New Jersey Diversion Increase Scope of Work

Purpose

The purpose of this scope of work is to outline the path toward an analysis required to determine a hydrologically derived out-of-basin diversion for New Jersey during Basin-wide and Lower Basin drought conditions. This study does not seek to change the drought curves as currently identified in FFMP 2017 and the DRBC Water Code.

Tasks for this study will focus on quantifying the impacts of drought on the Delaware and Raritan Canal (Canal), identifying hydrologic and hydraulically derived diversion limit(s), as well as an assessment of the diversion rate(s) effects on basin resources including reservoir storage and flow in the river and estuary.

This diversion increasingly plays a critical role in meeting New Jersey's current and future water supply needs, and enhances water system resilience in the Central, Coastal North and Northeast drought regions of the state.

The resulting analyses and conclusions from this study, the Synthesis Study as described in the 2023 Amendment to FFMP 2017, and the other relevant FFMP 2017 studies will be used to inform development of subsequent flow management proposals and programs. New Jersey's diversion as identified in the FFMP 2017 will also be addressed in the Synthesis Study.

In 2019 the Decree parties released the General Study Workplan document that provides some additional detail on how each study will be scoped. Section 2.4 of that document refers to the New Jersey Diversion study and states the following:

> "*2.4. New Jersey Diversion: The study will evaluate the impacts of increasing the New Jersey diversion limit by varying amounts in the different stages of drought, during both basin-wide and lower-basin drought status. Evaluation of the effects of the increased diversion will include the items identified in the FFMP2017."*

Based upon the information and direction contained in FFMP2017 and the General Study Workplan, the following tasks will be undertaken to complete the FFMP2017 New Jersey Diversion Study.

Tasks

*** Organizations listed in parenthesis () represent the lead entity responsible for each task below.**

1. **Overview and History of the Delaware and Raritan Canal (New Jersey)**
    a) The history of the Delaware and Raritan Canal
    b) The design of the Delaware and Raritan Canal
    c) The summary of flow regulations governing the canal
        1) Pre-1954 Decree through the current FFMP negotiated programs.
    d) The Delaware and Raritan Canal's role supporting water supply/recreation/ecology in the Raritan Basin
2. **Summary of Drought Focused Literature Review (New Jersey)**
    a) Flows in the Delaware River during drought and their hydraulic effect on the Canal inlet.

1) Stage/Elevation
2) Inlet/Outlet Structures
3) Wing Dam Engineered Design and Effect on Operating Ability
    (a) Run-of-river diversions vs reservoir safe yield diversions designed to support lower basin resources.
4) Port Mercer Gaging Station
    (a) Location
    (b) History
    (c) Gaging Station
5) Monthly and/or annual diversion of the Canal as measured at Port Mercer, New Jersey.
    (a) Local influences at gage site.

3. Drought Evaluations (New Jersey & Delaware River Basin Commission & Decree Party Workgroup)

a) This task will evaluate the effect and significance of an incremental increase of the New Jersey diversion on various factors and metrics. DRBC's PST model will be the primary tool used to evaluate all alternatives, but other models, methods and/or approaches may also be utilized. The analysis will consider the items (a)-(l) in Section IV.6. of FMMP 2017.

1) The effects the diversion has on the Delaware estuary.
2) Evaluate modeling results and metrics that maximize the time when New Jersey's diversion of 100 million gallons per day is maintained through mainstem Delaware River flows throughout the various stages of drought.
3) The effects the increased diversion has on the location and variability of the 7-day average of the salt front.
4) The effect on in-basin storage.

b) The availability of Delaware River mainstem flows during varying stages of water supply drought declarations.

1) Flows in excess of the regulated passing flow requirements during declared water supply drought declarations.

4. Analysis, Summary and Recommendations of Alternative D&R Canal Diversion Rate(s) (New Jersey & Delaware River Basin Commission)

a) Discussion of the limitations of DRBC-PST model results and metrics. The ability of the model to accurately estimate hydrologic impacts at the basin scale under "real-world" conditions; modeled impacts vs observed impacts and their resulting effects on the metrics selected.
b) Summary of results and findings, along with recommendation(s) for New Jersey Delaware and Raritan Canal diversion increase including the volume and source(s) for supplemental diversions.

Public Participation

As identified in FFMP 2017, this study will provide opportunities for interested stakeholders to receive study updates and provide comment back to the Decree Parties. The public input process is outlined in Attachment A of this scope of work.

Study Modification

The Decree Parties acknowledge that additional items that are not covered in this scope may arise that are deemed critical for successful completion of the study by one or more of the Parties. If such a situation arises, the Decree Parties may modify this scope and associated outline to ensure that all critical information is obtained.

Timeline

The estimated time to complete the tasks identified is twelve months. The following timeline is recommended assuming scope is approved by May 2025 and work commences June 2025.

Tasks	Dates (Federal Timeframe)					
	May of 2025	3rd Qrtr 2025	4 Qrtr 2025	1st Qrtr 2026	2nd Qrtr 2026	3rd Qrtr 2026
SOW Approval	x					
Task 1		x				
Task 2			x			
Task 3				x		
Task 4					x	x

Project Management

This project will be coordinated by the State of New Jersey with support from the Decree Parties, Delaware River Basin Commission, and Office of the Delaware River Master.

Attachment A:

Public Input Process for all FFMP 2017 Studies

A FFMP 2017 general study work plan was shared through the Delaware River Basin Commission's Regulated Flow Advisory Committee (RFAC) in April 2019 and includes statements regarding the use of RFAC to inform the public and solicit feedback on the FFMP2017 studies. The steps below provide additional details on the process and timelines for informing and involving the public in this study.

Initial RFAC/Public Review:

1. After the Decree Party Principals approve a draft Scope of Work (SOW) it will be shared with RFAC.
2. At the next RFAC meeting, a Decree Party(ies) or ODRM or DRBC will provide a summary presentation on the draft SOW followed by a question-and-answer session. RFAC will make the SOW available on the DRBC website (https://www.nj.gov/drbc/about/advisory/RFAC_index.html) at least 14 days before its meeting and accept public or individual RFAC agency comments for 14 days after.
3. RFAC will compile the comments and submit the package to the Decree Parties within 30 days of the meeting.
4. The Decree Parties will review the comments, revise the SOW if changes are deemed appropriate, approve a final SOW, and respond to RFAC and include a copy of the final SOW. The final SOW will be made available on the DRBC website (https://www.nj.gov/drbc/about/advisory/RFAC_index.html).

Annual RFAC/Public Updates:

5. The Decree Parties or ODRM or DRBC will provide a progress report including a meeting presentation and question and answer session to RFAC at least once per year on the status of the FFMP2017 studies.
6. Documents, video conferencing, websites, emails, etc. may be utilized to provide more frequent sharing of status and results.
7. Study alternatives, metrics, scenarios, or SOW can be adjusted as applicable based upon feedback received through email.
8. If the Decree Parties agree, results of phases, subtasks or partial recommendations or findings, or draft report sections may be shared with RFAC.

Final Report/Recommendations:

9. After the Decree Party Principals approve a final draft study report it will be shared with RFAC.
10. At the next RFAC meeting, a Decree Party(ies) or ODRM or DRBC will provide a summary presentation on the final draft study report followed by a question-and-answer session. RFAC will make the final draft study report available on the DRBC website at least 14 days before its meeting and accept public or individual RFAC agency comments for 14 days after.
11. RFAC will compile the comments and submit the package to the Decree Parties within 30 days of the meeting.
12. The Decree Parties will review the comments, revise the final draft study report if changes are deemed appropriate, approve a final study report, and respond to RFAC and including a copy of the final study report. The final study report will also be made available on the DRBC website (https://www.nj.gov/drbc/about/advisory/RFAC_index.html).