to provide comment on addressing current and impending infrastructure needs.

Most of my family live in Henderson County, TN. Their water supply comes from Beech Lake in Lexington, TN. It is the worst smelling and tasting water, ever. Some action needs to be take concerning this issue. THANK YOU

Comment 6

Use the field below to provide comment on addressing current and impending infrastructure needs.

I agree with the report that this is critical for local and state economies. There does need to be a steering or some committee/board on the state level that sets the priorities. Should amend lottery to provide a portion of funds to infrastructure needs or a beverage tax on bottled water that goes to providing for clean accessible drinking water.

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

Need it tied to any proposed funding stream to improve the situation.

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

Agree very important that some entity is developing plans but if they have no political clout it will come to yet another talk and lunch committee.

Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

Agree with this to see updating.

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

This is also needed.

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Please provide feedback on using the state water-resources task force or advisory committee and regional water-resources jurisdictions to facilitate intrastate and interstate regional cooperation.

Tennessee water does not start and stop at our boundaries so this would make good sense.

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

I did that in question 1. Would recommend consulting with state grant making agencies how their programs could use their funding and scoring to promote sustainable projects. Example Local Parks and Recreation with reducing sports and athletic use of water in irrigation by recycling waste water, retainage ponds etc.

Comment 7

Use the field below to provide comment on addressing current and impending infrastructure needs.

It is a wise thing to be thinking about this topic. Nonetheless, the report is vague on specifics. What, exactly, should regions be doing with regard to infrastructure and the like to prepare for these challenges? For example, how can we best plan for extended droughts and increased risk for wildfires? The Devil is in the details!

Cities and counties should coordinate efforts. Rural areas will need state support given limited budgets.

Comment 8

Use the field below to provide comment on addressing current and impending infrastructure needs.

We live just a few yards from the city of Loretto, and there is a CCFO on the property next door. Over the past year, we have experienced huge amounts of run off the chicken facility. Another concern is Clax Branch creek runs through our land. The chicken farm pollutes our sure as well as our creeks with it's water and rain run off

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Institutional and Legal Framework
Groundwater
Surface Water

Are there any other ideas or comments you would like to share?

Large agriculture or CCFO (chicken facilities) in or near homes and creeks.

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Comment 9

Use the field below to provide comment on addressing current and impending infrastructure needs.

Stop the Old Hickory quarry now before they ruin the area any more.

Comment 10

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Institutional and Legal Framework

Are there any other ideas or comments you would like to share?

The TH2O report can be summarized as "gather more data" with some public relations thrown in.

The real issue, at least on the drinking water side, is the number municipalities and utility districts in the state. The Comptroller's water loss report shows 211 cities, 157 utility districts, one county, two metropolitan governments, and 18 other governmental entities. This may not be all of the water providing entities in Tennessee. But, even this number averages four per county.

It would seem that most of the things a city or utility district does could be done cheaper on a larger scale. Sending out bills and receiving the money just means running the computer a little longer. Processing water on a larger scale requires about the same number of people. Fixing broken and leaking pipes may take the same number of people per fix, but you can buy better equipment if you do more of the same fix. One audit costs less than two.

Tennessee needs to merge utility districts and city water systems into larger entities. Having one per county or even one per region would allow the utility district to work better with economic development projects, have multiple sources of raw water, and reduce the cost of serving each home and business. With the savings the utility district could fix the leaking pipes and connect with other utility districts to provide backup sources of clean, safe drinking water.

As the boards of the existing water entities will not look at merging, a carrot is needed. If the "rainy day" fund could be used to provide, say \$5,000,000, to any two utility districts or city water systems that merge with the proviso that the money be used to replace old pipes or water treatment facilities we may get at least some discussion of merger.

Comment 11

Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

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Property owners are afraid of conservation easements because they don't think they can't use the land or they will lose revenue. Consider an incentive for property owners to donate land in riparian zones as conservation easements. The property owner could still own the property but pay a dramatically lower tax rate. The local governments would be in a sense reimburse for the lost tax revenue by receiving additional funding for infrastructure improvements from State or Federal funding sources.

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Natural Resources

Are there any other ideas or comments you would like to share?

The date to submit comments is incorrect on the 12/7/18 press release, please change it to 2/28/19.

Comment 12

Use the field below to provide comment on addressing current and impending infrastructure needs.

Being an Environmentalist I'm all for water conservation and preservation of our waterways. I sincerely hope that in this process special attention will be given to the Nolichucky River along Taylor Bridge and Jackson Bridge Roads in Jonesborough as someone has purchased 90 acres of farmland and has previously dredged along the river as well as put large concrete barriers along a stream. The new owner is [NAME REDACTED] and he has already been told both by local TDEC and Nashville to remove the barriers and has not complied. I understand he has not been taken to task for his refusal. What gives?? I will hope to hear back from you. Thank you.

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

Your education campaign should begin at the Elementary School level. We need to begin our concern for the environment as early as possible. Middle and HS levels can be incorporated in planning as well as local river and stream clean-up.

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Natural Resources

Comment 13

Use the field below to provide comment on addressing current and impending infrastructure needs.

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Hello,

I am trying to assess the feasibility of shipping water by rail to Arizona and California from Tennessee or possibly West Virginia. Is there someone interested in this I might talk to? Does Tennessee ever sell water to out of state?

Thanks

Comment 14

Use the field below to provide comment on addressing current and impending infrastructure needs.

I review the plan and its addresses issues for the state as a whole. I would like to know if and when a plan will be implemented to address 1. the raw sewage smell in the Riverside Community which west hwy 61 east of hwy 55 south of Crump and north of Mallory 2. the brown tap water that for drinking in this economically disadvantaged neighborhood. 3. The position of the water line access for residents in this community outdated or nonexistence in addition, it portal itself has been a hazardous element for streets and sideways. However, I do appreciate knowing that resolution is in the near future.

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

An education campaign should be develop on the an education level for preschool up to adults on what the look for , how to prevent and what is consider dangerous went it come water and natural resources.

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

We do not need to charter a state water resources task force. An advisory group is sufficient but must include member for each community that is being affected.

Comment 15

Use the field below to provide comment on addressing current and impending infrastructure needs.

I could go on and on about how to address the Infrastructure issues in Hamilton County. But years of neglect and fraud has lead to these issues. From leaking sewers to poor water quality. Even the Tennessee reservoir system is beginning to become saturated with e coli.

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

The EPA has already created such a program so why not adopt what they have? We need not to reinvent the wheel but rather go with proven things that work. I feel like many of the EPA guidelines are overlooked because Tennessee wants laxxed guidelines to cater to investors and developers.

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Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

This will never happen as long as private investors are involved like American Water that would gain by a cover-up of how poor the water quality is.

Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

This is a Joke I hope... You Guys should know all the laws involved from TVA and US provisions set up to The Clean water act and Epa Guidelines. I suppose that is what has gotten into this mess is the fact no one understands all the water guidelines. Or the fact that an NPDES permit only deals with Quantity, not quality.

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

If we were to abide by federal and local guidelines we would not be in this mess. The state in the County allowed the dumping of many chemicals in the Reservoir system. And even a 1 inch rain event creates sewer breaches in the city of Chattanooga who is locked into a consent decree.

Please provide feedback on using the state water-resources task force or advisory committee and regional water-resources jurisdictions to facilitate intrastate and interstate regional cooperation.

All we need is our agencies to not only fall into compliance but also have more enforcement.

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

Well, something tells me the state would go for Federal and state and Local funding as well.

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Infrastructure

Are there any other ideas or comments you would like to share?

I feel like this program and agency has violated the Tennessee Open Meeting act on several occasions. And that there is no statute of limitations on a suit against this issue. If this group will not fall into compliance then how will they have others do so as well. I believe all that will go on is a massive coverup to the fact our water sources are becoming more saturated with harmful substances, from PCB's tooE-coli.

Comment 16

Use the field below to provide comment on addressing current and impending infrastructure needs.

As an individual citizen, my greatest concern is the inability to access treated water supplies. The rock formations in East Tennessee really mean that current inspection systems for wells and septic systems in increasingly densely populated outlying areas are irrelevant for determining water safety.

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The presence of a commercial quarry with its blasting does not serve to make us more sanguine about the continuing safety of our water. Three water systems provide service within a mile or less of our residence, but because of various problems, most notably the overlap of systems, none will provide water to our neighborhood. There is also the concern that state funds are needed to supplement the cost of infrastructure and taps. I believe that clean water, available to all, is as important in Tennessee as it is in a third world country!

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

A central database for agencies responsible for water systems, ground and surface monitoring, and environmental protection with adequate IT support would be a necessary first step for any planning. Otherwise the fractured nature of the various concerns will continue to block progress.

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Surface Water

Are there any other ideas or comments you would like to share?

The regulation of industry--forest clearing, chemical plants must be enforced if our watersheds are to continue to support us. "Sprouting" subdivisions do not appear to be adequately regulated as to their effect on the surface and groundwater. Wetlands and forests on private properties appear to be clear-cut or drained with impunity. Each of these specific problems could be easily addressed.

Comment 17

Use the field below to provide comment on addressing current and impending infrastructure needs.

In Marshall County, one of our greatest needs is the replacement of failing infrastructure (specifically pipeline) while keeping the cost to consumers at a steady rate.

In the future, there would be a great benefit to Tennessee residents in creating watershed connectivity and also creating a county-to-county infrastructure at county lines with a reasonable line diameter (minimum 12 inch at primary trunk).

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Infrastructure

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Comment 18

Use the field below to provide comment on addressing current and impending infrastructure needs.

As there is no replacement for H₂O, I hope we do more to protect it. The pollution problems from local sewers, construction, farm and home pesticides and fertilizers, to industrial wastes are an impediment to our healthy water. Fracking is not only bad for water but our land mass in a state with so many underground tunnels.

Comment 19

Use the field below to provide comment on addressing current and impending infrastructure needs.

Hello - I am not sure of the state of your talks and plans - however I feel it is CRITICAL for advanced wastewater treatment systems to be standardized in the state of Tennessee. Many other states (at least 29 according to my research) have adopted EPA regulations for alternate septic systems in rural areas.

We are currently trying to build a house in Wilson County for example. Our land does not PERC properly. According to Wilson county, we can't build. However there are MANY established alternate systems for individual residences that discharge wastewater at cleaner rates than the traditional septic system!

As much as 2/3 of America has land that will not PERC. The clean wastewater systems ARE ALREADY DESIGNED! But the state of Tennessee has not adopted a uniform code for their approval. (Surrounding states such as Alabama, Arkansas, North & South Carolina, Virginia Have)

Aerobic Treatment Units are basically single family wastewater facilities. They discharge in many cases water that is pure enough to discharge to the surface!

If the state would adopt these standards and allow these systems

- 1) More homes could be built on otherwise unsuitable sites
- 2) City resources could be diverted to other expenses (because the cost to build would be on the home owner)
- 3) Water discharge would be CLEANER, well above EPA standards
- 4) Septic failure rates would go down substantially, resulting in cleaner water

and I could go on and on.

This is a regulation that should not even be up for debate. Modern technology has been developed for as much as 50 years (and continues to be developed) that would drastically result in cleaner septic systems for single family homes that are considered "rural". They should be absolutely written into this plan.

It may already be included but if not I would certainly like the opportunity to make the case.

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In addition to better water quality, it would benefit the state FINANCIALLY by doing the following:

- Provides jobs for installers of the new systems
- Creates ongoing job development
- Lower demands on city systems (in theory metro systems could be completely replaced with these units)
- Lower infrastructure costs to the city/state (no cost)
- Allow for higher quality development of outlying land that is considered Rural, but is close to the city (such as Wilson County, Sumner etc)
- Ultimately increase in property values and higher property tax collection.

Again - there is NO LOGICAL REASON to not have approval and codes for alternative septic systems such as Aerobic Treatment Units (ATUs) and Single Family Onsite Wastewater Treatment units

Thank you

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

Adding to what I wrote above -

More than 50% of conventional septic systems fail within 25 years and discharge contaminated effluent into the ground water!

The Aerobic Treatment Unit FIXES IT. Not only can it be used to revitalize a failed septic field, but they can be used to raise the water quality standard that is being discharged.

IF TN WANTS TO CLEAN UP THE GROUND WATER, IT NEEDS TO ALLOW AND ENCOURAGE these alternate systems (specifically Aerobic Treatment Units).

These units are ideal for Rocky ground, soil that will not perc, WATER FRONT, and any where environmental concerns are important.

I believe if more home owners knew the benefits, they would be inclined to opt in to a better quality modern wastewater treatment system instead of a traditional septic field

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

TNonsite.org is an organization working on these issues.

Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

I believe the laws need to be changed to encourage the use of Aerobic Treatment Units for single family homes. It is WAY better for the environment. This one regulation could improve groundwater quality by a sizable factor.

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Please provide feedback on identifying sustainable funding for all TN H2O recommendations.

Groundwater could be substantially improved if the use of individual Aerobic Treatment Units were encouraged instead of Traditional Septic Fields. The cost of installation would be incurred by the home owner/builder and the state would save substantially (billions) by not having the pressure to provide city sewer to rural areas.

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Groundwater

Are there any other ideas or comments you would like to share?

I put them all in here. I would love to know if there is a public hearing I could attend to voice my opinion. I saw nothing in the plan about the encouraged use of Aerobic Treatment Units and I believe this is a HUGE mistake. The regulation should be simple to pass and only provides benefits. There are more than 25 manufactures of ATUs in the U.S. and even more internationally. The most environmentally sensitive areas of the world use these systems and the state of TN should at the very least have a provision for their use.

Comment 20

Use the field below to provide comment on addressing current and impending infrastructure needs.

Please use the southeast Tennessee water quality playbook: HydroLIT
<https://www.asla.org/2017studentawards/332631.html>

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

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Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

HydroLIT Southeast TN Water Quality Playbook

Sender's profile photo I know many of you contributed to this publication and I wanted to share it if you hadn't already seen it <https://www.asla.org/2017studentawards/332631.html> .

Also I wanted to say thank you to Prof. Brad Collett for the mention in the Advisory and Review Team under Project Team (as I'm sure Jennifer, who is now in NY NY is also much obliged; and now aware she is in print).

Thank you to RPA for the Hard Copy. I hear there are more hard copies at SETDD, and I hope there are some at the Chattanooga Design Studio.

I never thought pitching a "Complete Creeks" P.114 (ala Complete Streets) idea would ever be in print. The students work, and your persistence to see this to print is inspiring. A Waste Mgmt section P.122 that includes Biosolids and a full composting cycle specific to our Region and a Playbook to execute strategy, Bravo! It's so much more though...

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<https://www.tn.gov/environment/program-areas/wr-water-resources/watershed-stewardship/tennessee-healthy-watershed-initiative.html>

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Institutional and Legal Framework
Groundwater Surface Water Natural Resources Infrastructure

Are there any other ideas or comments you would like to share?

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https://drive.google.com/drive/folders/1y3UIbIn-fsY_YtjyoDo38nUPNzhe9Fmo?usp=sharing

www.chattanooga.gov/treatment

www.chattanooga.gov/biosolids

http://www.sedev.org/news-posts/hydrolit-exhibition_december-1-2017/

Comment 21

Use the field below to provide comment on addressing current and impending infrastructure needs.

the water from Burgess falls/down stream needs to be tested.smells like a open sewer in the river below the falls.

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Comment 22

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Institutional and Legal Framework

Are there any other ideas or comments you would like to share?

1. Water's Cultural Environment, Current and Future Water Needs, page 16. "Self-supplied industrial water use have been trending down thanks to conservation....the steep decline from 2005 to 2015 cannot be expected to continue even with the adoption of more efficient technologies.Footnote18".

18=Dieter, Maupin, et al. 2018, Estimated Use of Water in the US in 2015. US GS Circular 1441.

Comment - I read the Self-supplied industrial section in the USGS report and it does not support what is stated in this sentence. The USGS report discusses why this category had decreased use including the economy and less manufacturing. I don't see it making a comment about not seeing future declines based on efficiency. I also looked in footnote 17 (Robinson 2018) and did not see this discussed.

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Institutional and Legal Framework

Are there any other ideas or comments you would like to share?

1. Water's Institutional Environment, Areas of Concern for TN's Institutional and Legal Framework, 7th bullet. I think this sentence should be reworded. Right now it seems to say that leak reduction is estimate to have wasted 51 B gallons of water. I'd prefer to use efficiency rather than conservation. We want efficient water use, prevent wasteful use, but don't really want to restrict use/conserves use. Instead, I'd say "encouraging water use efficiency and demand-management, as well as leak reduction, because it is estimated that leaks have wasted more than 51 B gallons of water and cost more than \$64 million annually."

2. Same page # as above, footnote 24. What is the reference for the Comptroller's report?

3. Same page # as above, footnote 24.

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2. Same page # as above, footnote 24. What is the reference for the Comptroller's report?

3. Same page # as above, footnote 24. "audits did not pass the filters recommended by American Water Works Association". The American Water Works Association does not recommend filters. The filters were first published in, Sturm, R., K. Gasner, and L. Andrews. 2015. Water Audits in the United States: A Review of Water Losses and Data Validity. Denver, CO: Water Research Foundation. See page 16 or <http://www.waterrf.org/PublicReportLibrary/4372b.pdf>.

Comment 23

Are there any other ideas or comments you would like to share?

Portland's feedback for the TN H₂O project: It's hard to imagine that any other city or utility in the State of TN has a lengthier pursuit of a supplemental water supply than Portland. We spent many long years of pursuing a dam and reservoir project on the West Fork of Drakes / Caney Fork Creek. We spent millions of dollars. We obtained the necessary permits from TDEC and the Corps of Engineers in 2000. Then our engineering firm proclaimed that the site was not adequate for the dam and reservoir in 2003. After hiring another engineering firm, reviewing and modifying some of the original plans, undergoing more studies and paying more (and more) money, we were finally ready to resume the work. Five plus years had lapsed. TDEC then decided not to renew the permit (ARAP) they had initially granted in 2000. With that bit of history, it was very disappointing that no one from this area was invited to serve with the H₂O group last year. It is further disappointing that nothing in the final summary seems to indicate that there is any hope for Portland's project to be salvaged - after more than \$10 million was spent. There were folks who served with the TN H₂O group who had firsthand knowledge of our plight.

It would have been nice if they had at least mentioned our fruitless pursuit - better still if they had explored remedies for our plight. Conversations and studies have been "around the world" so to speak, and when the next drought (like the one in 2007) strikes - as it most certainly will - we will still be unprepared to provide the amount of water needed for this system. If anyone with TN H₂O is interested in hearing details about our situation, we will be more than happy to share with you.

Comment 24

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

The report states that groundwater monitoring networks are lacking or non-existent across the State. The existing groundwater treatment data from monthly operator reports provides daily data on basic parameters that could be re-purposed for evaluation of basic trend and classification. This data should be protected from deletion and assembled into repositories available to the task force or other researchers. Monthly report data retained by treatment plants for longer than five years should be salvaged if the State records have been purged.

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Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

Research potential legal thresholds for minimum use for large springs / headwater streams in karst areas where traditional minimum flow for surface water techniques are inapplicable. This is particularly important for large volume karst springs which could be targeted for water supply by individual owners in the future.

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

In order to protect groundwater resources from depletion, representative geographic areas of potential stress should be identified and criteria established to test when or if groundwater overproduction can be identified. The criteria should be as concrete and testable as possible and subject to public review.

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Groundwater

Are there any other ideas or comments you would like to share?

The report notes the need for further study of recharge to the Memphis Sand. Particular emphasis should be placed for the potential for stream loss into the aquifer on the eastern edge where westward flowing streams cross the boundary. Characterization of normal flow of streams in this geographic area should be collected in order to look for potential future overproduction effects in the area where the upper aquifer is still thin. For example, comparison of 18 months worth of raw water quality data from the Jackson north and south fields shows distinct differences, for example raw pH vs. raw alkalinity, even though both fields are in the Memphis Sand and of good quality.

Accurate reservoir water quality models could serve as testable verification venues for basin scale water quality models. Basic frameworks have been developed for Cheatham and Center Hill reservoirs; these could be updated and evaluated.

[Comment 25](#)

Use the field below to provide comment on addressing current and impending infrastructure needs.

Future infrastructure needs will surely grow everywhere- in rural areas as well as urban, suburban and developing areas. In places like Middle Tennessee, the broader costs associated with urban growth and expansion (e.g. funding of schools, roads, public safety) will likely exacerbate the challenges that local officials are already facing to meet their water infrastructure funding needs.

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As such, local funding alone will be insufficient to cover the sizeable and long-range capital infrastructure needs that exist in Middle Tennessee and across the state. Conveyance and treatment of domestic

water supply, wastewater and structural solutions to reduce flood risk will be expensive and will only grow into the future. Additional direct state and federal funding through the form of grants and forgivable loans and expanded financing programs, including low-interest revolving loan funds, will be critical to meeting future needs.

At the same time, an increased focus on regional integrated resource planning could help identify new efficiencies and economies of scale that could allow local communities to reduce and share the long-term cost burden of future capital investments in water resource infrastructure. An emphasis should be placed on regional solutions to these long term operational and capital cost burdens.

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

Public education campaigns should seek to improve common understanding of the importance of water resources in the State and the complexity that underpins their sustainable management. The effectiveness of this work will be a leading determinant in the State's ability to make the case for the financial investments necessary to secure the future of the State's water resources.

Messaging should be informed and delivered by institutions that are trusted by the audiences they are intended for- Development Districts, trade and industry associations and cooperatives, environmental advocacy and affinity organizations, university extension faculty and utility districts, among others.

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

A standing advisory group could add significant value in providing independent, science-based thought to managing Tennessee's water resources. As suggested by the TN H₂O report, the purpose and function of this body should be further clarified so that its role is clear and distinguishable from other local, state and federal bodies. Additionally, its ability to guide or directly make decisions on resource management issues should be framed as an extension of the public trust and remain unhindered from political influence.

Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

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The laws cited within this recommendation should also include the Tennessee Water Quality Control Act (TCA 69-3-101) and work in this area should include and address laws and other administrative rules intended to protect and improve water quality and aquatic habitat (see comments that follow regarding water quality). A gap analysis should be conducted to identify where existing laws and regulations at the state level- along with expected funding levels, are likely to result in the state falling short in meeting the water resource management needs identified in TN H₂O. The result of this gap analysis could function as a key pillar of the public education campaign called for in TN H₂O.

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

This is a key recommendation that should be advanced as quickly as possible. Where/when appropriate, the planning effort should identify opportunities to evolve the current institutional frameworks in a manner that could help integrate long-range capital investment planning- particularly with respect to water supply, wastewater and flood management infrastructure. State Development Districts, Metropolitan Planning Organizations and Rural Planning Organizations could play a key role in providing data and analysis and in disseminating key results from this work to their respective memberships.

Please provide feedback on using the state water-resources task force or advisory committee and regional water-resources jurisdictions to facilitate intrastate and interstate regional cooperation.

The standing advisory group and its presumptive statewide perspective would add value to future discussions and interactions related to interstate and intrastate water resource management needs. As with the advisory group in general, its role should be clear and distinguishable from other local, state and federal bodies.

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

It is appropriate for the Governor and State Legislature to commit adequate funding to support the "backbone" planning, monitoring and analysis activities that are described in TN H₂O. The amount necessary would reflect a small but powerful investment in a resource that is likely to leverage greater public and private investments creating lasting economic, environmental and cultural value to the citizens of Tennessee. Specifically, the work products and outcomes that would emerge from this investment would make it easier to attract the more substantial funding that will be necessary to meet the long-term infrastructure needs and other future costs associated with protecting and enhancing the State's water resources.

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Groundwater

Are there any other ideas or comments you would like to share?

The Greater Nashville Regional Council applauds the effort of TDEC and its partners in taking this important step towards securing the future of Tennessee's considerable water resources. TN H₂O presents a view into the current state of water resources, but additional work needs to be done to develop a more strategic and prescriptive path forward. As this work proceeds, TDEC should consider

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reintegrating a focus on water quality and maintaining a balance between managing the state's water resources for sustained availability as well as for its environmental quality and ecological function. While there may be different financial, technical and institutional needs to successfully manage quantity and quality, it is no less a matter of managing the same resource- simply for multiple purposes and benefits.

More work will be necessary to plan for a future water resource that is safe, healthy and reliable in meeting the many demands that are placed on it, while also preserving ecological integrity and the ability to accommodate future needs. Leadership and staff at the Greater Nashville Regional Council are eager to work with TDEC to support future phases of the TN H₂O initiative and the full implementation of its recommendations.

Comment 26

Use the field below to provide comment on addressing current and impending infrastructure needs.

Municipalities need support with approvals for lined storm water conveyance repairs. The easements are not in place to meander these conveyances yet the infrastructure deterioration is causing major problems for adjacent property owners. We have to come up with an economical and environmentally way to address these situations.

A second issue is the streamlining by the CORP of Engineers the Mississippi River. Habitat has decreased due to this rip rap streamlining to support commercial barge transports. The Mississippi River has become a ditch. Not helpful for wildlife.

Comment 27

Use the field below to provide comment on addressing current and impending infrastructure needs.

We would request that TDEC communicate with Industry stakeholders prior to considering/adopting any additional proposals

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

I am involved with the Friends of Henry Horton State Park and we have teamed with the Duck River Agency to provide educational opportunities concerning the history, bio-diversity and sustainability of the Duck River to all 4th and 5th graders in Coffee, Bedford, Marshall, Maury and Hickman Counties. This program should be implemented across the state.

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

I feel this is a bad idea because it will become so political and people will be apportioned with their personal agendas as opposed to doing what is best for the State of TN.

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Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

See comments from above

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

See comments from above

Please provide feedback on using the state water-resources task force or advisory committee and regional water-resources jurisdictions to facilitate intrastate and interstate regional cooperation.

Bad idea

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

It needs to be sustainable without a burden to the taxpayers. There is already a fee system in place so that could be evaluated

[Comment 28](#)

Are there any other ideas or comments you would like to share?

While the task force members that prepared this document put considerable effort into it's preparation, additional input and refinement are warranted. There is a new Commissioner and Governor so there may be new ideas that should be considered. The report needs to be a "living document" with changes made periodically as situations develop. At a minimum, all comments received should be published and another review made before a final document is submitted to the Lee administration.

[Comment 29](#)

Are there any other ideas or comments you would like to share?

Please ensure that TDEC communicates with industry stakeholders, prior to considering/adopting any additional proposals.

[Comment 30](#)

Are there any other ideas or comments you would like to share?

Request that TDEC communicates with industry stakeholders, prior to considering/adopting any additional proposals.

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Comment 31

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

I am concerned about the systemic concentration of pcb congeners present in game fish and rough fish in the streams and creeks in the middle Tennessee area. What is the root cause of this problem and what is being done to address it in the plan.

Are there any other ideas or comments you would like to share?

Request that TDEC communicate with industry stakeholders, prior to considering/adopting any additional proposals.

Comment 32

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

We hope that TDEC will allow industry affected by this plan to comment prior to adopting. As written, this plan could become very political which could be harmful to certain industries that depend on the local POTWS.

Comment 33

Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

I fully support the recommendation for enforcement of existing water quality regulations and laws. I am a past board member for Tennessee Scenic Rivers Association and we have seen a significant decline in enforcement that is affecting water quality. We are so blessed with an abundance of amazing water and we need to protect it with the laws and regulations already passed.

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

I do not support the recommendations of the Recreation section of this report. [NAME REDACTED] is biased toward fishing and created a biased document.

The recommendations are heavily biased toward state investment in fishing and greater regulation of paddle sports but representatives of paddle sports were not adequately included in this process.

I am State Director for the American Canoe Association and a certified kayak instructor, and past board member of TSRA. There are five major paddling clubs across the state which were not included. ACA and American Whitewater did not have a representative on the team. And as a result, there is not adequate focus on recommendations related to safety in paddle sports.

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There are 3 major kayak manufacturers located in Tennessee which were not included. The jobs and contribution to the state economy were just ignored.

The report referenced the study done on the Ocoee River and economic impact that paddlers have on that rural region, but there is no recommendation to measure the economic impact paddlers bring to the Buffalo River, the Harpeth River or the Caney Fork. We have destination whitewater in Tennessee but we also have destination flatwater.

There were pages and pages dedicated to the study of Fish Dayton but no mention at all of the Chattajack phenomenon which involves 600 paddlers undertaking a 31 mile race. Only 6 years old, this annual event benefits the Tennessee River Gorge Trust and typically sells out about 1 hour after they open registration. There is no telling what kind of funding we could raise to benefit water resources by studying the model of this success.

Most importantly, the growth in paddling recreation should not simply be measured against the impacts on fishing. We need capacity studies to support ecological health of the rivers, economic impact studies to support the rural communities leveraging outdoor enthusiasts for tourism, and a better understanding of the right way to support county water rescue first responders.

Comment 34

Are there any other ideas or comments you would like to share?

The Southern Environmental Law Center ("SELC") is a nonprofit organization dedicated to protecting natural resources and public health across the Southeast. SELC works with more than 100 local, state and national groups, providing legal and policy expertise on issues ranging from land use to water quality, including protecting special rural and wild places in Tennessee.

SELC was one of the many volunteer stakeholders assembled to develop TN H₂O: Tennessee's Roadmap to Securing the Future of Our Water Resources ("TN H₂O"). As a member of TN H₂O's Institutional and Legal Framework working group, I write to express SELC's support for the creation of a strong statewide water plan. Last year, Governor Haslam directed the public and private sectors to work together and create a "roadmap" for adopting a new statewide water plan. This, we believe, was a critical kick-start for a more comprehensive effort. TN H₂O offers such a framework for next steps-based on input from government, industry, academic, public interest, and utility voices. We are hopeful that your administration will take up the mantle and begin the even harder work needed to create a plan with concrete goals and interim actions to achieve them.

As noted in its preface, TN H₂O has several limiting factors, including "significant data gaps." Before TN H₂O's recommendations can be fully translated into an action agenda, policymakers and stakeholders must have a better understanding of water use. How much water exists in our underground aquifers and

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surface streams, lakes and wetlands? How much is being extracted? Where is it going, and who is taking it? These questions are fundamental to water planning and the prevention of drought, as well as to gauging the efficiency of users' systems and the impacts of various uses to our State's water resources. Currently, many major users of the State's water resources are not required to collect or report this information. We therefore ask that your administration work quickly to ensure a fair, inclusive system of water use reporting across Tennessee.

In addition to highlighting the urgent need to address data gaps, we offer the following points for your consideration for managing the water supply and protecting Tennesseans-and the wildlife we share our home with-during water crises and the years in between:

- Evaluate and quickly implement a suite of water conservation and efficiency incentives, standards, and a fee structure that encourages all water users to continually move the bar towards more efficient water use, including by developing watershed-based budgets, providing technical assistance and educational campaigns, and tying grants from state agencies, including the Department of Agriculture or from the Department of Environment and Conservation, to water efficiency programs.
- Evaluate an integrated resource management approach because the value of water conservation is even greater when the wastewater value is also considered. In particular, please continue to consider the role of water reuse, if any, in water conservation efforts. As urban areas continue to grow, pressure on local water supplies will continue to increase. Nationally, groundwater aquifers used by over half of the world population are being over-drafted. The ability to reuse water has myriad potential positive benefits including improved agricultural production; reduced energy consumption associated with production, treatment, and distribution of water; and significant environmental benefits, such as reduced nutrient loads to receiving waters due to reuse of the treated wastewater.
- Finally, as you know, one of the "areas of concern" identified by the Institutional and Legal Framework working group is "resolving interstate conflicts . . . coupled with the challenging nature of current federal mechanisms for resolving interstate disputes." As more fully discussed in the TN H₂O appendix, the working group identified current or potential interstate water disputes involving Mississippi, Georgia, Alabama, and Arkansas. And, as noted in the outline, there are traditionally three ways that interstate waters are allocated among states: by Congress, pursuant to a compact approved by Congress, and by the Supreme Court. As the State works to address interstate water conflicts, Tennessee must honor its longstanding recognition that the waters of the state are held in public trust. No one owns the water here, just as all wild game and fish are-constitutionally-not private property. To be sure, Tennessee balances competing sovereign interests in utilization and preservation of shared natural resources, but preservation cannot be an afterthought. We recommend that, in interstate disputes as well as in evaluating competing intrastate uses, the long-term health of Tennessee's natural resources takes a front seat in resolving policy choices.

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Because of the short time available to the volunteers working on TN H₂O, it is by its own terms not exhaustive. We therefore look forward to additional specificity about the recommendations in the plan in order to understand their real-life implications and ensure conservation interests are embedded in every policy decision. We are optimistic, though, that TN H₂O lays the groundwork for the State of Tennessee to steward its water resources from the Mississippi River to the Great Smoky Mountains, from rural communities to dense population centers. To that end, we hope that SELC and other conservation organizations will continue to have a seat at the table and be part of the conversation.

We look forward to answering any questions and providing additional resources.

Comment 35

Use the field below to provide comment on addressing current and impending infrastructure needs.

Some states use their revolving fund, not as direct loans, but as a fund to provide guarantees to municipalities for private loans. With the loan evaluation process under the revolving loan programs and the state guarantee, then none of these loans would have an interest rate premium, thus lowering the cost of money. This is authorized by federal legislation and a few states already do this.

Comment 36

Use the field below to provide comment on addressing current and impending infrastructure needs.

See the sign-on letter from Harpeth Conservancy, et. al, for specifics of the inequities demonstrated through the Water and Wastewater Board's allocations.

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

Education is key to any successful social initiative, and TNH₂O correctly prioritized the overall recommendation "to help the public and decision-makers understand the value of water and natural resources and complexity in managing them." But that's not enough. Communicate the change you want to effect. No one wants to hear how complex it is to manage resources. You need them to act, and they need to know specifically how and why.

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

My fear in this is creating another layer of bureaucracy and time delays. Existing departments and agencies need to work together to accomplish the goals that are inherent to their existing mission.

Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

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Yes, start there. TNH2O does not clearly answer why the Water Resources Act has not been implemented in over 50 years. (I can't swallow "consistent funding limitations.") And TNH2O does not clearly explain why the Watershed Districts have dwindled to a tenth their original number. I suggest starting with finding those answers. Let's try to fix what's broken instead of throwing it away.

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

Start small. Get it going. Sufficient public data exists (see example link below) to form the foundation of a good water resources protection strategy. Considering TN has not been very organized in this effort - ever - any progress is good progress.

<http://uswateralliance.org/sites/uswateralliance.org/files/publications/Roadmap%20Executive%20Summary.pdf>

Please provide feedback on using the state water-resources task force or advisory committee and regional water-resources jurisdictions to facilitate intrastate and interstate regional cooperation.

Fix the existing - albeit dysfunctional - structure or replace it entirely. Don't add another layer.

Please provide feedback on identifying sustainable funding for all TN H2O recommendations.

How about a portion of TWRA Non-Motorized Vessel Outfitters' permit fees?

Would you like to share suggestions or input on specific sections of the plan? Select from the list below.

Groundwater Surface Water Natural Resources

Are there any other ideas or comments you would like to share?

With great respect to the authors for their hard work, calling TNH2O a "roadmap" is misleading at best. A true roadmap and "commitment to the availability of sustainable Tennessee water resources" would be evidenced in a thorough, data-driven analysis with specific recommendations for improvement. Instead, it appears the "aggressive schedule" mentioned in the Executive Summary left no time to draft a single action step.

TNH2O authors admittedly focused on water quantity rather than water quality issues, but the two are inexorably intertwined.

Start with the data. It's already being collected in a hundred different places. Consolidate that information, then let the library of data reveal the real issues.

[Comment 37](#)

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Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

This is a great need! If you want to actively pursue this education campaign, you need a dedicated education staff to implement. There is already good momentum in TDEC for Environmental Education and could be combined to promote water education.

Additionally, a full-time role to oversee Water Education for the State of Tennessee would be valuable. This person should be experienced in science, education, and communication to make the improvements needed.

Education and Outreach is sometimes considered to be an easy approach, but it is not effective if you do not have the right leaders.

Are there any other ideas or comments you would like to share?

Request that TDEC communicate with industry stakeholders, prior to considering/adopting any additional proposals.

Comment 38

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

I appreciate and concur with the emphasis placed on protecting the headwaters of our streams and rivers. If we allow the degradation of these headwaters, how can we expect the downstream water quality not to be impacted negatively?

We have a very high percentage of our streams and lakes listed as "impaired". I don't believe that issue is adequately addressed in the recommendations. Seems like that would be a great starting point.

Thanks for the work done on this "roadmap" and for the opportunity to comment!

Comment 39

Use the field below to provide comment on addressing current and impending infrastructure needs.

This is a very useful survey and a good starting point. My main concern (in addition to water quality issues) is the effect of climate change on water issues as well as other aspects of life in Tennessee. Although climate change is described in the report I don't see any recommendations that specifically address it.

Thank you. This is a general comment and not a section specific one.

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Comment 40

Use the field below to provide comment on addressing current and impending infrastructure needs.

There was very little discussion of the deteriorating water quality of all TVA lakes, especially those used as a public water source. Protecting the source should be part of the infrastructure concern.

Effective and reasonably priced water treatment also needs to be factored in here. The State needs to test and evaluate various types of filters and treatment devices and place them on state contract so that the more rural water supply companies have access to needed treatments. NY State recently proposed a new standard of 1- 4 Dioxane which water companies predicted will DOUBLE the cost of water since the only methods of treatment are with reverse osmosis or H₂O₂ Uv light followed by GAC. And the lack of laboratory testing by all Tennessee Water purveyors for organic contaminants, especially PFOA/PFOS, will also result in enormous cost increases.

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

As a former science teacher, and as Executive Director of the Long Island Water Commission, we developed a K-12 Water resources Curriculum. We also started poster contests in the local schools culminating in the winners being showcased during Water Week, a slogan contest similar to what CA has been doing for years, and an in-house training program for teachers to help them foster students into better stewards.

Nevertheless, when I prepared a water conservation plan for the Suffolk County Water Authority, I contacted many major water companies across the country, and they all said the same thing: While education makes many feel good, the most effective way to get people to conserve water is through the pocket book. When rates are raised, water usage goes down immediately!!

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

This is critical, and must have the authority to not only identify failures of various departments and agencies, but legally able to force compliance. The State Comptroller's very critical reports on TDEC in past years, including 2018, has failed to result in the needed changes. The San Francisco Bay Commission, the California Coastal Commission, the New Jersey and Long Island Pine Barrens Commissions were all created by States that finally recognized that local and state governments had not been effective in addressing critical issues and an effective overseer was needed.

Key to protecting the states water resources is mandating all Counties implement ZONING, including a zoning category for watershed protection. You don't build a gas station or dry cleaner or manufacturing industry next to your drinking water supply.

Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

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Unless there is clear and effective evaluation as to why these previous laws were never fully implemented, this exercise may be futile. Its building on a foundation that is already flawed. Doing the same thing over and over again, expecting a different outcome is the definition of insanity.

A specific entity must be given the legal responsibility to enact and enforce these laws. If not, they're just words on paper.

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

Absolutely essential! "Where there is no vision, the people perish". The New York Water Resources Planning Council prepared a Statewide Plan, and then 7 more detailed sub-state plans. Local governments and water districts were strongly urged to adopt and implement the recommendations and Council prepared yearly "report cards" to the legislature and public as to how well the plans were being implemented.

Please provide feedback on using the state water-resources task force or advisory committee and regional water-resources jurisdictions to facilitate intrastate and interstate regional cooperation.

Also necessary, and there are many such entities, either commissions or compacts, such as Lake Champlain Compact, between NY and Canada.

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

A one penny tax on each gallon of water used.

Pass the returnable bottle bill and use the proceeds from all of the un-returned bottles to fund needed programs. NY State Comptroller did a study to determine where the unclaimed nickel deposits went and determined that the bottling industry was keeping \$400 million each year. After a two year battle, the state reached an agreement to split the money. New York gets \$200 million each year which it places into an Environmental Protection Fund (EPF) Since TN has 1/3 the population of NY, I suspect this could bring in \$100 million, since the bottling industry will not have any expenditures based on the latest amendments to this law that has been discussed for the past 13 years.

Are there any other ideas or comments you would like to share?

* While economic growth was mentioned many times in the intro, the health and safety of our current residents of Tennessee wasn't. Water availability concerns stated, but not water purity free from contaminants.

* "Additional resources to help farmers" YES like New York's Agricultural Environmental Program (AEM). Farmers given funding to be better stewards, less adverse impact on environment and increased profits--funded in part by 5 cent bottle deposit!!

* "Collaboration among state cabinet department".

Governor can issue executive order requiring TDEC, TWRA, Dept of Agriculture, Health, and Economic Development to coordinate--monthly meetings.

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* " a need to improve monitoring analysis of water resources". State of Tennessee lacks a 20th century laboratory, much less a 21st century one. A GCMS should be purchased immediately as well as other critical equipment so we can begin to gather a much clearer picture of how much of our water is contaminated with what substances. TDEC's failure to adequately monitor the Army munitions plant on Holston River for Perchlorate, and PFOA/PFOS. Inadequate monitoring of ORNL and entire river corridor, especially backwater wetlands that flooded; failure to give NPDES discharges to water used for drinking purposes a higher level of scrutiny.

* Disagree that "the nature of agricultural water use makes difficult the collection of data" unless you are referring to the lobbying of the Farm Bureau against such management practices. Many other states require this. Although strongly opposed by NY Farm Bureau 30 years ago, that state requires all agricultural wells 1st obtain a permit from state.

This did not prove to create any significant hardship and more importantly, gave government the ability to provide farmers with much needed advice as to where wells should be located, especially if they could be strategically placed to act as remediation wells, i.e intercepting leachate produced by the farmers use of fertilizers, pesticide and herbicides. Failing to regulate farms will not shield them from the liability they will incur when their operations contaminate a public water supply. Case law has already determined this, and the State should not ignore that fact.

* A separate chapter should be created for Water Dependent Uses/Industries.

Each one should present economic data, population impacted, and historical significance, followed by:

1. A listing of issues that exist.
2. Potential suggestions for addressing those issues, as well as recommendations for enhancing the resource and its uses. The current controversy over TWRA imposing fees on recreational users on waterways is an example.

Are there any other ideas or comments you would like to share?

More people of color, more women, more people who experience poverty!

The steering committee, public input, and drafters are mostly white. Water conservation is an environmental justice concern; data from all over the globe shows that poor people, people of color, and women are hit first and hardest during crises.

Have water disaster/crisis plans readily available; and make sure volunteers and first responders are adequately trained.

Get legislators on board to add "teeth" to recommendations.

Use the field below to provide comment on addressing current and impending infrastructure needs.

More planning, implementation, and enforcement needed in regards to:

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1. Checking existing piping infrastructure that may have contaminants such as lead present, and replacing those pipes. This is for urban AND rural areas.
2. Urban storm water management. We need more structures such as bio-retention ponds in urban areas, and infrastructure added to buildings to channel as much of that water as possible.
3. Waste Water-removing more pollutants (such as micro plastics) from waste water before it is released.
4. Re-establishing wetlands, as they mitigate flooding and have immense economic value for the state in the long run.
5. Restoration of the the natural shorelines of rivers and creeks, and undo the damaging channelization that causes and exacerbates flooding and erosion (for example the Wolf River in West Tennessee). Restoration of the creeks and rivers also holds immense economic value in recreational use.
6. TVA Ash ponds. These "retention" ponds have been shown to leak into surface and ground water.

Use the field below to provide comment on developing an education campaign regarding the value of water and natural resources.

1. 1 stop online resources to water data; accessible for adults and children
2. Integrate water conservation into the required curriculum for K-12 students
3. Have a "Year of Water" educational campaign, multi-disciplinary planning and approach: arts, sciences, businesses. A capitol campaign on the scale of the celebration of the state's birthday. Shows, traveling exhibits, public murals (and other public art), incentives for business to practice water conservation (similar to the "easements" used for hiking trails), radio shows, podcasts, museum exhibits.
4. Campaign to encourage "citizen scientists;" with incentives, maybe science fairs for K-12
5. Paid internships for high school and college to focus on water resources
6. Accessible job training for adults interested in switching careers, or integrating water resource management in their current jobs/careers.
7. AmeriCorps VISTA service experiences for developing localized educational campaigns for nonprofits and government entities

Please provide feedback on chartering a state water-resources task force or advisory group focused on proactive water-resources management.

Be sure that the task force and advisory group is diverse! African Americans, Native Americans, Hispanic people, etc need to be represented. People of different socio-economic classes need to be represented. People of various disciplines-geologists, anthropologists, ecologists, law enforcement, etc, need to be represented. Also, many faiths consider being "good stewards" of our resources important. Get them on board as well.

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Please provide feedback on evaluating laws (e.g. Water Resources Act, Watershed District Act, Water Resources Information Act) for possible full implementation.

Hire more enforcement officers!

Please provide feedback on developing a comprehensive water resources planning process and planning cycle.

1. 5, 10, and 20 year planning cycles
2. Hire the people necessary to collect and study the data, and make the necessary, educated recommendations. Volunteers are great, but this is an on-going process, and needs full-time, paid attention.

Please provide feedback on using the state water-resources task force or advisory committee and regional water-resources jurisdictions to facilitate intrastate and interstate regional cooperation.

So far, looks like you are doing a great job reaching out and getting cooperation. Please continue to do so. Make sure the legislators and governor support the committees enough beforehand to accept and act on the recommendations. Take the time to develop the relationships (and incentives) needed to get interstate cooperation.

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

1. Tax on oil, coal, and natural gas companies that put immense strain on water resources, and that ult
2. Use those TVA fines (and other fines)
3. Hire the enforcement officers needed to collect those fines!
4. Get public input on adding an additional taxes to fund long-term sustainability. Be sure to do the proper campaigning and educating needed to get those taxes passed.
5. EPA grants?

Are there any other ideas or comments you would like to share?

More people of color, more women, more people who experience poverty!

The steering committee, public input, and drafters are mostly white. Water conservation is an environmental justice concern; data from all over the globe shows that poor people, people of color, and women are hit first and hardest during crises.

Have water disaster/crisis plans readily available; and make sure volunteers and first responders are adequately trained.

Get legislators on board to add "teeth" to recommendations.

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Comment 42 (Received by mail)

Please provide feedback on identifying sustainable funding for all TN H₂O recommendations.

With Almighty God, Nothing Is Impossible! God's blessings to all of us!

Are there any other ideas or comments you would like to share?

Yes, in the northeast TN area, there are 7 roads without water! This area has pipes near that are:

Johnson City Water

Jonesborough Water

Chuckey Water

Kingsport Water

Yes, unreal for one area!

I [NAME REDACTED] feel blessed to know that Tennessee is working millions of long hours to come up with a work plan that will be super wisdom! May God Richly Bless All of Us! To God Be the Glory! Thank You! Blessings!

Comment 43

The Harpeth Conservancy, Obed Watershed Community Association, Richland Creek Watershed Alliance, Tennessee Chapter of The Sierra Club, Tennessee Clean Water Network, Tennessee Environmental Council, and the Tennessee Scenic Rivers Association (collectively, "Commenters") submit the following comments on the TN H₂O Plan (<https://www.tn.gov/environment/program-areas/wr-water-resources/tnh20.html>) (the "Plan"). We appreciate the time and effort that went into preparing the Plan, as well as the opportunity to comment on the Plan.

To briefly summarize our comments, the Plan lays out many (though not all) of the issues facing Tennessee's water supply. Omitted issues, or those not given appropriate attention, like the direct connection between water quantity and water quality, should be more fulsomely addressed. Tennessee's water quality can significantly help or detract from the State's reputation in many important areas. Future efforts should now be concentrated on enacting policy solutions that will actually help solve the problems facing Tennessee's waters.

Our purpose in these comments is not to provide a lengthy, comprehensive set of comments on every point raised in the Plan, but, rather, to highlight issues of particular concern that we believe are amenable to solutions with attention to the particular issues raised.

I. Overall Comment

"Proposed Recommendations-Executive Summary" (Page 11 of the Plan)

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First, we note that a principal purpose of the Plan appears to be to raise public awareness of the issues involved:

"The working groups recommend developing a campaign to help the public and decision-makers understand the value of water and natural resources and complexity in managing them. The campaign could identify the critical role of water and natural systems in enabling and supporting quality of life and economic development in the state-from maintaining vibrant communities to industrial and population growth to recreation and tourism. The campaign could raise awareness of how individual and collective actions affect this public trust and of the importance of stewardship to protect the resource."

We strongly support this recommendation, as those of us in the environmental community have long noted and regretted the generally low level of awareness and understanding of the importance of our water resources and their protection to both the quality of life and our economy. We would welcome the opportunity to work with the Tennessee Department of Environment & Conservation ("TDEC") to develop and implement a campaign as recommended above.

Many of the solutions to the issues raised are already known and available, but the Plan does not, for the most part, attempt to note these possible solutions or to begin the hard work of choosing between alternatives or implement those solutions. Further, we note that Tennessee has engaged in actual planning efforts - it knows how to do that - and it needs to resume those efforts. For example, TDEC still acknowledges the Water Resources Regional Planning page from prior planning efforts. The two (2) regional plans produced in 2008 - 2011, South Cumberland and North Central, can be found there. They projected needs through the year 2030, analyzed alternatives for meeting those needs, and selected the best, most cost-effective and sustainable alternative. Actual planning involves significant work, and Tennessee should not hesitate to return promptly to the state's prior work as blueprint for what actually needs to be done. Highlights of our comments are below, in roughly they order they appear in the Plan.

II. Recommendation for creation of a water resources agency:

"Recommendations-Water's Institutional Environment" (p. 24 of the Plan) recommends that a water resources agency be established:

"Consider amending the Water Resources Act to establish a multidisciplinary and multi-stakeholder task force or similar agency for water supply planning, allocation, management of flow regimes, and conflict resolution."

We agree that Tennessee needs a better way to ensure that our utilities will operate in the public rather than competitive or other interests. We do not necessarily believe that the State needs another governmental bureaucracy and that the State likely possesses most of the authority it requires to make the changes needed. Tennessee has significant authority under the federal Safe Drinking Water Act, the Clean Water Act, and the Drinking Water and Clean Water Revolving Loan Funds. The State also possesses rule-making power under the statutes creating the Water & Wastewater Finance Board. To date, the authority available under these statutes do not seem to have been used in a coordinated fashion, particularly to serve the very real needs of rural communities.

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For example, in 2017 an already very wealthy city of 62,000 able to self-finance its own water and sewer improvements, received between one-third to one-half of all State Revolving Funds ("SRF") for that year, approximately \$100mm of \$240mm SRF availability that year. As a result of this distribution of funds to a single community, funds were not available to help other and rural communities, including to avoid defaults. By comparison, Shelby County was to receive the second largest loan, \$49,300,000, even though Shelby county's population is 646,889, or approximately ten (10) times the population of the largest SRF loan recipient. The next closest loan amount, only approximately one-fourth of largest loan, was \$27,500,000 for Smyrna, Tennessee. The remainder of the loans were \$15,000,000 or less, most of them being \$1,000,000 or below. Twenty-four of the fifty-three listed on the 2017 Clean Water State Revolving Fund priority ranking list projects are \$1,000,000 or below. All twenty-four of these projects (some of the locations have more than one project with less than \$1,000,000 in loans) add up to \$19,159,725. This total for these twenty-four locations represents approximately one-fifth of the SRF loan allocated to the largest recipient. If SRF loans were funded as noted above, that distribution suggests a need to revisit the State's SRF priority ranking system.

Similarly, with respect to the TN Board of Water & Wastewater Finance, although the Board has made significant strides in reducing water losses (non-revenue water) through, among other efforts, the use of AWWA M36 software, much additional work could be done. The Board could require the use of AWWA M36 auditing software with Level 1 validation, which would substantially enhance efforts to reduce water loss, at a modest additional cost. Georgia uses such a system, and Tennessee should be entitled to the same, leading protections.

III. Recommendations for funding for growth in water infrastructure:

"Recommendations-Infrastructure" - (Page 40 of the Plan)

The Plan states that: "Although Tennessee's public providers are to be commended for their proactive approach to maintaining current systems, we must also pay attention to additional maintenance, repair, and replacement of the existing aging infrastructure. Doing so today on a comprehensive level would likely create prohibitive rate structures that most of the public could not bear. Even with contributed capital as a funding source, some public entities will not be able to fund the \$13.9 billion "local share" without burdensome rate increases for their customers. Therefore, and in keeping with legislative action establishing the Water Resource Act, we urge that this act be implemented in a way that creates additional funding sources for Tennesseans to meet these needs while offsetting excessive rate adjustments."

Although we believe that the Plan is correct in identifying that significant additional revenues will be required, we believe it should focus on the true nature of the issue, that most development does not pay nearly enough of its own actual costs, but pushes those costs on to future taxpayers and ratepayers. As one commentator phrased the issue:

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City councils and so on have incentives to grow [their cities]. The upfront costs of doing that are pretty much all covered by other people. And in the short term there's a nice boost to property taxes from those nice new houses that other people have paid to build. However, those taxes are not enough to pay for the necessary upgrades of and maintenance to (and eventual necessary replacement) of the infrastructure to support that housing. The only way to pay for that is another round of growth, more debt or....well, that's the Ponzi scheme of the title.

Tennessee should take the opportunity the Plan presents to re-think how it pays for growth, to make sure that costs are fairly distributed.

One significant way to address the true cost of growth and to realize the savings that will be necessary to pay for it, is to begin promptly the regionalization of utility providers. The State already possesses significant authority to begin this process under both the State Revolving Loan Fund and the statutes establishing the Water & Wastewater Finance Board. The SRF has authority to include general and special conditions in its loan agreements. This authority could also be used to address other issues, such as participation in programs to reduce nutrient pollution. Existing authority of the Water & Wastewater Finance Board could be utilized to help ensure greater regionalization and consolidation of inefficient utilities.

IV. Recommendations for data collection:
"Recommendations-Infrastructure" - (Page 40 of the Plan)

We applaud the statement in the Infrastructure recommendations that: "We encourage consistent monitoring, data collecting, and reporting to provide usable modeling and trending data. This should be implemented (a) to include all major water users and stakeholders; (b) based on the most current and accepted science-based practices; and (c) with the goal of establishing a means of comprehensive planning and information sharing.

To similar effect is the statement in "Areas of Concern" on page 35: "A need for greater transparency, collaboration, and support for science at all levels in both the public and private sectors in support of the regulatory framework and more effective and inclusive decision-making."

Only thorough, evidence-based decision-making is defensible, and we encourage Plan participants and users to ensure that all decisions and policy choices are supportable by sound and adequate science and data. Inclusiveness is the only sure way to acceptance of policy decisions.

V. Recommendations for Groundwater

Areas of Concern-Groundwater

One of the critical needs identified in this effort is to better delineate the Memphis aquifer recharge area and better understand how recharge takes place within it. Other areas of the State can benefit from an improved understanding of the exchange between surface water and groundwater. Moreover, how the

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State's groundwater resources can best support municipal, agricultural, and industrial users' needs to be considered. Groundwater monitoring networks are lacking to nonexistent across the State, even in areas that most rely on groundwater.

As noted on page 28, "Groundwater is a critical resource used for domestic, public, industrial, agricultural, and irrigation water supplies." Public water systems in 66 counties use groundwater as a source, serving more than 2.3 million people. These figures do not include private wells serving residences in primarily rural areas of the state. Yet groundwater in Tennessee is regulated mostly by a philosophy of "out of sight, out of mind." As noted, aquifers are prone to contamination from their direct connection to the surface through sinkholes and surface waterbodies, yet Tennessee currently has no comprehensive groundwater monitoring networks for assessing key groundwater uses or quality.

Recommendations-Groundwater

We strongly agree with and support the groundwater Working Group recommendations, particularly those that relate to improving the understanding of the importance of groundwater resources by the general public and decision makers.

VI. Recommendations re water quality issue

Natural Resources & Surface Water Resources chapters

We agree with and affirm this area of concern: "A need to reduce pollution and to maintain and restore the ecological functions and health of Tennessee's streams and watersheds, including floodplains and riparian conditions, to support aquatic habitat; clean water for domestic, agricultural, and industrial use; flood control; and recreation. Clean and plentiful waters that are fishable, swimmable, and provide adequate and reliable sources of drinking water are key to equitable and sustainable communities."

Tennessee's water resources cannot be seen as simply a source of water for the use of people, agriculture, and industries. If Tennessee is to sustain healthy and equitable communities, the full functions of streams and watersheds must be maintained, protected, and restored.

We are pleased to see the recognition of the major threats to Tennessee's water quality, which cannot be separated from water quantity. According to pages 6-7 of the Natural Resources Chapter:

"The primary causes of stream and river impairment are pathogens (specifically, *Escherichia coli*), excess sediment, habitat alterations, organic enrichment (resulting in dissolved oxygen issues), and nutrients originating from livestock and crop production land uses, channelization, urban stormwater runoff, municipal sewer system overflows and point source discharges, and land clearance for construction (TDEC 2018a)."

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To similar effect are statements in the Surface Water Resources chapter, such as those on page 6:

"Recommendation: Protect the foundational natural processes critical to sustaining the health and abundance of Tennessee's water. To accomplish this, our leaders must prevent the weakening of water laws and rules pertaining to water health and abundance. Continue close communication with Tennessee's congressional delegation on matters involving water resource management, clean water programs, and funding."

TDEC has long known of the severity of these issues, but has focused too little attention to applying known solutions and already available regulatory tools to make tangible improvements in water quality. Less than half of Tennessee's stream miles have been assessed (although nearly all of its large reservoirs have been assessed), and of the half of the stream miles assessed, only half of those meet water quality standards (about 68% of reservoirs do). Only ten percent (10%) of Tennessee's streams support all designated uses.

TDEC has the requisite regulatory authority and, indeed, is required by law, to ameliorate and abate existing water pollution conditions in the State. The Tennessee Water Quality Control Act ("TNWQCA"), provides that:

(a) Recognizing that the waters of Tennessee are the property of the state and are held in public trust for the use of the people of the state, it is declared to be the public policy of Tennessee that the people of Tennessee, as beneficiaries of this trust, have a right to unpolluted waters. In the exercise of its public trust over the waters of the state, the government of Tennessee has an obligation to take all prudent steps to secure, protect, and preserve this right.

(b) It is further declared that the purpose of this part is to abate existing pollution of the waters of Tennessee, to reclaim polluted waters, to prevent the future pollution of the waters, and to plan for the future use of the waters so that the water resources of Tennessee might be used and enjoyed to the fullest extent consistent with the maintenance of unpolluted waters.

For example, Tennessee Code Annotated § 69-3-108(g) provides, in part, that:

Under no circumstances shall the commissioner issue a permit for an activity that would cause a condition of pollution either by itself or in combination with others.

Nevertheless, Tennessee is significantly behind in its duties to address nutrient pollution, which the USEPA calls "...one of America's most widespread, costly and challenging environmental problems...." The State's failure to address this problem adequately is well documented. See Mississippi River Collaborative, *DECADES OF DELAY* (November 2016), and the discussion of Tennessee's lack of

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progress therein). For example, the report notes that although the number of stream miles in the state impaired by nutrients has increased by approximately 70% over the last decade, TDEC has not developed numeric nutrient criteria. As of the date of the report:

NPDES permits [issued by TDEC] are not sufficiently controlling for nutrient pollution as not a single permit contains a water quality based effluent limit derived from Tennessee's numeric nutrient translator. The state has developed just five nutrient related TMDLs and has not implemented the resulting wasteload allocations in NPDES permits.

We also note the Tennessee has not finalized its now four (4) year old 2015 Tennessee Nutrient Reduction Framework. TDEC similarly engaged in a pilot program to optimize sewer plants to reduce nutrient discharges, but has not continued the program, which showed promising results, or announced a replacement program.

VII. Recreation & Tourism

Commenters appreciate the inclusion of a discussion of the importance of recreation and tourism in the Plan. We believe that it could furnish the basis for further discussion of the issues and solutions to them.

Commenters first note that the principal focus of the chapter is on "consumptive" or permit-driven recreation - recreational pursuits requiring a permit to take or consume a natural resource, such as hunting and fishing. Although these are important topics, they are not the only kinds of water-based or water-necessary recreation in the State. Tennessee hosts several paddlecraft manufacturers, and several such pursuits are increasingly popular with Tennesseans. That growing popularity has put significant pressure on popular spots, such as the "Narrows" area of Harpeth River State Park, the Caney Fork River below Center Hill Dam, and the Duck River (as well as the case of the Ocoee noted in the Plan). The conflicts among user groups spawned proposed legislative fixes, i.e., 2018's SB 1335, HB 0785. This legislation gave TWRA the authority to regulate commercial non-motorized watercraft outfitters. This legislation, although perhaps well-intentioned, has so far spawned three (3) bills in the 2019 General Assembly session seeking to repeal it, or limit its scope.

Commenters believe that the preferred approaches should include: 1) establishing a paddlecraft advisory board composed of users, outfitters, and other stakeholders to discuss and formulate a mutually acceptable approach, and 2) recreational usage capacity studies on the most heavily used waters of the State, to determine what usage loads these rivers can handle without permanently damaging the resource.

More importantly, the Plan and future efforts should recognize and seek to leverage further the great natural assets Tennessee possesses. Promotion of those assets could go a long way towards addressing a priority for our State - the need to assist Tennesseans in rural areas. Greater tourism development in our rural areas could not only provide much need jobs for rural county residents but also

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preserve what makes Tennessee such a special and desirable place for residents and visitors alike and offers great economic value to our State . Tennessee has shown that well-spent resources - such as the highly successful "Soundtrack of America" program, which yielded a 19-to-1 return on investment - can provide significant benefits.

We are excited about the opportunity that the Plan presents to begin to tackle the many issues Tennessee faces, and the opportunities presented. We look forward to working with you on the next phases of the Plan.