

# Arizona's Designated Use Verification and Use Attainability Analysis Process

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## What is a Use Attainability Analysis?

- “A structured scientific assessment of the factors affecting the attainment of the USE which may include physical, chemical, biological, and economic factors”
- Applies to fishable/swimmable designated uses:
  - Body contact
    - Full body contact
    - Partial body contact
  - Consumable species
    - Fish consumption
  - Aquatic & wildlife
    - Cold
    - Warm
    - Ephemeral
    - Effluent dependent water



## When is a UAA required?

- Designating uses for waters that do not have CWA 101(a)(2) uses
- Removing/downgrading a 101(a)(2) use
  - Adopting a subcategory of a DU with less stringent WQ criteria

## When is a UAA Not required?

- Designating uses that include 101(a)(2) uses
- Designating uses that are at least as stringent as previous uses (eg. upgrade use)
- Removing/downgrading a non-101(a)(2) use
  - Use and Value demonstration required
- Removing/downgrading uses for non-wotus state waters

## Clean Water Act Designated Uses

- 10 designated uses 
- Uses the Tributary Rule

A&Wc  
A&Ww  
A&We  
A&Wedw  
FBC  
PBC  
FC  
Agl  
AgL  
DWS

## AZ Surface Water Protection Program Designated Uses

- 8 designated uses 

A&Wc  
A&Ww  
FBC  
PBC  
FC  
Agl  
AgL  
DWS

## Arizona's Tributary Rule

- Assigns fishable/swimmable uses
- Uses elevation and flow regime
- Does not include domestic water use or agriculture uses
  - Need to be assessed separately
  - ADEQ's Designated Use Checklist

### **R18-11-105. Tributaries; Designated Uses**

The following water quality standards apply to a surface water that is not listed in Appendix B but that is a tributary to a listed surface water.

1. The aquatic and wildlife (ephemeral) and partial-body contact standards apply to an unlisted tributary that is an ephemeral water.
2. The aquatic and wildlife (cold water), full-body contact, and fish consumption standards apply to an unlisted tributary that is a perennial or intermittent surface water and is above 5000 feet in elevation.
3. The aquatic and wildlife (warm water), full-body contact, and fish consumption standards apply to an unlisted tributary that is a perennial or intermittent surface water and is below 5000 feet in elevation.

# ADEQ's Designated Use Checklist

## ADEQ Checklist for Designated Use Identification

The Tributary Rule uses are applied to a waterbody with no designated uses as an initial step. The flow regime and elevation range will be checked to verify Tributary Rule uses. Then, this checklist is used to identify any additional designated uses that may be present in a waterbody.

Waterbody Name: \_\_\_\_\_ Date: \_\_\_\_\_

WBID: \_\_\_\_\_ Elevation Range: \_\_\_\_\_

Flow regime: \_\_\_\_\_ Flow regime source: \_\_\_\_\_

Were there already Uses assigned? Y/N If Yes, List uses assigned: \_\_\_\_\_









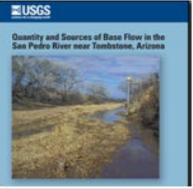
If No, which Tributary Rule uses apply? \_\_\_\_\_

See Appendix B R18-11-105

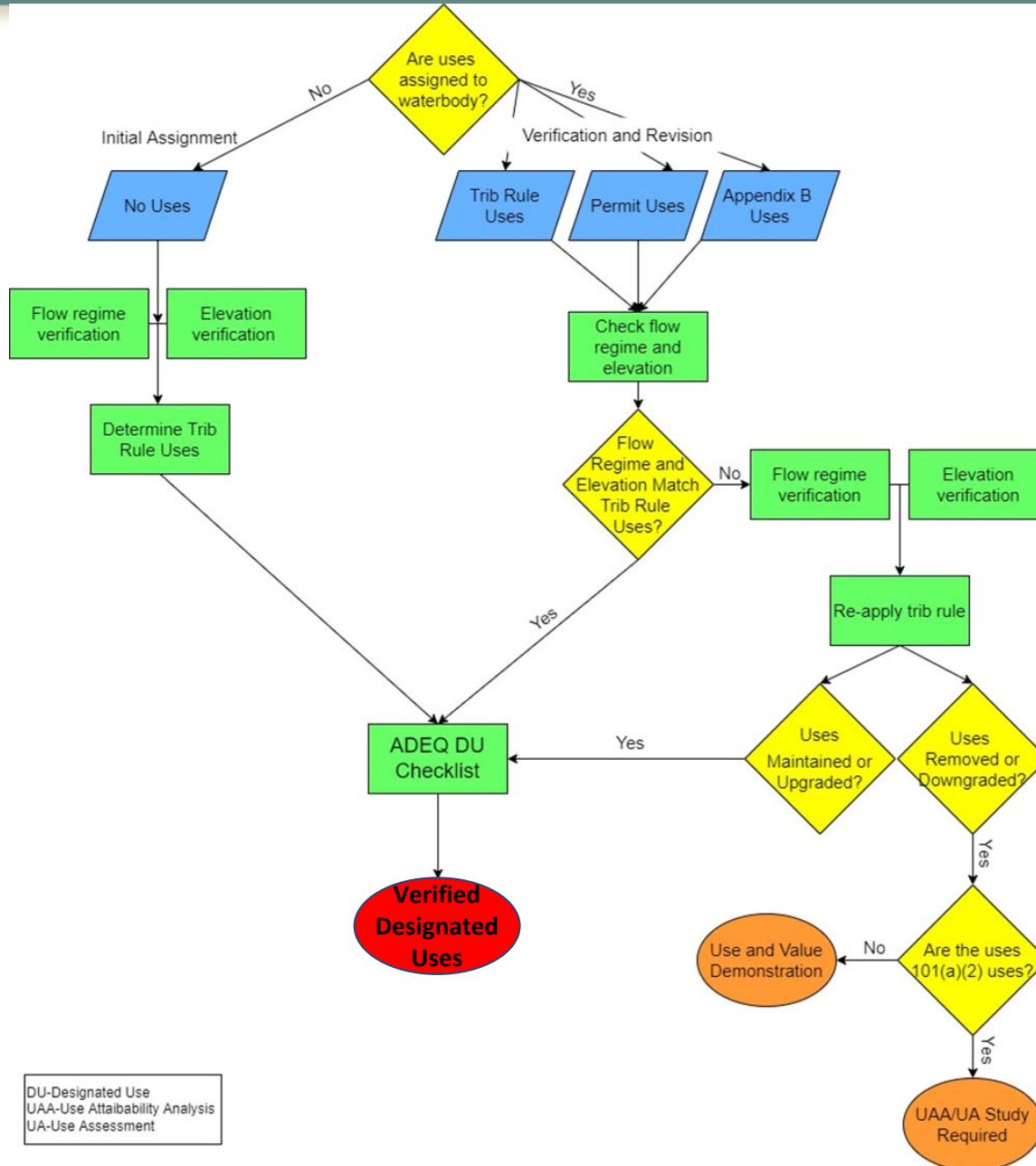
Designated use	Indicator	Evidence checked	Present?
<b>Domestic Water Source (DWS)</b>	Surface water with current or historical intake for drinking water present in the WBID	ADEQ GIS layer: Drinking Water Surface Water Intakes ADEQ internal look-up table: Historic Drinking Water Surface Water Intakes	
<b>Agricultural Irrigation (Agl)</b>	Irrigated crops adjacent the WBID reach or using the surface water in the WBID	AZ Water Blueprint Map, layer: Farmland 2020	
		ADWR Groundwater Rights, <a href="https://azwatermaps.azwater.gov/igfr">https://azwatermaps.azwater.gov/igfr</a>	
		Google Earth, historical imagery-look for agriculture	
<b>Agricultural Livestock Watering (AgL)</b>	Grazing allotments or private ranches within the WBID reach	USFS Map	
		AZ State Land Department, layer: Grazing lease	
		AGFD Habi-Map, layer: Grazing Allotment/Pastures	
		BLM maps	
		Google Earth imagery	



- Verify correct uses are applied
  - Verify the uses are based on the correct elevation
  - Verify the flow regime using ADEQ's Weight of Evidence Approach
- Completed Designated Use Checklist

Observation Data Source Types		
<p>USGS Gages</p>  <p>9</p>	<p>SDAM Surveys - Reach</p>  <p>8</p>	<p>Biological Indicators</p>  <p>Ephemeroptera - Baetidae - Baetis</p> <p>7</p>
<p>Wet Datapoints</p>  <p>6</p>	<p>Continuous Monitoring</p>  <p>5</p>	<p>Modeled - Merritt et al. (2021)</p>  <p>4</p>
<p>ADEQ Screening Tools</p>  <p>3</p>	<p>SDAM Surveys - Point</p>  <p>2</p>	<p>Supplemental Data</p>  <p>1</p>

# Designated Use Flow Chart



DU-Designated Use  
UAA-Use Attainability Analysis  
UA-Use Assessment

Have uses  
already been  
assigned?

Is a UAA needed?



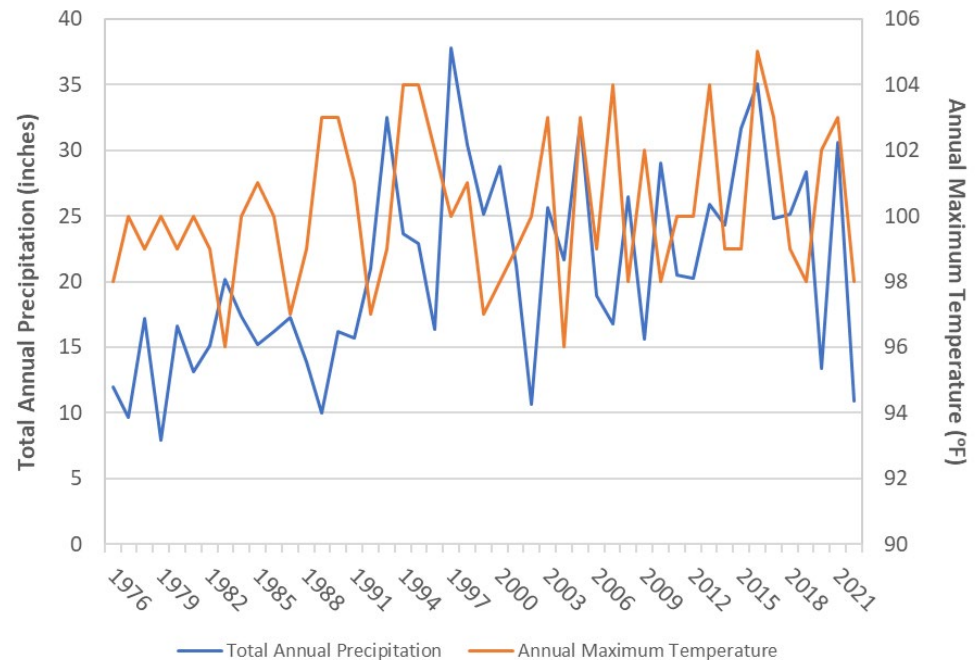
1. Watershed and Waterbody Characterization
2. Determine “existing uses” of the waterbody
3. Determine if uses are attainable
  - a. If not attainable, identify the UAA factor
4. Determine the highest attainable uses
5. Provide recommendations
6. Review & approval process

## Watershed

- Land ownership (city, rural)
- Elevation
- Climate

## Waterbody

- Physical, chemical, and biological
  - Field Survey data
  - Flow regime determination
  - Water quality data



## Outline evidence for each use

- Different levels of scientific rigor
  - Level I, II, or III
- Exhaust all resources for evidence
- Determine using evidence and level of scientific rigor if a particular use is an existing use



# Determining Existing Uses

Designated Use	Evidence for Existing Use Determination	Level of Scientific Rigor	Existing Use?
Ag- Irrigation	USDA's cropland show cropland in area	I	Yes
	ASU's blueprint map shows farmland, but no irrigation	I	
Ag- Livestock	USFS maps indicate 5 active cattle pastures	I	Yes
A&W-cold	Elevation in entire reach is less than 5000'	III	No
	SDAM surveys determined ephemeral flow regimes	I	
	Weight of evidence flow regime indicate ephemeral	I	
Full body contact	SDAM survey photos and Google Earth imagery show a dry, shallow streambed throughout the reach not appropriate for submersion	I	No
	Weight of evidence flow regime indicate ephemeral	I	
	Recreational activities occurring in the reach area are mainly non-aquatic recreation by OHVs/ATVs	II	

# Factors why use is not feasible

1. Naturally-occurring pollutant concentration prevents the attainment of the use
2. **Natural, ephemeral, intermittent, or low-flow condition or water level prevents the attainment of the use**
3. Human-caused condition or source of pollution prevents the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place
4. Dam, diversion, or other type of hydrologic modification precludes the attainment of the use, and it is not feasible to restore the surface water to its original condition or to operate the modification in a way that would result in attainment of the use
5. Physical condition related to the natural features of the surface water, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, precludes attainment of an aquatic life designated use
6. Controls more stringent than those required by CWA §§ 301(b) and 306 (33 United States Code (USC) §§ 1311 and 1316] are necessary to attain the use and implementation of the controls would result in substantial and widespread economic and social impact

## Existing use vs Highest attainable use

- Explanation of evidence and reasoning for highest attainable use
  - Partial and full body contact example
    - Factor for partial body contact not being attainable:  
Natural low flow conditions
- Only fishable/swimmable uses considered
- Discuss any impacts or pollutants that can affect attainment
- Point or nonpoint sources

# Provide Recommendations

Designated Use	Current Designated Use?	Existing Use?	Highest Attainable Use?
Agriculture Irrigation (Agl)		Y	
Agricultural Livestock (AgL)	Y	Y	
Aquatic and Wildlife -cold water (A&Wc)		N	N
Aquatic and Wildlife -warm water (A&Ww)	Y	N	N
Aquatic and Wildlife - ephemeral (A&We)		Y	Y
Aquatic and Wildlife -effluent dependent water (A&Wedw)		N	N
Domestic Water Source (DWS)		N	
Full-Body Contact (FBC)	Y	N	N
Partial-Body Contact (PBC)		Y	Y
Fish Consumption (FC)	Y	Y	Y

Recommended uses: A&We, PBC, FC, Agl, AgL

- We have completed 1 UAA and 9 other DU investigations using this process
- Drafts not yet reviewed/approved by EPA





Guidance is currently  
review with EPA

## Assigning and Revising Designated Uses for Surface Waters in Arizona: ADEQ's Standard Work Procedures



Hassayampa River at Maricopa County Preserve, June 2020

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Clean Air, Safe Water,  
Healthy Land for Everyone

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Thank you!

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<https://azdeq.gov/surface-water-quality-standards>