

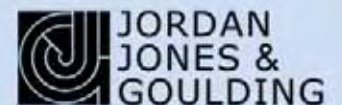
Holistic Watershed Management:

Integrating a Treatment Plant Upgrade with Water Quality Improvement in Beaver Creek

Presented By:

David A. Reece, P.E. - Jordan, Jones & Goulding, Inc

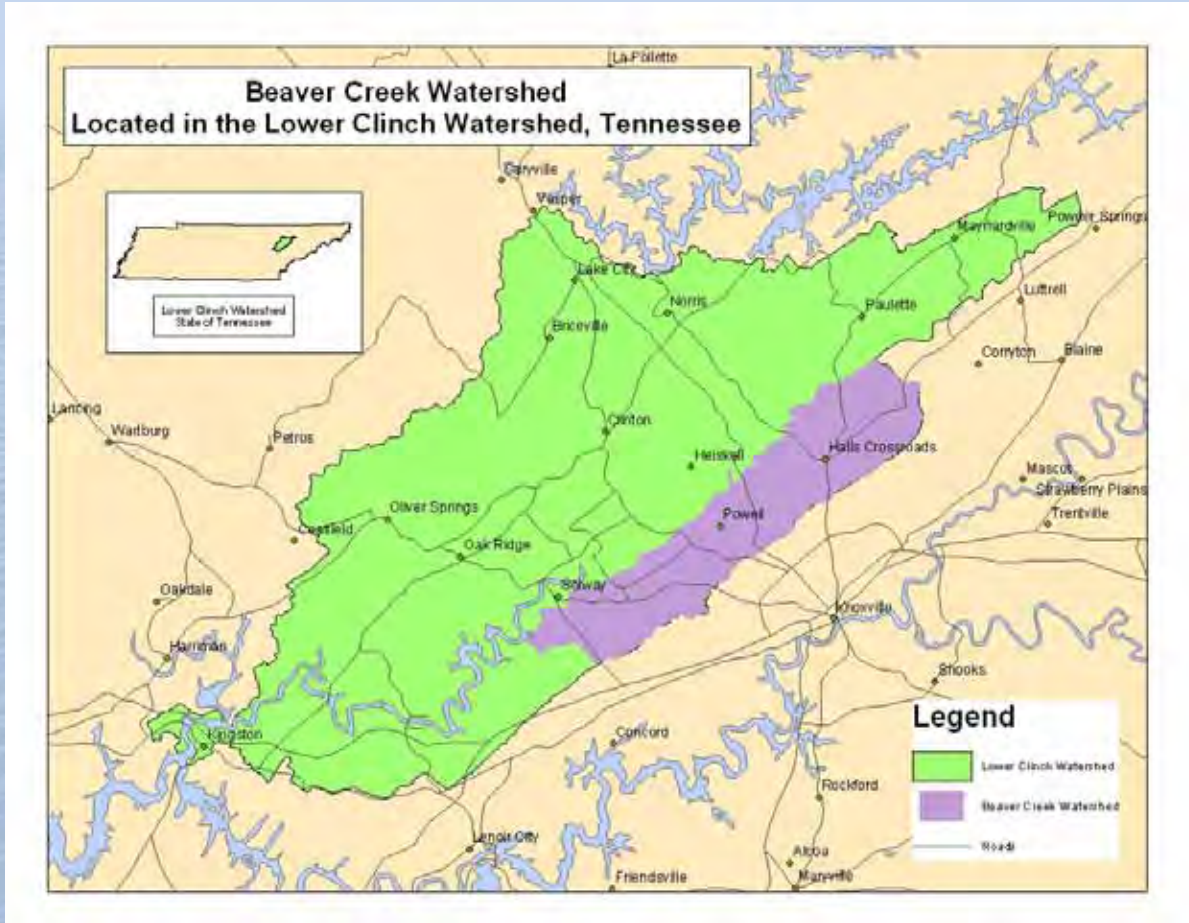
Stefanie Farrell - Hallsdale-Powell Utility District



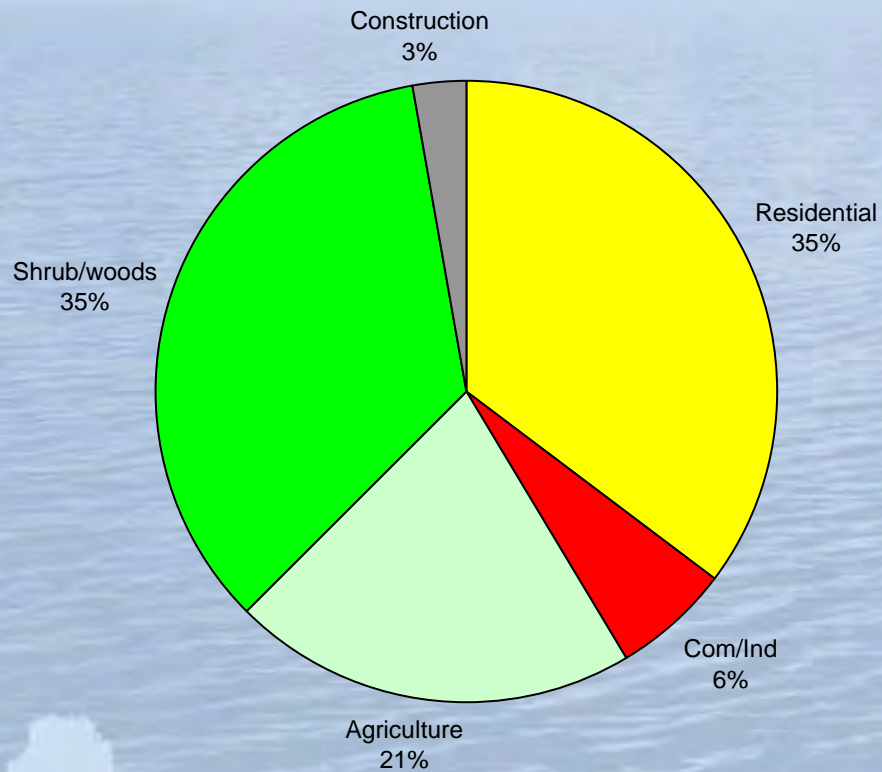
AGENDA

- Introduction
- Watershed description
- Utility concerns
- Description of HPUD approach
- Permitting

Background

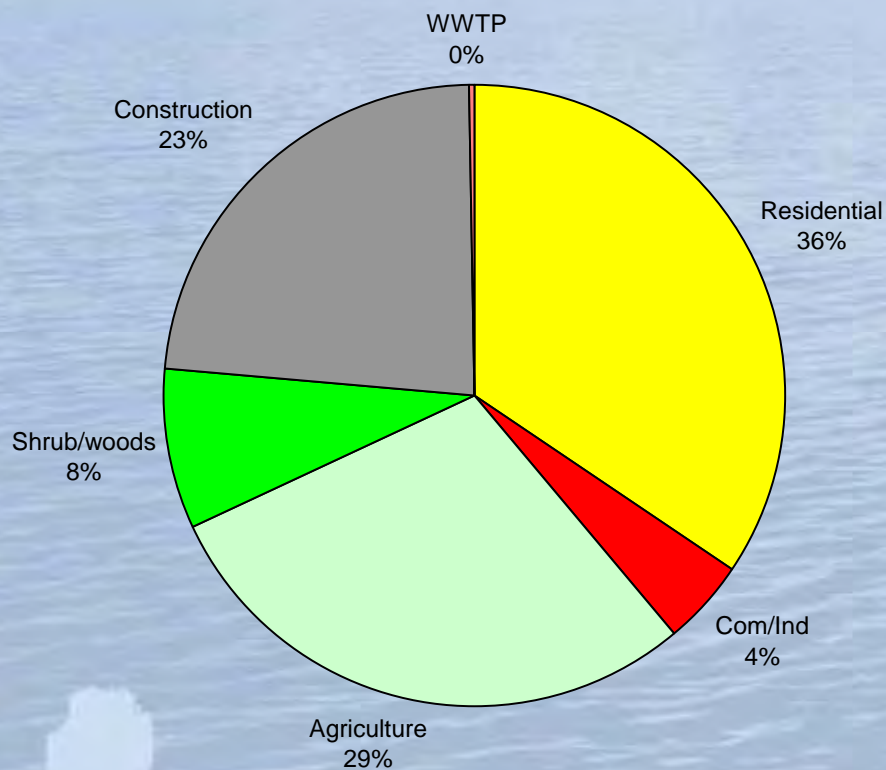


Causes of Impairment



- Siltation
- Phosphorus
- Nitrate
- E. coli*
- Habitat Alteration
- Dissolved Oxygen

Sediment Loading



- According to the WAP, the primary pollutant is sediment
- Watershed approach will allow the utility to appropriate funds for implementation of BMP's

Issues with Utility

- Accommodate growth
- Reduce SSO's
- Obligation to ratepayers



Several reasons behind Hallsdale-Powell rate hikes

Bills, bills, bills.
Don't you hate them?
Especially when you are asked to shell out more money than usual the next time the hand comes out for a payment.



ED MARCUM
North Notes

The News Sentinel's editorial page staff asked me to check out a

decades, rates were left artificially low, and improvements to the system were not done. Also, Hallsdale-Powell is among 14 utility districts in East Tennessee under an Environmental Protection Agency unfunded mandate to improve their wastewater systems, so the district is in a double bind, he said.

Hammond said that when he became CEO in 2000, the district's board of

Hammond said.

Smith said Hallsdale-Powell's problems are not that unusual. Utility districts across the country are facing similar challenges as pipes installed 50 years ago near the end of their life.

In 2002, Hallsdale-Powell hired Raftellis Financial Consultants Inc. of Charlotte, N.C., to develop a rate model that would produce the increases needed to fund the required improvements.

completion of another plant on Norris Lake, which should be in operation by September or October.

The rate model developed by Raftellis is designed accommodate these needs, and unfortunately, it includes a spike in rates to do it, although 2008 would be the last year rate increases would reach into the double digits, Hammond said.

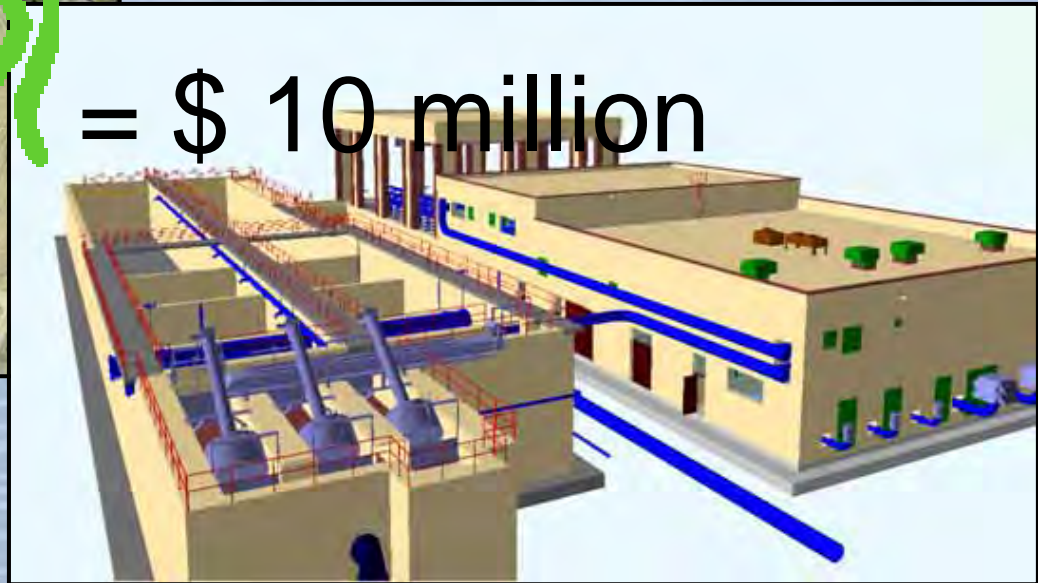
One of the findings by Raftellis was that water rates had been too low for the



Nutrient Removal Costs



= \$ 10 million



Stream Restoration

Over 10 miles of
stream restoration



Land Conservation

Nearly 2500 acres
available for land
conservation



Flooding



Targeted BMP's



Benefits to Watershed Approach

- More 'water quality' bang for the buck
- Sustainability
- Community asset

Permitting Challenges

- Lack of flexibility
- Separate groups – watershed vs. permit writers
- Unproven solutions

Permit Approach

- Quantify P loading in the watershed
- Comprehensive watershed plan
- Monitoring – chemical and biological

Questions?

