

DATE: October 6, 2017
TO: John Audley, Rebecca McCoun
FROM: Ed MacMullan
SUBJECT: ANALYTICAL APPROACH TO OUR ECONOMIC ANALYSIS OF THE NORTH SANTIAM WATER DEVELOPMENT PROJECT

Introduction

The overall objective of this economic analysis is describing the business case for investing in a water project in the North Santiam Basin. We will employ an analytical approach that we developed during our recently completed economic assessment of a basin-wide, multi-faceted water project in Washington's Yakima Basin.¹ As part of that project we developed a number of key analytical principles and major tasks that apply to economic analyses of water projects in basins elsewhere, including in Oregon. The scalability of our analytical approach is based on the fact that the underlying economic principles of applied benefit-cost analysis are fixed and do not vary by project or basin, and on commonalities between the Yakima and other water basins in the West, including the North Santiam. These commonalities include: a water supply defined by a basin's location, geographic extent and landforms; a range of affected water stakeholders that include consumptive use (e.g., irrigated agriculture and municipal use) and non-consumptive use (e.g., recreation, fish, habitats, and other in-stream uses); competition for water that exceeds available supplies; water scarcity issues that make future economic and municipal planning uncertain; and, a project designed to help minimize water uncertainties as they apply to water supplies and related ecosystem services including habitats and fish populations.

This memo describes the key analytical principles that will guide our analysis, and the major analytical tasks. We begin with key principles.

Key Principles

The following key principles will guide our analysis of the North Santiam Project's benefits, costs, and returns on investments.

Take A Basin Wide Approach — A basin defines the volume of water available for consumptive and non-consumptive uses and so provides a logical boundary for an economic analysis of water use.

Take A Comprehensive View of Water Use — A stakeholder's water use does not happen in isolation of other users. For example, runoff from agricultural fields can contribute to in-stream flows that benefit fish; groundwater withdrawals may reduce volumes of surface

¹ See the Washington Department of Ecology's website for information on the Yakima Basin Integrated Water Resource Management Plan and ECONorthwest's report on an economic assessment of the Plan, <http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html>.

flows; and, surface storage facilities can provide recreation benefits in addition to supporting irrigated agricultural production and municipal supplies. Considering interactions among water users provides a more complete picture of a basin's water situation compared with a "silo" approach that looks at water use by individual stakeholder groups in isolation.

Identify A Basin's Key Water Constraints — A basin's water constraints typically include conditions around the timing and volume of water supply, and the nature and extent of competition for available supplies. Accurately depicting these constraints and their consequences is crucial to describing baseline conditions for the economic analysis.

Take A Comprehensive View of Water Projects — A project that helps mitigate a basin's water constraints will likely affect a range of water users and stakeholders. An economic analysis should address the impacts, benefits, and costs of the project on all affected stakeholders. If available data do not allow quantifying economic outcomes, describe these outcomes qualitatively. That is, do not exclude a benefit or cost if it cannot be quantified. Rather, communicate the economic significance of un-quantified project impacts qualitatively.

Describe A Water Project's Return On Investment — A water project may have multiple investors and multiple beneficiaries. Describe a project's return on investment in ways that capture the diversity of investors and beneficiaries. For example, private entities that invest in a water project, e.g., an irrigation district, may be most interested in the returns expressed as a percentage of their original investment. Public entities that help fund a project, e.g., federal or state agencies, may be interested in a broader description of investment returns to include benefits to public recreation, property and income tax returns associated with increased business activity, and ecosystem services. In this analysis we define the term business case to mean the economic benefits to economies, communities, and watersheds of investing in the North Santiam Project.

Major Tasks

The key principles described above will guide our analysis and implementation of the following major analytical tasks.

Describe Current Water Supplies — The economic analysis begins by telling the water story for the North Santiam basin. This description includes information on sources of supply (e.g., snowpack, rainfall, groundwater), timing of supplies, changes in supply over time, regulations on water use in the basin, and projections of future supplies.

Describe Current Water Uses/Demands — The demand side of the basin's water story includes information on water rights, water use by type (e.g., irrigated agriculture, Tribal, recreation, fisheries, municipal, etc.), and the economic value or benefits of water use (e.g., revenues, employment, tax payments, etc.).

Describe Water Constraints — This task focuses on describing the basin’s water limitations or constraints that make future economic or municipal planning uncertain. The purpose of this task is to show the extent to which the competition for available water is such that it harms basin economies, communities, and watersheds.

Describe the North Santiam Project — This task focuses on the specifics of the North Santiam Project, describing how the Project will help address the basin’s water constraints, and the economic costs of the Project.

Describe Returns on Investing in the North Santiam Project — This task focuses on describing the economic benefits of the Project by type of beneficiary or water stakeholder, comparing the Project’s benefits and costs, and describing the returns on investing in the Project in ways that capture the diversity of water stakeholders, beneficiaries, and funding sources.

Describe Benefits Beyond the Project Area — This task focuses on describing the benefits of the North Santiam Project that extend outside the Project’s immediate study area to beneficiaries (e.g., habitats, Tribal members, businesses, workers, recreationists, etc.) in the broader Willamette Basin.