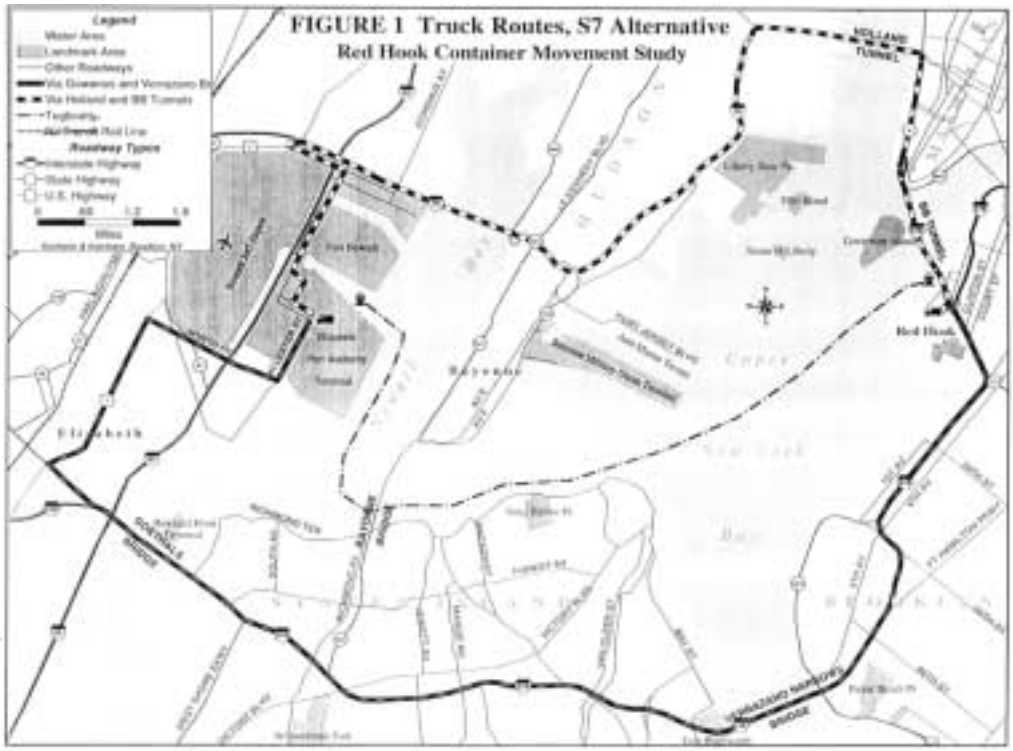
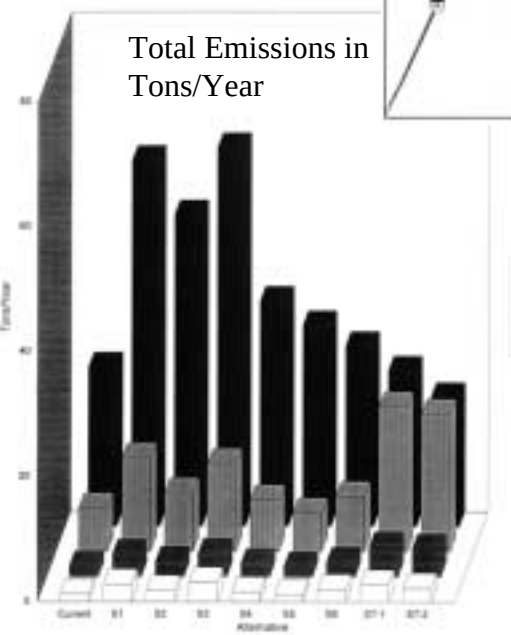


Total Emissions in Tons/Year



Emission Estimates for Freight Alternatives

In response to New York City's objective to optimize operations at the Brooklyn Red Hook container port, the PANY&NJ undertook a study of various water transport alternatives with two trucking alternatives for moving containers from Red Hook to Port Elizabeth in New Jersey. Konheim & Ketcham used its GIS to identify and map various routes via water and the region's road system, for moving containers to New Jersey. Each route was characterized both graphically and in tabular form using information derived from the GIS analysis. K&K then evaluated each alternative, seven water borne and two truck, for regional air pollution impacts. This required, in particular, characterizing the emissions for various transport systems, both on shore trucks for lifting and moving containers, as well as four different marine power systems. Funded by the Congestion Mitigation and Air Quality program, the study was cited by U.S.DOT as one its top ten successes.