

Project:	SCI-348-17.51	PID:	119950
PERFORMED BY:	MCM	DATE:	3/10/2025
CHECKED BY:		DATE:	
SUBJECT:	TAF		
STREAM:	Scioto River		

TAF DESIGN

STREAM CHARACTERISTICS AT PROPOSED TAF LOCATION (NO TAF INSTALLED)

Is StreamStats data for the site available?	Yes
Is the stream's flow influenced by hydraulic controlling features (i.e. dams)?	No
Basin drainage area (mi ²)	6,180
Ordinary High Water Mark elevation [OHWM] (ft)	510.2
Top of bank elevation (ft)	523.0
50% AEP flow water surface elevation (ft)	518.6
OHWM flow rate [without TAF] (cfs)	23,013
Maximum mean monthly flow (cfs)	6950
2x maximum mean monthly flow (cfs)	13900
2x maximum mean monthly flow water surface elevation (ft)	503.97

Tier 1 TAF Analysis

Proposed TAF obstruction	Partial
For partial TAFs: minimum channel opening width (ft) at the OHWM elevation	275'
Calculated backwater elevation (ft) with the TAF in place.	507.86
Does the site pass two-times highest monthly flow without backwater rise above OHWM with TAF in place?	Yes
End Analysis: Proceed to TAF Stability section and Summary.	
After verifying OHWM, does the site pass 2x highest monthly flow?	Yes

Tier 2 TAF Analysis

Do not complete this section, analysis complete.

Calculated backwater elevation	
Modified height of TAF (backwater elevation+1' freeboard)	1
Calculated backwater from modified TAF height	
Calculated freeboard	1
TAF Design acceptable (greater than 0.5-feet)	
Is the TAF height acceptable based on viability considerations?	
Proceed to Tier 3 TAF Design	
Final top of TAF elevation (ft)	1.0

Tier 3 TAF Analysis

Complete if adjusted STD is necessary

Initial height of TAF (1' above OHWM or necessary to facilitate construction)
 Calculated STD (flow producing WSE equal to height of TAF)
 Is historical waterway flow available (USGS Gage data availability)?
 Does probability of exceedance of STD facilitate the project schedule?

TAF STABILITY- Based on Bureau of Reclamation

Suggested rock sizing and corresponding Manning's n based on hydraulic analysis velocities

Note: Sizing based on velocity due to unavailability of accurate point shear in 1D models

Velocity at edge of TAF corresponding to 20% AEP flow (ft/s)

9.34

Suggested dumped rock size

ODOT Type B (n=0.042)

SUMMARY

Streamflow data source

Stream contains hydraulic controlling features?

Top of TAF elevation (ft)

Partial TAF: minimum channel opening width (ft) at the OHWM elevation:

Suggested size for TAF dumped rock:

Suggested HEC-RAS scoping (1D or 2D)

Stream Stats
No
511.21
275'
ODOT Type B (n=0.042)
1D Hydraulic Model