



City of Austin

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Watershed Protection and Development Review Department
P.O. Box 1088, Austin, Texas 78767

October 30, 2009

Mr. Mark R. Vickery, P.G.
Executive Director
Texas Commission on Environmental Quality (TCEQ)
MC 109
P.O. Box 13087
Austin, TX 78711-3087

RE: Petition for rulemaking to repeal the Highland Lakes discharge ban
Rule Package No. 2010-002-PET-NR (TCEQ Docket No. 2009-1586-RUL)

Dear Mr. Vickery:

The Cities of Leander and Granite Shoals have petitioned the Texas Commission on Environmental Quality (TCEQ) to repeal the prohibition of discharges of wastewater to the Highland Lakes (30 TAC 311, subchapters A, B, and F). The petition was filed on September 25, 2009. The City of Austin requests that TCEQ deny this petition and continue to preserve these high quality reservoirs. These precious waters are utilized by millions of Texans as their source of drinking water. They also serve as high quality aquatic habitat, substantial contributors to the regional economy, enhancers of residential and commercial property values and regionally important contact recreation resources. To date, Travis County, the Village of Volente, Lake Travis Chamber of Commerce, the City of Lakeway, and several citizen organizations have issued resolutions in opposition to this petition. On November 5, 2009, the Austin City Council will be considering a resolution opposing this petition. Specific reasons for the denial of this petition include:

- **Governor's Select Committee Findings:** The current prohibition on wastewater discharges to the Highland Lakes originated from the findings of Governor Clements's Select Committee on Water Quality Standards for Lake Travis and Lake Austin (1983). The findings of the scientific experts of this diverse and bipartisan committee were unambiguous, and clearly recommended the prohibition of discharges to these water bodies. The water quality conditions upon which those findings were based have not improved over time, providing no justification for this petition. In fact, due to population growth and the corresponding increase in non-point source pollution, water quality protection measures for the Highland Lakes should be made more stringent, rather than removing them.
- **LCRA Model Shows Potential for Increased Degradation:** The Lower Colorado River Authority (LCRA) has spent significant time and money developing calibrated water quality and hydrologic models of the Highland Lakes. Modeling scenarios include an evaluation of new point source discharges to the lakes similar to those that could occur with the repeal of the existing discharge ban. The nutrient enrichment from the addition of wastewater effluent to Lake Travis could degrade the quality of the lake to such an extent that summer algal growth could increase on average by 42% and the maximum growth could increase by 102%. This represents a transition to a eutrophic state based on predicted chlorophyll-*a* concentrations. The City believes the change in trophic status is a violation of TCEQ's Tier 2 anti-degradation policies (30 TAC 307.5). Decreases in water clarity and dissolved oxygen impacts are expected results of the predicted increases in algae growth, as well as fundamental changes in lake ecology that result when lakes undergo nutrient enrichment.

- **Eutrophication Threatens Existing Recreation Uses:** Non-point source pollutant loads are increasing over time with increasing development in this area. These patterns underscore the high sensitivity of this system to nutrient enrichment. Discharges directly to lake would rapidly accelerate the eutrophication of these water bodies and threaten not only the ecological integrity but also the aesthetic appeal and recreational future of these vital resources.
- **Emerging Contaminants:** Pharmaceutical and personal care products (PPCPs) are an emerging issue for water suppliers across the nation. These PPCPs can affect both human and aquatic life even at very low concentrations, can be very difficult to detect and may not be removed in either the drinking water or wastewater treatment processes. Allowing effluent discharges to the Highland Lakes could not only alter the ecology of the Colorado River but also pose additional risk for millions of Texans by introducing such contaminants into the lakes.
- **City of Austin's Drinking Water Supply:** The City of Austin is investing heavily in a new drinking water treatment plant that will withdraw water directly from Lake Travis, and all of Austin's drinking water is currently withdrawn from Lake Austin. If algal growth is increased in Lake Travis, this will significantly increase the annual operating cost of all of Austin's drinking water treatment as activated carbon will be utilized with increased frequency to remove objectionable taste and odors produced by algae. Furthermore, testing and treating for emerging contaminants could pose significant cost increases and not all such contaminants may be treatable. It will be far better for public health and cost containment to prevent emerging contaminants from entering the Highland Lakes through continued discharge prohibitions.
- **Effluent Not of Same Quality as Lakes:** The petition claims that water quality of treated effluent is better than the existing water quality of Lake Travis. Treating to such a stringent level would be prohibitively expensive and no treatment plant in existence in Texas would be capable of treating dissolved solids and nutrients to the existing ambient concentrations found in the Highland Lakes. As noted above, the LCRA model demonstrates that effluent discharges will have a negative impact on the water quality of the lakes and emerging contaminants pose additional threats.
- **City of Austin Discharges to Downstream River Segment:** The City of Austin discharge wastewater effluent to the Colorado River downstream of Austin. However, flow conditions in the un-impounded Colorado River are such that even with the discharge, TCEQ has consistently designated the water quality in the river downstream of the City's discharge as "exceptional". The lotic ecosystem (running water) portion of the Colorado River (downstream of Austin) will respond to nutrient enrichment from wastewater effluent in markedly different ways relative to the Highland Lakes. The Highland Lakes are impounded, lentic ecosystem (standing water) segments of the river, characterized by significantly longer residence times. Additionally, the City of Austin has voluntarily sought more stringent limits in its discharge permits and is surpassing even those stringent limits. Moreover, unlike on the Highland Lakes, there are no public drinking water supply intakes downstream of Austin.
- **Not a Valid Conservation Argument:** The petition claims to represent a reclaimed water initiative. Discharging effluent to the lakes versus land application of effluent is not a water conservation measure. The cumulative volume of existing land application discharges (estimated at 7 MGD) that could transition to direct discharges to Lake Travis represent less than 0.6% of the total Colorado River average flow. Despite this small volume, the potential adverse impacts of the increased nutrient loading from this effluent addition vastly outweigh any increases in

available water supply. Furthermore, diverting effluent that is currently being used for irrigation is simply a shift in water use and not a conservation measure, since other water in many instances will still be needed for the irrigation.

- **On-Going Drought Heightens Degradation Impact:** The on-going severe drought is cited as an additional reason in support of this petition. However, with a severe drought there is less ambient water for dilution and longer hydraulic residence times that will further exacerbate nuisance algal growth. Although this effluent would be an additional source of the water, the minimal benefit from the small flow addition is substantially outweighed by the adverse impacts caused by the increased pollutant loading.
- **Texas Land Application Permits (TLAPs) Are Responsible Growth:** The current rules have been in place for the past 23 years and growth of communities near the Highland Lakes has proceeded at a rapid rate. Development is occurring throughout this area with the existing rules utilizing land application methods for wastewater disposal. The current prohibition on discharges directly to the lakes is not a deterrent to growth, but does serve as an effective control for unacceptable water quality degradation.
- **Discharge Not Needed to Replace Septic Tanks:** Although not as much of a problem for Lake Travis as Lake LBJ, removal of older onsite wastewater facilities is listed as a primary goal of this petition. However, construction of a central sewer system for a community does not necessitate discharge from the central wastewater treatment plant. The collection system can be designed for treatment and land application systems rather than for discharge to a major source of drinking water and recreation for millions of Texans.
- **TLAP and 210 reuse rules can be adjusted:** This petition has been made because these communities such as Leander see an economic benefit in discharge over land application. Some estimates of irrigation and pond costs that appear excessive. In addition, there are several irrigation water consumers such as of golf courses ready to accept treated wastewater. Also, at higher levels of treatment, some of the controls such as access restrictions could be reduced on a case by case basis. If the current rules on land application do not allow reduced controls when technically justified, then it is the rules themselves that should be adjusted rather than repealing the longstanding prohibition on discharge to the Highland Lakes.
- **Leander has regional options:** We understand that Leander also has ongoing negotiations for diversion of their wastewater to the Brushy Creek Regional Wastewater Treatment Plant. There are no prohibitions on discharge to Brushy Creek or the Brazos River Basin. A discharge to this free flowing system would be more akin to the City of Austin discharge to the Colorado River than the proposed discharge to a drinking water and flood control reservoir in the Highland Lakes chain. Diversion to this plant would also be more consistent with the TCEQ policy on Regionalization of Wastewater Treatment. In fact, the repeal of the prohibition on discharge to the Highland lakes would be contrary to regionalization efforts if each small community separated by shoreline topography was to have their own wastewater treatment plant and discharge location.
- **Local Employment Impact Statement:** The rule recommended by the petition would require a Local Employment Impact Statement under Texas Government Code Section 2001.022. The rule contemplates a complete reversal of the discharge prohibition that protects the bodies of water that are the subject of these subchapters. These bodies of water support extensive contact recreation, and the businesses supported by and that cater to contact recreation - boating, diving,

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etc. - as well as related businesses such as waterfront restaurants and tourist lodging. These businesses would be harmed by any even potential or perceived adverse effect on the water quality. The bodies of water also are sources of drinking water for millions of people, and any adverse effect on their quality certainly may have an even more significant impact on area businesses and the economy in general, where these bodies of water are widely noted for their high quality, and the State's protection of them. At the very least the TCEQ must evaluate the potential economic effects before proposing such a rule.

- **Regulatory Impact Analysis:** The requested rule also would require a Regulatory Impact Analysis under Texas Government Code section 2001.0225. The original rule was arguably adopted under the general powers of the agency. There is no specific state law pertaining to a prohibition on discharges into the bodies of water as are the subject of these subchapters. There is certainly no specific state law pertaining to a repeal of same.

In order to protect the superior drinking water supply and recreational assets for millions of Texans, the City of Austin respectfully requests that TCEQ deny this request for rulemaking. The rules were implemented based on the Governor's Select Committee findings with extensive scientific input. Since these rules were promulgated with recommendations from the highest level, any consideration to overturn them merits extensive review. We request that no formal rulemaking should proceed until a complete scientific analysis of the potential impacts that discharges to these reservoirs is conducted by TCEQ staff and stakeholders. The City of Austin will gladly participate in any future Technical Advisory Group.

If you have any questions regarding these comments, please contact me at (512) 974-2250.

Sincerely,


Marc A. Ott, City Manager
City of Austin

cc:

Bryan W. Shaw, Ph.D., Chairman, TCEQ
Buddy Garcia, Commissioner, TCEQ
Carlos Rubinstein, Commissioner, TCEQ
Les Trobman, General Counsel, TCEQ
Kathy Humphreys, Attorney, Environmental Law Division, TCEQ
Mayor Lee Leffingwell
City Council Members
Sue Edwards, Assistant City Manager, City of Austin
Rudy Garza, Assistant City Manager, City of Austin
Greg Meszaros, Director, Austin Water Utility
Victoria J. Li, P.E., Director, Watershed Protection Department

Attachment 1

Mistatements in the Highland Lakes Petition

Petition Assertion, Page 2 - Lack of availability and expertise in operating advanced treatment units and unfamiliarity with tertiary treatment units were the reasons for the 1986 prohibitions: In 1986, industry information was widely available on tertiary treatment. Extended aeration for nitrification, effluent filters for higher solids removal, chemical precipitation for phosphorous removal, and post-aeration had been applied at a full scale throughout the country and overseas as well as in Texas. These technologies allowed plants to operate within the tertiary treatment effluent set in 30 TAC 319 of 5 mg/L BOD/5 mg/L TSS/2 mg/L NH₃-N, 1 mg/L TP/ 6 mg/L minimum DO. Operators kept these plants running and in substantial compliance throughout this period.

Petition Assertion, Page 2 – Some wastewater treatment facilities treat to a degree where it is “virtually indistinguishable from, or in most cases, of higher quality than local untreated fresh water supplies”: The untreatable recalcitrant organics that pass through treatment facilities alone would make this statement false. The pharmaceuticals, household chemicals, and undegradable fractions of wastewater can be successfully treated by soil bacteria after irrigation, but not through the short retention times of wastewater treatment facilities. The basic ionic balance of wastewater differentiates it from Highland Lakes water. Results from the United States Geological Survey (USGS) Toxic Substance Hydrology Program, including emerging contaminants from domestic wastewater, should provide ample evidence that the two waters are anything but “virtually indistinguishable” and are rarely “higher quality than local untreated fresh water supplies”. For more information, see the USGS website at: <http://toxics.usgs.gov/regional/emc/>

Petition Assertion, Page 2 – Treated effluent is now known as “reclaimed water”: Treated effluent can mean anything from septage to primary clarifier effluent, to industrial wastes, to tertiary treated water. Treated effluent in general is not equivalent to reclaimed water. The degree of treatment for reclaimed water is even specified in 30 TAC 210. TCEQ’s Application to Use Reclaimed Water under 30 TAC 210 asks for the quality of “treated effluent to be used as reclaimed water”. The two are not synonymous and should not be confused in the petition.

Petition Assertion, Page 2 – The Commission promotes direct reuse through 30 TAC 210: The promotion of direct reuse by TCEQ is not at issue because the petition is about putting wastewater into the lakes making any resulting use downstream an indirect reuse.

Petition Assertion, Page 2 – The current prohibition and TLAP rules do not recognize reclaimed water as a “resource”: TCEQ rules in 30 TAC 309.20 concerning land disposal of sewage effluent makes no judgments about the value of reclaimed water. Likewise, the current 30 TAC 311 rules containing the prohibition to discharge do not mention reclaimed water and are silent on whether it is considered a “resource”. However, 30 TAC 210.2 contains a very clear policy statement that reclaimed water that can be generated from a plant operating under TLAP rules or TPDES rules is considered a resource. Also, the prohibition and TLAP rules are concerned with the requirements for protection of water quality which does not require specific rulemaking to recognize as a resource.

Petition Assertion, Page 2 – Discharging wastewater into the Highland Lakes would recognize reclaimed water as a “resource”: Reclaimed water is already viewed as a resource, and in fact is already being used as a resource by communities surrounding the Highland Lakes through direct reuse. The proposed indirect reuse by downstream public water supply intakes would make reclaimed water less visible as a resource than finding irrigation uses locally and concentrating efforts to use this resource under 30 TAC 210 as it was intended with the provision for land application.

Petition Assertion, Page 2 – Reclaimed water as a “resource” should make it into water supply: Irrigation returns the water to the hydrological cycle as does discharge; but the benefits are felt more locally.

Petition Assertion, Page 2 – Unstated assumption that water rights downstream will be satisfied by wastewater thus freeing water supplies upstream for these Highland Lakes communities: Petitioners have not demonstrated that their proposal actually reduces in any significant way the amount of water taken from the reservoirs. The golf courses, parks and other green spaces in these lake communities will continue to require irrigation from lake water. The proposed petition apparently suggests that rather than utilizing wastewater effluent for this irrigation, which is considered a conservation use, that the communities use either potable water or raw water from the lakes. Rather than promoting conservation the petition proposes a move away from conservation practices. The argument that large amounts of reclaimed water are being used to irrigate cedar is specious. The most significant amounts of irrigation are for golf courses and other green spaces which of course will continue to need a water supply, so the proposal does not reduce demand on the lakes. In addition, Texas water rights are seldom as simple as Petitioners’ assumption would indicate. <http://www.twca.org/downloads/newsletters/2006q3-confluence.pdf>

Petition Attachment A, Letter Dated February 6, 2009 from City of Leander – This letter was referenced on Page 3 of the Highland Lakes petition concerning an earlier petition from the City of Austin and Barton Springs Edwards Aquifer Conservation District to prohibit discharges into the contributing zone of the Barton Springs segment of the Edwards Aquifer. This petition was to protect the water quality and uses of streams in the contributing zone prevent further degradation of Barton Springs and groundwater resources. Leander proposed that the petition would encourage “thousands of failing septic systems” in the contributing zone and would mandate irrigating “golf courses and tracts of cedars” http://www.tceq.state.tx.us/permitting/water_quality/stakeholders/barton_onion.html. Neither of these allegations were factual as any central collection and treatment system that can discharge to a stream can be used in a land application system. Also, irrigation of golf courses and cedars is not mentioned in the petition and are only two of a myriad of land application uses for the wastewater generated in the contributing zone. The letter also likened the Hill Country streams covered under the Barton/Onion petition to the discharge and indirect reuse of communities downstream from Dallas-Fort Worth on the Trinity River. Obviously, these two systems are not comparable in either hydrology or background water quality. Also, neither of these systems is comparable to the Highland Lakes chain addressed by the current petition.

Petition Assertion, Page 5 – Granite Shoals regional wastewater study depends on ability to discharge into the Highland Lakes for feasibility and efficacy: The subject report (Freese and Nichols, August 29, 2008) makes reference to the possibility of discharge into Lake LBJ, but does not depend upon it for feasibility of replacing some 2,000 septic tanks with a centralized collection system. The major limitation to efficacy and feasibility in this plan is the use of a conventional gravity wastewater collection system in the topography of Granite Shoals. The alternative design of grinder pumps and pressure collection system components is independent of subsequent treatment or land application options. The combined treatment and collection system cost is estimated at \$6,572,686 in this report. The irrigation system and land costs for effluent disposal are estimated at \$1,430,428. The remaining cost of the project is \$3,788,328 for construction of lined storage ponds for the effluent. The ponds are 191 ac-ft in volume or 62 MG for a 300,000 gpd plant. It appears that the storage pond may be oversized as this allows 207 days of storage when the most conservative estimates would require a quarter of this cost. The facilities would be placed on the recently purchased 131 acres at the corner of Phillips Ranch Road and FM 1431. It does not appear from this report that the project is either infeasible or not in the best interests of Granite Shoals. In fact, with the apparent error in storage volume, the facilities may be more economical than presented in this report. http://www.twdb.state.tx.us/RWPG/rpgm_rpts/07048304730_GraniteShoals.pdf

Petition Assertion, Page 2 – The costs for land application are prohibitive and the costs for discharge are significantly less. If there were neutral or beneficial water quality impacts of the proposed petition, choosing the least cost alternative would be warranted. However, it is not really a given that land application at a secondary or even tertiary treatment level will be more expensive than the treatment necessary to meet water quality standards in Lake Travis. This situation is similar to that of Hays County WCID No. 1 where a 0.25 MGD treatment facility (Phase 1) was permitted at an estimated cost of \$1.6 Million capable of nutrient removal to the current industry technological limits (0.1 mg/L TP, 3 mg/L TN) <http://www.soah.state.tx.us/pfdsearch/pfds/582/08/582-08-0202-pfd1.pdf>. This level would not be sufficient to prevent degradation of water quality in Lake Travis, but it is the best feasible using current technology that the petition relies on to have improved significantly since 1983. Using the above Granite Shoals costs and ratio of storage volumes, the irrigation system and storage pond would be around \$ 500,000. However, treatment to this level is seldom necessary for land application disposal, and secondary treatment without nutrient removal would make the treatment cost closer to that proposed for Granite Shoals. Using both the Belterra (HCWCID No. 1) and the Granite Shoals cost estimates, the differential would be discharge of 0.25 MGD at \$1,600,000 vs land application at \$1,692,026. Although both of these estimates are preliminary, the savings of discharge may have been overestimated.

Petition Assertion, Page 2 – The discharge would benefit downstream users of the Highland Lakes. The LCRA has conducted a water quality modeling study of Lake Travis that included scenarios for discharge of wastewater from communities that are currently land applying effluent. The included a 20 year projection of 10 MGD wastewater disposal at treatment levels with and without nutrient removal. This flow rate is approximately 0.99 % of the average flow of the Colorado River below Austin. However, if discharged, this wastewater has potential to degrade water quality to a degree that Lake Travis would become nutrient rich thus drastically increasing the problems of nuisance algae in the coves and ultimately the entire lake.

http://www.lcra.org/library/media/public/docs/water_WQ_LakeTravisFutureScenarios.pdf. If algal growth is increased in the Highland Lakes, not only would there be adverse impacts to the contact recreation use of these lakes, but also annual operating costs of drinking water treatment will significantly increase. More activated carbon must be utilized to remove the objectionable taste and odors produced by the algae. In addition, expanded testing and treatment will be needed for the new classes of pollutants such as pharmaceuticals and personal care product residuals that could enter the lakes.

RESOLUTION NO. 20091105-039

WHEREAS, the City of Austin and its water customers depend upon Lake Austin as their sole source of drinking water; and

WHEREAS, the City of Austin and its water customers will depend upon Lake Travis as an additional source of drinking water in the near future; and

WHEREAS, the excellent water quality of the Highland Lakes makes them major recreational resources, significant sources of employment, substantial contributors to the regional economy, high quality habitat for aquatic life, and an enhancement to residential and commercial property values; and

WHEREAS, Governor Clements's Select Committee on Water Quality Standards for Lake Travis and Lake Austin strongly recommended prohibitions of new treated wastewater effluent discharges to Lake Austin and Lake Travis in 1983; and

WHEREAS, in 1986 the Texas Water Commission (now known as the Texas Commission on Environmental Quality - TCEQ) promulgated rules prohibiting new treated wastewater effluent discharges to the Highland Lakes, including Lakes Travis and Austin; and

WHEREAS, the Lower Colorado River Authority (LCRA) has sophisticated models that predict considerable degradation of water quality in the Highland Lakes if new discharges were to be authorized; and

WHEREAS, the water quality of downstream lakes are affected by the water quality in the upstream lakes; and

WHEREAS, the segment of the Colorado River into which the City of Austin discharges its treated effluent is an un-impounded segment that differs significantly from the impounded waters of the Highland Lakes where water is held for a longer time; and

WHEREAS, the City of Austin has voluntarily sought more stringent limits from TCEQ in its discharge permits and is surpassing even those stringent limits; and

WHEREAS, TCEQ has consistently designated the water quality immediately downstream of Austin as exceptional; and

WHEREAS, there are no public drinking water supply intakes on the Colorado River downstream of Austin; and

WHEREAS, degraded water quality of the Highland Lakes will significantly increase drinking water treatment costs, introduce new pollutants, impede recreational uses, degrade aquatic life habitat and adversely impact the regional economy; and

WHEREAS, the Cities of Leander and Granite Shoals filed a petition with the Texas Commission on Environmental Quality on September 25, 2009 requesting the repeal of 30 Texas Administrative Code Chapter 311, Subchapters A, B, and F that prohibit discharges of treated wastewater effluent to the Highland Lakes and a significant portion of the watersheds of all these reservoirs ; and

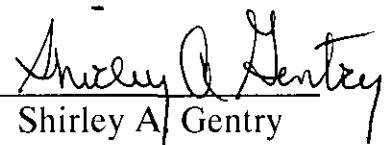
WHEREAS, the petition seeks to allow treated wastewater effluent to be discharged into all of the Highland Lakes, including Lakes Travis and Austin;
NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

Due to the potential for negative impacts to the region's drinking water supply, detrimental effects on recreational resources and aquatic life habitat, and substantial harm to the regional economy, the Austin City Council respectfully requests the Texas Commission on Environmental Quality to deny the petition filed by the Cities of Leander and Granite Shoals on September 25, 2009.

ADOPTED: November 5, 2009

ATTEST:


Shirley A. Gentry
City Clerk