

**Exam II**  
(100 points)

- (5 pts) 1. In what way(s) should it be argued that cost-benefit analysis is a larger matter than NPV (and larger than similar metrics – BCR, ANB, IRR – too)? [There is no need to mention the similar metrics.]
- (15 pts) 2. In a surface water setting, name and explain the opportunity costs that might be commonly omitted from the volumetric component of rates. What are the problems created by such omissions? What is optimally included? If the utility is relying on a surface water market for its water supply growth, are the costs it must pay for raw water a remedy for correcting its volumetric rate? Why/not?
- (22 pts) 3. According to the text, there is reason to be suspicious about the level of typical new connection charges, and if they are incorrectly set, "the location decisions made by agents will be inefficient, with negative implications for water use and conservation."  
How should efficient new connection charges be computed, and what types of values or costs are commonly omitted by current practices? Describe well.
- (28 pts) 4. After the next 3 years are over, the City's new reservoir will contain enough water to handle foreseeable demand. During these 3 years, an interim measure is desired. The City has two take-it-or-leave-it options. Each is adequate, so only one measure should be selected.  
In measure A, a company is contracted to repair leaks. The cost will be \$500,000 in year 1. No other costs will occur. The 3-year schedule of water saved (water supply impact) will be 30, 90, and 90 units of water, respectively.  
In measure B, a downsizing farmer has offered a 3-year lease. Payments for B will be \$90,000, \$200,000, and \$210,000 respectively in the 3 years while the water supply impact will be 40, 70, and 90 units.  
Any surplus water from either measure can be sold at cost to suburb utilities that buy water from the City. Is A or B the better deal given a reasonable discount rate?
- (30 pts) 5. Administration of surface water markets commonly includes a step whereby water users external to a proposed trade are given the opportunity to lodge protests.  
Why is this done? Nonwater markets do not do this, so be specific about the possible reasons for inviting third parties into a market process. (10 pts)  
Ground water marketing is relatively novel and not as developed as surface water markets. Should a role for third parties be developed for these markets too? Should all aquifer users be treated as equivalent third parties in every exchange? Provide explicit reasons for your responses. (20 pts)