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# Flow Table Model of Cook Inlet, Alaska

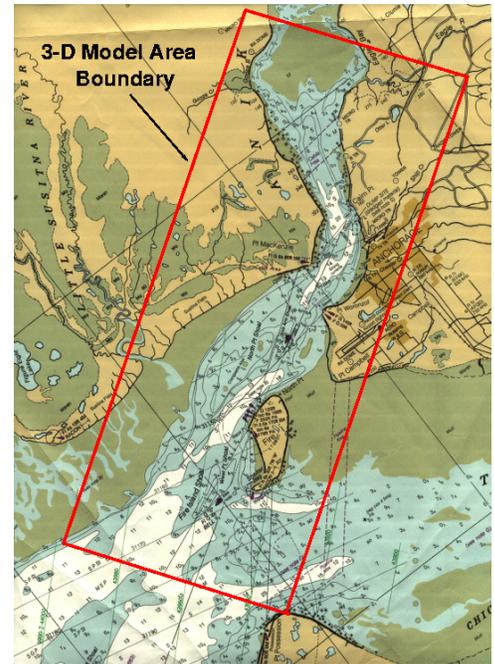
**Description** Shoaling at Anchorage Harbor during the summer months has required annual dredging that averages between 200,000 and 400,000 yd<sup>3</sup> per year with occasional larger deposition quantities between 800,000 and 1,000,000 yd<sup>3</sup>. The tidal flow regime is characterized by a large tidal range and significant flow separation and turbulence at major headlands.

**Issue** The U.S. Army Engineer District, Alaska, sponsored flow table studies to determine if the turbulent flow regime could be correctly modeled using a large, distorted-scale physical model of Cook Inlet. The study also provided initial screening of the hydrodynamic flow regime in upper Cook Inlet in the vicinity of the Port of Anchorage.

**Benefits** The flow table models helped to clarify the flow regime, and the flow visualization techniques indicated particular findings which had not been hypothesized prior to the flow table tests. Benefits from the study far outweighed the costs because the overall study then became focused on root causes of the shoaling problem and appropriated engineering methodologies that could be pursued.

**Sponsors** U.S. Army Engineer District, Alaska.

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**Three-dimensional model area of  
Cook Inlet, Alaska**