

# ODESSA SUBAREA SURFACE WATER SUPPLY ALTERNATIVES

By

CSRIA

Comments on economic features

by

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## INTRODUCTION

The CSRIA study is sparse in explanation of how the economic alternatives for water supply are evaluated and presented. This makes it difficult to be precise in assessing the economic alternatives and the procedures used. There is some speculation about some important aspects of the study as well. These include such things as wasteway management and costs of wasteways. Most important however is the complete lack of any discussion of who will pay for the alternatives other than vague references to State funding, Federal funding and possibly some farmer/landowner payments. There is no attempt to determine how project costs would be shared or what farmers are willing to pay for surface water. We don't know if farmers in that region would be willing or able to pay the costs of the irrigation alternatives considered. It is highly likely that the State or Federal taxpayer would have to provide considerable subsidies to the project if it were to achieve the objectives of the CSRIA alternative projects.

## ECONOMIC ISSUES

**Land Values:** A major problem with the CSRIA analysis is the blanket assumption that all land in the Odessa Subarea (OS) now has a dry land value only. The assumption that all wells are nonfunctioning in 2017 is implicit in the economic analysis. When, in fact, many wells in the OS have adequate water to continue pumping for another 20 years or more. Some even could continue pumping for another 50 years according to the Odessa Subarea Special Study of 2011. Hence, it is incorrect to assume that the value of that land is worth no more than can be produced by dryland wheat. In that regard the benefits of the alternatives are significantly overstated.

It is unlikely that any landowner in the OS would be willing to sell land with an operable well for the assumed value of \$425 per acre, or even several times that amount. It is even unlikely that the nonirrigated farmland in that region could be bought for \$425 per acre, given the current price of wheat.

Analysis: Perhaps the greatest problem with the CSRIA report is the faulty economic analysis. The lack of consideration of interest costs during construction implies that the analysis is being done in terms of “real” 2010 dollars. The discounting of income streams for 50 years at 3% is consistent with the assumption of an analysis in “real” dollars rather than “nominal” dollars. But the escalation of economic returns into the future using a 2.5% inflation rate is inconsistent with an analysis in real dollar terms. A brief focus on this issue follows.

Irrigation Benefits: The economic analysis of CSRIA proceeds in a novel way. Instead of measuring farm income or ability to pay for irrigation construction the authors use a land value approach. They start with the assumption that all deep well irrigated land in the OS is worth \$425 per acre, as it might be for dryland wheat production only. This significantly understates the current value of land and results in an overstatement of benefits from the surface water alternatives. There is not time in this brief review to determine what the true value of land in the OS is currently worth but it is certainly more than its dryland wheat only value.

However, without determining the actual added value of surface water this review will initially follow the method used in the CSRIA report. Using a land value increment of \$4225 (overstated) due to the addition of surface water the authors follow a financial procedure using a 5% discount rate to determine that the annual rental value of surface water is \$405 per acre (2010\$). This value is inflated at 2.5% and discounted at 3% for 50 years to determine the present value of irrigation benefits. **THIS IS WRONG.** Two alternative procedures could have been followed to be more nearly correct. One, the return to water (\$405) could have been held constant in real terms and discounted at 3%. Two, the return to water could have been inflated at the 2.5% to account for some inflation factor, but then should have been discounted at around 6% (something closer to a nominal discount rate). The first alternative reduces the present value of irrigation benefits by 40% and the second reduces the present value of irrigation benefits by 45%. Hence, even beginning with a return to water that is

artificially high (\$425), it is highly unlikely that either irrigation alternative considered by CSRIA can provide a benefit/cost ratio that is remotely close to 1.0, if both benefits and costs are accurately evaluated. That is, the initial return to water should probably be reduced from \$405 per acre to something close to one half that value to obtain an honest return to water that would reflect the farmer's ability to pay for surface water. And the present value analysis should be revised to reduce the stream of irrigation benefits by at least 40% to 45%. These two corrections would reduce the benefit/cost to around 0.3 in the State-Federal alternative and to something less than 0.5 in the State-private alternative. It is not possible to be more precise without a great deal of research and more information.

**Development Costs:** It was not possible to fully assess the cost side of the CSRIA analysis. However, one problem on that side can be observed. The CSRIA analysis appears to ignore the value of lost hydropower in its analysis. For the State-Federal option the CSRIA analysis uses a value of \$121 per acre for "forgone power and system pumping use". The similar calculation for the State-private alternative is \$98 per acre. It is not clear what this includes or at what price the power is evaluated. However, the value of lost hydropower alone (at 50m/kwh) would be about \$150 per acre, assuming a diversion from Grand Coulee of 3.0 acre feet per acre. The pumping costs for water delivery would be at least as much if valued at 50 m/kwh. The actual opportunity cost of power today, however, is probably closer to 100 m/kwh (thermal or wind). One must conclude that the energy costs of irrigation development are significantly understated in the CSRIA report.

**Secondary Impacts:** Finally, a brief comment about the secondary impact analysis. It is very misleading to claim billions of dollars of value added and hundreds of new jobs by providing water to land that is already irrigated by deep wells. The figures and terms used to describe the secondary impact analysis are misleading and subject to gross misinterpretation by any of the general public or the state legislature. Such information properly explained and interpreted should never be implied to be sustained over a long time period. All such secondary impacts are transitory and are quickly (two to five years) reduced to zero as capital and labor resources are relocated and reemployed.

## CONCLUSION

In conclusion, the CSRIA report is not well done and very misleading. State funds directed toward irrigation development should never be spent on the basis of such an analysis. It would be a great disservice to the state taxpayers to make any political or economic decisions solely on the basis of the CSRIA report.

If the state wishes to move forward on this matter it should require an independent evaluation of the true benefits and costs to the state and the region of any serious development proposal. Such independent studies could be carried out, for example, by the U. of Washington Center for Benefit Cost Analysis or the Washington State University School of Economic Science. In these difficult economic times the state taxpayer deserves such careful consideration by our elected representatives.