Costs of Water Resource Planning

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Information Requested to Date

- At the State Water Commission Meeting on 07/09/09 DEQ staff presented information on its water resources programs, their implementation, and their emerging needs
- A cost analysis was requested that looks at a funding continuum from a "basic" to a "Cadillac" program
- As requested, today we will present costs for three program levels: basic, expanded, and optimal levels of service

Needs of a Basic Program

- "Basic" level of service includes re-establishment of a DEQ state observation well drilling capacity:
  - well drilling equipment and 3 staff to run the equipment
  - 4 new groundwater permit writers to address the current permit backlog and new permit demands from expanding the regulated area
  - 1 contracted station and 2 DEQ drilled stations per year

"Basic" Level of Service

Equipment/ Personnel	Cost
Equipment (1 time cost)	$750,000
GW Drilling Personnel 3 FTE	$188,500
GW Permit Writers 4 FTE	$331,500
	$1,270,000

- Personnel and equipment to install 2 state observation well stations per year in locations currently known to have lower water levels in the field than predicted
- Personnel to issue permits in new management area

"Basic" Level of Service

Location/# of observation sites	Cost
4 NN observation stations w/ 7 wells each	$624,348
7 MP observation well stations w/ 7 wells each	$1,175,559
	$1,799,907

- Data gaps in Northern Neck and Middle Peninsula
- 4 new observation well stations in Northern Neck
- 7 new observation well stations in Middle Peninsula

"Basic" Level of Service

Location/# of observation sites	Cost
12 observation stations w/ 5-7 wells each + 8 wells	$890,000
3 geophysical cores near Franklin	$90,000
	$980,000

- Contract out observation well stations in locations where water levels are lower than predicted
- Contract out geophysical cores in locations where some aquifers appear to be "missing"
- Contracting needed to supplement DEQ drilling

"Basic" Level of Service

Location/# of observation sites	Cost
1 wells in each of 3 localities without any observation well	$45,000
Re-activate 4 surface water flow gages	$26,800
	$71,800

- Contract out observation wells in 3 localities for drought monitoring and monitoring of high yield rock formations
- More cost effective to contract hard rock drilling
- Re-activate 4 gages lost to reduced funding

"Basic" Level of Service

Totals for Basic Level of service	Cost
DEQ drilled observation wells and surface water gaging	$3,096,707
Contracted observation wells	$1,025,000
	$4,121,707

- Cost of a basic effort is more than $4 million
- With resources at this level it would take 10-20 years to complete this work
- FY 2011 costs nearly $1.7 million
- FY2012 and thereafter costs $985,000

"Expanded" and "Optimal" Levels of Service

- "Expanded" includes 2 additional surface water hydrologists and 3 additional groundwater hydrogeologists
- 5 additional stream gages, 1 new geophysical core, and 39 hard rock wells in counties w/o a well, and 11 new observation well stations in the NN and MP
- Additional annual cost of $500,00 per year over Basic

- "Optimal" includes all "expanded" and 3 additional groundwater hydrogeologists
- ongoing annual establishment of 4 new observation well stations
- ongoing observation well drilling of 1 or 2 additional wells per year that are hydrogeologically significant
- 1 additional flow gage per year
- Additional annual cost of $700,000 per year over Basic

Questions?