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The Inland Waterway System

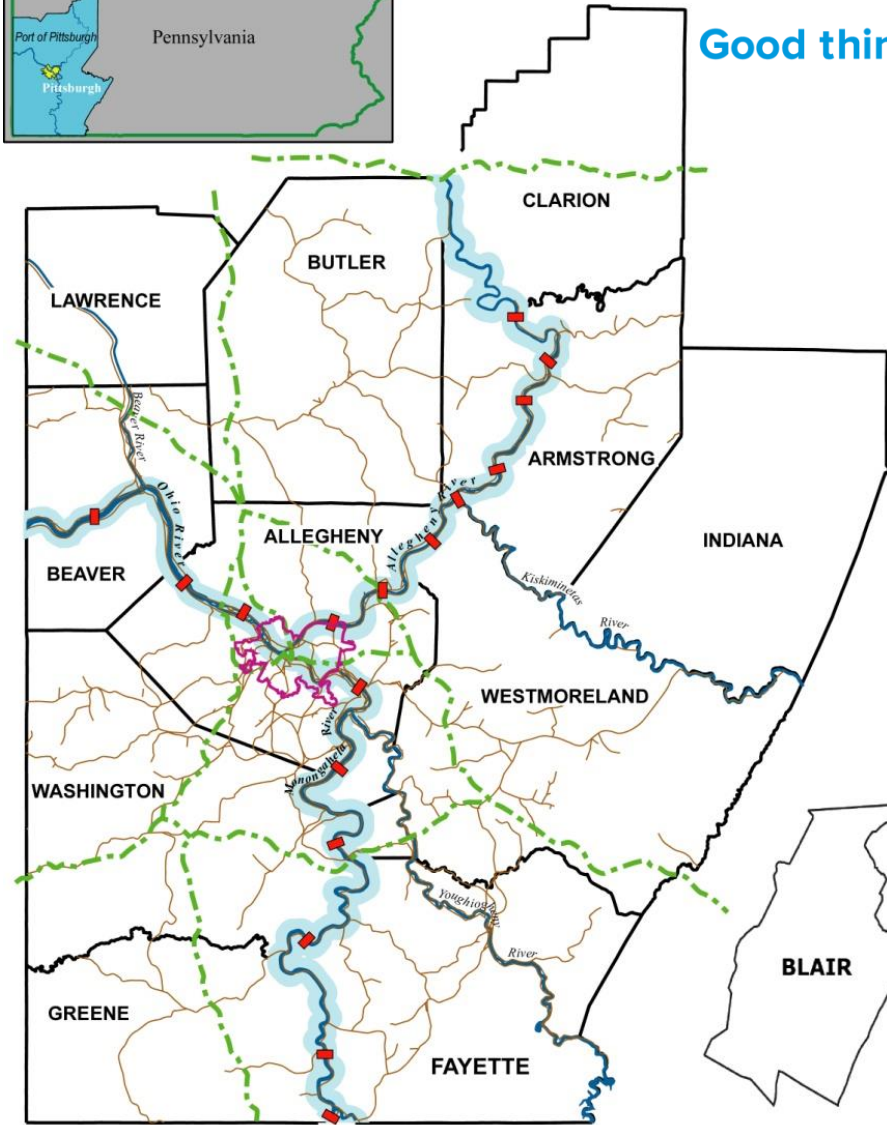
334 Mileage Between Cities
3 Number of Locks

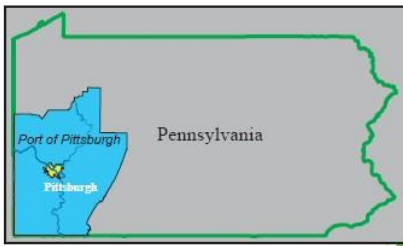


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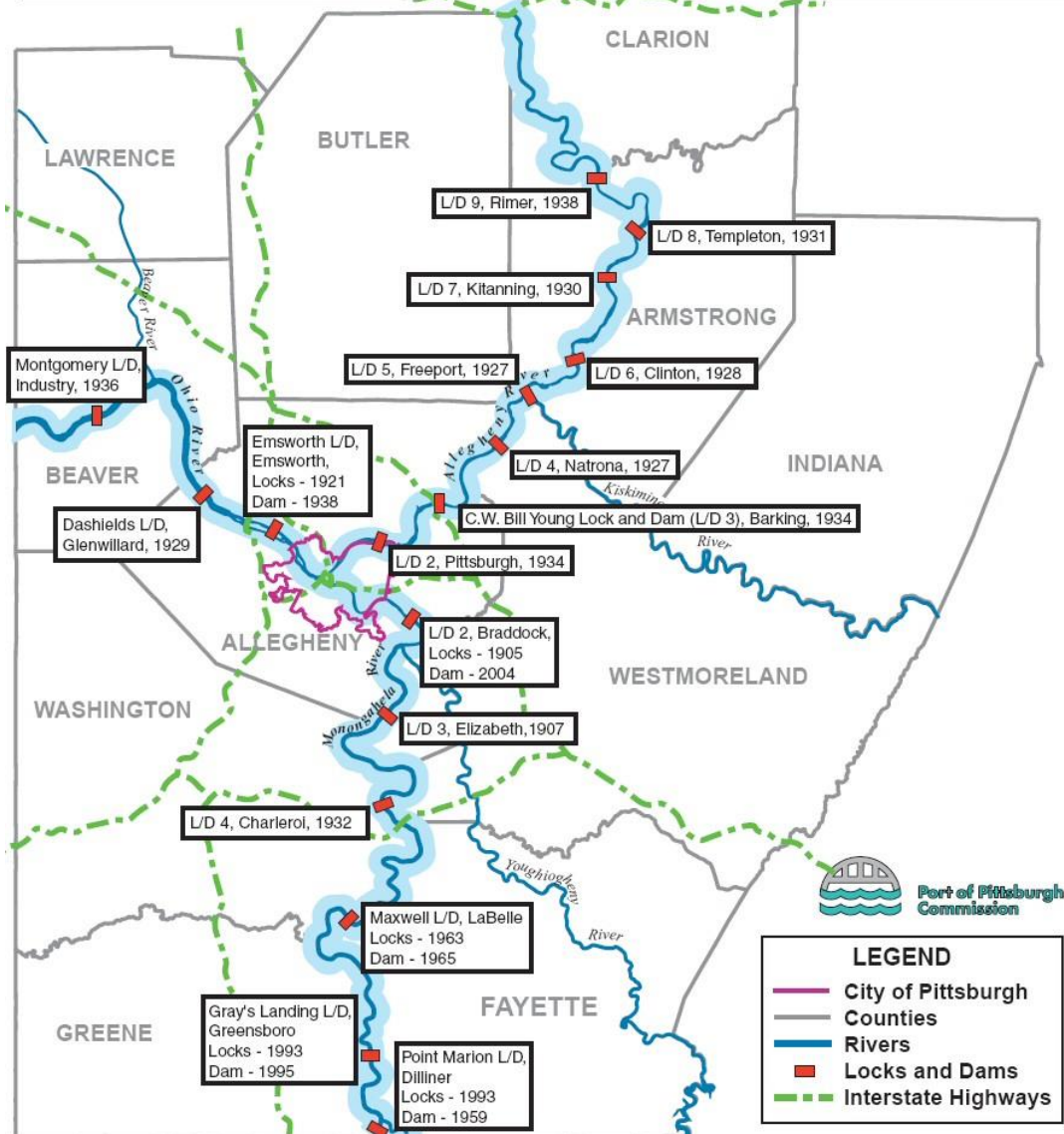
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The Port of Pittsburgh's Locks and Dams



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Benefits Of Keeping Locks Open



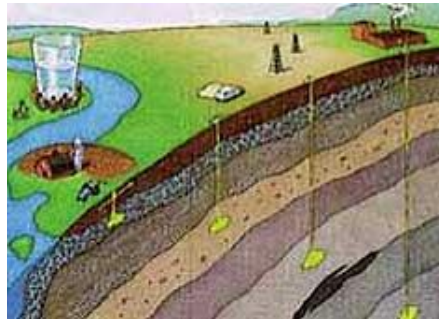
Recreation



Flood control



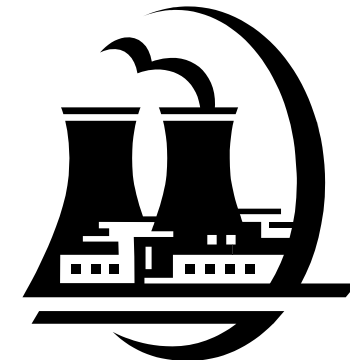
Drinking
water



Source water
for fracking

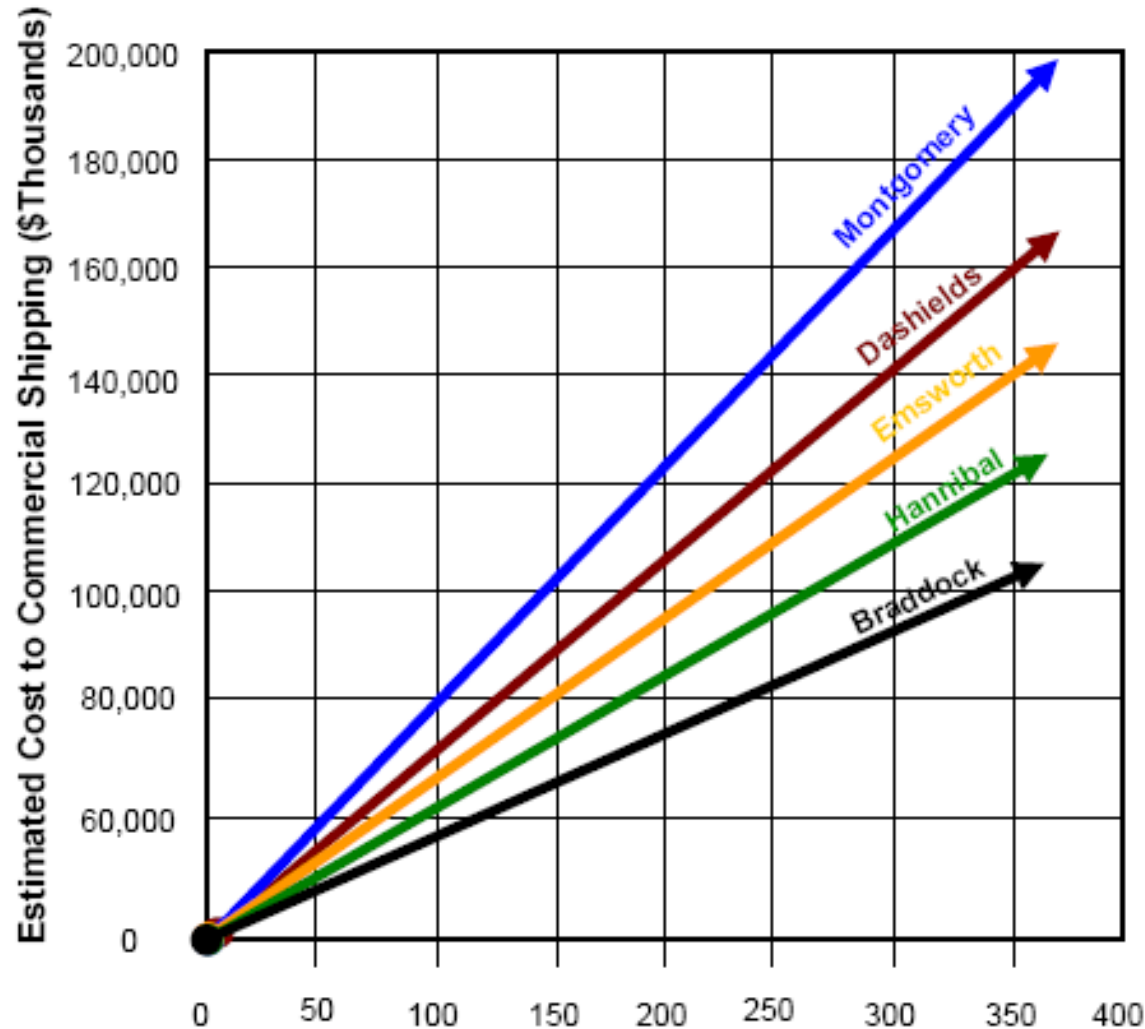


Low cost
transportation of
bulk materials



Industrial
cooling water

Impact of Catastrophic Failure and Lock Closure



Unscheduled Lock Closure Days

1. Unreliable system requires development of contingency plans, including construction of access roads and rail spurs that would allow transportation by other modes if necessary.
2. At best, unscheduled closures results in delays, use of alternative modes, increased production from alternative plants and/or mines.
3. At worst, an unreliable or closed systems results in a deterioration of the market position of area businesses to the point that some may close.

Lower Mon Project

- Locks 2, 3, & 4 experience the highest volume of commercial traffic on the entire Monongahela River.
- “2 for 3” project:
 - replace dam at L/D #2
 - construct new locks at L/D #4
 - remove dam at L/D #3.
- Dam at Braddock (Lock #2) already replaced.
- Project benefits estimated at \$200 million per year.
- Total project cost: \$2.7 billion.
- Funding allocation to date: \$687 million.
- Project cost is shared 50/50 with Inland Waterways Trust Fund.
- 2009 and 2015 funding from American Recovery and Reinvestment Act (ARRA)

Lower Mon Project



Lower Mon Project

- Removal of Locks and Dam 3 will create a single pool, between Braddock and Elizabeth.
- Monongahela River will rise a nominal 5 ft.
- From Elizabeth to Charleroi, the river will drop a nominal 3.2 ft.
- Existing lock chambers of 2, 3, & 4 are 56 ft in width.
- Locks upstream from 4 have 84 ft chambers.
- New lock chambers at 2 and 4 (with dam 3 removed) will be 100 ft wide, eliminating the bottleneck of smaller chambers downstream of larger chambers.

Upper Ohio River Navigation Study

- Oldest locks on the Ohio River system
- All over 70 years old
- Smallest lock chambers on the entire river system
- All three in a state of critical structural and operational degradation
- Major failure of Ohio River lock would shut down entire port.
- Pool loss from dam failure would cause major disruptions to:
 - Transportation
 - Municipal and industrial water intakes
 - Recreation
 - Wildlife habitats

Upper Ohio River Navigation Study

- Replacement of all three locks systems necessary
- Thirteen years to complete study
- Cost of \$17 million for study
- Eight options examined
- Twin 600' x 110' chambers will be constructed at each site
- Total cost of project is \$2.69 billion
- Incremental cost-to-benefit ratio is estimated at 3.8 to 1
- Study signed off just in time for 2016 WRDA.
- WRDA bills passed in House and Senate

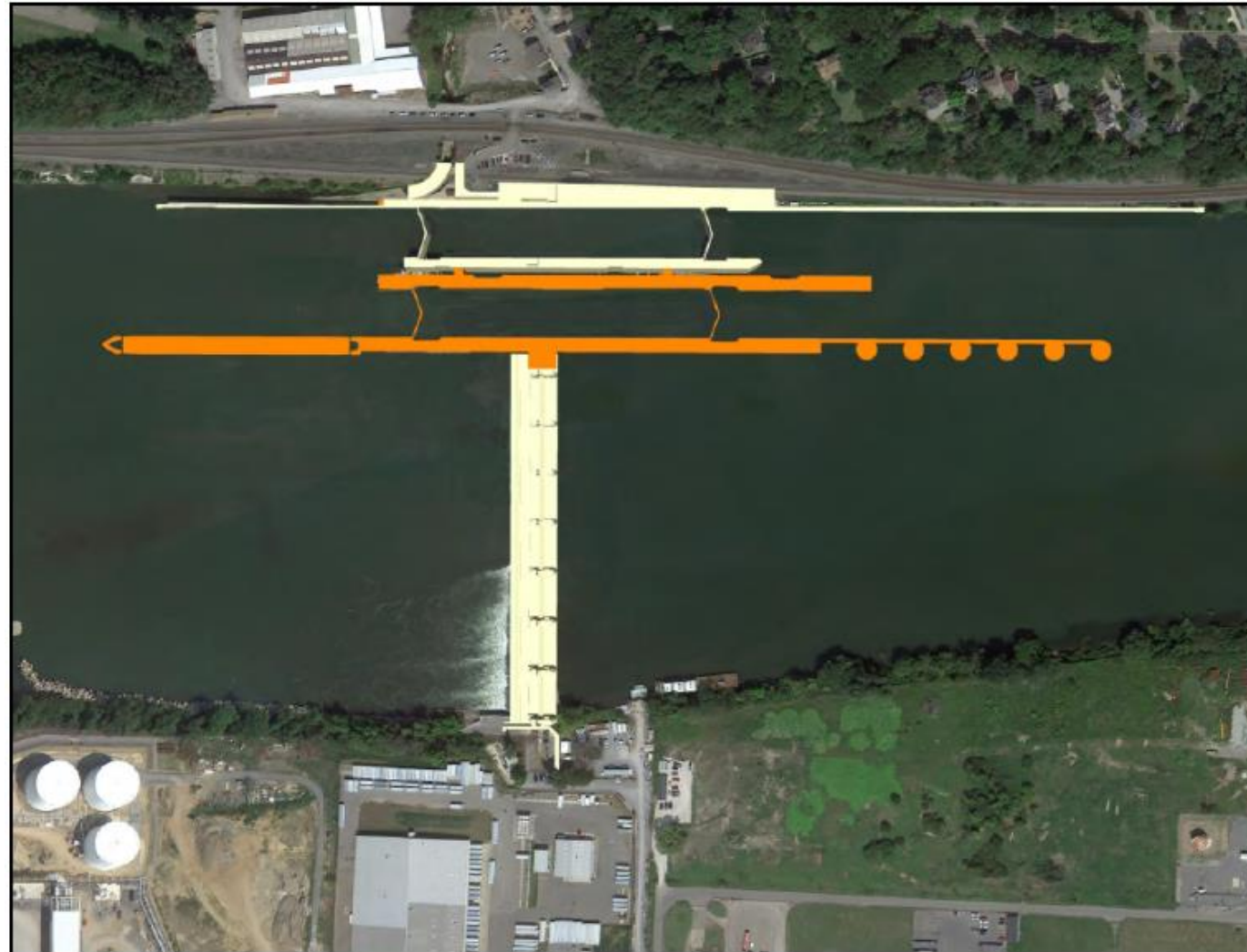
Upper Ohio River Navigation Study

Project Area



Upper Ohio River Navigation Study

Emsworth Locks showing overlay of new 110' x 600' chamber in place of existing 56' x 360' auxiliary chamber; Dashields and Montgomery facilities have similar replacement patterns.



Deteriorating Lock Conditions

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The dewatered main chamber of Monongahela River Lock and Dam 3 at Elizabeth is heavily braced due to its questionable stability. The district has spent more than \$7.3 million since 2006 to maintain the locks originally slated for removal in 2004.

Deteriorating Lock Conditions

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Water pours from the 100+ year-old lock wall at the Lock and Dam 3 at Elizabeth during a maintenance pump out of the auxiliary chamber. The Navigation facility is the oldest in the district's inventory of 23 locks.

Deteriorating Lock Conditions

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Pittsburgh District maintenance workers pump out the auxiliary lock chamber of the Elizabeth Lock ahead of scheduled repairs to the aging, pre-World War 1 facility.



Deteriorating Lock Conditions

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Built on wood pilings more than a century ago, Lock and Dam 3 on the Mon River has doubled its service life, though it has taken millions of dollars to keep it going.



Deteriorating Lock Conditions



The district has spent \$3.5 million on temporary repairs to keep the Ohio River's Montgomery Dam gates from failing.

Questions??????????

