



## Flood Control

This Fact Sheet provides a brief overview of a specific topic important to the Master Water Control Manual Review and Update Study process. Information contained in this Fact Sheet is summarized from technical reports and the preliminary Revised Draft Environmental Impact Statement.



### Summary

Farms, residences, and businesses with an approximate worth of \$17.6 billion benefit from flood control measures provided by the Mainstem Reservoir System under the CWCP. Average annual flood control benefits under the CWCP total \$414.8 million over the 100-year study period. Each of the alternatives analyzed in the preliminary RDEIS provides less flood control than the CWCP. Flood control benefits range from a reduction (negative impact) under alternative C18 of about \$2.5 million to a reduction under alternative FW15 of about \$4.8 million. Alternatives providing additional fish and wildlife benefits (FW10, FW15, FW20) provide the least benefits, followed by alternative M66. Each of the alternatives results in about a 1 percent negative change from the CWCP.



### Existing Conditions

Approximately 1.4 million acres of farmland are subject to flooding along the mainstem Missouri River. There are also approximately 30,400 residential and 5,345 nonresidential buildings with an approximate worth of \$17.6 billion located within identified flood zones. The navigation industry has a maximum average annual benefit of \$6.9 million per year and is subject to losses resulting from interrupted service during floods. Stormwater runoff in the Missouri River basin is generally captured by tributaries and flows to the Missouri River. Large storms can produce so much runoff that they increase flow in the Missouri River to flood levels. The Mainstem Reservoir

System and levee system work together to store flood waters and limit damage to property.



### Comparison of the Alternatives

Total average annual flood control benefits (\$Millions) for each alternative were determined by comparing their damages to damages for a scenario simulating no system operation, i.e., operation that passes inflows without storing them. The analysis was conducted for the entire 100-year study period. Flood control benefits were computed for river reaches downstream from five of the six Mainstem Reservoir System dams, with Big Bend Dam being the exception.

The figure presents the total average annual flood control benefits for the eight alternatives. Total flood control benefits provided by the Mainstem Reservoir System under the CWCP are \$415 million over the 100-year study period. Each alternative provides less flood control than the CWCP. For the 100-year period, flood control benefits range from a reduction (negative impact) under alternative C18 of about \$2.5 million (\$412 million total) to a reduction under alternative FW15 of about \$4.8 million (\$410 million total).

Increasing the amount of conservation during drought periods under alternatives C31 and C44 reduces the benefits by \$2.5 million from the CWCP. Adding additional spring/summer releases to benefit fish and wildlife causes the greatest reduction



in flood control benefits. Under alternatives FW10 and FW15, the benefits are reduced by about \$5 million each for the 100-year period of record. This alternative has a net reduction of about \$4 million over the 100-year period relative to the benefits for the CWCP. Adding a St. Louis flow target under M66 reduces flood control benefits about the same as they are reduced under alternative FW20. Each of the alternatives results in about a 1 percent negative change from the CWCP.

In response to public concerns to increase flood control, the Corps examined changing the size of the carryover multiple use pool in 3 of 64 alternatives evaluated. This zone provides some

increased flood control, but has mixed results in other areas. For this reason, an alternative examining increased flood control is not evaluated in detail in the preliminary RDEIS. Alternative FC-2 was, however, included in the flood control study analysis at the request of individuals along the Lower River who were adversely affected by Mainstem Reservoir System releases during the high runoff years of 1993, 1995, 1996, and 1997. FC-2 is the same as the CWCP except that it has an extra 2 million acre-feet of storage set aside for flood storage. In general, alternative FC-2 reduces flood control benefits slightly from the CWCP, by less than \$1 million for the 100-year study period.

Total average annual flood control benefits

