

Appendix 4A

Influencing Factors Survey



Appendix 4A – Influencing Factors Survey

Colorado River Basin Ten Tribes Partnership Tribal Water Study Influencing Factors Survey (Finalized January 2016)

Instructions and Guidance for Completing the Influencing Factors Survey

As part of the Colorado River Basin Ten Tribes Partnership Tribal Water Study (Study), the Study Team (the Bureau of Reclamation and the Ten Tribes Partnership) is undertaking a planning process to develop scenarios regarding how the tribes of the Ten Tribes Partnership may develop and use their water over the next approximately 50 years. Important steps in this process are to identify the key factors that are likely to impact how such development and use will occur (called “influencing factors”), and then to survey tribal representatives to identify those influencing factors that are both highly important and highly uncertain (known as “critical uncertainties”). These critical uncertainties will form the basis for the Study’s tribal water development and use scenarios.

The Study is being conducted by both Reclamation and the Ten Tribes Partnership, and the list of influencing factors in the attached survey was jointly developed. The purpose of the survey is to receive input from tribal representatives on the relative “importance” (how important the factor will be in influencing future tribal development and use) and “uncertainty” (how certain the changes in the factor are over time) of each of the influencing factors through 2060. This input will be used to identify which influencing factors are critical uncertainties. Additionally, this input will help inform subsequent phases of the Study where issues related to future use and/or development of tribal water will be discussed.

The purpose of the Study is to identify, for the tribes of the Ten Tribes Partnership, tribal water supplies, document current tribal water use on Partnership reservations, project future water development on Partnership reservations, document use of unused tribal water by others, and identify tribal opportunities and challenges associated with the development of tribal water, considering the future projected water supply and demand imbalances documented in the Colorado River Basin Study. Specific objectives of the Study that will be addressed through the scenario planning process include:

- Characterize a range of future tribal water development and use for each of the tribes in the Partnership
- Identify potential future impacts to specific users, or groups of users, presently relying on unused tribal water
- Identify tribal water development challenges both specific to the tribes in the Partnership and in general Basin-wide

Survey Format

The survey includes a list of factors that influence how tribal water will be developed and used in the future. Each respondent is requested to independently rate (using a scale of 1 through 5, with 5 being the highest) the relative “importance” and “uncertainty” associated with each factor with respect to the objectives of the Study being addressed through the scenario planning process:

Importance (1 through 5): Rate how important the factor will be in influencing tribal development and use of its water (from the Colorado River and its tributaries) through 2060.

Uncertainty (1 through 5): Rate how certain you are regarding how that factor will change between now and 2060.

Respondents are encouraged to provide comments related to each response. These comments will help the Study Team better analyze the input received, particularly for high and low ratings.

Guidance for Completing the Survey

The list of influencing factors is intended to be relatively broad to capture the large-scale mechanisms that influence how tribal water will be developed and used in the future. Not every variation of influencing factors is necessary at this point, as details of the critical uncertainties will be explored in the next steps of the scenario planning process. However, please provide any comments you have that may help us better understand your views regarding a particular influencing factor. Some additional guidance may be helpful in the completion of the survey:

1. Relate all ratings to the relevant Study objectives:
 - a. Characterize a range of future tribal water development and use for each of the tribes in the Partnership
 - b. Identify potential future impacts to specific users, or groups of users, presently relying on unused tribal water
 - c. Identify tribal water development challenges both specific to the tribes in the Partnership and in general Basin-wide
2. Consider the current impact of the influencing factors on tribal water development and use in addition to evolving trends and the range of effects of the factors through 2060
 - a. How important is the influencing factor on development and use today? What are the current trends in these factors? Are the future trends likely to following the same trajectory? What is the magnitude of these influences? How may future changes in a factor impact development and use?
3. Keep your ratings of importance and uncertainty separate
 - a. Importance is a relative measure of the magnitude of impact of the influencing factor on Tribal water development and use.
 - b. Uncertainty is a relative measure of how certain you are regarding how the factor will change between now and 2060.
4. Keep in mind that the survey is a relative comparison of the listed influencing factors
 - a. You may wish to make two or more passes through the survey—the first to gauge an initial response and baseline and subsequent passes to compare and identify the relative rating of all influencing factors.

Influencing Factors Survey

Importance and Uncertainty of Factors Influencing Tribal Water Development and Use

Please return completed survey by January 29, 2016

Name (optional):		Title (optional):	
Tribe (optional):			
<p>Importance (1–5): Rate how important the factor will be in influencing tribal development and use of water from the Colorado River and its tributaries through 2060. 1=Unimportant, 3=Important, 5=Very Important</p>			
<p>Uncertainty (1–5): Rate how certain you are regarding how that factor will change between now and 2060. 1=Certain, 3=Uncertain, 5=Very Uncertain</p>			
Enter "NA" if you are unfamiliar with the influencing factor (Note: will not be included in final rating)			

No.	Influencing Factors	Importance	Uncertainty	Comment
Demographic				
1.	Changes in reservation populations and their distribution			
2.	Changes in non-Indian populations adjacent to reservations			
Land Use and Natural Systems				
3.	Changes in agricultural land use (e.g. irrigated agricultural areas, crop mixes, etc.)			
4.	Changes in agricultural irrigation practices <i>Description: This factor could include changes in the irrigation of agricultural lands by the adoption of new methods or technologies to improve the efficiency of irrigation systems when using water.</i>			
5.	Changes in the needs of environmental resources that are dependent on water (e.g. fish and aquatic wildlife, riparian habitat, etc.) including those related to Endangered Species Act (ESA)-listed species			
6.	Changes in water quality (including those that are physical, biological, and chemical in nature)			

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No.	Influencing Factors	Importance	Uncertainty	Comment
7.	Changes in the resources and technology available to treat poor quality tribal water			
8.	Changes in patterns of use and/or water supply sources (e.g. springs, groundwater, streams, etc.) due to drought and/or climate variability			
Infrastructure Development				
9.	Changes in tribal/federal financial resources available to expand Tribal housing and related infrastructure <i>Description: This factor could include changes in Tribal housing and related municipal and domestic water delivery infrastructure serving users such as tribal members, schools, community centers, parks, etc.</i>			
	9a. Changes in tribal financial resources			
	9b. Changes in federal financial resources			
10.	Changes in tribal/federal financial resources available to operate and maintain existing water delivery systems and storage for irrigation purposes (includes repairing, rehabilitating, and replacing agricultural and storage infrastructure) <i>Description: This factor could include influences such as the ability of the tribe to operate, maintain and improve on-and off reservation irrigation and related water delivery systems, including storage facilities.</i>			
	10a. Changes in tribal financial resources			
	10b. Changes in federal financial resources			
11.	Changes in tribal/federal financial resources available to construct new water delivery systems and storage for irrigation purposes <i>Description: This factor could include influences such as the ability of the tribe to construct new on-and off reservation irrigation and related water delivery systems, including storage facilities.</i>			
	11a. Changes in tribal financial resources			
	11b. Changes in federal financial resources			

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Importance and Uncertainty of Factors Influencing Tribal Water Development and Use

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No.	Influencing Factors	Importance	Uncertainty	Comment
12.	<p>Changes in tribal/federal financial resources available to operate and maintain existing water delivery systems and storage for domestic and municipal purposes (includes repairing, rehabilitating, and replacing delivery, distribution, and storage infrastructure)</p> <p><i>Description: This factor could include influences such as the ability of the tribe to operate, maintain and improve on-and off reservation domestic and municipal delivery systems, including storage facilities.</i></p>			
	12a. Changes in tribal financial resources			
	12b. Changes in federal financial resources			
13.	<p>Changes in tribal/federal financial resources available to construct new water delivery systems and storage for domestic and municipal purposes</p> <p><i>Description: This factor could include influences such as the ability of the tribe to construct new domestic and municipal delivery systems, including storage facilities.</i></p>			
	13a. Changes in tribal financial resources			
	13b. Changes in federal financial resources			
Economic Development				
14.	Changes in water needs for energy generation (e.g. solar, oil shale, thermal, nuclear, hydroelectric, etc.)			
15.	Changes in water needs to support tribal economic development (e.g. eco and cultural tourism, commercial and business centers, etc.)			
16.	Changes in the local and regional market "value" (i.e., cost) of water (as it relates to different uses, such as the cost of generating energy, commodity prices, cost to pump, leasing, municipal use, etc.)			
Social				
17.	Changes in cultural and spiritual uses of tribal water			
18.	<p>Changes in tribal values affecting water use</p> <p><i>Description: This factor could include changes in tribal member priorities related to water use such as in-stream flows, recreation, domestic use, etc.</i></p>			

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No.	Influencing Factors	Importance	Uncertainty	Comment
Governance				
19.	Changes in tribal water availability and use due to the resolution and settlement of tribal water rights claims <i>Description: This factor could include changes in the time it takes to complete Indian water settlements and in tribal member support for these settlements and water development plans.</i>			
20.	Changes in the laws, policies, and/or regulations to provide increased flexibility to tribes to use tribal water <i>Description: This factor could include changes to provide for increased use of water banking, water marketing, leasing, etc. and changes that further support and facilitate use of tribal water to support tribal economic development.</i>			
21.	Changes in federal, state, and/or regional water administration practices <i>Description: This factor could include changes in the accounting of tribal water in the Colorado River system, and tracking and ensuring deliveries during all hydrologic conditions, and changes in the ability to ensure water is delivered to a specific entity or location.</i>			
22.	Changes in tribal expertise and resources available for tribal water use planning <i>Description: This factor could include changes in tribal economic and other resources for tribal water resources planning and management, changes in Congressional appropriations to support water use development and planning, and changes in cooperative efforts with State and regional non-Indian water development planning.</i>			
23.	Changes in the understanding of tribal reserved water rights by Federal, State, other governmental agencies and the public at large (e.g. external education)			