

LOCK TENDER TRAINING

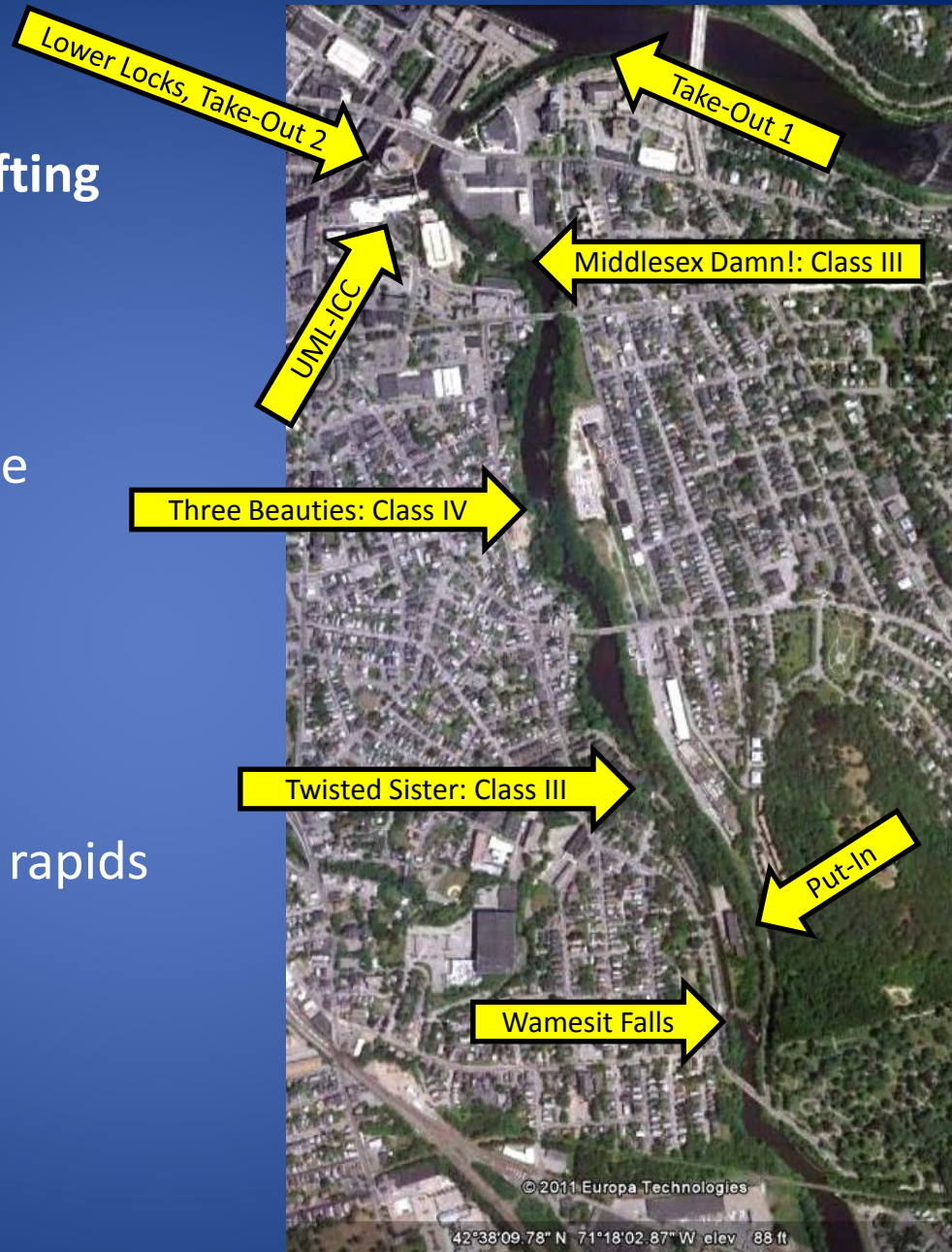


The Concord River, Lowell



Concord River Whitewater Rafting

- What you'll see & learn
 - See Lowell from a unique perspective
 - "Thoreau's Portage"
- The experience
 - 2 trips through 3 sets of rapids

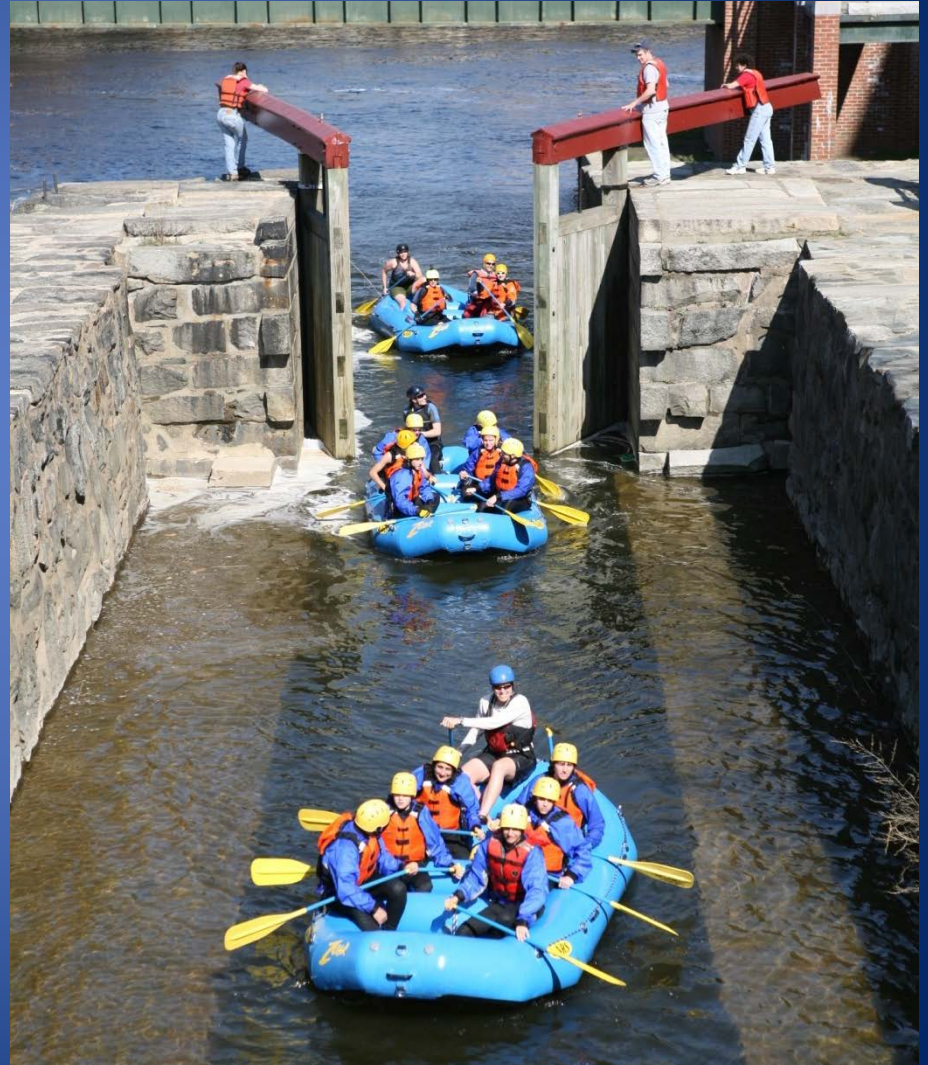




Concord River Whitewater Rafting and Lock Tending

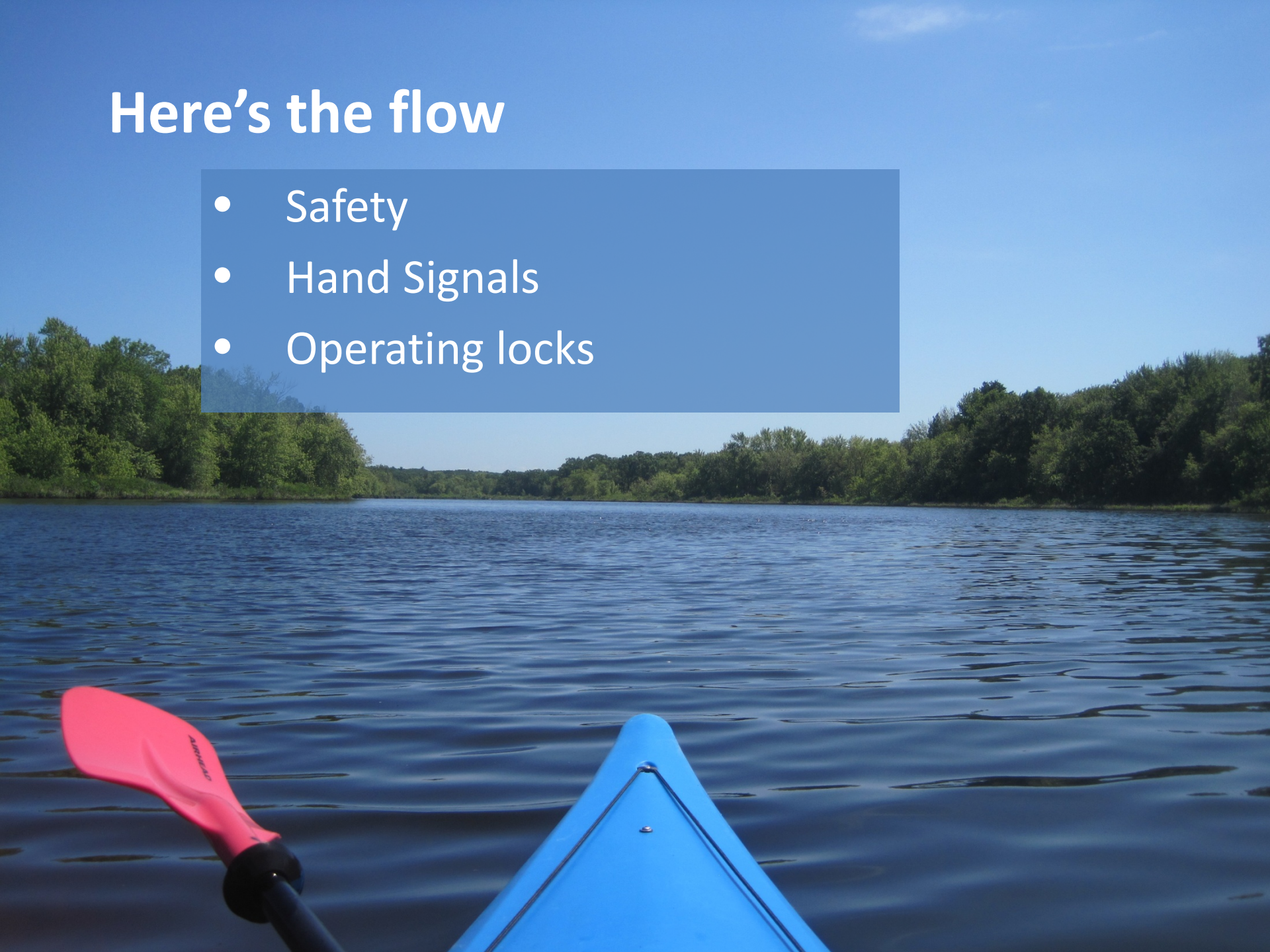
Why lock tenders?

- Become part of living history!
- Lock tenders represent the Trust



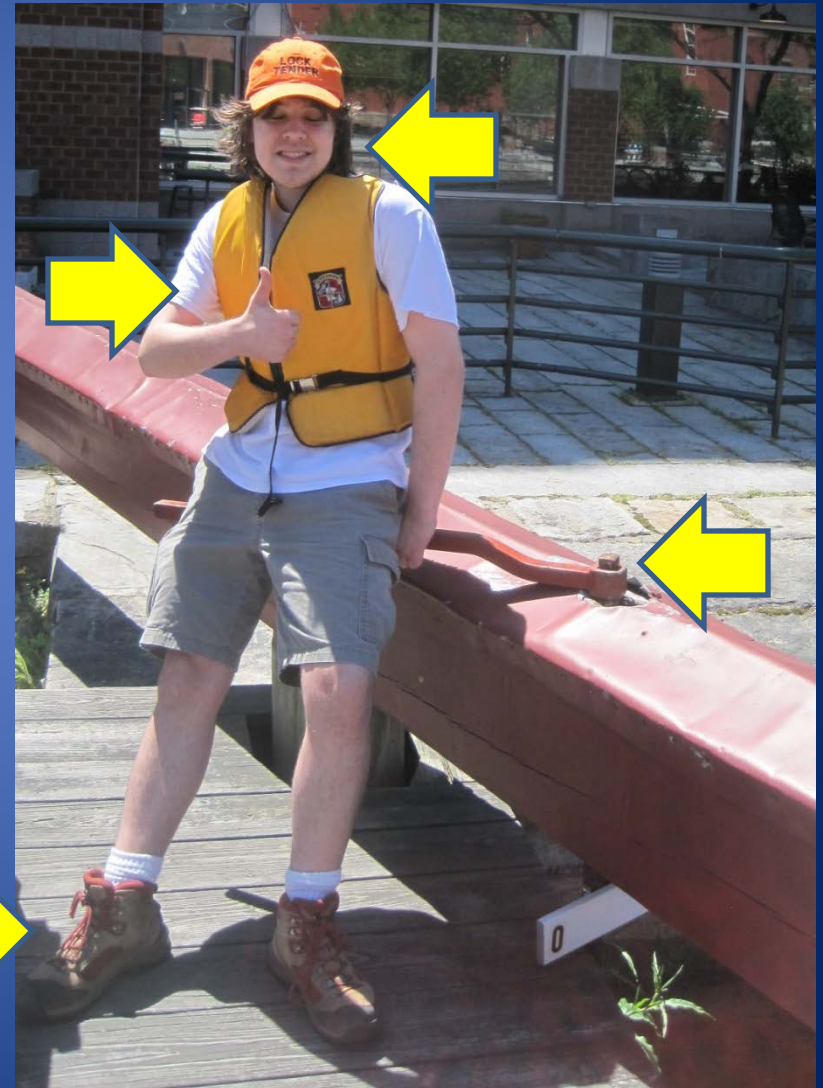
Here's the flow

- Safety
- Hand Signals
- Operating locks



Lock tending items & safety

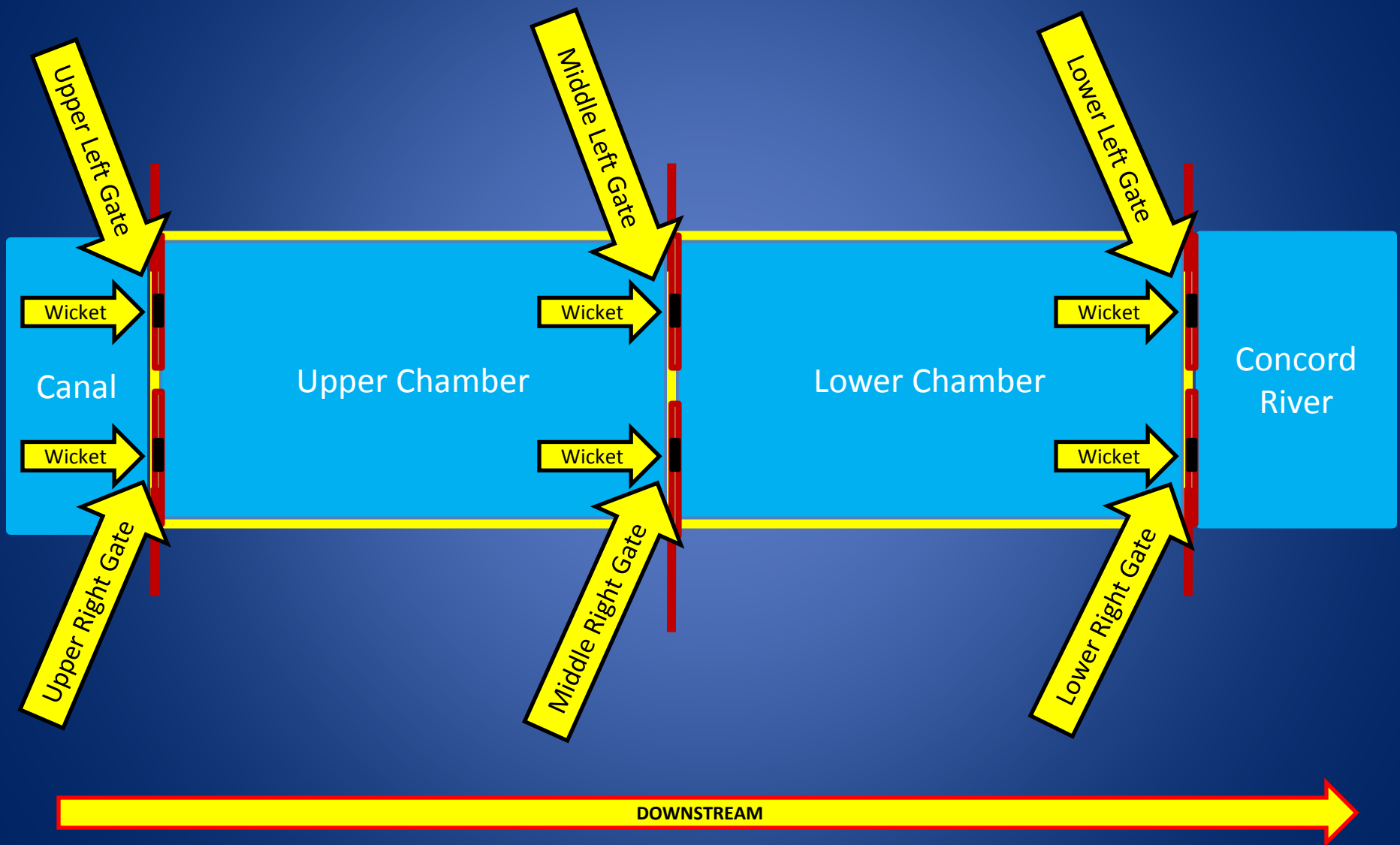
- *Safety First!* Stay alert & bring a good attitude
- Completed release form for the season
- Ability to lift a 50 pound key
- PDF (life preserver)
- Closed-toe footwear, good traction
- Lock-keys
- Throw bag/rope



Lock tending safety!

- If **someone falls in** close all wicket gates & use throw bag
- Always **keep at least one hand** on the iron lock key if it is attached to an open wicket gate (they can move suddenly)
- **Do not put yourself** between the wooden gate arm and the top of lock chamber wall in the direction the gate is moving.
- Advise all **spectators** to stay behind the green fence.
- Call 911 in the event of an **emergency**
- Watch out for **yourself** and **those around you**
- **Location:** behind the UMass Lowell Inn & Conference Center at 50 Warren Street







Hand Signals

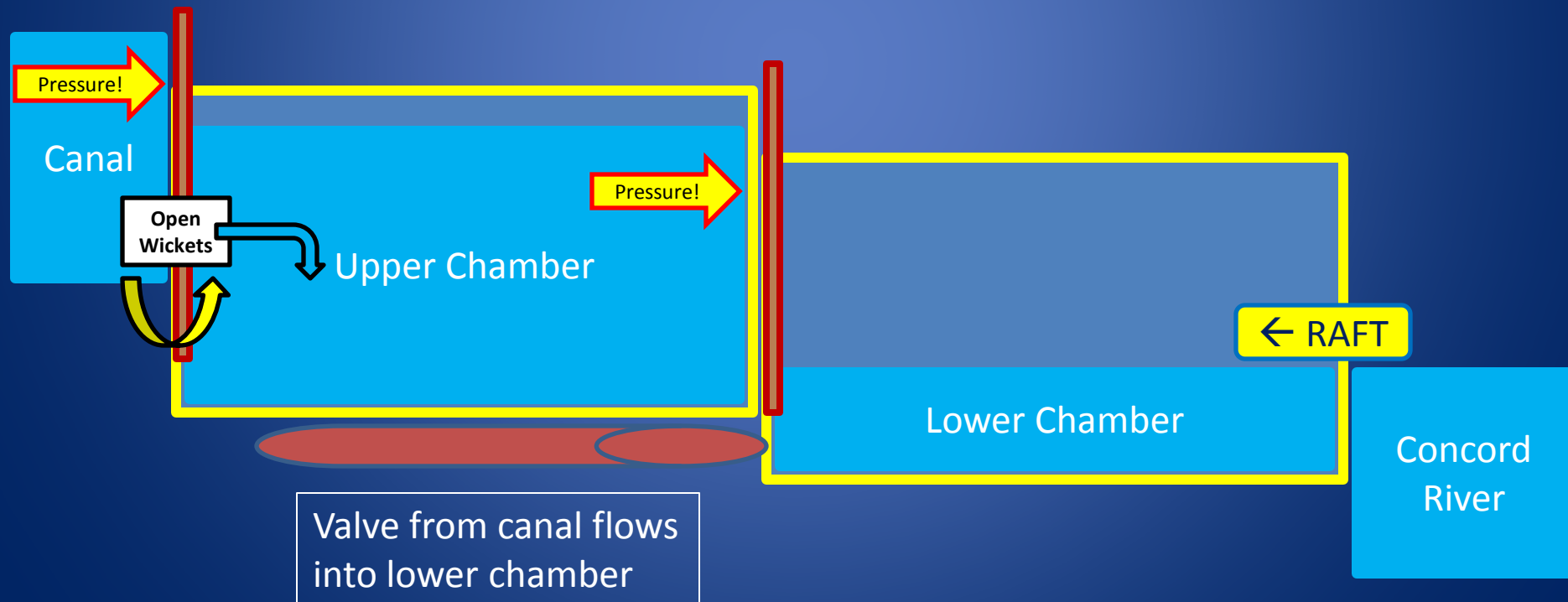
SIGNAL	MEANING
Vertical slicing motion of one arm and hand	Open wicket
Horizontal slicing motion of one arm and hand	Close Wicket
Vertical slicing of both arms and hands	Open Gate
Horizontal slicing of both arms and hands (a baseball “safe sign”)	Close Gate
Point at person. Two hand gesture toward body	Come help me
Two hand gesture, palms out at head height	Stop
Two hand gesture, palms out waving forward	Return to where you came from
Thumbs up!	Good job! – You did it! – That’s exactly what I wanted you to do. – That’s right. – Yes, that’s what I mean. – Thanks!

Fill Upper Chamber



Fill Upper Chamber

- Lock tenders located at upper gate & middle gate
- Close Middle Gates and Middle Wickets
- Open Upper Gate Wickets & fill with water from canal
- Open Lower Gate Doors for rafts to enter



Fill Upper Chamber

1) Close Middle Gates



Fill Upper Chamber

2) Close Middle Gate Wickets
with key



Fill Upper Chamber

3) Open Upper Gate Wickets with key

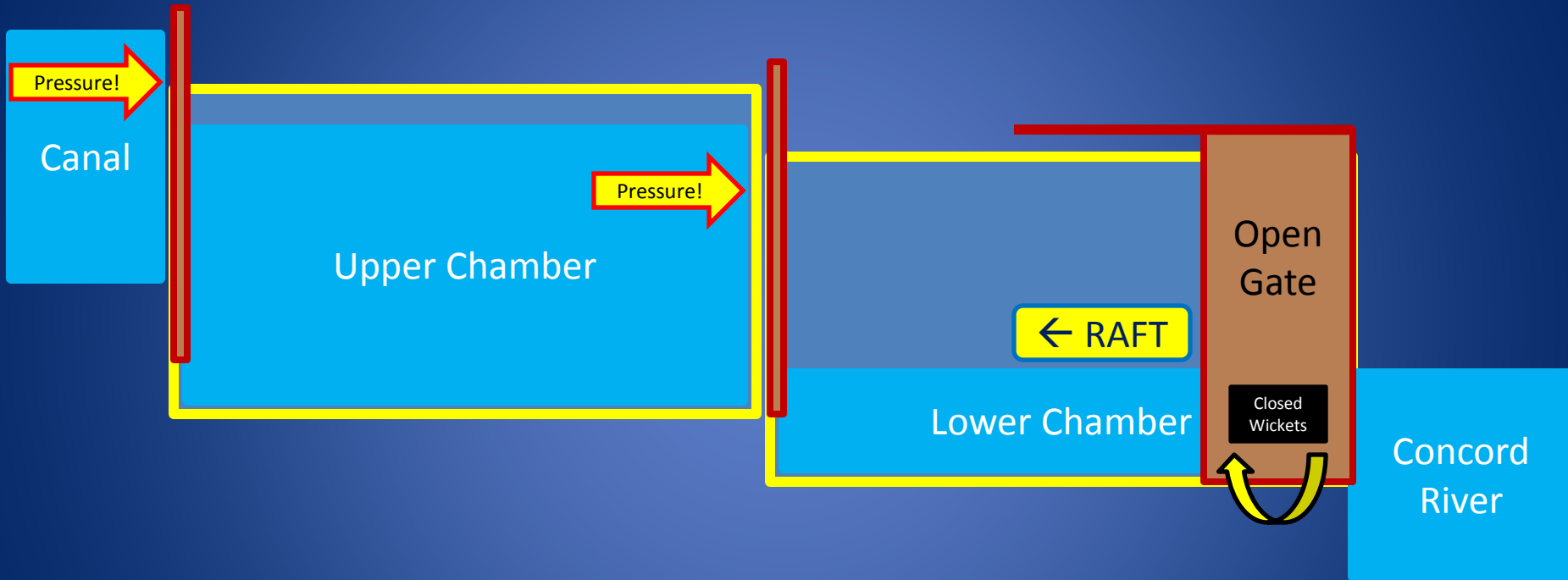


Fill the Lower Chamber

- Rafts enter the Lower Chamber
- Close lower gate wickets, close lower gates
- Lock tenders at middle and lower gates

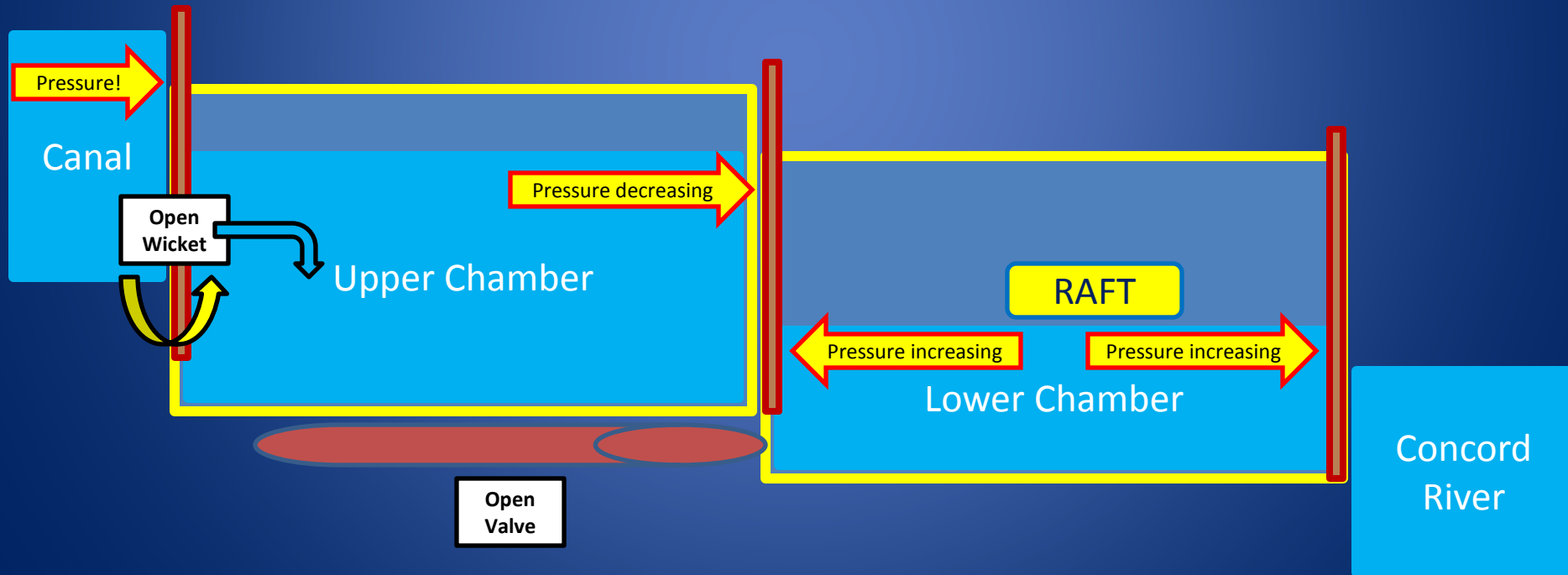


Fill the Lower Chamber



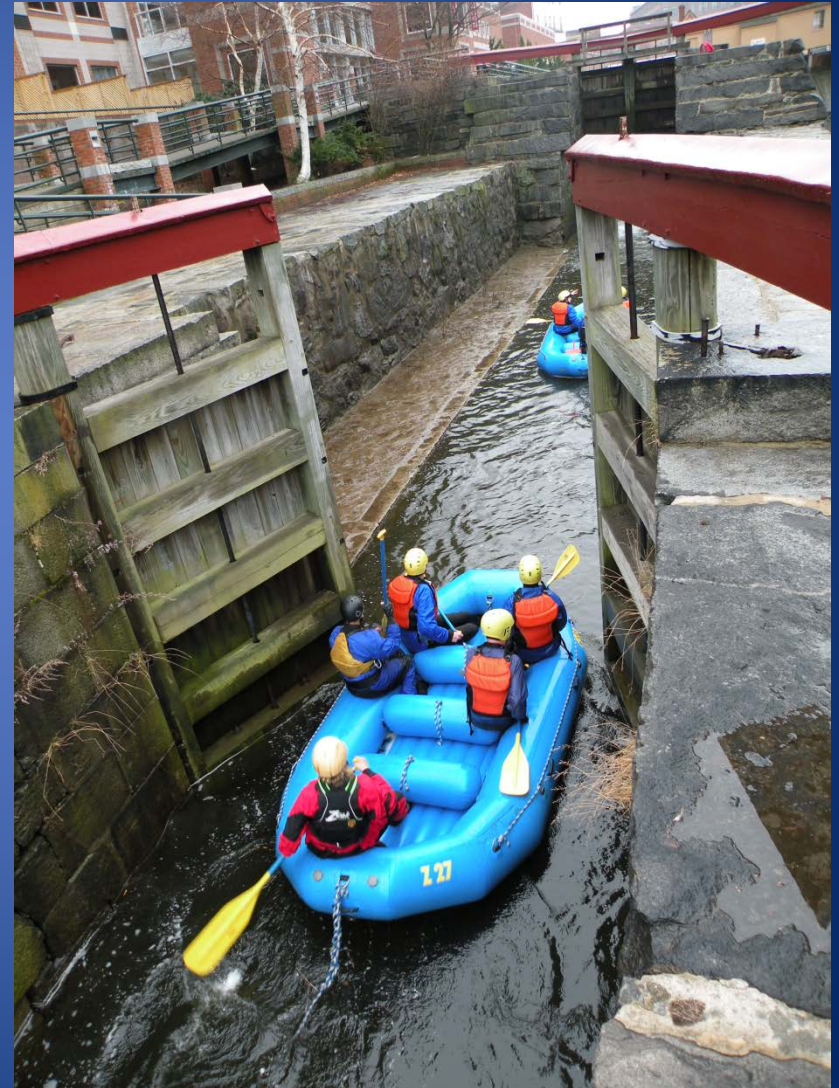
Lower Chamber Lift

- Close Lower Gate wickets
- Close Lower Gates behind rafts
- Open Middle Gate Wickets (keep upper gate wickets open as required)
- Valve helps balance water loss from chamber
- Water levels & pressure equilibrate



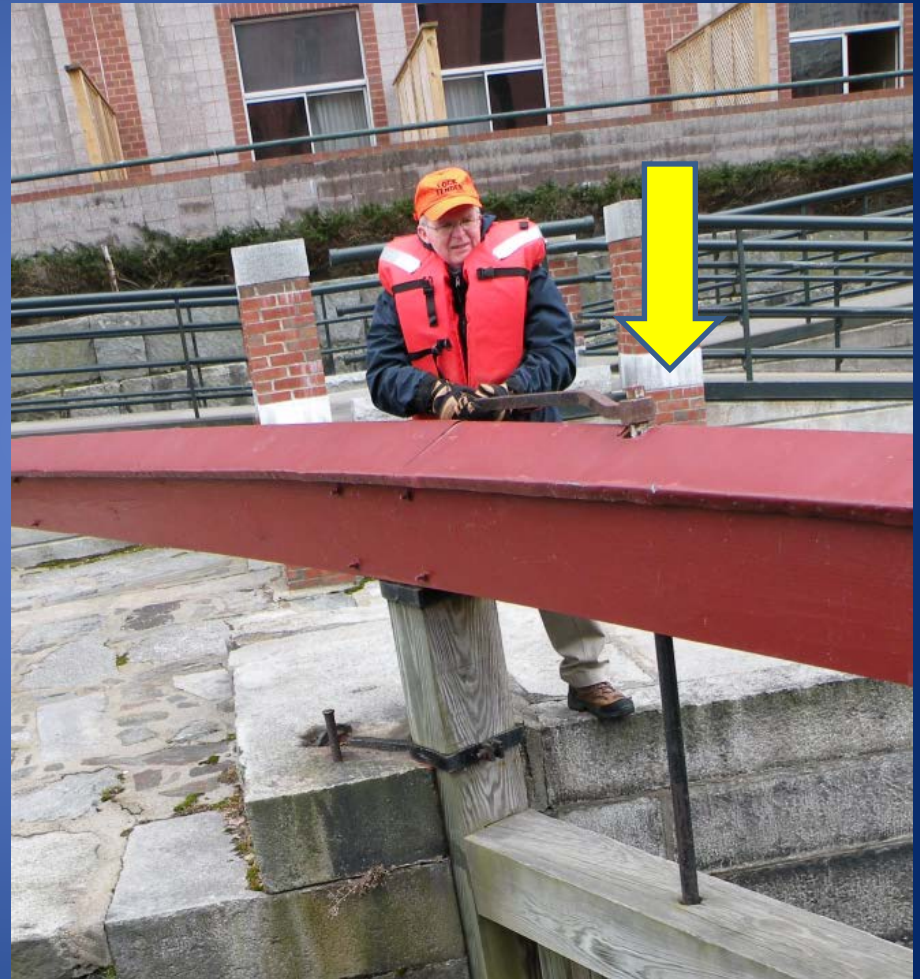
Fill the Lower Chamber

1) Open Lower Gates and allow rafts to enter



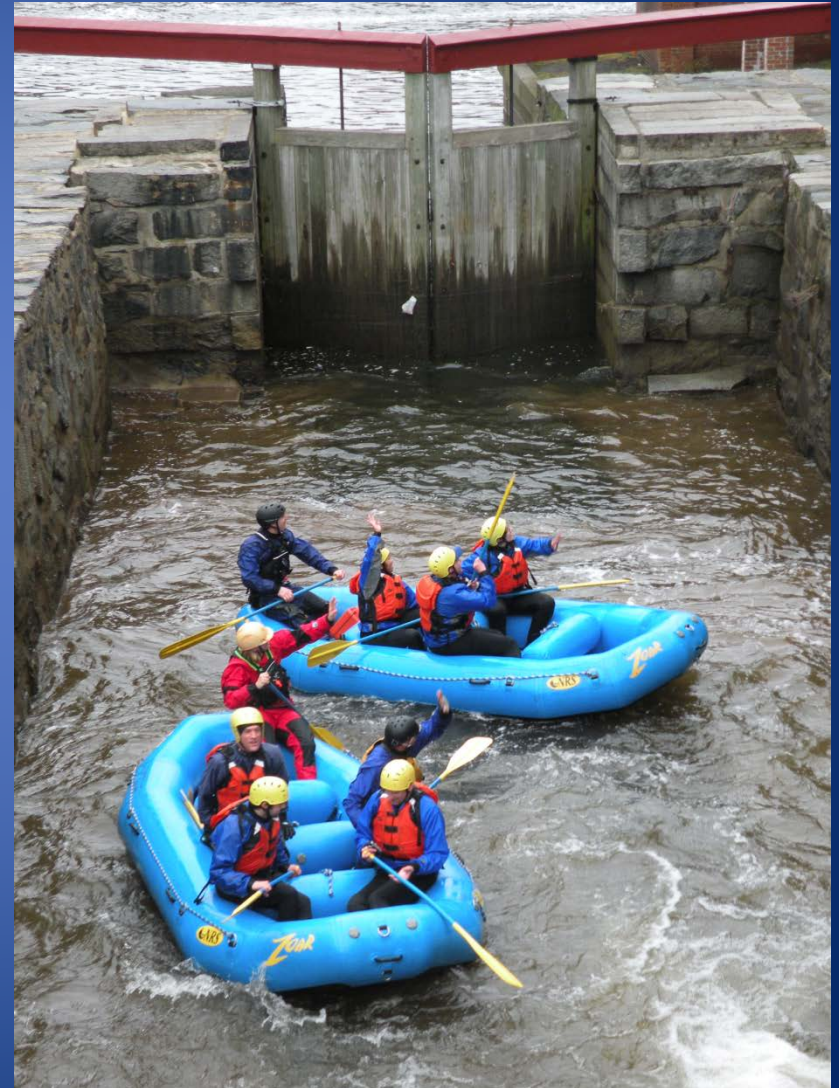
Fill the Lower Chamber

2) Close Lower Gate wickets with key



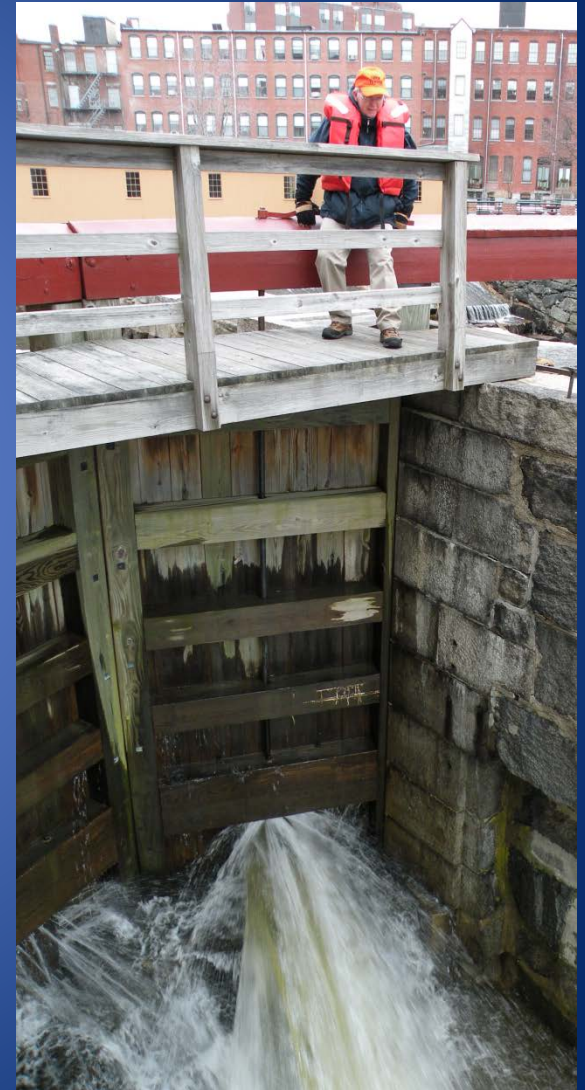
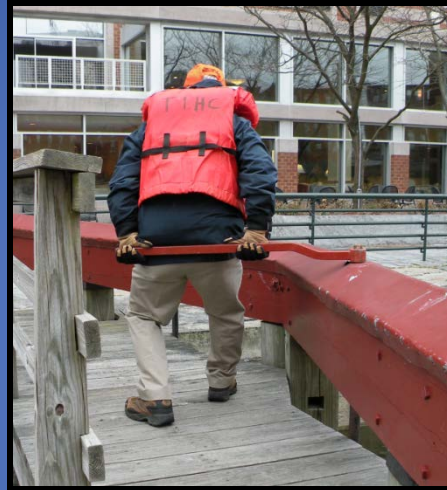
Lower Chamber Lift

3) Close Lower Gates Behind Rafts



Lower Chamber Lift

4) Open Middle Gate Wickets with key



Fill the Lower Chamber

5) Keep Upper Gate Wickets open as required



Fill the Lower Chamber

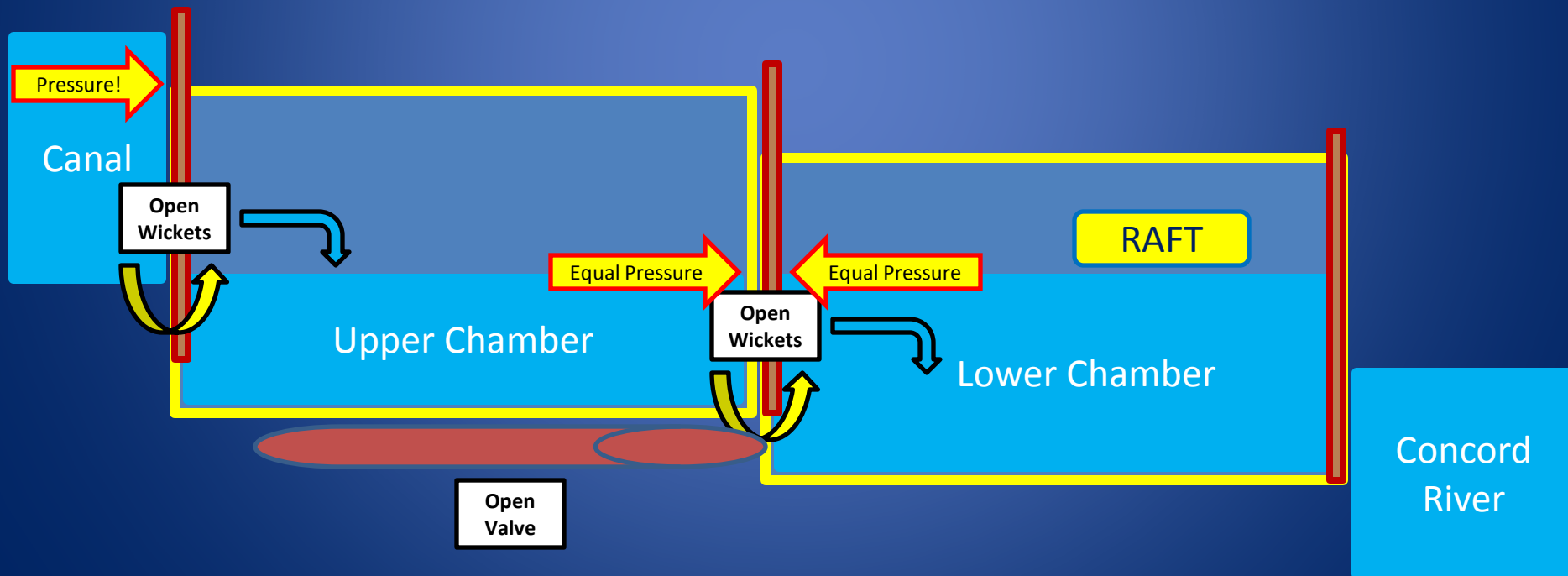


- Lock tender at middle gate connects with raft guide to indicate the gates are ready to be opened

Passage from Lower to Upper Chamber

- Equal water levels & pressure allows us to open the middle gates
- Keep water flowing through the Upper Wickets, Middle Wickets, and open valve to achieve this equilibrium.

Note: too much pressure, you won't be able to open the gates!



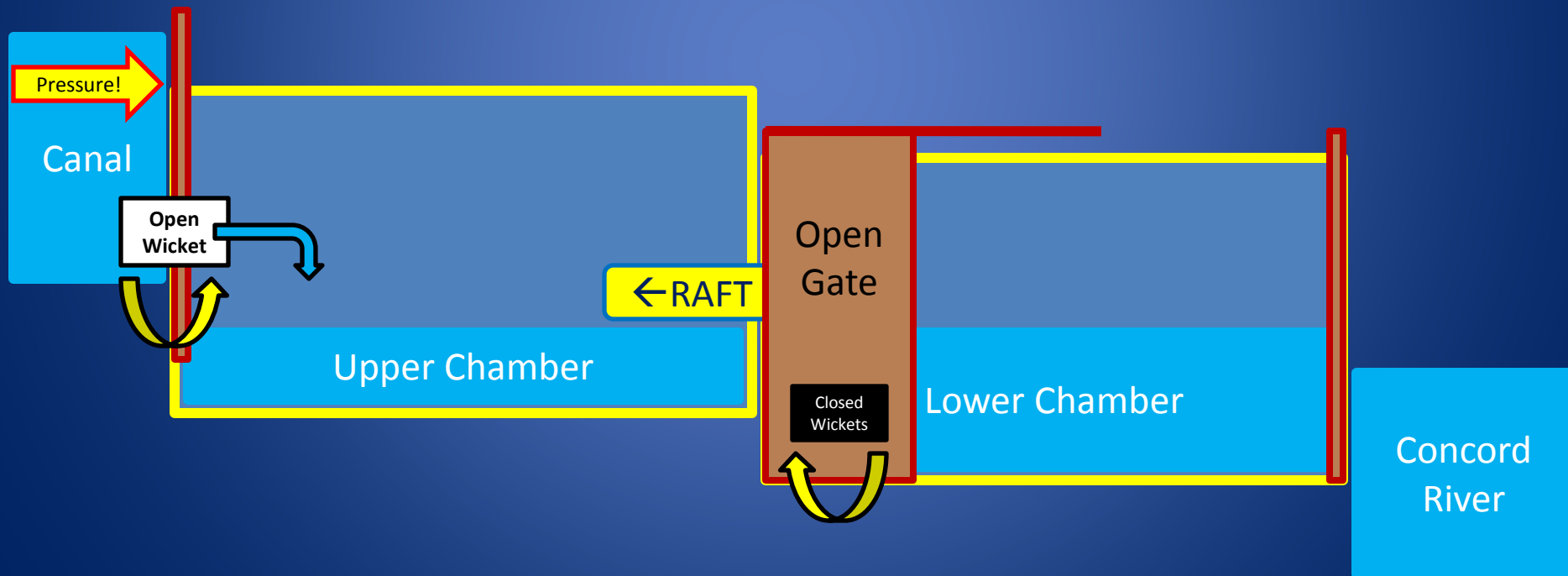
Passage into Upper Chamber

Once the water levels of both chambers are equally balanced, the rafts will move from the Lower Chamber to the Upper Chamber



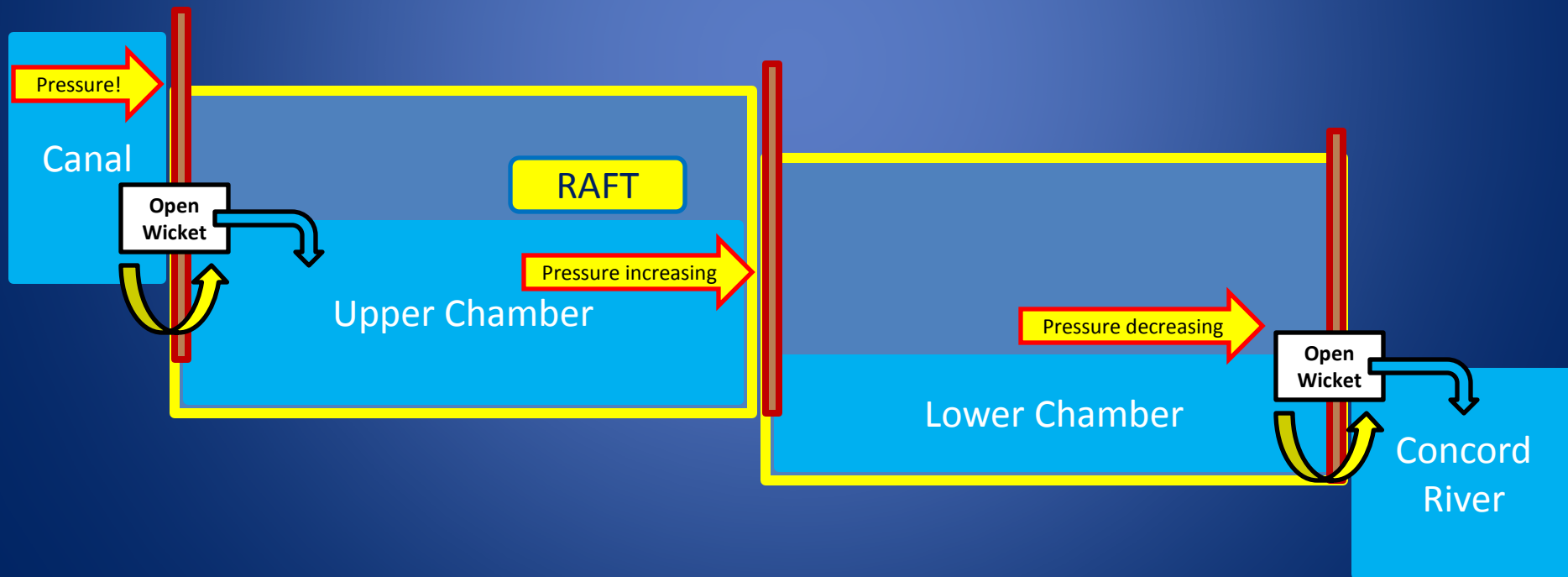
Passage into Upper Chamber

Open Middle Gates and allow rafts to pass



Passage into Upper Chamber

- Close Middle Gate & Close Middle Gate Wickets for final ascent
- Open Lower Gate Wickets to empty the Lower Chamber



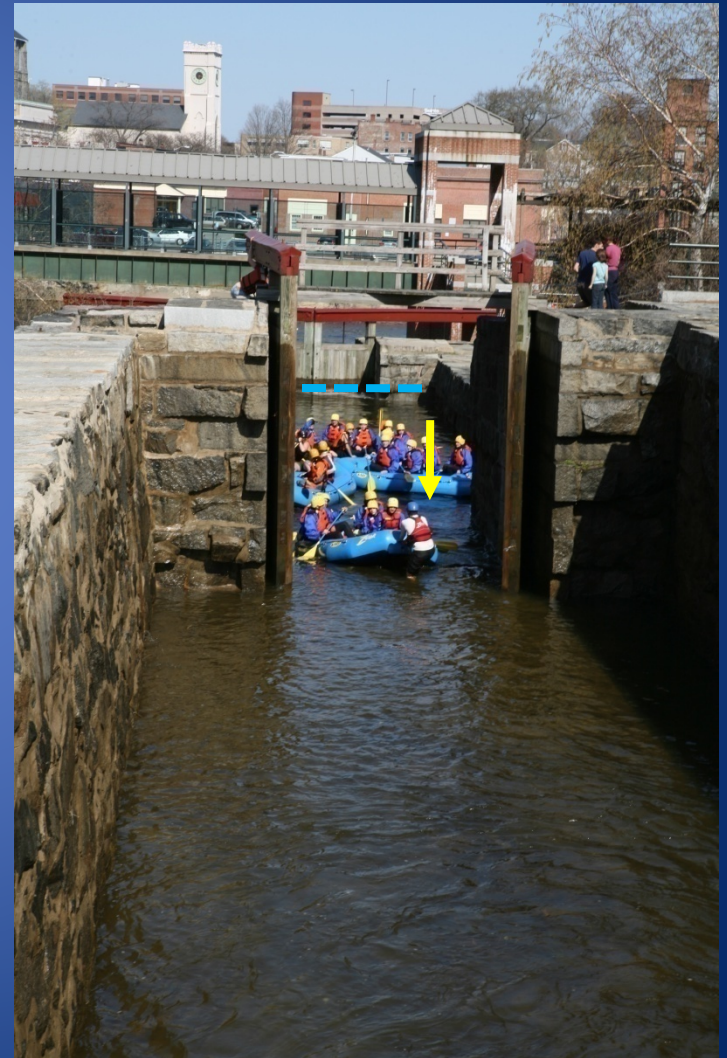
Passage into Upper Chamber

- 1) Bring water levels in both chambers to the same height by controlling the Upper Gate wickets



Passage into Upper Chamber

- 3) Allow rafts to pass through Middle Gates
- 4) Close Middle Gates
- 5) Close Middle Gate Wickets



Passage into Upper Chamber

6) Open Lower Gate Wickets.
This prepares for the next trip.



Unloading and Lock Chamber Draining

- Keep upper wickets open to raise water level in upper chamber



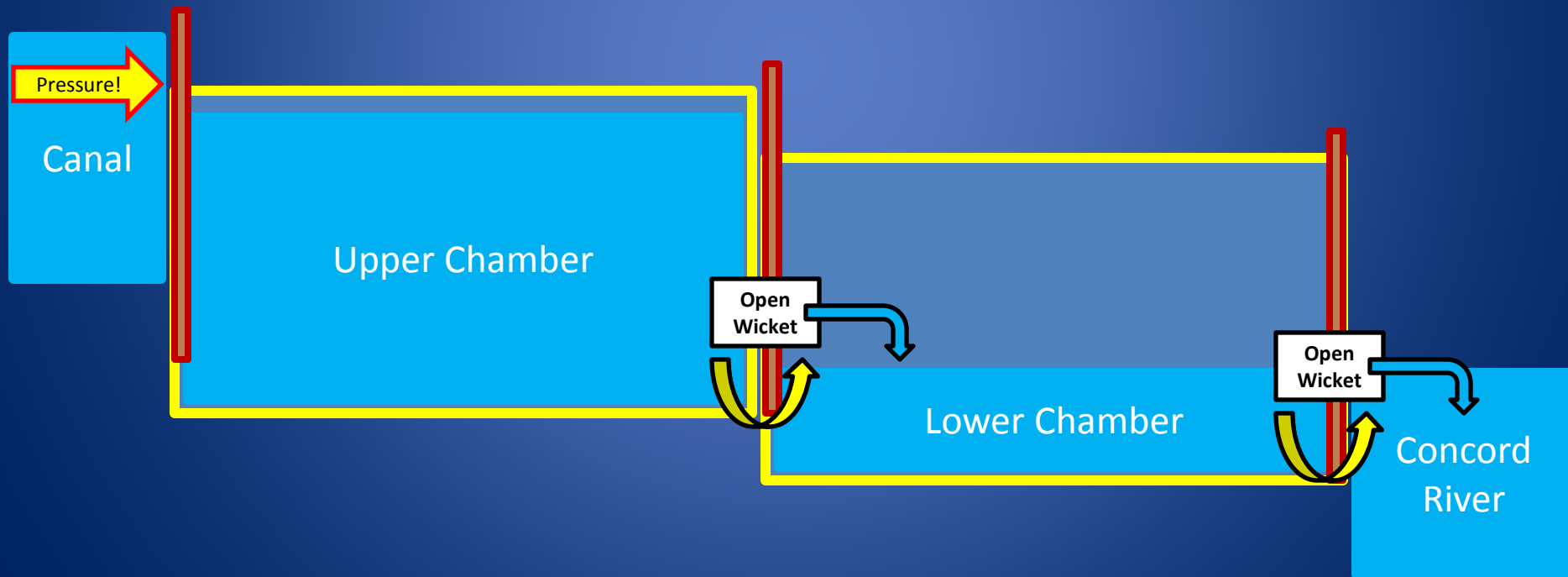
LP&CT Ambassadors!

While they are waiting...

- Location: confluence of the Concord and Merrimack Rivers
- Entered the Lower Locks of the Pawtucket Canal
- A portion of whitewater rafting proceeds will support the work of LPC&T to protect land along the Concord River, including the Concord River Greenway
- Thank the rafters for supporting LP&CT and riding with Zoar Outdoor
- Tip part

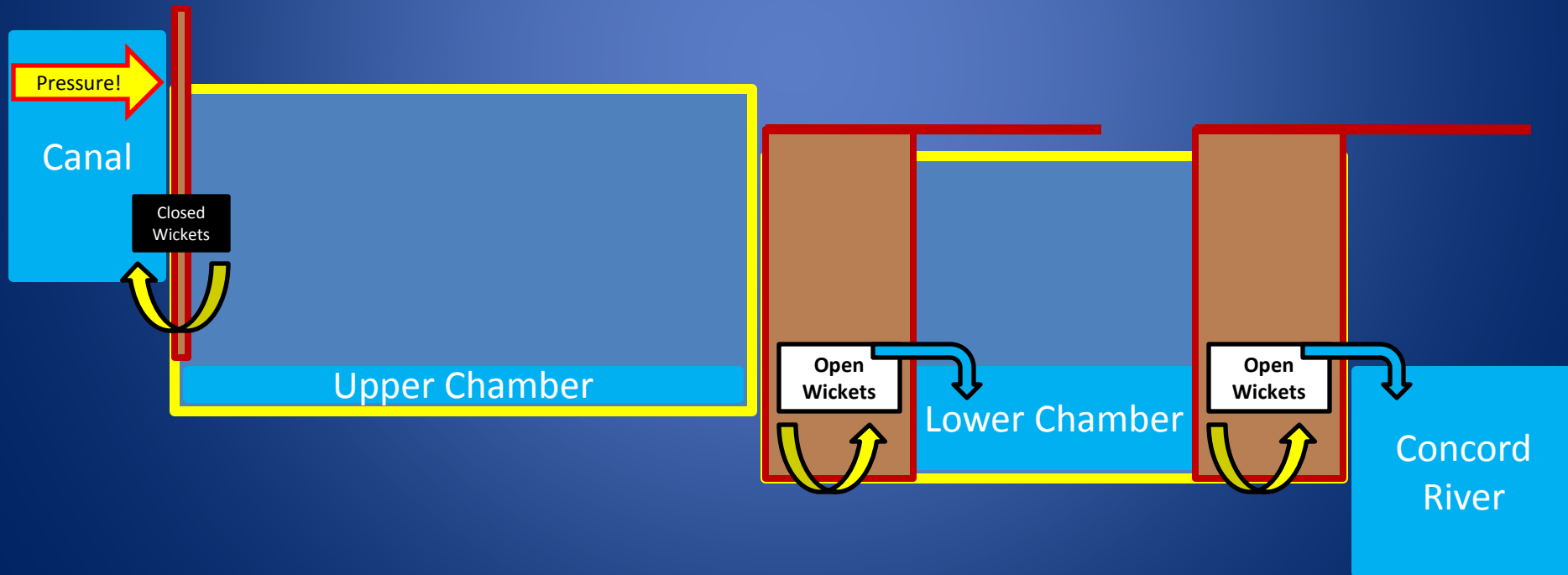
Unloading and Lock Chamber Draining

- Allow rafters to unload
- Close Upper Gate Wickets
- Open Middle Gate Wickets and ensure Lower Gate Wickets are open



Unloading and Lock Chamber Draining

- Upper Gates and Upper Gate Wickets should be closed
- Everything below should be left open (gates & wickets)
- *All equipment should be returned to the proper storage location.*

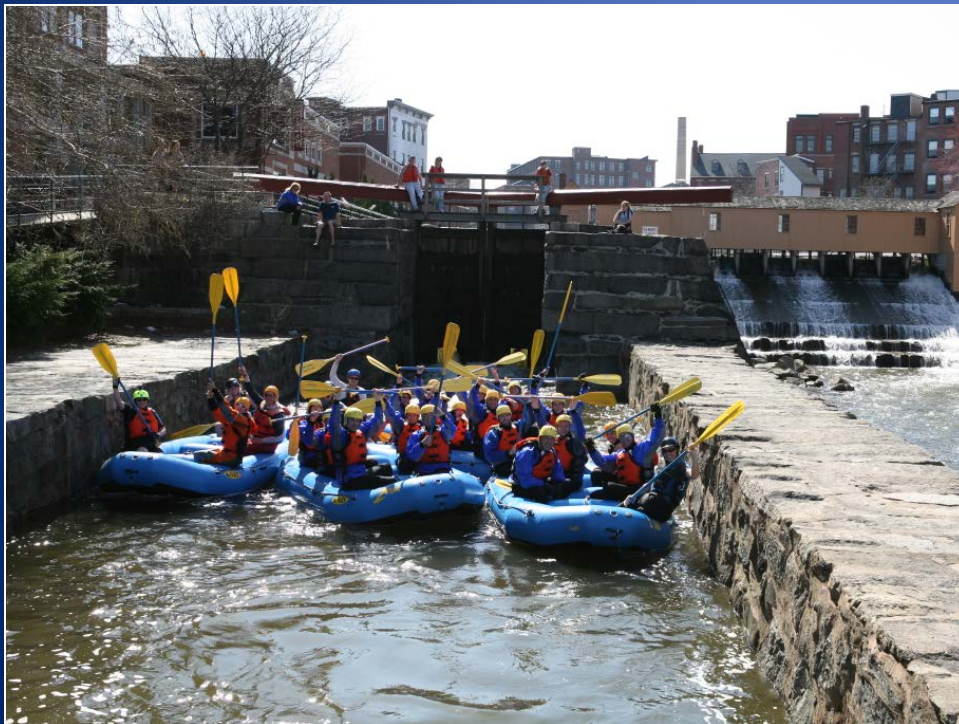


Reminder: Safety First

Safety is our first priority:

- PFDS
- Closed toed shoes with good traction
- Safety equipment, such as a throw bag
- All wicket gates should be CLOSED immediately if a rafter or lock tender falls into the lock chamber.
- “Sticky wicket”: Always keep at least one hand on the iron lock key if it is attached to an open wicket gate. Wicket gates can close “voluntarily” without warning.
- Do not put yourself between the wooden gate arm and the top of lock chamber wall in the direction the gate is moving.
- Advise all spectators to stay behind the green fence.
- ***Think Safety First! Call 911 in the event of an emergency.***
- *Watch out for yourself and those around you.*
- *The location of lock tending is behind the UMass Lowell Inn & Conference Center at 50 Warren Street, Lowell, MA 01852.*

*We couldn't do it without you, our
faithful volunteers!
Thank you!*



Lowell Parks & Conservation Trust and Zoar Outdoor kindly thank our programming partners and volunteers for their support in making this program possible:

- UMass Lowell – Inn & Conference Center
- Lowell National Historical Park
- Lowell Heritage State Park
- Olsen (Hydro-) Electric Company
- Lower Locks Parking Garage
- *And of course our much appreciated and devoted LOCK TENDERS!*

