



4.2.2 Industrial Wastewater System

The IWS collects and treats industrial wastewater,¹² the IWS serves as a spill-control BMP. The IWS was initially constructed in 1963 to collect runoff from terminal aprons, taxiways, hangars, portions of the terminal roof top,¹³ the parking garage, the toll plaza, aircraft and vehicle maintenance areas, and some parking lots in the air cargo area. Runoff from these areas may be contaminated by accidental fuel spills, de-icing chemicals, and washwater from cleaning of aircraft and ground support vehicles. A comprehensive engineering evaluation of the IWS system was conducted in 1995 (Kennedy/Jenks 1995) and a program for upgrading the system is ongoing. The original IWS system has been gradually expanded over the years to include larger areas of terminal apron plus newly developed areas subject to industrial activities. Many parts of the current IWS system originally belonged to the SDS, but were later connected to the IWS.

Runoff from the IWS catchment areas is collected by the IWS conveyance system. The IWS is divided into two primary drainage areas: the air cargo/runway system and the terminal system. Runoff from these areas is conveyed to the IWTP via separate pipeline routes. With upcoming planned improvements, the IWS conveyance system will be sized to handle approximately the 25-year design storm. Because the IWS does not discharge to the streams, it is not included in the hydrologic modeling analysis for the SMP. However, five pump stations, which normally drain to the IWS, overflow to the SDS under high flow conditions (see Section 4.2.3 below). These overflows are included in the hydrologic model of the SDS and receiving streams.

Three lagoons (Lagoons 1, 2, and 3) in the southwest corner of STIA provide storage for the industrial wastewater prior to treatment in the IWTP. Treated discharge flows to an outfall pipeline that joins the Midway Wastewater Treatment Plant effluent pipe for discharge into Puget Sound via a marine outfall. The discharge is authorized by the Port's NPDES Permit. IWS treatment performance and the Port's determination of all known available and reasonable treatment (AKART) for the IWS are discussed in Sections 4.5.3 and 7.5, respectively.

4.2.2.1 IWS Storage Capacity

The 2006 configuration of the IWS (land use, lagoon storage capacity, treatment rate, and outfall discharge capacity) is summarized in Table 4-2. A continuous simulation of the IWS was performed using KCRTS (King County Regional Time Series) to demonstrate that overflows will

¹² As defined in STIA's NPDES Permit WA-002465-1, "Industrial wastewater is water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater, non-contact cooling water, or stormwater associated with industrial activity. Industrial wastewater may result from any process or activity of industry, manufacturer, trade, or business, and includes, but is not limited to: water used for industrial processes such as pipe integrity pressure testing and vehicle and aircraft wash water; stormwater contaminated with fuel, oil, fire foam, cleaning agents, and aircraft deicing/anti-icing agents; contaminated construction dewatering waters; excess water from groundwater well construction and monitoring; and leachate from solid waste facilities. Industrial wastewater does not include stormwater runoff that contains deicing/anti-icing agents that shear or drip from aircraft in the stormwater system."

¹³ Although the intent of the IWS is to treat areas subject to industrial pollution, most of the IWS was constructed by diverting existing drainage areas. In some areas that were diverted to the IWS, it was generally not practicable to separate non-industrial drainage areas from industrial drainage areas. The Port undertakes an ongoing effort to remove non-industrial drainage areas from the IWS, where such diversions become practicable.