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Water Quality in Austin Environmental Board – April 18, 2007

The Sierra Club appreciates the opportunity to address the Environmental Board on water quality issues in Austin and we commend the Board for taking a pro-active look at this issue. This is not intended to be a comprehensive listing of water quality threats in Austin. Other issues are out there and surely more will arise in the future.

Regarding Austin's water quality, the issues that the Sierra Club is concerned about today are likely to be quite similar to the issues that they Austin will be grappling with in the future. However, in the future these issues will probably be larger in scope.

The items listed below are Surface Water and Groundwater issues.

1) Non-point Source Pollution – Nonpoint source (NPS) pollution results when small amounts of contaminants from a large number of sources are carried by rainfall runoff into streams, lakes, or bays. For example, pollutants washed off lawns, construction areas, farms, or highways during a heavy rain are carried to a creek. Nonpoint source pollution is difficult to control because it comes from the everyday activities of many different people, such as fertilizing a lawn, using a pesticide, or constructing a road or building. The LCRA considers NPS pollution or stormwater runoff to be the largest source of pollution to the Highland Lakes.

The Sierra Club is concerned about sediment-based and chemical based NPS pollution. Sediment based NPS pollution partly originates from the extensive construction projects in all parts of town. The chemical based NPS originate from myriad sources: fertilizers, herbicides, pesticides, pet excrement, motor oils, car tires, antifreeze and many other sources. Austin has a large watershed (694 square miles) and many creeks feeding into Lakes Travis and Austin, Town Lake and downstream from Austin as well. As people move to Austin and we continue to urbanize, this will continue to be a problem.

NPS pollution can lead to an accumulation of silt in creeks and reservoirs, reduced fish and wildlife habitat, increased growth of aquatic weeds, algal blooms and fish kills, contamination of food and water sources and reduced recreational opportunities because of bacterial contamination and increased turbidity.

2) Impervious Cover and Erosion – Although the city has stormwater retention rules for certain development in parts of the city, increasing amounts of impervious cover in the inner city due to the rapid "infill" does not seem to fall under this requirement. The runoff from these impervious areas carries chemicals and other constituents mentioned

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previously, but also can cause amplified erosion of creek banks. This is a citywide problem and one only has to visit any of our urban streams to see the problem of erosion and excessive nutrients. The excessive erosion causes bank instability, puts nearby homes in danger, and destroys habitat.

Creeks in many parts of Austin are experiencing high erosion rates. This erosion leads to problems downstream due to the increased sediment and problems in the area where the erosion has occurred as well. This is a particularly big problem in the Eastern part of Travis County where they have deep soils that are more prone to erosion problems than streams in Western Travis County. Some of these streams are located in neighborhoods and urbanized areas and the erosion poses a threat to homes and businesses near the creeks, not to mention the environmental consequences. Eastern Travis County is developing so quickly that more and more residents will have to deal with this problem soon (new and current residents).

3) Road Runoff – Runoff from roads is a significant pollution source. It does not appear that our streets have runoff protections. Many empty directly through storm drains into our creeks and streams. As we see more cars and more vehicle miles traveled daily, we are experiencing increasing oil, gas, radiator fluid and tire particles flowing directly into the waterways.

The Environmental Board is surely aware of coal tar based parking lot sealants and related water quality issues their use. The city of Austin has banned the use of and sale of these coal based parking lot sealants although that does not stop their use.

4) Groundwater – Since the Barton Springs segment of the Edwards Aquifer (BS/EA) is a karst aquifer the line between surface and groundwater is blurred and that should certainly be kept in mind when considering water quality issues for the BS/EA. Discharge of point source pollutants into streams that recharge the BS/EA from wastewater treatment plants (such as Belterra's plans to discharge treated effluent into Bear Creek) is a great concern. Just as is the case with surface water, NPS pollutants, erosion, increasing impervious cover are concerns for our groundwater resources.

The Barton Springs Edwards Aquifer Conservation District controls pumping and water use in the aquifer, however they have limited authority to control the myriad factors that may affect water quality in the aquifer. The City of Austin has more authority to control factors that effect water quality and should continue to work closely with the district to protect water quality in the BS/EA.

There are other groundwater sources that are utilized in the Austin area. The Trinity Aquifer and the Colorado River alluvium are two. These aquifers recharge slower than the BS/EA and their structures allow many of the pollutants that might flow directly into the BS/EA to filter out. Nonetheless, similar precautions to protect the quality of these water sources should be taken as with any other important water resource.

In East Austin gravel mining operations are literally digging up the alluvial aquifer. Development adds to the pollutant load and decreases the area available for water to recharge the aquifer.

5) Downstream Impacts - Our water use and wastewater discharge is downstream of Austin into the Colorado River. With this somewhat expanded focus, there are some potentially emergent issues, in addition to regular suite:

a) If the population of Austin continues growing rapidly, this will lead to an increasing percentage of the Colorado River being comprised of our effluent (treated wastewater). Conventional constituents, long-regulated under Clean Water Act, will increase in volume but likely will be handled through normal plant expansions and permit updates at TCEQ.

One important factor to note here – for a long time Austin's effluent has been diluted during much of the summer (when it is most likely to be a problem to aquatic life), by water releases from LCRA for downstream rice irrigation. These releases are forecast to be greatly diminished as this water is increasingly transferred to municipal use. Thus Austin may have to treat to a higher level to just maintain status quo. This is certainly something to consider for the future. Austin has a responsibility to be a good neighbor to downstream interests.

b) The EPA has been working on the regulatory framework for possible new regulation of nutrients, nitrogen and phosphorous, in our wastewater discharge.

c) There has been lots of interest, mostly at the academic level, on a suite of chemicals generally called 'endocrine-disrupters' that are apparently harmful to some fish and amphibians (pharmaceuticals, birth control pills, etc. in our wastewater). This may become an issue in the future. Austin might have to treat its drinking water to a higher level to get these substances out of the water and conversely we might have to treat our wastewater to a higher level to remove these constituents before that water is discharged back into our waterways.

What can the Environmental Board do to help protect Austin water quality?

This is not a comprehensive list of actions the Environmental Board can or should take. This list is merely intended to be a conversation starter.

1) Riparian Buffers and Development setbacks– The Environmental Board can support appropriate setbacks for development on creeks and streams. This is especially important in East Austin where erosion is such a problem and will become increasingly important as the development boom from SH-130 becomes a reality (this is in addition to the development boom that is currently underway).

Within these setbacks, the Environmental Board should encourage the establishment of healthy riparian buffers. Riparian Buffers should be planted with deep rooted native grasses. The riparian buffer will help maintain the structural integrity of the stream channel, cut down on erosion, provide habitat and filter sediment and other pollutants out of the water as it enters Austin's creeks, streams, and river.

2) Support additional investment in protecting our rivers and streams, similar to what we have done for the Edwards Aquifer.

3) Work with city staff to quantify if there is indeed a problem from road runoff. Work with city staff to find solutions to the runoff pollution problems presented from this source. Support funding for this work.

4) Stricter regulations on pesticides and fertilizers sold in the city: The recent ban on PAH-containing pavement sealants (coal tar sealants) was a major step forward, and a precedent nationwide. If that's possible, perhaps a local ban on lawn chemicals is also possible.


5) Support public information campaigns to educate citizen's about how their individual actions effect their water (NPS pollution, stormwater drains, etc.)

Contacts:

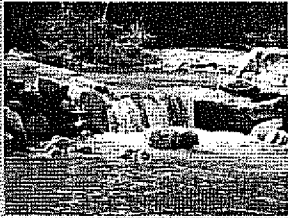
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Status of Austin's Water Quality



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April 18, 2007


Watershed Protection
Development Review



Agenda

- State of Water Quality
- WQ Activities of COA
- Horizon WQ issues for COA
- Environmental Board Assistance

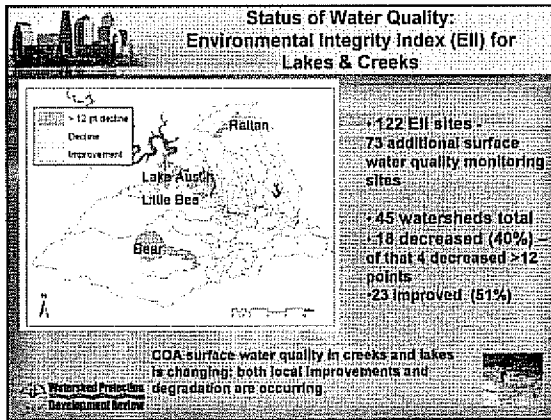
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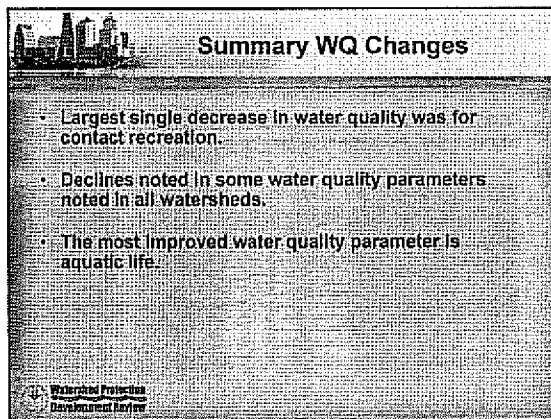


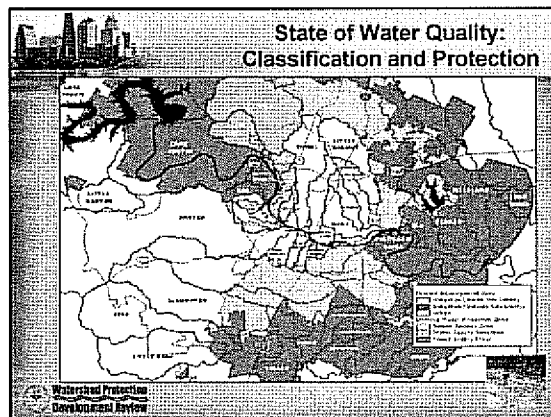
Status of Water Quality: Environmental Integrity Index

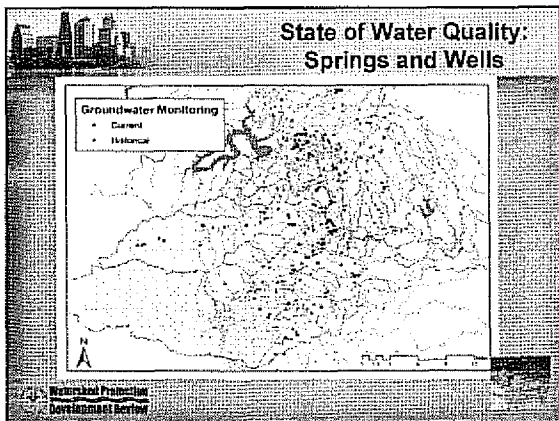
• Dissolved Oxygen	• Habitat assessment
• Specific Conductivity	• Stream and reach stability assessment
• pH	• Flow measurements
• Water Temperature	• Diatom sampling
• Ammonia as N	• Benthic macroinvertebrate surber sampling
• Turbidity	• Conventional field parameters
• Total Suspended Solid	• Non-contact recreational assessment
• E. coli bacteria	
• Orthophosphorus as P	
• Sulfate	
• Nitrate as N	

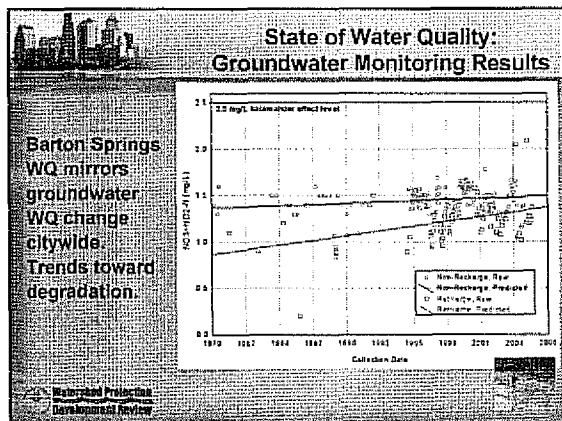
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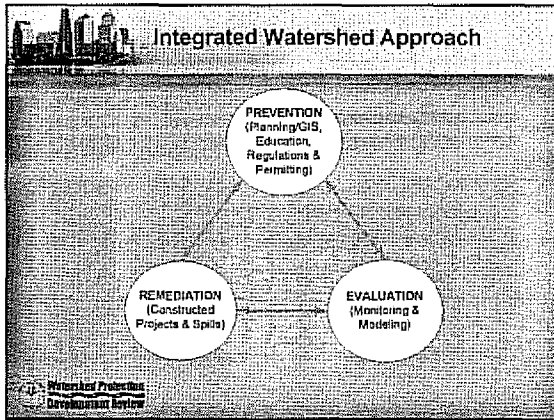




Austin WQ Activities

- Integrated bond funded CIP projects including stream restoration
- Environmental Criteria Manual improvements (EA/PAP) and BSZ regional plan regulations
- Education, conservation, spills response, permitting, & inter-jurisdictional programs

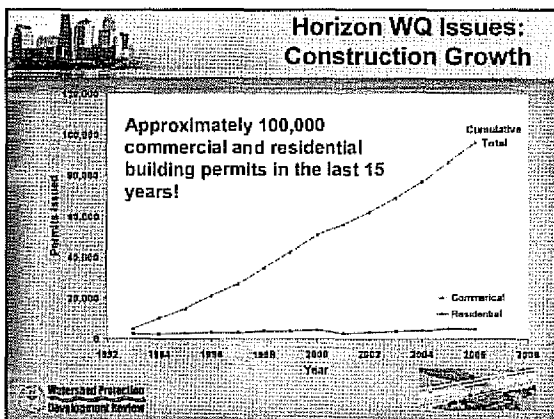
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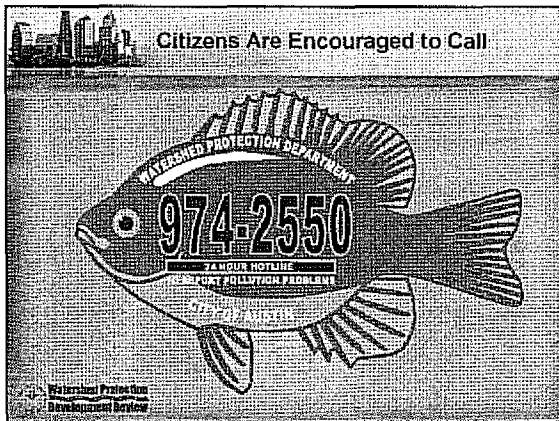


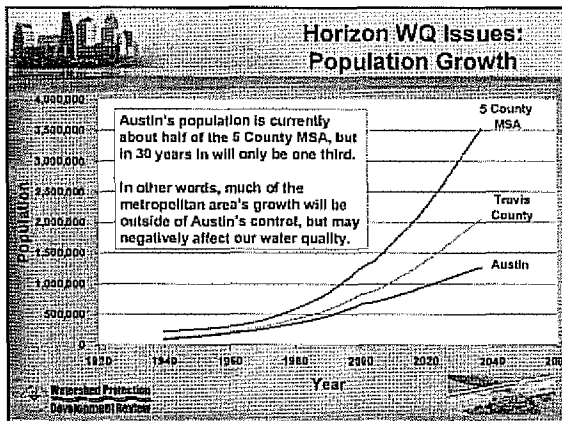
Horizon WQ Issues

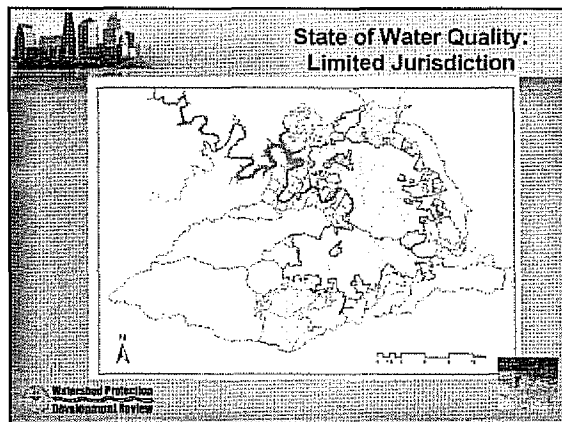
- Population growth
- Urban sprawl
- Redevelopment
- Transportation Infrastructure
- Water supply planning
- Wastewater discharge BSCZ
- Hydrological alteration
- Eutrophication in Town Lake


Watershed Protection Development Review





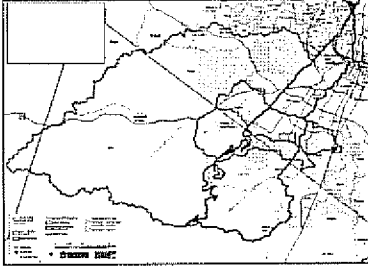







Barton Springs Zone


Much of the Recharge and Contributing Zones are out of the City's Control.





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How can the Environmental Board help?




- Codes and criteria amendments
- Regional issues and advocacy
- Quick response sub-committees where appropriate
- Variance management with consistency
- Community liaison

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Summary



- Monitoring - mixed results but overall no backsliding
- City activities - effective @ current level and need continuing support
- New challenges - need for continued vigilance
- Environmental Board - effective conduit between staff, city management, Council and citizens.

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State of Austin's Water Quality

Questions
&
Answers

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Waterland Protection

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