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Estimated Benefits from Restoration of IBWC Rio Grande Flood-Control Projects

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The International Boundary and Water Commission (IBWC) is responsible for maintaining a series of flood-control projects beginning in New Mexico and extending along the Rio Grande's international border dividing the United States and Mexico. A review by the USIBWC indicates that, over time, the flood-control capability of the levees has been compromised. Recent flood events along the international border, resulting in significant economic damages and loss of human life, emphasized the need for a timely assessment of impacts of potential flood-control failure. Given a short project time line mandated by IBWC and the large geographic extent of the river and floodway-levee system (stretching from Caballo Reservoir in New Mexico to the Rio Grande's mouth, near Brownsville, TX.), innovative methods were developed to conduct a rapid and preliminary economic assessment of the flood-control infrastructure.

Millions populate the cities and towns along these economic reaches of the Rio Grande where extensive housing, commerce, industry, tourism, and irrigated agricultural production exist. Areas susceptible to flooding, along with land-use, were identified and quantified through high-resolution map imagery. Estimates of representative residential,

commercial, and industrial property values and agricultural production values were developed from property assessment records, economic development councils, crop enterprise budgets and cropping patterns, census data, previous U.S. Army Corps of Engineers' flooding studies, etc. Gross economic values of flood-control benefits for a sample of each of the land-use types were determined and extrapolated to similar land-use areas in the flood zone. This analytical method provides a rapid assessment of potential flood-control benefits for a single event for each of the IBWC designated Flood control project areas.

An aggregate estimate arrived at by summing the potential benefits across all project areas assumes avoidance of, or protection against, a simultaneous breach in all areas. Baseline economic benefits for agriculture and developed property along the Rio Grande project areas are estimated at \$322.9 million in flood-control protection benefits. By including preliminary estimates of \$183.0 million in other benefits (i.e., emergency, roads, utilities, and vehicles), the total flood control protection benefits provided by the IBWC projects to the United States increase to \$506.0 million.