

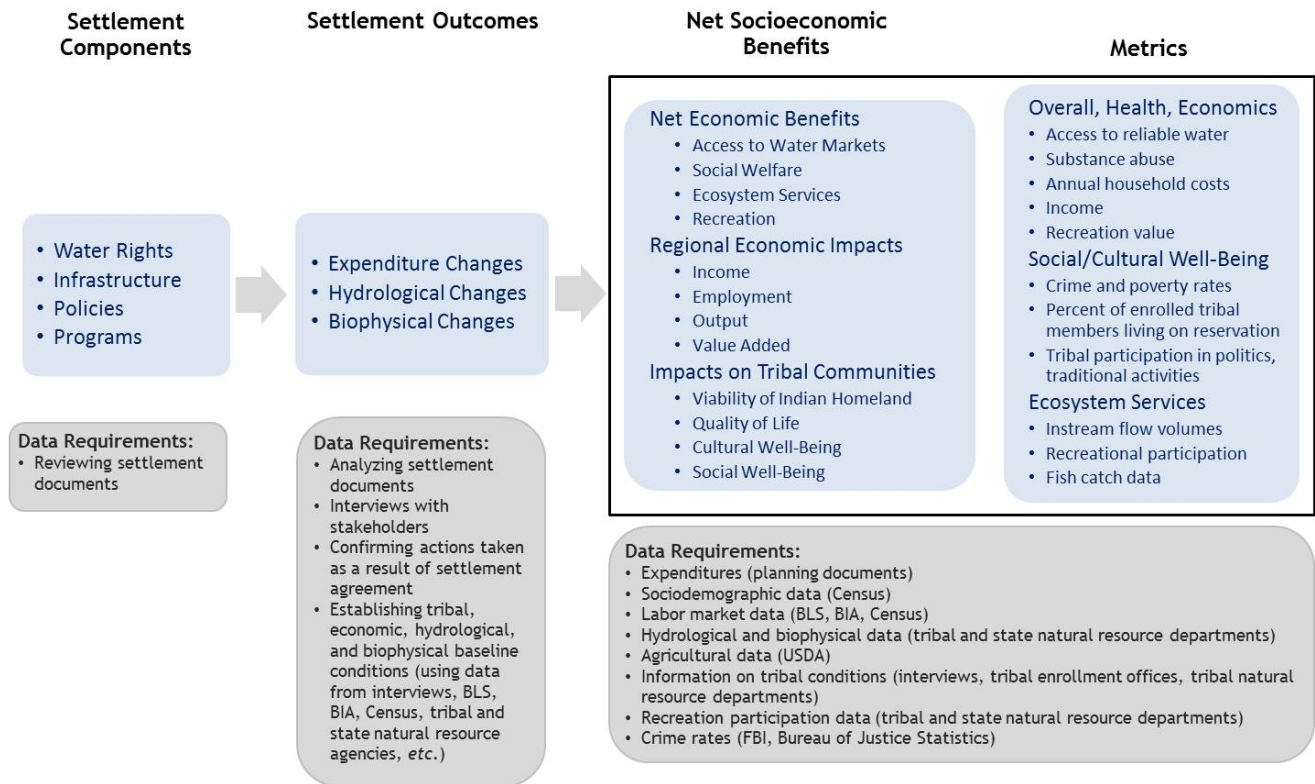
MEMORANDUM | September 6, 2016

TO David Alspach, Office of Chief Information Officer, US Department of Interior
CC Fain Gildea, Secretary's Indian Water Rights Office (SIWRO), US Department of Interior
FROM Robert Unsworth, Brent Boehlert, and Jessica Murray, Industrial Economics, Inc. (IEc);
Travis Greenwalt and Barbara Wyse, Highland Economics
SUBJECT Indian Water Rights Settlements: Economic Analysis Information Collection Approach
specific to the Gila River Case Study

To complete the Indian Water Rights Settlements: Economic Analysis project, IEc will conduct four deterministic case studies on the economic outcomes associated with individual Indian water rights settlements (IWRS). The settlements selected for case studies in this project are Gila River (Arizona), Nez Perce (Idaho), Soboba (California) and Taos Pueblo (New Mexico). The data requirements for these case studies will inform our understanding of whether each component of the settlement was in fact delivered, and the timing and detail of the final action (e.g., was the infrastructure put in place and is it functioning as expected). Understanding settlement outcomes will require targeted interviews with informed entities representative of the tribal communities and other beneficiaries. These interviews will focus on the physical, demographic, and socioeconomic changes that the settlement has produced. The data requirements associated with these interviews are presented in the gray boxes of Exhibit 1. Data requirements will differ in each case study. Data inquiries for each case study will be based on expectations of changes resulting from each individual settlement, and will be specific to the nature and timing of the settlement. Participation in data collection and interviews is voluntary. This memorandum uses the Gila River IWRS as a representative case study to provide examples of entities we will contact and details of the data we aim to obtain.

Broadly, interviews associated with each case study may include tribal leadership (i.e., the Tribal Councils), professional resource managers within the tribes (fisheries management, water management, tribal budgeting department), and informed representatives of agricultural districts and municipalities who have been designated water rights or allocated funding through the settlement. Based on the findings of data collection and targeted interviews, we then analyze the net socioeconomic benefits of the settlement, using a range of specific metrics related to community health, economic conditions, social and cultural well-being, and the state of ecosystem services, both on and off the reservation. Specific examples of the benefits and metrics are included in Exhibit 1.

EXHIBIT 1. FRAMEWORK FOR ANALYSIS



Exhibits 2 through 8 present the points of contact, information requests, and estimated levels of effort associated with fulfilling the requests for each of the metric categories we plan to examine for the Gila River IWRS case study. These categories include:

- Water use (Exhibit 2)
- Economic net benefit: local (Exhibit 3) and regional (Exhibit 4)
- Social well-being (Exhibit 5)
- Cultural well-being (Exhibit 6)
- Ecosystem services (Exhibit 7)
- Health (Exhibit 8)

We anticipate that some of the data requested below does not exist or is not readily available in a usable form. Therefore, the list of information requests presented below can be thought of as a comprehensive list of potential data, and where available, would be useful to the evaluation of impacts from IWRS. The information requested will not require primary data collection by any entity we contact, and should not be time intensive to collect or transfer to our project team.

EXHIBIT 2. GILA RIVER WATER METRICS INTERVIEW STRUCTURE

POINT OF CONTACT	TYPES OF INFORMATION REQUESTED AND RELEVANT SETTLEMENT REFERENCES	LEVEL OF EFFORT
Tribe / Gila River Farms	Historic (pre-settlement) water deliveries for the Gila River Indian Community ("Community") for domestic, irrigation, industrial/commercial purposes, preceding the settlement implementation. Include source of water diverted, volume, and timing of deliveries.	Voluntary participation. Accessing and sharing available historic data (hard copy or electronically).
	Post-settlement implementation water deliveries to the Community for domestic, irrigation, industrial/commercial purposes for all years following the settlement.	
	Volume and purpose of water banked in the Community's name (post-settlement implementation), including: Southside Replenishment Bank, and Arizona Water Banking Authority.	
	Water savings from rehabilitation of irrigation works efforts described in Section 214 (a1)	
	Additional acreage irrigated on Gila River Indian Community Farms resulting from water secured in settlement: types and acres of crops grown, number of employees	
	Volume and type of use of Central Arizona Project (CAP) water leased by the Community to others (Section 17.0 allows for 41,000 acre feet per year (AFY) lease terms to the cities of Chandler, Goodyear, Glendale, Mesa, Peoria, Phoenix and Scottsdale; additional water exchange provisions are also relevant)	
Cities of Chandler, Mesa, Phoenix and Scottsdale, AZ	Current and future projections of water use by type of water use (industrial, commercial, domestic), effect of water availability on urban growth and development	Voluntary participation. Accessing and sharing existing available data and analyses (hard copy or electronically).
Gila Valley Irrigation District and Franklin Irrigation District	Water efficiency savings provided by improvements at Ft. Thomas Diversion Dam as described in Section 214 (7)	Voluntary participation. Accessing and sharing existing available analyses (hard copy or electronically).
	Irrigation activity expected under various levels of water available	Voluntary participation. Discussion regarding hypothetical example of water use in an unconstrained surface water situation (prior to settlement) and water use in a severely constrained situation (e.g. if litigation resulted in no surface water available to district).

**EXHIBIT 3. GILA RIVER LOCAL ECONOMIC BENEFIT METRICS INTERVIEW
STRUCTURE**

POINT OF CONTACT	TYPES OF INFORMATION REQUESTED AND RELEVANT SETTLEMENT REFERENCES	LEVEL OF EFFORT
Cities of Chandler, Mesa, Phoenix and Scottsdale, AZ	If not for leased water from Gila River Indian Community ("Community"), what would be the next best water supply alternative and its associated cost per volume? What level (volume) of alternative water supplies is available? Are alternative water supply sources of the same quality as water from Community?	Voluntary participation. Accessing and sharing existing available analyses (hard copy or electronically).
City of Safford, AZ	Impacts of settlement funding on rate payers? (\$13.9 million to eliminate debt for city water infrastructure)	Voluntary participation. Discussion regarding use of \$13.9 million in funds received by the City of Safford and past impacts on rates.
Gila Valley Irrigation District	Cost savings from improvements made from \$15 million investment (Section 214)	Voluntary participation. Accessing and sharing existing available analyses (hard copy or electronically).
Tribe	Impacts of the settlement funds on costs of water to Community water users. Information on the use of settlement funds directed to community water users (i.e., infrastructure capital costs, ongoing operations and maintenance costs).	Voluntary participation. Accessing and sharing existing available data (hard copy or electronically).
Agricultural activity input suppliers of Arizona	Trends in equipment, seed or other input sales as result of shifts in agriculture in the post-settlement time period	Voluntary participation. Discussion regarding historic sales and if / how shifts in agriculture have impacted sales. Accessing and sharing existing available data (hard copy or electronically).

**EXHIBIT 4. GILA RIVER REGIONAL ECONOMIC BENEFIT METRICS INTERVIEW
STRUCTURE**

POINT OF CONTACT	TYPES OF INFORMATION REQUESTED AND RELEVANT SETTLEMENT REFERENCES	LEVEL OF EFFORT
Gila Valley Irrigation District	The timing and value of expenditures for the \$15 million investment (Section 214) and available detail on the use of the funds for labor and materials, and the source (local versus out of region) of the labor and materials	Voluntary participation. Accessing and sharing existing available analyses (hard copy or electronically).
Tribe	The timing and value of expenditures for tribal water supplies, including available detail on the use of the funds for labor and materials, and the source (local versus out of region) of the labor and materials	Voluntary participation. Discussion regarding timing and value of expenditures. Accessing and sharing available historical data (hard copy or electronically).
City of Safford, AZ	The timing and value of expenditures for city debt payment, including information on what level of infrastructure investment the city would have made in the absence of the settlement and \$13.9 million in funds. i.e., was there a change in infrastructure spending due to the settlement, or was it an income transfer to relieve debt repayment that was already incurred?	Voluntary participation. Discussion regarding use of \$13.9 million in funds received by the City of Safford and past impacts on rates.
Agricultural activity input suppliers of Arizona	Trends in equipment, seed or other input sales as result of shifts in agriculture that either occurred due to settlement or could have occurred with litigation.	Voluntary participation. Accessing and sharing existing available data and analyses of shifts in agriculture output value impacting local business, and how shifts in the proportion of tribal vs. non-tribal irrigation impacts local business.

EXHIBIT 5. GILA RIVER SOCIAL WELL BEING METRICS INTERVIEW STRUCTURE

POINT OF CONTACT	TYPES OF INFORMATION REQUESTED	LEVEL OF EFFORT
Agriculture Specialist at Agricultural Services Program of Gila River Indian Community Irrigation and Drainage District	Annual membership totals for community gardens; size of garden plots; types of produce grown.	Voluntary participation. Accessing and sharing available data (hard copy or electronically).
Tribe	Data on trends and non-IWRS events (e.g. new tribal business ventures not relying on or benefited from the settlement) that may have affected welfare during period of analysis. Trends or changes in social well-being on reservation through time. Qualitative scoping questions related to migration patterns, engagement of tribal members, and other existing social well-being indicators.	Voluntary participation. Supplying available data (hard copy or electronically) on social welfare metrics.

EXHIBIT 6. GILA RIVER CULTURAL WELL BEING METRICS INTERVIEW STRUCTURE

POINT OF CONTACT	TYPES OF INFORMATION REQUESTED AND RELEVANT SETTLEMENT REFERENCES	LEVEL OF EFFORT
Tribe <i>and/or</i> Bureau of Indian Affairs	Historic data on Tribal enrollment, population residing in the community, visitation data and cultural events and participation rates	Voluntary participation. Accessing and sharing available historical data (hard copy or electronically).
	Voting participation by tribal members	
	Discussion of cultural well-being on reservation, discussion of trends and non-IWRS events that may have affected cultural well being. Discussion of factors affecting tribal members' decisions to live on-reservation or in area nearby reservation.	Voluntary participation. Discussion regarding cultural well-being on reservation, trends and non-IWRS events that may have affected cultural well being.

EXHIBIT 7. GILA RIVER ECOSYSTEM SERVICE METRICS INTERVIEW STRUCTURE

POINT OF CONTACT	TYPES OF INFORMATION REQUESTED AND RELEVANT SETTLEMENT REFERENCES	LEVEL OF EFFORT
Tribe	Amount of decreed water rights (from Gila Valley or Franklin Irrigation Districts) purchased and extinguished; acres of land preserved for riparian habitat (Section 211 (2)); other impacts of extinguished water right (e.g. water supply)	Voluntary participation. Accessing and sharing available historical data (hard copy or electronically).
	Data on species present in riparian areas (habitat types, species inventories)	
	Information on whether ancillary effects on groundwater levels, flooding and water quality occurred as a result of settlement	
	Area currently zoned for recreation use in vicinity of reservation, and other land uses in vicinity of reservation that may benefit from aesthetic improvements	

EXHIBIT 8. GILA RIVER HEALTH METRICS INTERVIEW STRUCTURE

POINT OF CONTACT	TYPES OF INFORMATION REQUESTED AND RELEVANT SETTLEMENT REFERENCES	LEVEL OF EFFORT
Gila River Health Care - Indian Health Service	Number of cases of obesity and diabetes by age of member (historic to present)	Voluntary participation. Accessing and sharing available historical data (hard copy or electronically).
	Data on health issues and trends through time	
	Availability of fruits and vegetables on reservation	