RISK INFORMED BUSINESS LINE INTRODUCTION WATER MANAGEMENT AND REALLOCATION STUDIES (WMRS)

PCOP WEBINAR SERIES

Cherilyn Plaxco, WMRS PCX 02 August 2018



PURPOSE

Basic Water Supply Training for **any individual** who interacts with Corps Planning









FIRST IN A SERIES

Water Management and Reallocation Studies

Inland Flood Risk Management

Coastal Storm Risk Management

Inland Navigation

Small Boat Harbors

Ecosystem Restoration

Deep Draft Navigation





HAVE YOU EVER WORKED ON A WATER SUPPLY STORAGE REALLOCATION STUDY?



Yes

No





OBJECTIVES

- 1. Overview of the business line
- 2. Identify business line specific policy and guidance
- 3. Reference common models used for existing conditions, costs, and benefits
- 4. Identify common risks specific to business line
- 5. Lessons learned, best management practices, tips for success, and a case study
- 6. Provide relevant business line points of contact
- 7. Frequently Asked Questions and an Open forum for your questions





OVERVIEW OF THE BUSINESS LINE







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https://www.justdial.com/Chandigarh/Punjab-Water-Supply-Sewarage-Board-Sector-27a/0172PX172-X172-091028203603-H9K6_BZDET

ONE OF THESE THINGS IS NOT LIKE THE OTHERS







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http://www.enhancedentistry.com.au/994-2/



WE BUILD THE BUCKET

The Corps does not:

- Own the water
- Obtain water rights
- Sell water



https://www.plasticboxshop.co.uk/home-storage-c1/kitchen-organisation-c19/plastic-buckets-c56/13-litre-clear-stepped-plastic-bucket-with-handle-p411





STORAGE

Acre-foot

- An acre-foot of space will cover one acre of ground, one foot deep.
- Could contain
 43,560 cubic feet
- Could contains 325,829 gallons



Note: Dimensions are not drawn to scale in order to illustrate the concept of an 'acre-foot'

http://jmkthought.blogspot.com/2017/05/how-much-water-can-is-there-in-dry-lake.html





STORAGE VS YIELD

The Corps manages <u>storage</u> in reservoirs that may or may not fill with water.

We may include water supply <u>storage</u> in new reservoir projects or reallocate <u>storage</u> in existing projects to Municipal and Industrial use.





WATER SUPPLY BIG PICTURE







STORAGE AND YIELD

MSC	Total M&I Storage Space (acre-feet)	Yield (MGD)
NAD	167,435	452
SAD	209,623	471
LRD	611,113	612
MVD	446,110	305
NWD	1,014,153	434
SPD	565,000	258
SWD	6,788,501	4,402
TOTAL	9,801,935	6,934.





GEOGRAPHIC REPRESENTATION







CURRENT STUDIES







STARTING A WMRS STUDY







http://www.lakeouachita.org/blakely-mountain-dam-lake-ouachita.htm

OBJECTIVES

1. Overview of the business line

2. Identify business line specific policy and guidance





GENERAL AUTHORITY OF WMRS

43 USC 390b



Water Supply Act of 1958, PL 85-500 Title III, as amended

Water supply is a primarily a state and local responsibility. The Corps may participate and cooperate in developing water supplies in connection with multipurpose projects.

https://www.joyfulword.com.ng/2016/07/he-gave-them-authority-hosea-101-37.html





QUICK QUIZ: WITHOUT CONGRESS, IS THERE A LIMIT TO HOW MUCH STORAGE CAN BE REALLOCATED UNDER THE WATER SUPPLY ACT OF 1958?







LIMIT OF AUTHORITY

As long as there is not **serious effect** to other authorized purposes, or **major structural or operational changes** being made by reallocation, we have authority to reallocate <u>storage</u> for <u>Municipal</u> and Industrial purposes.





POLICY GUIDANCE

Planning Guidance Notebook (ER 1105-2-100) Paragraph 3-8 and Appendix E, Section VIII

IWR Report 96-PS-4 Water Supply Handbook Chapters 2, 4, and 5



ER 1105-2-1156, 31 March 2014, Engineering and Design, Safety of Dams – Policy and Procedures

Chapter 24

USACE Planning Manuals, Part I and Part II

https://careersportal.ie/careerguidance/office.php?school_id=412





DIRECTOR MEMOS

Improving Efficiency and Effectiveness in USACE Civil Works Project Delivery

Modification of the Model Certification Process and Delegation of Model Approval for Use

Delegation of Model Certification (11 May 2018)



http://www.denofgeek.com/us/movies/directors/244527/17-films-that-changed-director-after-shooting-had-started





CHECK IN

Any questions in the chat that we haven't covered?







REALLOCATION REQUEST







PLANNING ITERATIONS



USACE Planning Manual Part II: Risk-Informed Planning (July 2017)





BRAINSTORMING

The PDT works with the sponsor to start brainstorming. The first three steps of the iterative process are:

- Problems/Opportunities/Objectives/Constraints;
- Criteria with which the PDT will eventually screen measures;
- And what the future looks like without the Corps storage (including both structural and non-structural measures).



https://www.benzcommunications.com/blog/solve-employee-benefits-engagement-challenges-through-better-brainstorming





WHAT CAN THE SPONSOR DO WITHOUT THE CORPS?

- Transfers
- Groundwater
- Surface Reservoir
- Conservation*
- Reclaimed Water
- On Site Recycling
- Storm Water Management
- Rainwater Harvesting
- Aquifer Storage and Recovery
- Desalination

*NonStructural







MANAGEMENT MEASURES





https://betanews.com/2015/09/22/simplifying-analytics-with-a-building-block-approach/

WHAT CAN THE CORPS DO?









FEDERAL MEASURES

Acre feet of storage may be reallocated from another purpose.

- Flood storage the top of the conservation pool rises as flood storage decreases †
- Conservation storage the top of the conservation pool remains constant
- Inactive storage the bottom of the conservation pool lowers as inactive pool decreases

+ Flood pool reallocation is prohibited at DSAC 1, 2, or 3 dams.





PLANNING ITERATIONS



USACE Planning Manual Part II: Risk-Informed Planning (July 2017)





ALTERNATIVE FORMULATION

Mixing together measures into alternatives is similar in WMRS as it is in other business lines. However, by the time we have a feasible array of alternatives, they usually look like standalone measures.







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http://caketalk.typepad.com/maryscupboard/2011/01/022011-copper-mixing-bowl.html

CHECK IN

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ALTERNATIVE MILESTONE MEETING

By the time you have your Most Likely Least Cost Alternative (the Without Project Condition Alternative), the list of Federal Alternatives, and the criteria with which you will screen, evaluate, and compare... you are ready for your Alternative Milestone Meeting.







https://www.odi.org/comment/10594-2018-time-update-dac-evaluation-criteria
PLANNING ITERATIONS



USACE Planning Manual Part II: Risk-Informed Planning (July 2017)





SCREENING







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https://stellarplatforms.com/sales-funnel-strategy/

ONE OF THESE THINGS IS NOT LIKE THE OTHERS







http://www.enhancedentistry.com.au/994-2/

IMPACTS TO OTHER PROJECT PURPOSES

Economist works with other team members to determine the reallocation's impact to other project purposes.

Flood Pool: Flood Damage Reduction, Hydropower, Recreation, Real Estate

Conservation Pool: Hydropower, Navigation, Water Quality

Inactive Pool: Sediment Management, Hydropower







ENVIRONMENTAL CONSIDERATIONS

- Defining the future No Federal Action alternative. Difference from other business lines – the municipality will not continue without action
- Planning Assistance Letter
- T&E Species
- Cultural Resource Evaluation
- Other Socioeconomic Impacts

Goal: Coordination Action Report and No Adverse Effects Determination from SHPO, FONSI







CHECK IN

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PLANNING ITERATIONS



USACE Planning Manual Part II: Risk-Informed Planning (July 2017)





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SELECTING A FEDERAL ALTERNATIVE

When faced with an array of Federal alternatives, the Tentatively Selected Plan is the alternative which has the LEAST financial impact on other project purposes.







TEST OF FINANCIAL FEASIBILITY

At the end of the study, a team should have **AT LEAST** three feasible alternatives:

- Alternative A
- Alternative B
- No Action Alternative (WOPC)

The Test of Financial Feasibility Least Cost Alternative (A or B) vs No Action Alternative







http://veterinaryschools.com/resources/choosing-a-veterinary-school

TENTATIVELY SELECTED PLAN

At the TSP, representatives from the One Policy Review team considers the TSP proposed by the study team and the analysis the team used to reach its recommendation. MSC Planning & Policy Chief determines whether the draft reallocation report and accompanying NEPA document can be released for concurrent review.



http://www.rt-cd.com/home/products-services/admission-consultancy/program-selection/





QUICK QUIZ: DOES A WATER SUPPLY STUDY USUALLY ⁴⁷ HAVE DETAILED DESIGN AND COST ESTIMATES?



ONE OF THESE THINGS IS NOT LIKE THE OTHERS







http://www.enhancedentistry.com.au/994-2/

AGENCY DECISION MILESTONE

At the ADM, the Corps has the chance to endorse the selected plan, to grant permission to the District to develop detailed designs and costs, and to endorse the District's plan for finalizing the report and NEPA document. It's where the agency accepts the risks and uncertainties as outlined by the PDT and supports the risk management plan moving forward

For WMRS studies, there is usually little change in the TSP and in the document before and after review. For O&M funded studies, there is not detailed design or construction cost. There is little implementation risk.





PLANNING ITERATIONS



http://www.lifecyclespinstudio.com/





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CHECK IN

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- 1. Overview of the business line
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COMMON MODELS: DEMAND FORECAST

A sound water demand forecast is necessary in reservoir reallocation to demonstrate the need for additional water supply and to estimate the quantity.

It should be a reasonable representation of future conditions in the study area and include the key drivers and factors that might influence future water demand within that study area.



https://www.keytomarkets.com/blog/newsletters/forecast-based-on-gold-to-silver-ratio/





THE APPROACH TO WATER DEMAND

The approach for a demand forecast typically is driven by three main components

Generally speaking, there is not one single approach that can be stamped on each study

Unique circumstances can dictate the forecasting approach







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DEMAND FORECASTING METHODS







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COMMON MODELS: BENEFITS FOREGONE – IMPACT ANALYSIS

Flood Benefits Lost:

- HEC-RAS/Geo-RAS
- FIA or FDA

Recreational Impacts:

• UDV/GIS

Real Estate ImpactsGIS

Hydropower Analysis Center



https://www.zmescience.com/science/news-science/why-water-drop-splash/





COMMON MODELS: COSTS

Cost of the Most Likely Least Cost Alternative: class 5 cost estimate

Cost of the Reallocation: Highest of 4 calculations

- 1. Foregone benefits
- 2. Foregone revenues
- 3. Replacement cost
- 4. Updated Cost of Storage

Test of Financial Feasibility





COMMON TOOLS: AMORTIZATION

Water Supply Interest Rate: FY18 = 2.875% 30 years

First payment pays only principal.

29 payments amortized with interest.



https://www.thestreet.com/story/13079275/1/how-to-get-the-lowest-mortgage-rates-without-a-large-down-payment.html





COMMON TOOLS: CONTRACTS







https://www.flmontreal.com/writing-an-employment-contract/

CHECK IN

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- 4. Identify common risks specific to business line





RISK AND UNCERTAINTY

According to the Risk Manual, "The planning team will never know less than they do for this [first] iteration." In the beginning uncertainty is high. As you progress, you gather relevant information to reduce uncertainty for decisions that need to be made.







https://leadingwithtrust.com/2017/08/13/4-strategies-for-leading-in-uncertain-times

RISK AND UNCERTAINTY

- Hydropower effects will be considered "serious" by Power Marketing Agencies
- H&H modeling uses "drought of record" which has an effect on reliability of yield
- Sedimentation estimates are often out of date, if ever done since construction of the reservoir
- Recreation may be complex, but may need to use something like Unit Day Values to get a rough estimate of impacts
- Real estate ownership in fee varies by lake and may not be to the top of the reservoir rim







RISK AND UNCERTAINTY

- There may not be an structure inventory to run a Flood Damage Analysis model.
- There may not be a HEC-RAS model created to give a suite of with and without reallocations for Flood Impact Analysis.
- Population growth within the Water Demand model is uncertain, especially over the last 10-20 years of the forecast.
- All Dam failure modes may not be fully evaluated and Periodic Assessments may not have occurred at "good" (DSAC 4) dams.







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LESSON LEARNED / TIPS FOR SUCCESS

Realize that you don't have or need all the information on the first day. Gather information as you need it.

Coordinate with the PCX early and often. The PCX has several tools that can make the process go more smoothly for the team. Review Plan templates, risk registers, decision management plan advice, etc.

Document the decisions and assumptions that the team is making along the way. Many things will be forgotten along a three year study. Climate considerations are required. Scope that with your H&H member.

Involve the project office! They know things you don't.







CHECK IN

Any questions in the chat that we haven't covered?







GREERS FERRY WATER SUPPLY STORAGE REALLOCATION STUDY (WHITE RIVER BASIN, ARKANSAS)







WHITE RIVER BASIN







GREERS FERRY DAM







US Army Corps of Engineers. 70

Existing M&I Water Supply Storage

Congressional Allocations of M&I Water Supply Storage:

Water User	ΡοοΙ	Acre-feet (af)
City of Heber Springs(1959)	Relocation Agreement – Original Design	1,008.00
City of Heber Springs(2005)	Congressional	3,538.40
Congressional Subtotal:		4,546.40

Conservation Pool Discretionary Reallocations to M&I Water Supply Storage:

Water User	ΡοοΙ	Acre-feet (af)
City of Clinton (1970)	Conservation Pool	900.00
Community Water Systems (1971)	Conservation Pool	225.00
Discretionary Conservation Pool Subtotal:		1,125.00





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Existing M&I Water Supply Storage

Flood Pool Discretionary Reallocations to M&I Water Supply Storage:

Water User	Pool	Acre-feet (af)
City of Clinton II (2005)	Flood Pool	2,175.39
Community Water System Phase 1	Flood Pool	3,776.00
Community Water System Phase 2	Flood Pool	4,295.00
Red Apple Inn and Country Club	Flood Pool	65.89
Thunderbird County Club	Flood Pool	54.88
Tannenbaum Country Club	Flood Pool	90.30
MAWA (2010 Allocation)	Flood Pool	18,729.71
Discretionary Flood Pool Subtotal:		29,187.17




MAWA REALLOCATION REQUEST

25 City Of Austin = Vilonia, AR (NPWW) Furlow Little Rock Air Force Base 20 West Stone County Water, AR Shirley, AR Mayflower, AR Vilonia, AR (CWS) 15 Beaverfork FD, AR Wooster, AR Greenbrier, AR Damascus, AR 10 Guy, AR Quitman, AR Salem Water Users PWA 5 Ridgefield PWA City of Shannon Hills Saline County Waterworks Sardis Water Association 0 Bryant Waterworks 2015 2020 2025 2030 2035 2040 2045 2050 2055 2060 2065 VFSHOU03/ENGR/USACE_03886/LR GREERS FERRY LAKE/DELIVERABLES/GREERS FERRY LAKE WATER STUDY.DOC 1/2015





CURRENT REALLOCATION REQUEST

Requester		MGD	Acre-Feet (AF)
MAWA Reallocation Request: 20.75			25,669
Total previous discretionary authority reallocated:			30,312
Cumulative Total:			55,981





GREERS FERRY REALLOCATION MEASURES

No	Measure	Structural or Non-Structural or Both	Screened or Carried Forward
1	Construct New Single-Purpose Reservoir	Structural	Carried Forward
2	Development of Groundwater	Structural	Carried Forward
3	Water Storage from another existing reservoir	Structural	Carried Forward
4	Buy Wholesale	Structural	Carried Forward
5	Greers Ferry reallocation within conservation pool	Structural	Carried Forward
6	Greers Ferry Lake reallocation within flood pool	Structural	Carried Forward
7	Greers Ferry Lake reallocation within inactive pool	Structural	Carried Forward
8	Obtain water supply from local river/stream	Structural	Carried Forward
9	Water conservation	Non-Structural	Screened
10	Combination of measures	Both	Screened





GREERS FERRY REALLOCATION ALTERNATIVES

ALTERNATIVES

Alternative 1—Buy Wholesale

Alternative 2—Groundwater Use

Alternative 3—Dam (new construction) (FWOP condition)

Alternative 4—Buy storage from another Lake

Alternative 5—Conservation Pool

Alternative 6—Flood Pool

Alternative 7 – Local Stream/River

Alternative 8 – Inactive Pool

Alternative 9 - Combination of Conservation Pool/Flood Pool





GREERS FERRY CRITERIA FOR SCREENING ALTERNATIVES

- Reliability of Water Quantity
- Cost
- Effects to other Authorized Purposes at Greers Ferry Lake





FINAL ARRAY OF ALTERNATIVES

Future Without Project Condition – Water Users construct a new reservoir (FWOP)

 Construction of new reservoir project is the least-cost/most-likely condition without a federal project, but poses potential large environmental and cost impacts

Reallocation of Conservation Pool Storage Alternative

- Allows the water users to obtain additional water supply storage at Greers Ferry Lake
- Reallocation of 25,669 acre-feet of storage from hydropower purpose to water supply storage purpose at Greers Ferry Lake
- No significant impacts to project purposes or the environment; least cost alternative

Reallocation of Flood Pool Storage Alternative

- Reallocation of 26,702 acre-feet of storage from the flood pool storage at Greers Ferry Lake
- Dependable Yield Mitigation Storage (DYMS) are required causing the cost to be slightly higher for this alternative
- Impacts to flood risk, increased downstream releases impeding evacuation of Rainbow Island residents, real estate, and recreation.





EFFECTS OF CONSERVATION POOL EVALUATED

Since the water level would NOT change with a conservation pool reallocation, only hydropower impacts are evaluated:

- > Hydropower Impacts
 - Hydropower Benefits Foregone \$210,000
 - Hydropower Revenues Foregone \$ 73,000





EFFECTS OF FLOOD POOL EVALUATED

Since the water level would change with a flood pool reallocation, all project purposes will have some impact to be evaluated:

- Flood Risk and Dam Safety Impacts
- Environmental impacts
- Recreational Impacts
- Real Estate Impacts
- Hydropower Impacts



FLOOD IMPACTS

- \$58M damages w/o reallocation to \$60M damages w/reallocation = Incremental \$2M damages for 500 year event = \$7K annual damages
- > 2008 flood event Top of flood pool = 487.0 feet

- Top of the Dam = 503.0 feet
- Current Condition (without project) top water elevation was 486.82 feet with 10,702 CFS release (flow creates problems with Rainbow Island bridge evacuation)
- Flood pool reallocation condition top water elevation would have been 486.98 feet with 12,842 CFS release (flow creates problems with Rainbow Island bridge evacuation)





RECREATIONAL IMPACTS

Facility Impacted	Swim Beach(es)	Access Road(s)	Marina(s)	Boat Ramp(s)	Campsite(s)/ Day Use Area(s)
Choctaw Park	Х				
Cove Creek Park		Х		Х	Х
Dam Site Park	Х				Х
Devil's Fork Park	XX				
Fairfield Bay Park	Х	XX	Х		
Heber Springs Park	Х	Х	Х	Х	
Mill Creek Park	Х	Х		Х	
Old Hwy 25 Park				Х	
Sandy Beach Park	Х				
Shiloh Park	XX	XX	Х	Х	Х





IMPACTS TO SHILOH PARK SWIM BEACH







IMPACTS TO HEBER SPRINGS PARK SWIM BEACH







RECREATIONAL IMPACTS

P Onit Day value Calculations are approx \$950K losses annually				
RECREATION AREA	NED Benefits	Without Project	With Project	
CHOCTAW PARK	(\$73224)	\$637762	\$564537	
COVE CREEK PARK	(\$32,306)	\$224,100	\$191,794	
DAM SITE CAMPGROUND	(\$15,197)	\$1,217,304	\$1,202,106	
DAM SITE DAY USE	(\$13,318)	\$354,082	\$340,764	
DEVILS FORK PARK	(\$32,611)	\$455,423	\$422,812	
FAIRFIELD BAY MARINA/				
VAN BUREN PARK	(\$82499)	\$394,702	\$312,203	
HEBER SPRINGS PARK	(\$155.043)	\$949 990	\$794 947	
HEBER SPRINGS MARINA	(\$155,045)	ψ0+0,000	ψι στ,στι	
HILL CREEK PARK	(\$7,894)	\$105427	\$97,534	
MILL CREEK PARK	(\$6,971)	\$41,623	\$34,652	
NARROWS PARK	(\$21,134)	\$352,391	\$331,258	
OLD HWY 25 CAMPGROUND/				
DAY USE	(\$49,981)	\$481,867	\$431,886	
SANDY BEACH	(\$23,031)	\$380,724	\$357,693	
SHILOH PARK	(\$43,669)	\$240,367	\$196,697	
SUGAR LOAF PARK	(\$29,982)	\$289,054	\$259,072	
Total	(\$586,860)	\$6,124,813	\$5,537,954	







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REAL ESTATE IMPACTS

Real Estate impacts associated with a flood pool reallocation

Acquisition of approximately 5.63 acres/120 tracts of land would be associated with the raise of the conservation pool from the current elevation of 462.04' to the elevation 462.84'

Total Cost:		\$2,6	35,000
Annualized (Cost:	\$	97,600





ENVIRONMENTAL IMPACTS

Federally Listed Species for the Greers Ferry Lake Project Area					
Common Name	Scientific Name	Status	Occurrence by County		
Rabbitsfoot	Quadrula cylindrical cylindrica	Threatened	Van Buren		
Speckled pocketbook	Lampsilis streckeri	Endangered	Cleburne and Van Buren		
Yellowcheek Darter	Etheostoma moorei	Endangered	Cleburne and Van Buren		
Gray bat	Myotis grisescens	Endangered	Van Buren		
Northern long-eared bat	Myotis septentrionalis	Threatened	Cleburne and Van Buren		
Indiana bat	Myotis sodalis	Endangered	Cleburne and Van Buren		
Source: USFWS Arkansas Ecological Service Office Database					





HYDROPOWER IMPACTS – FLOOD POOL

- Reallocation of an additional 25,360 acre-feet from either the conservation or flood pool does NOT have serious effects to hydropower
- Hydropower Benefits & Capacity Foregone \$192,100
- Hydropower Revenues Foregone \$40,500





EVALUATION OF FINAL ARRAY

Cost or Forgone Benefit ⁽¹⁾	Alternative 3 (FWOP)	Alternative 5 (conservation	Alternative 6 (flood pool
		pool	reallocation)
		reallocation)	
Energy benefits			
forgone	\$0	\$130,000	\$115,300
Capacity benefits			
forgone	\$0	\$80,000	\$76,800
Revenue forgone	\$0	\$73,000	\$40,500
Real estate	\$0	\$0	\$97,600
Recreation	\$0	\$0	\$587,000
Flood risk			
management	\$0	\$0	\$ 7,000
Capital costs			
(annualized)	\$12.5 M	\$ 229,000	\$236,100
OMRR&R Costs			
(annualized)	\$ 1.5M	\$ 73,000	\$ 75,300
Total	\$14.0 M	\$ 585,000	\$1.24 M





US Army Corps of Engineers.

SELECTED PLAN

- Reallocation of 25,669 acre-feet of conservation pool storage from hydropower to water supply storage at Greers Ferry Lake.
- This constitutes 1.5% of usable storage at the existing project.
- MAWA will assume a proportional share of future OMRR&R.







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ENVIRONMENTAL COMPLIANCE

- ✓ Endangered Species Act: Section 7 coordination PAL was received 5 ⁹¹
 AUG 2015. Final coordination will be completed in February 2018.
- ✓ Fish and Wildlife Coordination Act: Concluded FWCA process; Final CAR in February 2018.
- ✓ Cultural Resources and Tribal coordination. Arkansas SHPO responded on 5 December 2017 with No Adverse Effects determination from reallocation. Delaware Nation, Cherokee Nation and Quapaw Tribe of Oklahoma concurs with proposed plan. No responses has been received from Osage Nation. However, the team anticipates a concurrence from them.
- ✓ Clean Water Act Section 401 Water Quality Certification not required because the plan does not involve discharge of dredged or fill material.



of Engineers



SERIOUS EFFECTS TO HYDROPOWER?

Do the discretionary water supply storage reallocations at Greers Ferry Lake have a serious effect or major operational or structural change to hydropower?



https://www.lasallenonprofitcenter.org/donating-make-splash/





GREERS FERRY LAKE – SUMMARY OF RESULTS

- Reallocation of an additional 25,669 acre-feet from the conservation pool does NOT have serious effects to hydropower
- The cumulative non-congressional* change for energy decreases by less than 4% from either pool (3.7% for flood pool; 3.9% for conservation pool)
- There would be about \$110,000 in credits to Southwestern Power Administration (SWPA) if the reallocation is made from the conservation pool.
- There is approximately one day per year that SWPA would have to determine how to make up lost generation.





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- 6. Provide relevant business line point of contact







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- 7. Frequently Asked Questions and Open Forum for discussion





FREQUENTLY ASKED QUESTIONS

Q: What is the federal interest in water supply studies?A: The Water Supply Act of 1958 provides federal interest.

Q:ls the inactive pool more than just sediment and hydropower head?

A: Yes. It is also considered as the Emergency Drought Contingency Water.



Q: Does a water supply storage reallocation have to meet an immediate need?

A: Yes, but immediate may be 50 years.

Q: Does water conservation belong in the water demand (to reduce demand) or in the water supply alternatives?

A: Either is acceptable, as long as it is DOCUMENTED.





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inpeelhalton.com/to-write-cover-letters-or-to-not-write-cover-lettersthat-is-the-question-heres-one-answer/

OPEN DISCUSSION



http://workinginpeelhalton.com/to-write-cover-letters-or-to-not-write-cover-lettersthat-is-the-question-heres-one-answer/





Questions?

Type questions in the chat box. We will answer as many as time allows.

This webinar will be posted to the Planning Community Toolbox: http://www.corpsplanning.us

