

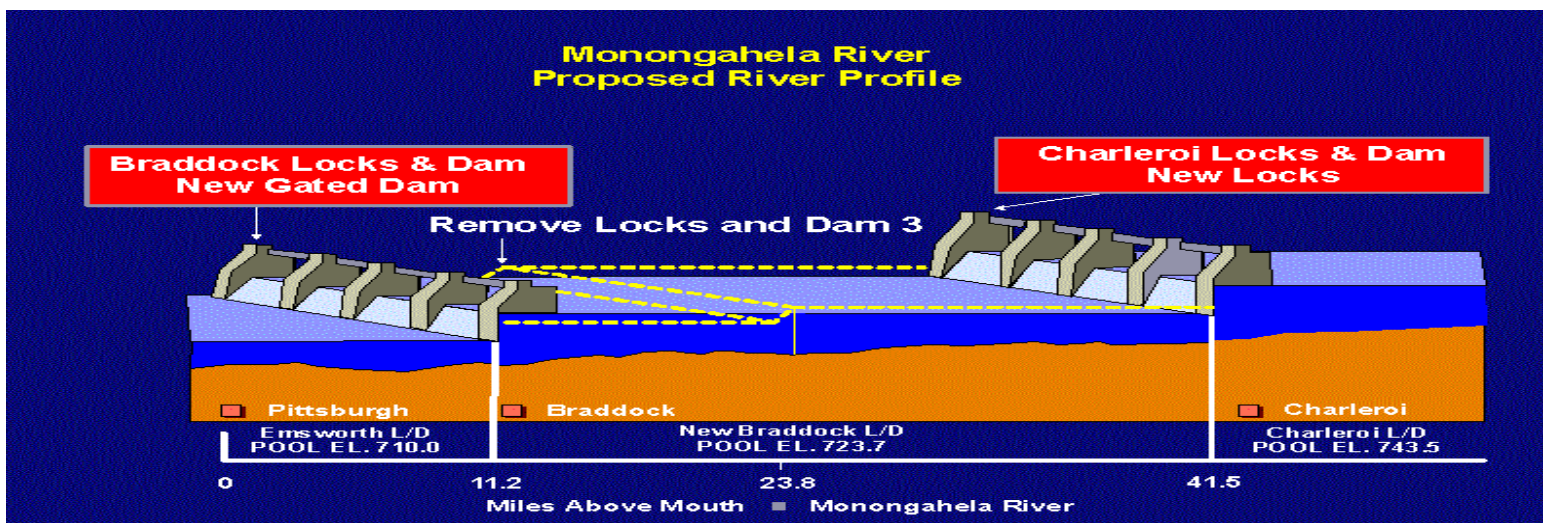


## WATERWAYS COUNCIL, INC.

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# Monongahela River Locks & Dams 2, 3 & 4

Locks and Dams 2, 3 and 4 are the first three navigation projects on the Monongahela River upstream of Pittsburgh. Lock and Dam 2 is located at Monongahela River mile 11.2, Lock and Dam 3 is located at mile 23.8, and Lock and Dam 4 is at mile 41.5. Lock and Dam 2 has a main lock chamber measuring 110' x 720' feet and an auxiliary lock that is 56' x 360'. The other two projects have main lock chambers that are 56' x 720' and auxiliary lock chambers that are 56' x 360'. Lock and Dam 2 was originally built in 1905, with new locks completed in the early 1950's. Lock and Dam 3 was built in 1907, and Lock and Dam 4 was completed in 1932.



This project was authorized in the Water Resources Development Act of 1992 (WRDA 92) and provides for a "two for three" lock replacement. The project consists of a new gated dam at L&D 2, removal of L&D 3, and two new 720' x 84' locks at L&D 4. The Corps completed a two-segment float in dam for L&D 2 at Braddock, PA. This dam involved underwater foundation preparation, float-in components, and tainter gates operated by hydraulic cylinders. The new locks at L&D 4 will be constructed in stages in order to maintain navigation.

According to the Corps of Engineers Waterborne Commerce Statistics for 2003, 20.0 million tons of commodities moved through any or all of the three locks. Nearly 8.5 million tons moved

through all three locks. Coal made up 85% of the tonnage moved through these locks, with aggregates next at 5%. The value of the 20.0 million tons was almost \$1.6 billion.

| <b>Monongahela River Locks 2, 3 and 4<br/>2003 Commodity Distribution</b><br><i>(values in millions of dollars)</i> |                   |                   |                  |                   |            |                |
|---|-------------------|-------------------|------------------|-------------------|------------|----------------|
| Commodity   | Commodities       |                   |                  |                   | %          | Value          |
|   | Lock 2            | Lock 3            | Lock 4           | Total *           |            |                |
| Coal  | 15,419,100        | 9,792,358         | 8,276,018        | 17,095,773        | 85%        | \$675          |
| Petroleum   | 405,117           | 250,387           | 115,650          | 405,117           | 2%         | \$100          |
| Aggregates  | 1,018,624         | 956,181           | 916,438          | 1,054,224         | 5%         | \$73           |
| Grain   | 36,129            | 3,363             | 3,360            | 36,129            | 0%         | \$8            |
| Chemicals   | 312,067           | 150,216           | 26,188           | 312,067           | 2%         | \$157          |
| Ores/Minerals   | 319,774           | 73,356            | 73,071           | 321,024           | 2%         | \$56           |
| Iron/Steel  | 379,372           | 339,543           | 86,915           | 379,372           | 2%         | \$363          |
| Other   | 104,383           | 79,297            | 366,270          | 451,815           | 2%         | \$146          |
| <b>Total</b>  | <b>17,994,566</b> | <b>11,644,701</b> | <b>9,863,910</b> | <b>20,055,521</b> | <b>100</b> | <b>\$1,578</b> |

*\* Total tonnage moving through any of the three locks.*  
*Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics*

The state that shipped the most tonnage through Monongahela River Locks 2, 3 and 4 was Pennsylvania, transporting 10.3 million tons worth over \$904 million. Of this amount, coal made up over 9.3 million tons. West Virginia was next, moving over 7 million tons of goods.

| <b>Monongahela River Locks 2, 3 and 4<br/>2003 Barge Tonnage Shipped by States</b><br><i>(values in millions of dollars)</i> |            |        |               |
|--|------------|--------|---------------|
| Shipments By   | Tons       | Value  | Top Commodity |
| Pennsylvania   | 10,292,591 | \$ 904 | Coal          |
| West Virginia  | 7,114,507  | \$ 313 | Coal          |
| Ohio   | 1,715,850  | \$ 98  | Coal          |
| Louisiana  | 567,265    | \$ 63  | Ores/Minerals |
| Texas  | 123,720    | \$ 122 | Chemicals     |

*Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics*

Pennsylvania is also the largest receiving state for Monongahela River Locks 2, 3 and 4 barge traffic, with 13.3 million tons and a commodity value of \$918. Coal made up 82% this amount. West Virginia was second in receipts, with over 2.1 million tons. See map for a graphical representation of state tonnage movements through these Monongahela River locks.

| <b>Monongahela River Locks 2, 3 and 4<br/>2003 Barge Tonnage Shipped to States</b><br><i>(values in millions of dollars)</i> |                   |               |                      |
|--|-------------------|---------------|----------------------|
| <b>Receipts By</b>   | <b>Tons</b>       | <b>Value</b>  | <b>Top Commodity</b> |
| <b>Pennsylvania</b>  | <b>13,346,892</b> | <b>\$918</b>  | <b>Coal</b>          |
| <b>West Virginia</b>   | <b>2,189,933</b>  | <b>\$ 108</b> | <b>Coal</b>          |
| <b>Ohio</b>  | <b>1,874,988</b>  | <b>\$ 78</b>  | <b>Coal</b>          |
| <b>Kentucky</b>  | <b>1,197,161</b>  | <b>\$ 82</b>  | <b>Coal</b>          |
| <b>Indiana</b>   | <b>446,465</b>    | <b>\$ 53</b>  | <b>Iron/Steel</b>    |
| <b>Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics</b>   |                   |               |                      |

Pennsylvania's 12<sup>th</sup> Congressional District was the leading shipper of commodities through Monongahela River Locks 2, 3 and 4. This district shipped more than 8.8 million tons with coal amounting to 95% of the total tonnage with a value of \$460 million. West Virginia District 3 was next, transporting over 3.7 million tons. See map for the top 10 Congressional Districts shipping tonnage through these Monongahela River Locks.

| <b>Monongahela River Locks 2, 3 and 4<br/>2003 Barge Tonnage Shipped to Congressional Districts</b><br><i>(values in millions of dollars)</i> |                 |                  |               |                      |
|---|-----------------|------------------|---------------|----------------------|
| <b>Shipments By</b>   | <b>District</b> | <b>Tons</b>      | <b>Value</b>  | <b>Top Commodity</b> |
| <b>Pennsylvania</b>   | <b>12</b>       | <b>8,847,186</b> | <b>\$ 460</b> | <b>Coal</b>          |
| <b>West Virginia</b>  | <b>3</b>        | <b>3,781,405</b> | <b>\$ 144</b> | <b>Coal</b>          |
| <b>West Virginia</b>  | <b>1</b>        | <b>2,002,840</b> | <b>\$ 119</b> | <b>Coal</b>          |
| <b>Ohio</b>   | <b>6</b>        | <b>1,715,850</b> | <b>\$ 98</b>  | <b>Coal</b>          |
| <b>West Virginia</b>  | <b>2</b>        | <b>1,330,262</b> | <b>\$ 50</b>  | <b>Coal</b>          |
| <b>Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics</b>  |                 |                  |               |                      |

The leading Congressional District in receipts of Monongahela River Locks 2, 3 and 4 commodities was Pennsylvania District 14, which received 8.5 million tons. This tonnage was mainly coal, and aggregates and had a combined value of over \$425 million. See map for the top 10 Congressional Districts receiving commodities through these Monongahela River locks.

| <b>Monongahela River Locks 2, 3 and 4<br/>2003 Barge Tonnage Shipped by Congressional Districts</b><br><i>(values in millions of dollars)</i> |                 |                  |               |                      |
|---|-----------------|------------------|---------------|----------------------|
| <b>Shipments By</b>   | <b>District</b> | <b>Tons</b>      | <b>Value</b>  | <b>Top Commodity</b> |
| <b>Pennsylvania</b>   | <b>14</b>       | <b>8,489,326</b> | <b>\$ 425</b> | <b>Coal</b>          |
| <b>West Virginia</b>  | <b>1</b>        | <b>2,133,884</b> | <b>\$ 105</b> | <b>Coal</b>          |
| <b>Pennsylvania</b>   | <b>4</b>        | <b>2,110,811</b> | <b>\$ 87</b>  | <b>Coal</b>          |
| <b>Pennsylvania</b>   | <b>12</b>       | <b>2,105,714</b> | <b>\$ 262</b> | <b>Coal</b>          |
| <b>Ohio</b>   | <b>6</b>        | <b>1,312,532</b> | <b>\$ 50</b>  | <b>Coal</b>          |
| <b>Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics</b>  |                 |                  |               |                      |