REGIONAL WATER LEVEL MANAGEMENT

LIZ NORRENBERNS
RRAT 2023

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NESP

GLOBAL MARKET COMPETITION

Helps the American farmer compete in global markets, decreases transportation costs

SUPPORTING RURAL AMERICA

Integrated approach maximizes environmental benefits while preserving multiple uses for the waterways

NESP IS VITAL TO THE NATION

INFRASTRUCTURE INVESTMENT

Gives America the working, modern infrastructure it deserves.

JOBS CREATION

High paying construction jobs and a permanent boost to the Midwest economy

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BACKGROUND AND TIMELINE

- Navigation study recon started in 1988.
- The feasibility report started in 1993 and completed in 2004.
- From 2005-2010, pre-construction engineering design (PED) was advanced. 1200’ lock chambers at Locks 22 and 25 on the Mississippi River were advanced to ~50% design.
- Authorized in WRDA 07.
- Econ Reevaluation completed in 2008 – Produced BCRs that ranged from 0.3 to 1.4.
- PED activities stopped in the 2010/2011 timeframe.
- No major actions occurred from 2012-2017.
- Economic update completed in 2019
- $4.5M in PED funding received in the FY20 Work Plan. As a result of the PED funding in FY20, there will be $20M in construction-ready projects in FY21.
- $5M in PED funding received in the FY21 Work Plan.

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ECOSYSTEM RESTORATION FEATURES

ECOSYSTEM PROJECTS AUTHORIZED BY NESP

- Island building
- Floodplain restoration
- Water level management
- Backwater restoration
- Side channel restoration
- Wing dam and dike modification
- Island and shoreline protection
- Topographic diversity
- Spillway, dam, and levee modifications

ECOSYSTEM PROJECT INFORMATION

- Cost share is 100% Federal on Federal Refuge lands and 65%/35% on other lands
- 100% Federal cost on lands below the ordinary high-water mark or in a backwater
- Navigation structures are modified for ecosystem benefits

ALTON Pool – Before/After

WATER LEVEL MANAGEMENT PROJECT

- Improve water clarity to increase abundance of emergent and submersed aquatic plants
- Increase substrate consolidation to reduce sediment resuspension
- Reduce pool level fluctuations which would improve fish spawning success reduce stranding of larval fish and eggs, increasing overall survivability
- Increase year-round shallow aquatic and wetland habitats to provide a more natural response to hydrologic changes.

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FEASIBILITY STUDY

Table 14-7. Description and cost of Management Measures included in the proposed 15-year implementation strategy.

Management Measures	Alternative D*		15-year Implementation Plan		
	Number of Projects	Area of Benefit (acres)	Number of Projects	Area of Benefit (acres)	Total by Measure ($millions)
Adaptive Management					$136
Cultural Res. Management & Mitigation					$26
Forest Management					$38
Real Estate (35,000 acres in MVR and MVS)					$146
Ecosystem Management and Restoration Measures	1,010	388,281	225	104,986	$980
Island Building	91	91,000	23	23,000	$151
Fish Passage	14		4		$209
Floodplain Restoration[1]	72	118,756	24	46,056	$177
Water Level Management[2]	15		15		$87
Backwater Restoration	215	124,800	38	24,800	$177
Side Channel Restoration	147	14,700	29	2,900	$82
Wing Dam/Dike Alteration	64	640	19	190	$29
Shoreline Protection[3]	392	38,385	73	8,040	$68
Restoration Response Monitroing and Evaluation					$136
Total Program Cost	$5,323		$1,462		

[1] - Includes large and small-scale floodplain restoration, dam embankment lowering, and topographic diversity
[2] - Includes pool-scale drawdowns, changing to dam point control at 2 sites, and reducing water level fluctuations on the Illinois River.
[3] - Included bankline and island protection.

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Navigation and Ecosystem Sustainability Program Authorization
TITLE VIII of the Water Resources Development Act of 2007 (P.L. 110-114)

(b) Ecosystem Restoration Projects-
(1) IN GENERAL- The Secretary shall carry out, consistent with requirements to avoid
adverse effects on navigation, ecosystem restoration projects to attain and maintain the
sustainability of the ecosystem of the Upper Mississippi River and Illinois River in accordance with the general framework outlined in the Plan.
(2) PROJECTS INCLUDED- Ecosystem restoration projects may include--
(A) island building;
(B) construction of fish passages;
(C) floodplain restoration;
(D) water level management (including water drawdown);
(E) backwater restoration;
(F) side channel restoration;
(G) wing dam and dike restoration and modification;
(H) island and shoreline protection;
(I) topographical diversity;
(J) dam point control;
(K) use of dredged material for environmental purposes;
(L) tributary confluence restoration;
(M) spillway, dam, and levee modification to benefit the environment; and
(N) land and easement acquisition.

appropriated from the Inland Waterways Trust Fund. Such sums shall remain available until expended.

(b) NEW LOCKS.—

(1) IN GENERAL.—The Secretary shall construct new 1,200-foot locks at Locks 20, 21, 22, 24, and 25 on the Upper Mississippi River and at LaGrange Lock and Peoria Lock on the Illinois Waterway.

(2) AUTHORIZATION OF APPROPRIATIONS.—The total cost of projects authorized under this subsection shall be $1,948,000,000. Such costs are to be paid half from amounts appropriated from the general fund of the Treasury and half from amounts appropriated from the Inland Waterways Trust Fund. Such sums shall remain available until expended.

(c) CONCURRENCE.—The mitigation required for the projects authorized under subsections (a) and (b), including any acquisition of lands or interests in lands, shall be undertaken or acquired concurrently with lands and interests in lands for the projects authorized under subsections (a) and (b), and physical construction required for the purposes of mitigation shall be undertaken concurrently with the physical construction of such projects.

33 USC 652 note.

SEC. 8004. ECOSYSTEM RESTORATION AUTHORIZATION.

(a) OPERATION.—To ensure the environmental sustainability of the existing Upper Mississippi River and Illinois Waterway System, the Secretary shall modify, consistent with requirements to avoid adverse effects on navigation, the operation of the Upper Mississippi River and Illinois Waterway System to address the cumulative environmental impacts of operation of the system and improve the ecological integrity of the Upper Mississippi River and Illinois River.

(b) ECOSYSTEM RESTORATION PROJECTS.—

(1) IN GENERAL.—The Secretary shall carry out, consistent with requirements to avoid adverse effects on navigation, ecosystem restoration projects to attain and maintain the sustainability of the ecosystem of the Upper Mississippi River and Illinois River in accordance with the general framework outlined in the Plan.

(2) PROJECTS INCLUDED.—Ecosystem restoration projects may include—

(A) island building;
(B) construction of fish passages;
(C) floodplain restoration;
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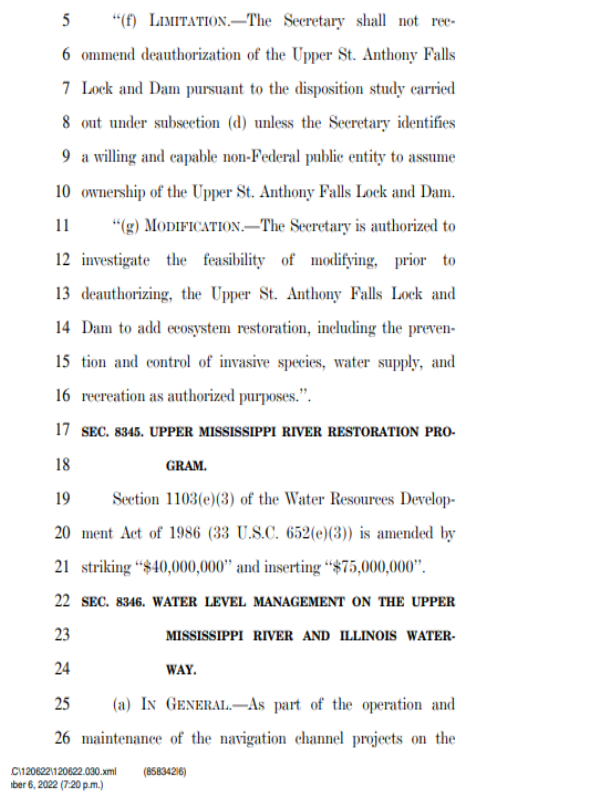
(J) dam point control;
(K) use of dredged material for environmental purposes;
(L) tributary confluence restoration;
(M) spillway, dam, and levee modification to benefit the environment; and
(N) land and easement acquisition.

(3) COST SHARING.—

Water Resources Development Act – 2022 Section 8346:

- In General… the Secretary is authorized to and shall carry out water level management activities…
- Conditions on Drawdowns – In carrying out subsection (a), the Secretary shall carry out routine and systemic water level drawdowns of the pools.
- Coordination – coordinate and consult with other relevant Federal agencies and States
- Report – No later than December 31, 2028 the Secretary shall make publicly available and to the Committees



"(f) LIMITATION.—The Secretary shall not recommend deauthorization of the Upper St. Anthony Falls Lock and Dam pursuant to the disposition study carried out under subsection (d) unless the Secretary identifies a willing and capable non-Federal public entity to assume ownership of the Upper St. Anthony Falls Lock and Dam.

"(g) MODIFICATION.—The Secretary is authorized to investigate the feasibility of modifying, prior to deauthorizing, the Upper St. Anthony Falls Lock and Dam to add ecosystem restoration, including the prevention and control of invasive species, water supply, and recreation as authorized purposes.".

SEC. 8345. UPPER MISSISSIPPI RIVER RESTORATION PROGRAM.

Section 1103(e)(3) of the Water Resources Development Act of 1986 (33 U.S.C. 652(e)(3)) is amended by striking "$40,000,000" and inserting "$75,000,000".

SEC. 8346. WATER LEVEL MANAGEMENT ON THE UPPER MISSISSIPPI RIVER AND ILLINOIS WATERWAY.

(a) IN GENERAL.—As part of the operation and maintenance of the navigation channel projects on the

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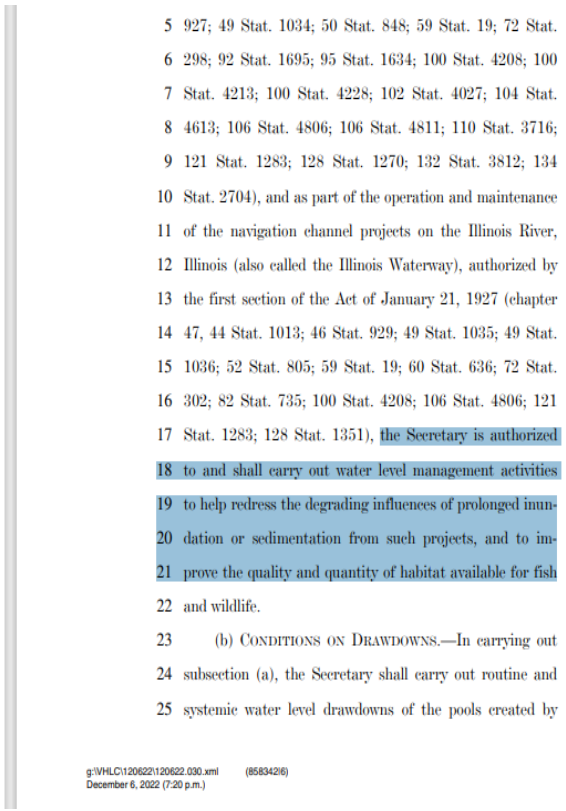

927; 49 Stat. 1034; 50 Stat. 848; 59 Stat. 19; 72 Stat. 298; 92 Stat. 1695; 95 Stat. 1634; 100 Stat. 4208; 100 Stat. 4213; 100 Stat. 4228; 102 Stat. 4027; 104 Stat. 4613; 106 Stat. 4806; 106 Stat. 4811; 110 Stat. 3716; 121 Stat. 1283; 128 Stat. 1270; 132 Stat. 3812; 134 Stat. 2704), and as part of the operation and maintenance of the navigation channel projects on the Illinois River, Illinois (also called the Illinois Waterway), authorized by the first section of the Act of January 21, 1927 (chapter 47, 44 Stat. 1013; 46 Stat. 929; 49 Stat. 1035; 49 Stat. 1036; 52 Stat. 805; 59 Stat. 19; 60 Stat. 636; 72 Stat. 302; 82 Stat. 735; 100 Stat. 4208; 106 Stat. 4806; 121 Stat. 1283; 128 Stat. 1351), the Secretary is authorized to and shall carry out water level management activities to help redress the degrading influences of prolonged inundation or sedimentation from such projects, and to improve the quality and quantity of habitat available for fish and wildlife.

(b) CONDITIONS ON DRAWDOWNS.—In carrying out subsection (a), the Secretary shall carry out routine and systemic water level drawdowns of the pools created by

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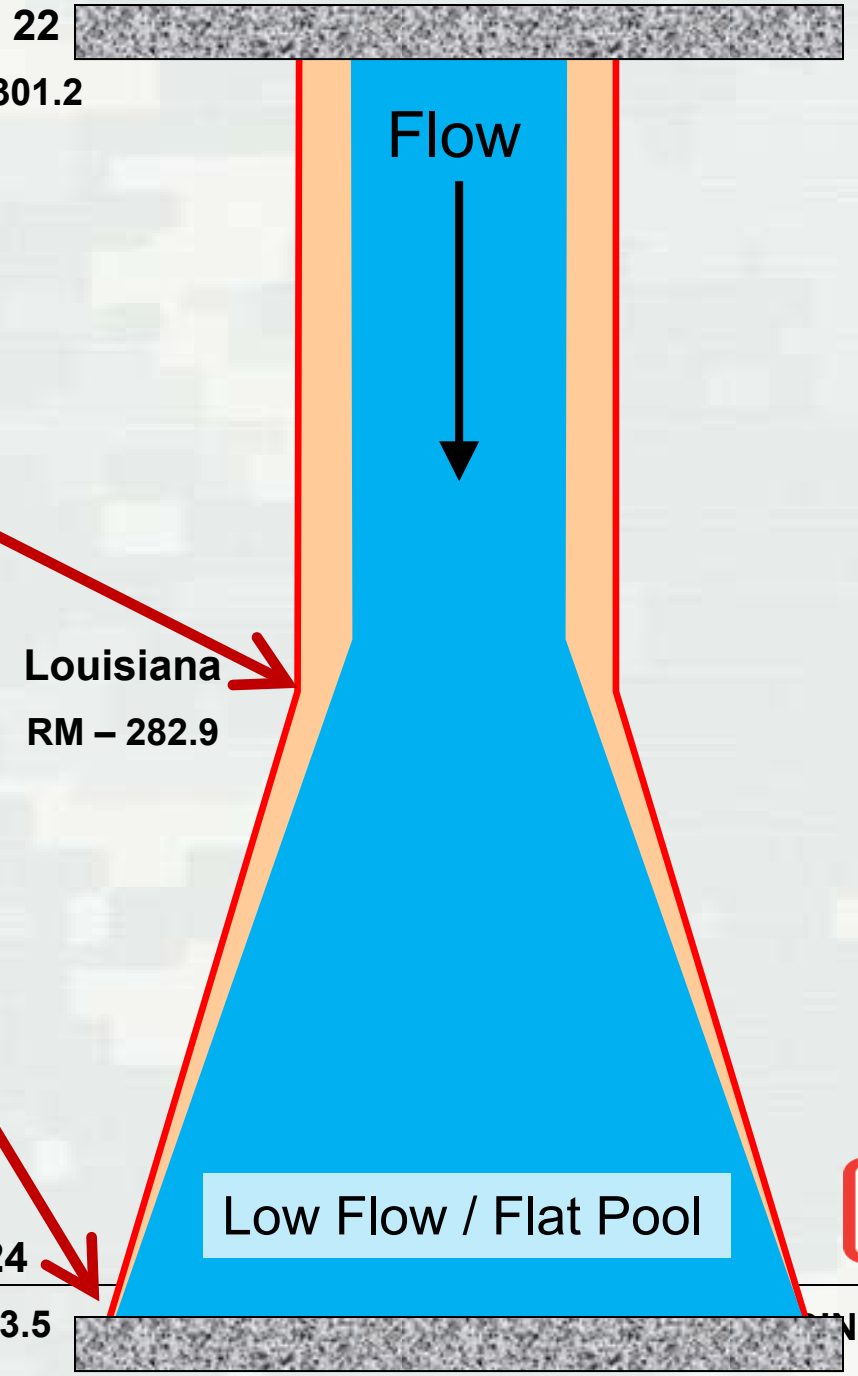
Hinge Point Operation

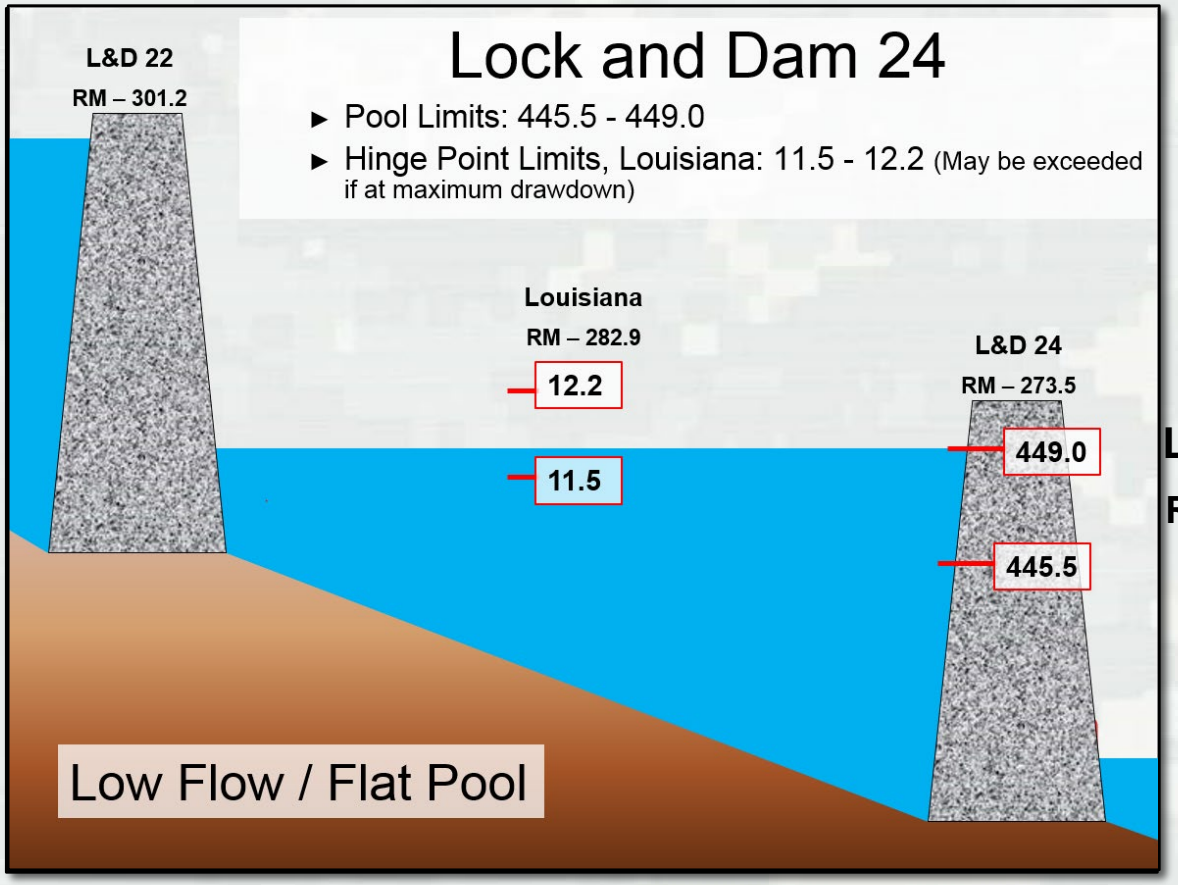
Lock and Dam 24

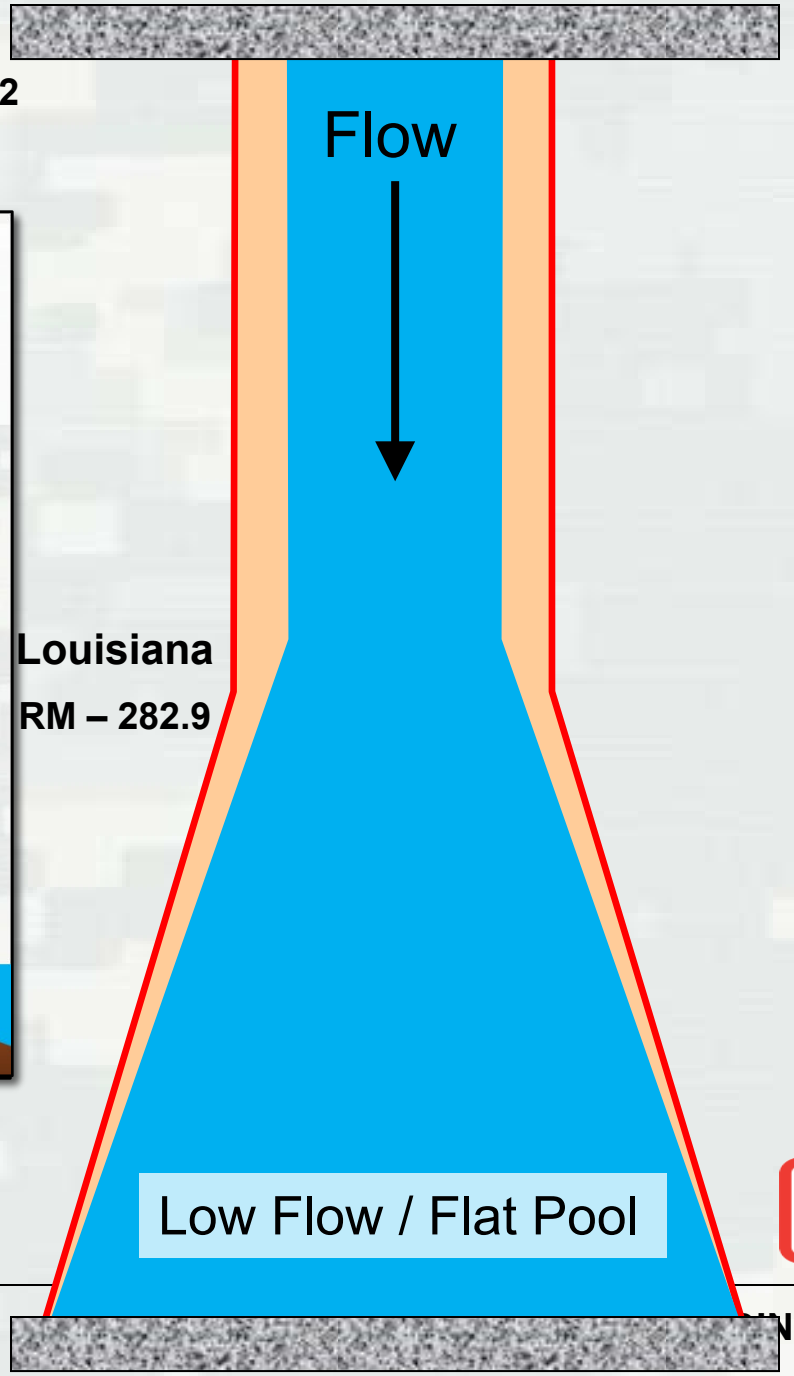
- Hinge Point Limits, Louisiana: 11.5 - 12.2
  - May be exceeded if at maximum drawdown
- Pool Limits: 445.5 - 449.0



Government Owned Flowage Easements

Hinge Point Operation





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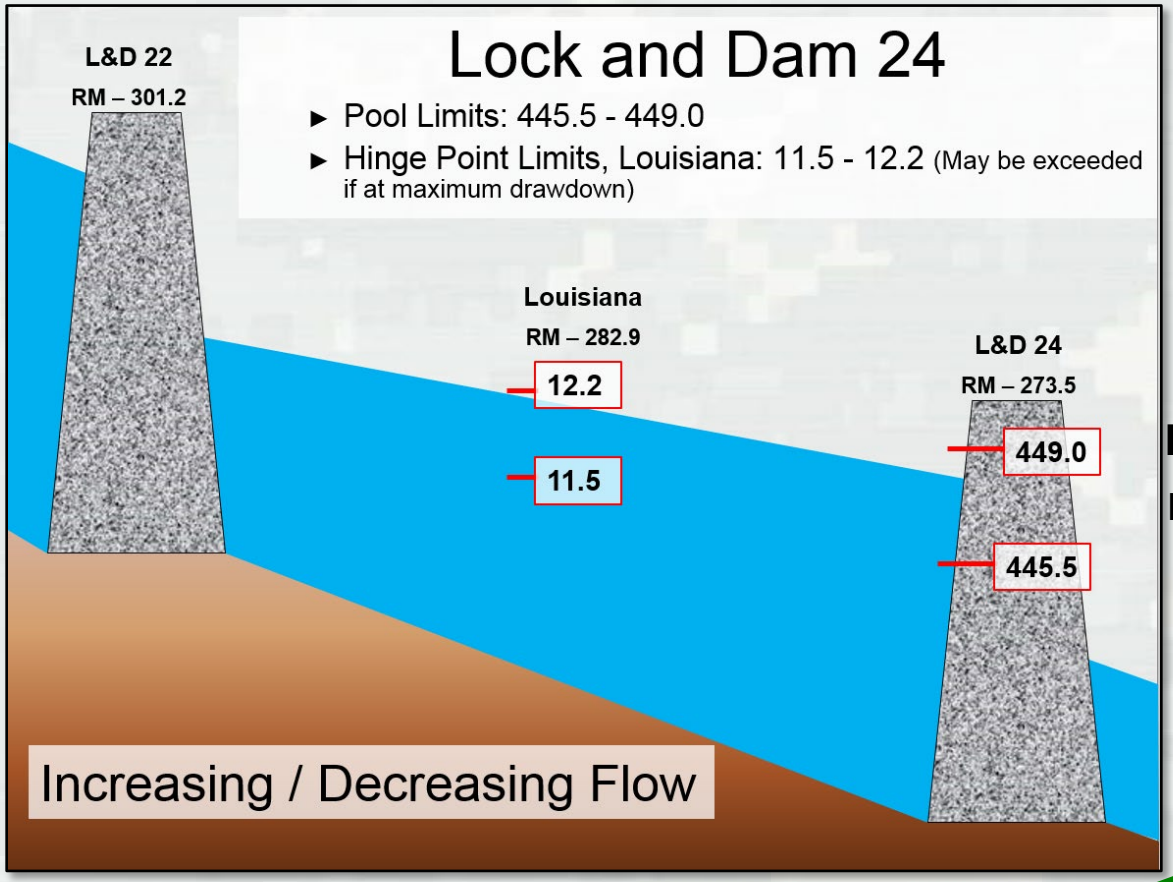
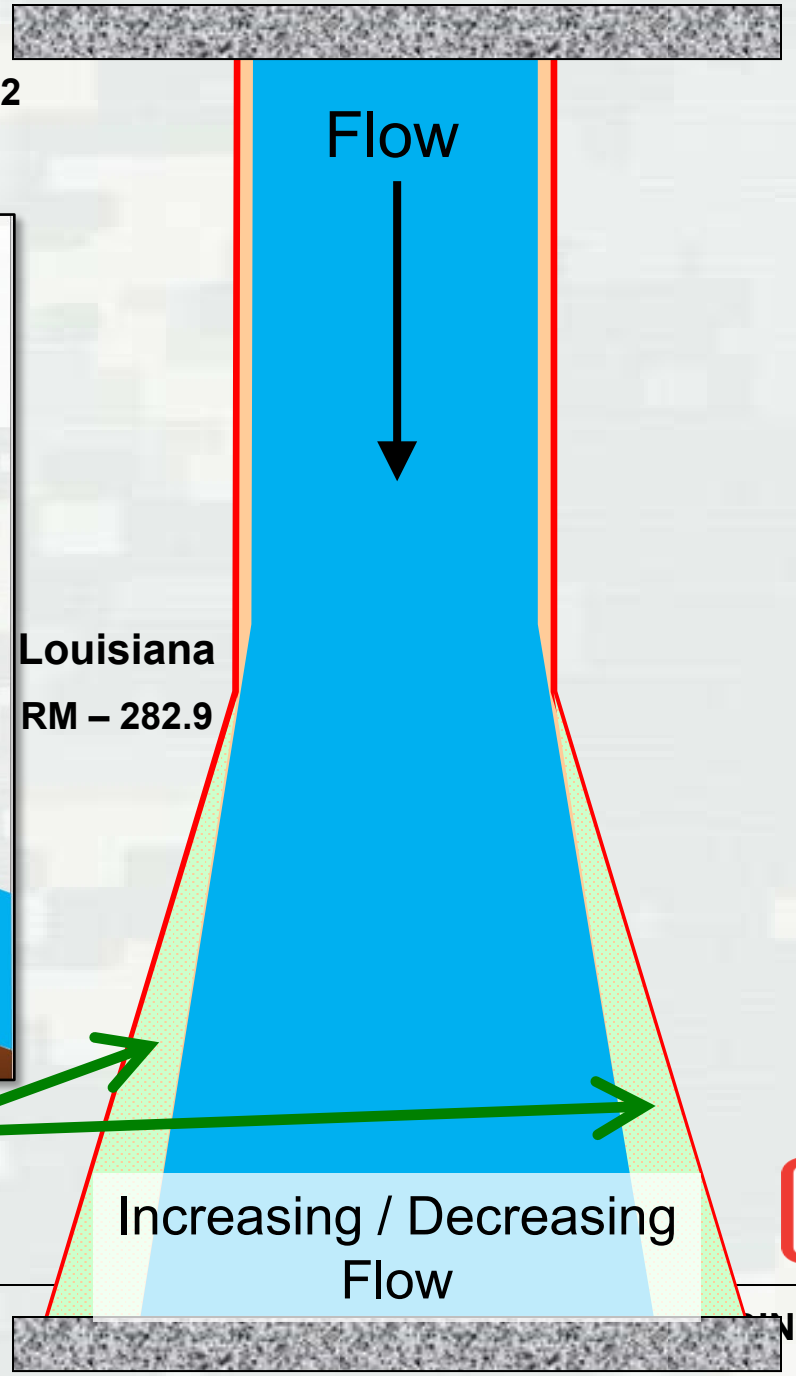
Hinge Point Operation



Environmental Pool Management Zone



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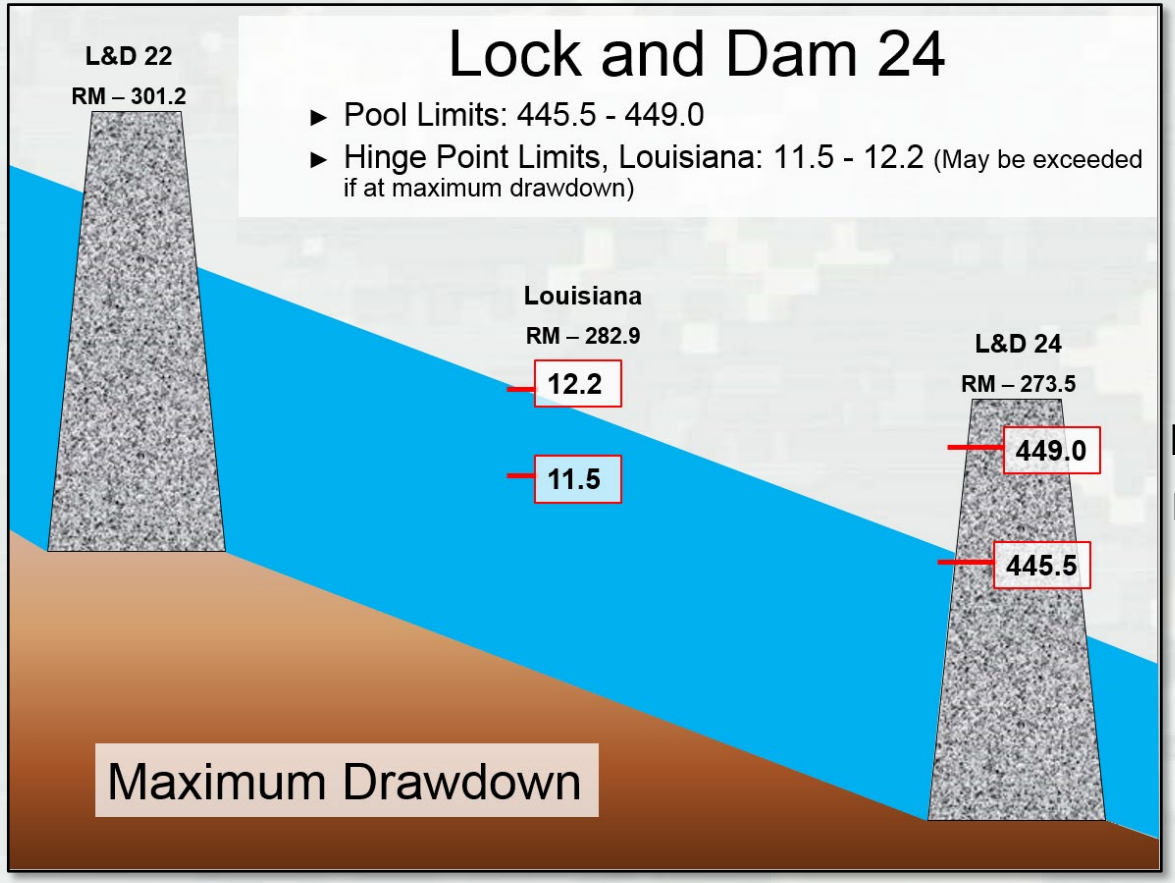
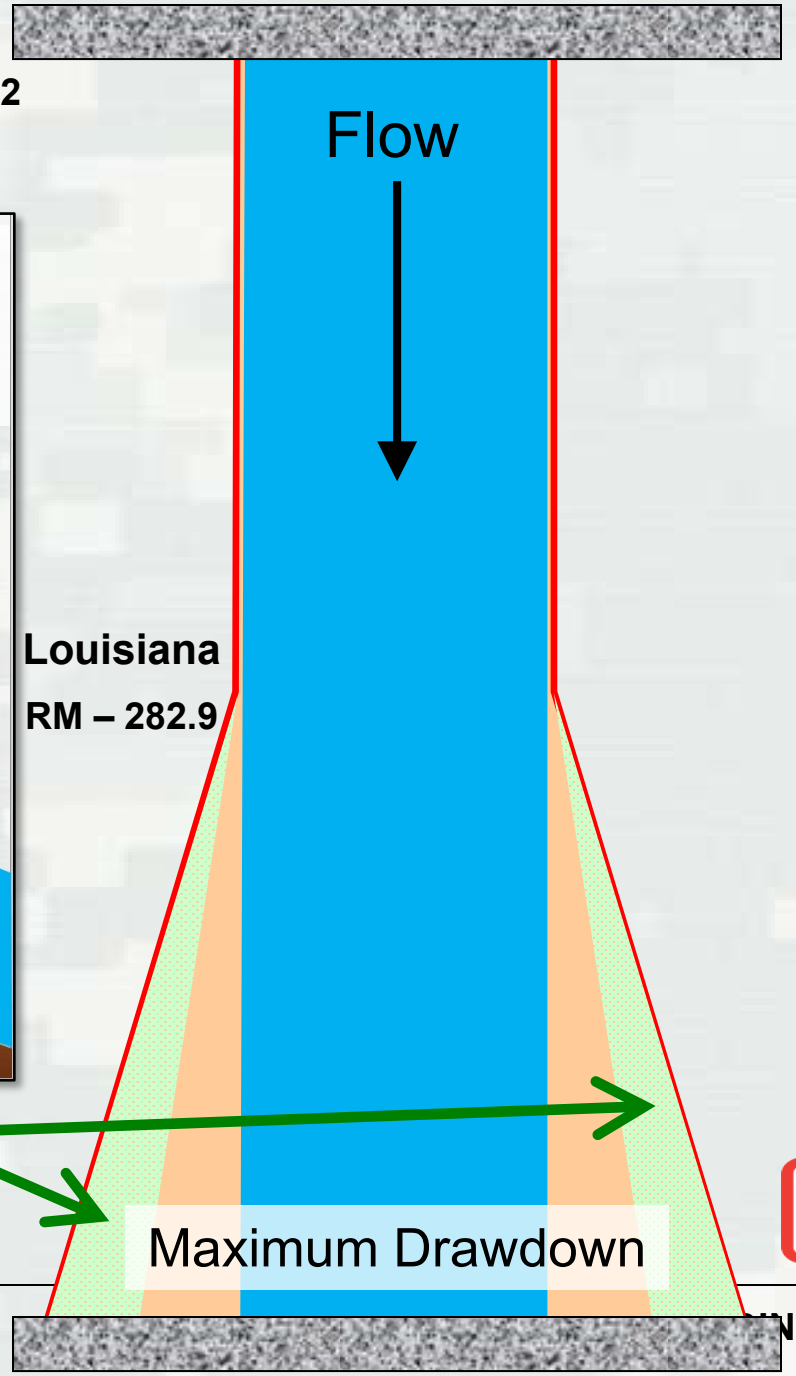
Hinge Point Operation

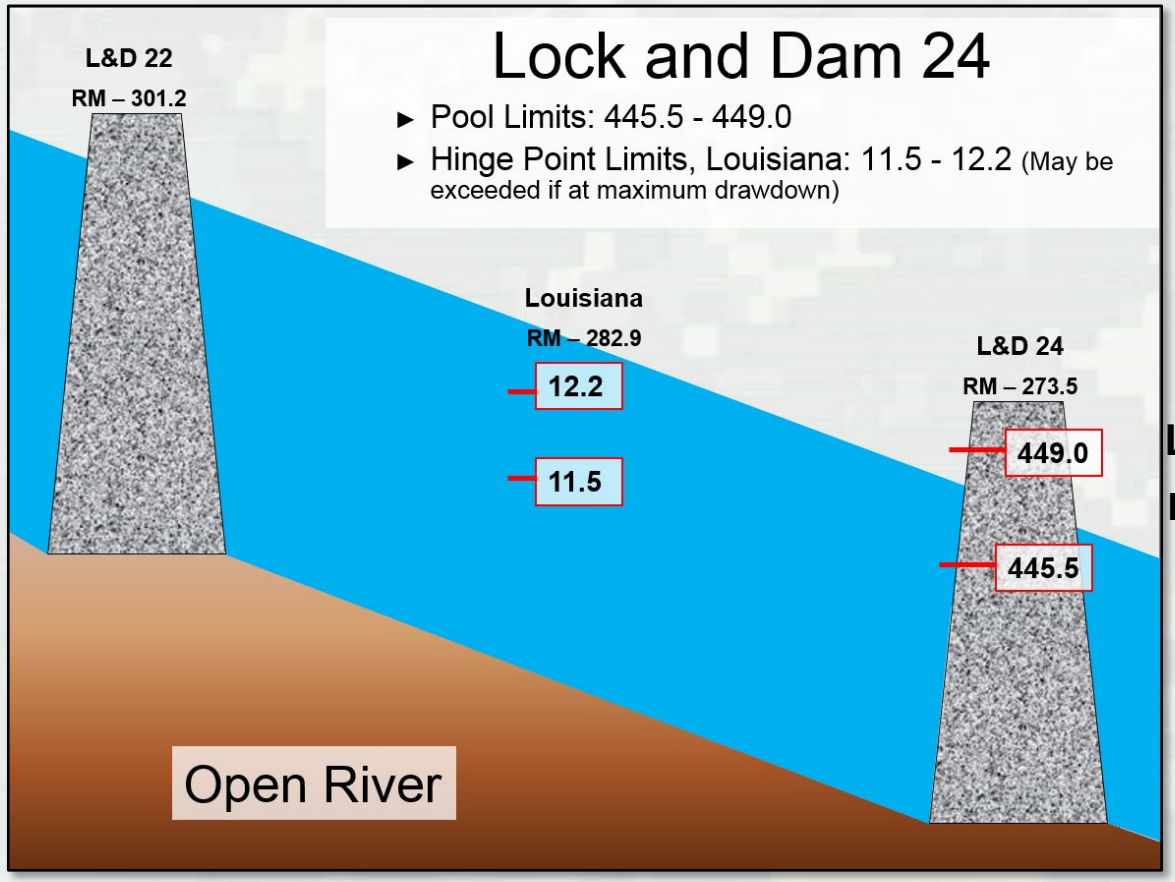




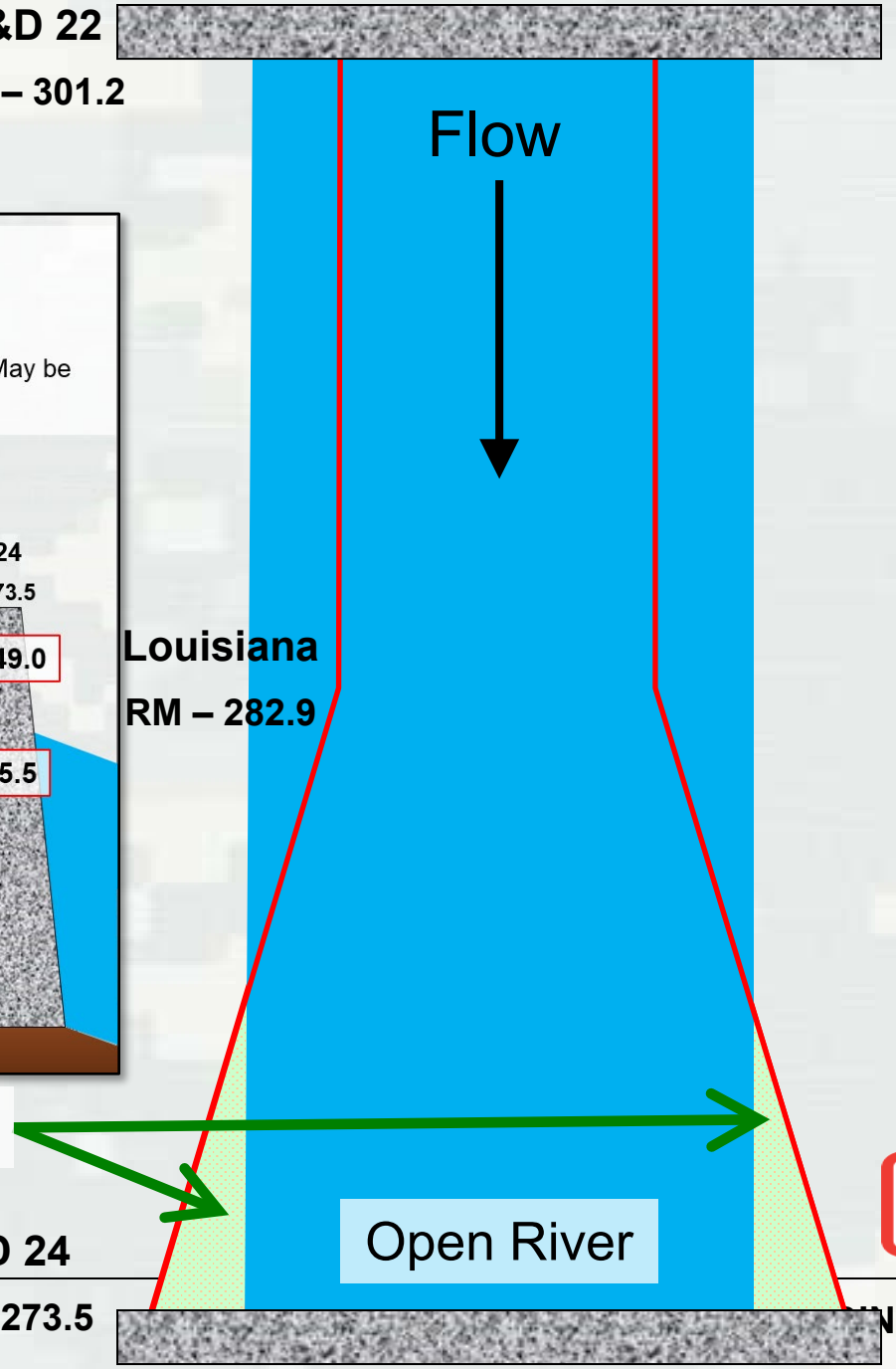
Environmental Pool Management Zone

Government Owned Flowage Easements

Hinge Point Operation



Environmental Pool Management Zone

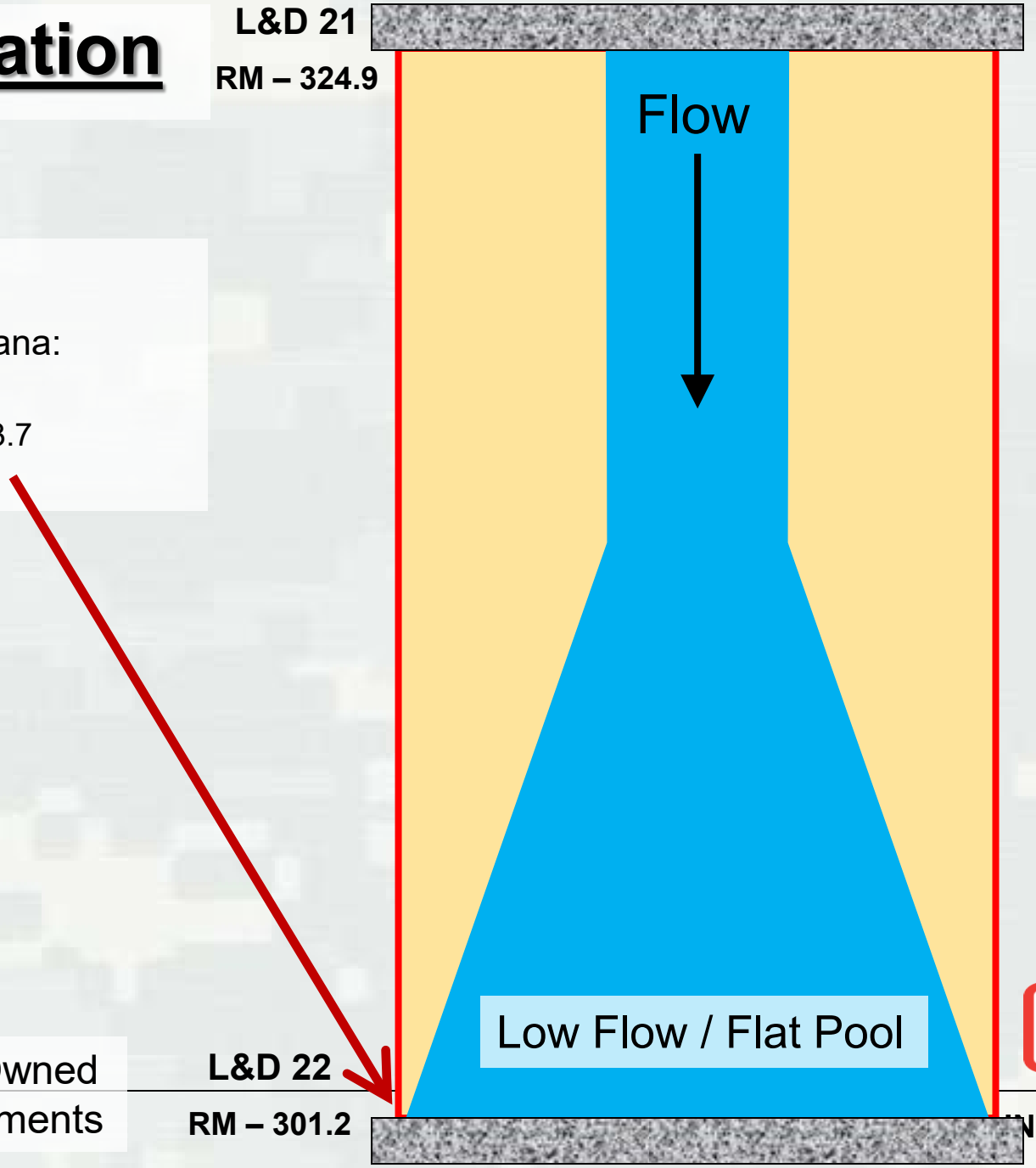


Government Owned Flowage Easements

Dam Point Operation

Lock and Dam 22

- Dam Point Limits, Louisiana:
  13.0 – 13.5
  - Upper limit can reach 13.7



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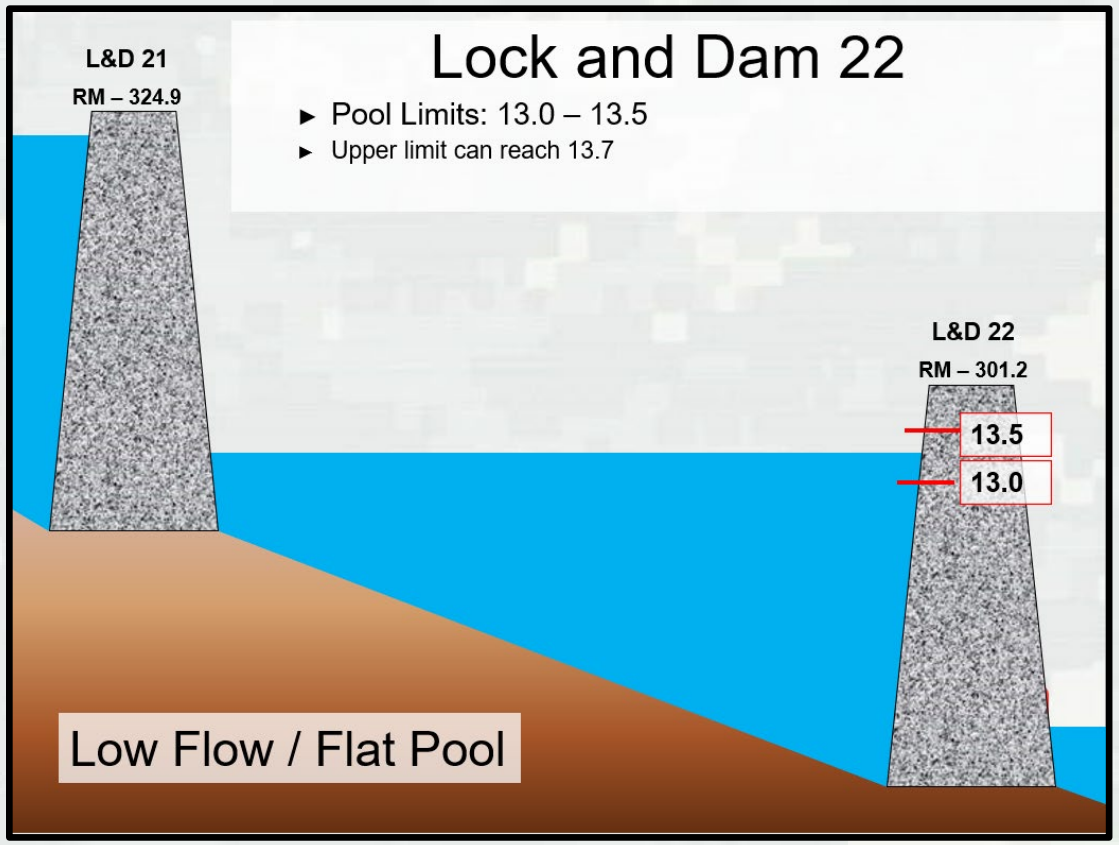
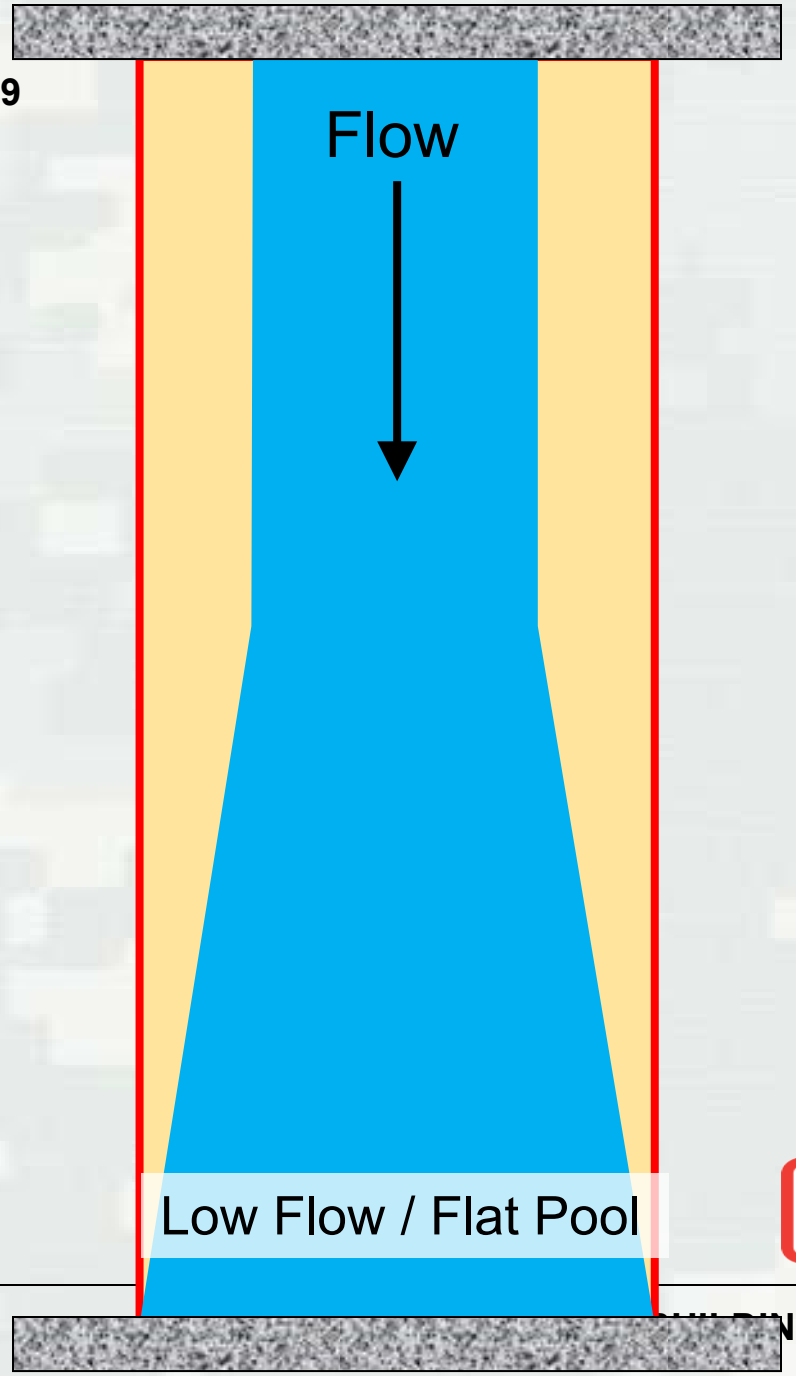
Flowage Easements

Dam Point Operation





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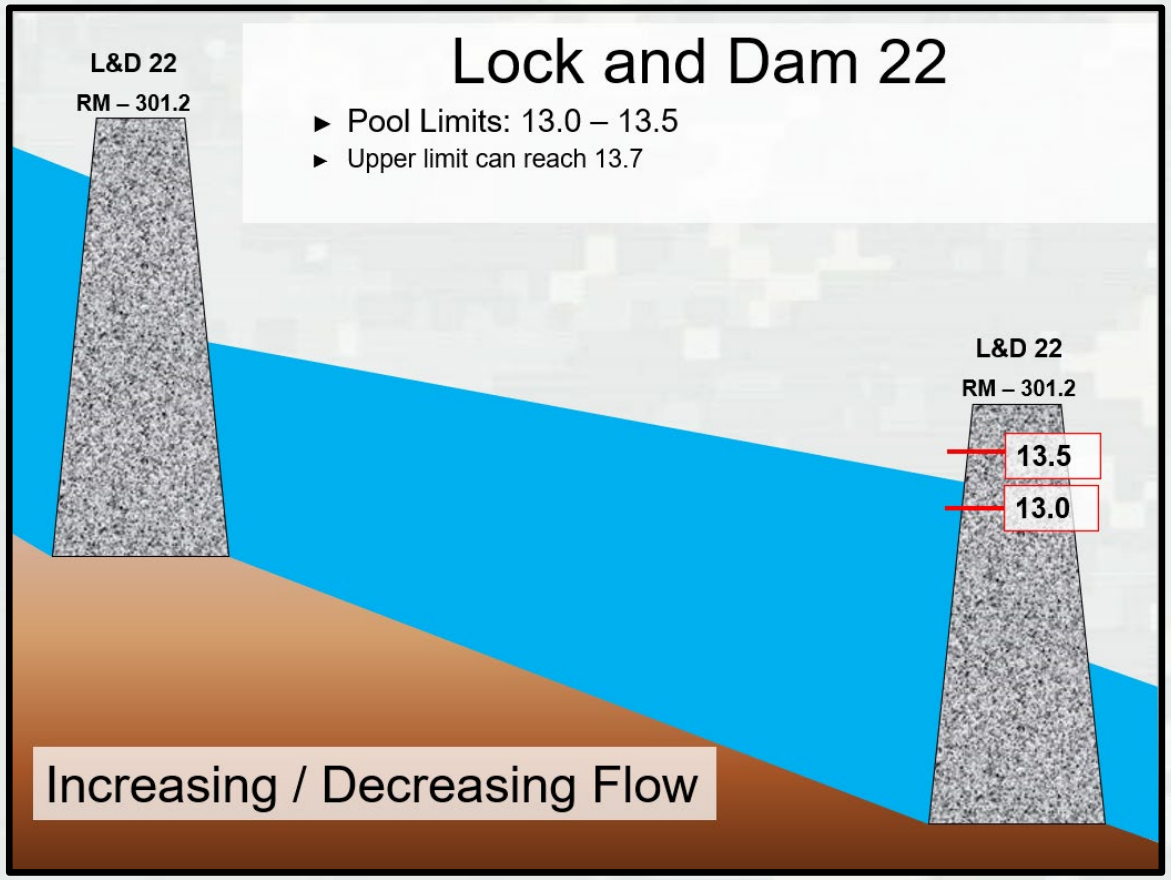
Dam Point Operation



Water Level Management Zone

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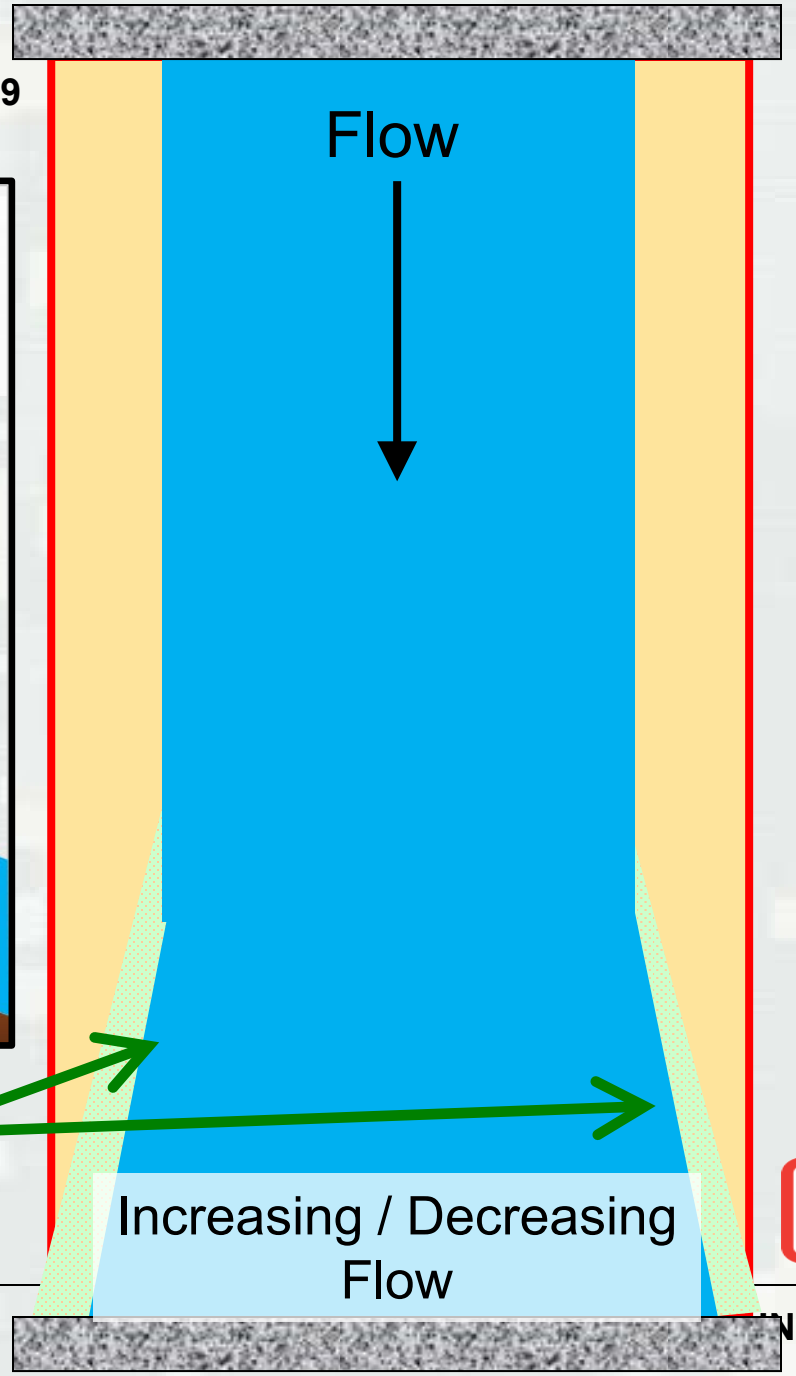
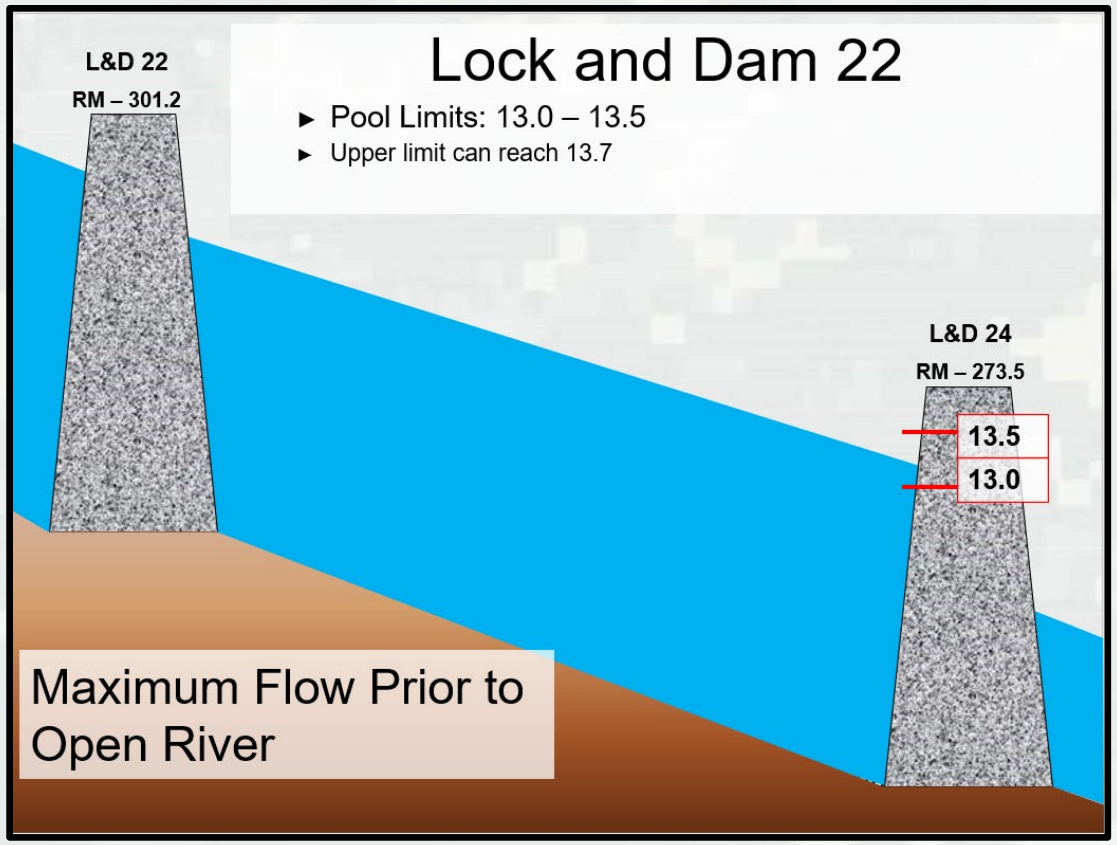
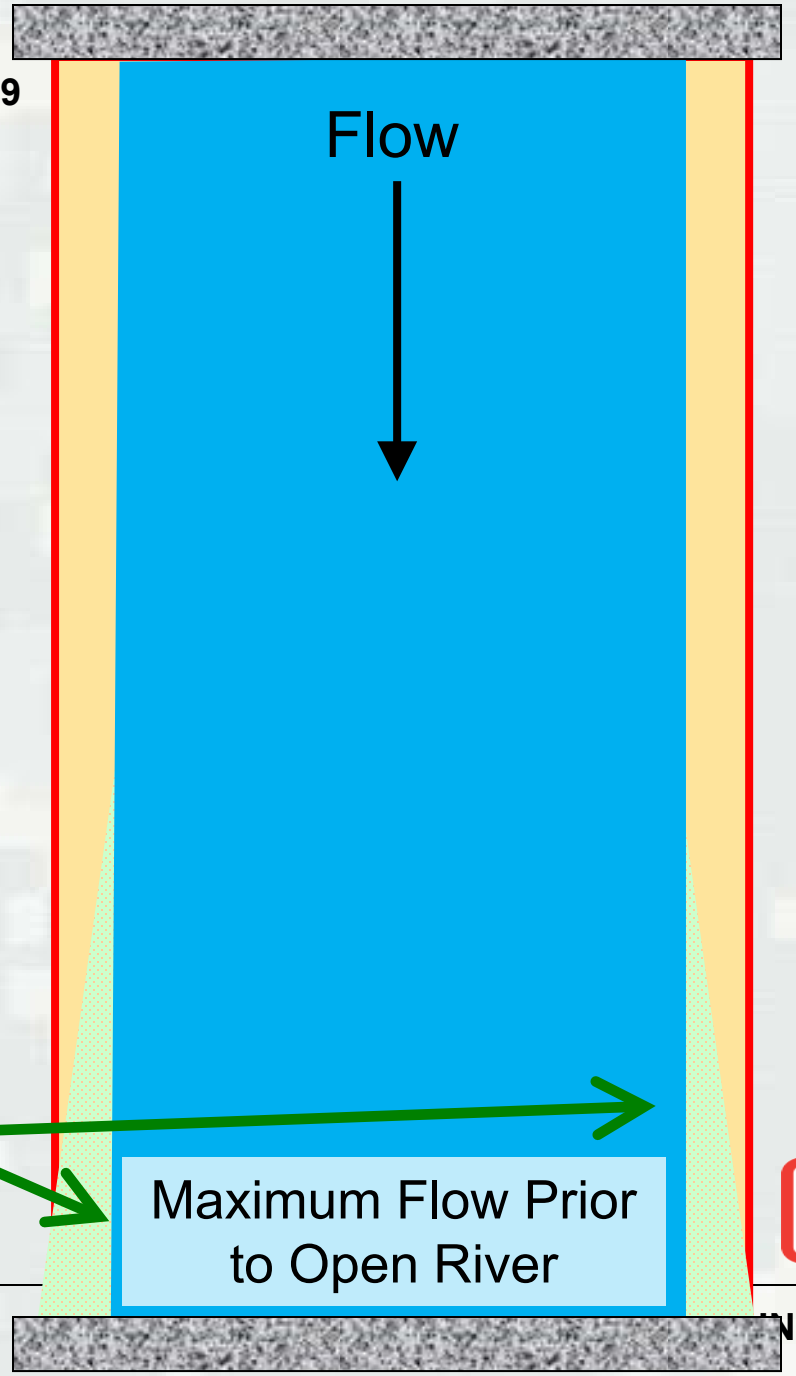


Hinge Point Operation





Environmental Pool Management Zone

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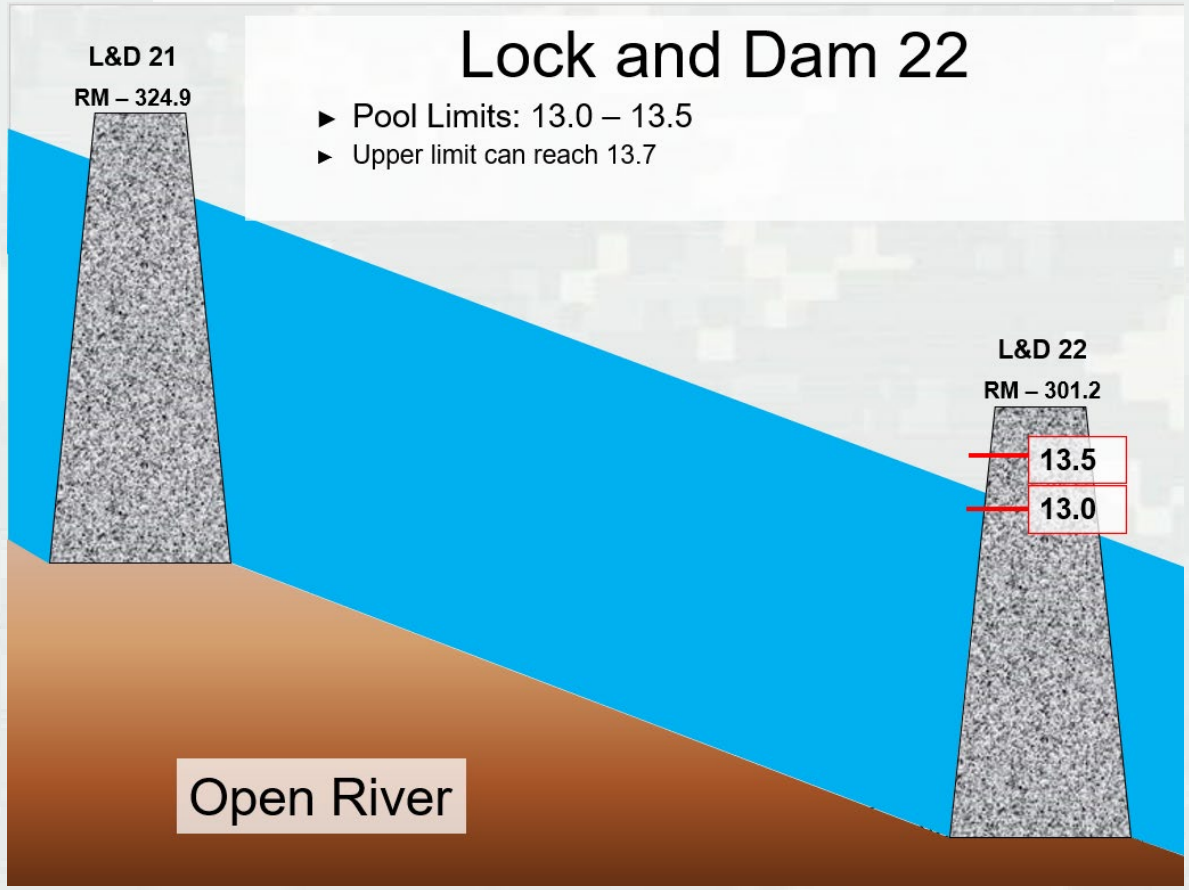
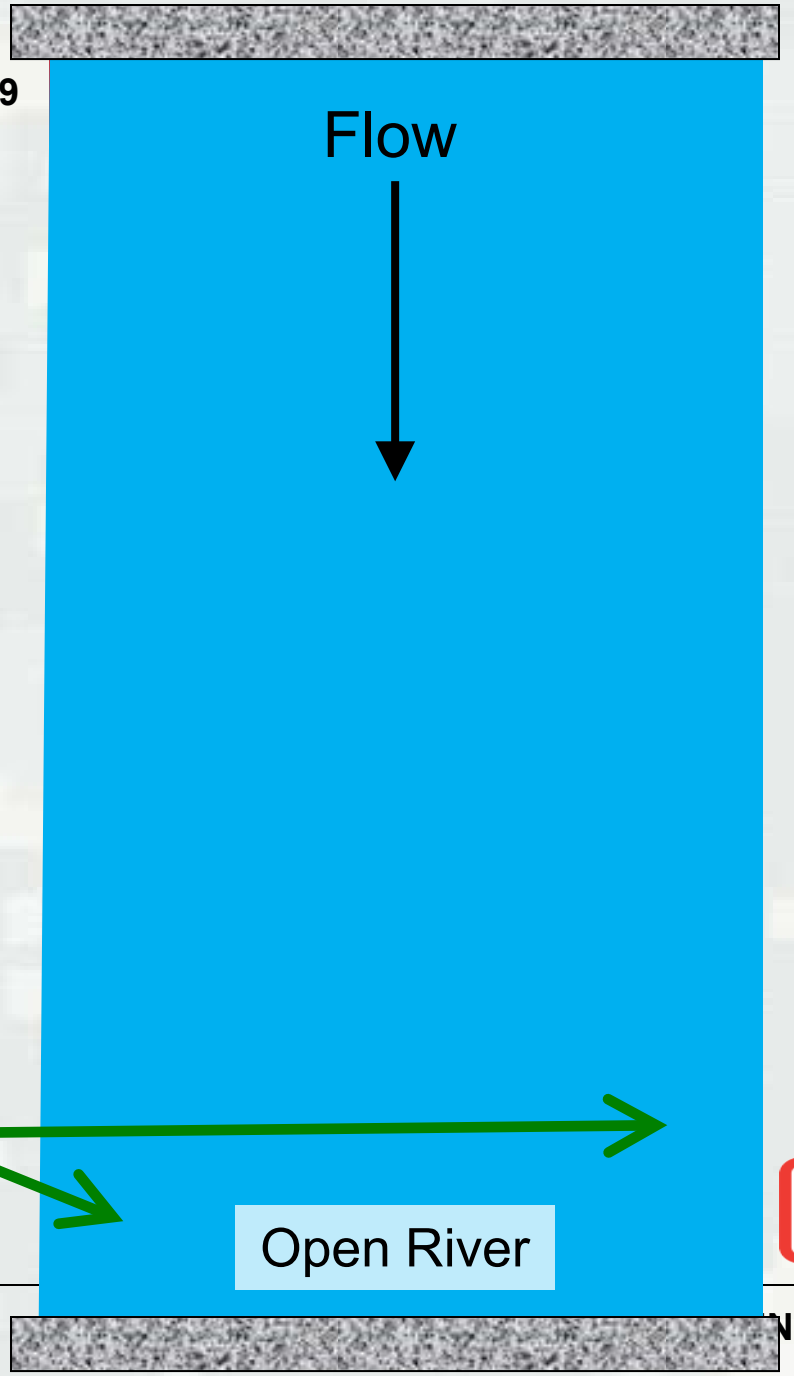
Hinge Point Operation





Environmental Pool Management Zone

Government Owned
Flowage Easements

PROJECT UPDATE

- Kickoff meeting July 11th
  - St. Paul, Rock Island, St. Louis, and Division
- Operations, Planning, Environmental, and Water Control Offices
- Developing Scope, Schedule, and Budget
- Gathering Existing Data and Reports

PATH FORWARD

Scope

- Two separate efforts with small scale drawdowns and large scale drawdowns
- Develop Project Implementation Report (PIR) for small scale drawdowns
  - Work within current Water Control Manual pool regulations
  - Primarily Internal Team Members
  - Small scale drawdown can be managed any year dependent on mother nature
  - Determine which lock and dams will benefit
  - Determine Ecological benefit from achievable drawdowns
  - Determine additional equipment, gages, man power, etc needed to achieve small scale drawdown

- Develop a Strategic Implementation Plan
  - Achieve drawdowns below Water Control Manual pool regulations
  - Utilize existing data – NESP Report 53
  - External Partner Support
  - Determine priority in future Project Implementation Reports
  - Require public outreach

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THANK YOU

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Figure 47. Photo of willow growth on periphery of Middleton Island, Pool 24 on June 8, 2016.

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