

Appendix E: Summary of Cost Data

National Primary Drinking Water Regulations: Drinking Water Regulations for Aircraft Public Water Systems; Proposed Rule

A survey of airline members of the Air Transport Association of America, Inc. was conducted to determine costs associated with managing and implementing the proposed drinking water regulations for aircraft public water systems. The survey was designed to determine costs associated with various elements of the Proposed Rule. These elements included rule reporting and management, routine sampling costs, routine disinfection costs, and non-routine disinfection costs. Responses were received from six carriers. The data were de-identified and then summarized in the attached tables. Pertinent points are discussed below.

Rule Reporting and Management. Annual cost ranged from \$350,000 to over \$900,000 per year. The majority of the cost is associated with project management and recurring reporting costs which comprise between 25 and 50% of the rule reporting and management costs. One carrier noted that cost to modify their currently approved AOC monitoring and disinfection program to comply with quarterly sampling requirements would incur an additional administrative cost of \$325,000. In addition, six new disinfection stations would need to be established and would require a minimum of three new hangars at an additional cost of \$1.95 million per year using current lease rates.

Routine Sampling Cost. Routine sampling cost ranged from \$531 to \$1,102 with an average and median cost of \$951 and \$1,037, respectively, per sampling event. These costs include cost of laboratory analyses, sampling supplies, shipping cost, and labor costs. Note that labor costs included estimates of time required for security clearance (if contractors were utilized) as well as costs associated with waiting for a delayed aircraft. Using EPA's estimate of 26,593 routine sampling events and the median cost per sampling event, a total cost of over \$27.5 million is derived.

Routine Disinfection Cost. There was a large range in disinfection costs due to the method of disinfection as well as whether the operation was outsourced. The average and median disinfection costs were estimated at \$550 and \$643 per event. Table V-3 of the Preamble to the Proposed Rule estimates a total of 20,516 disinfection events resulting in a total cost of \$13.2 million. Note that these costs do not include costs for hangar lease space. One carrier indicated a need to increase hangar capacity in order to increase disinfection frequency. Due to the need to have access to a sanitary discharge point during disinfection as well as the inability to discharge rinses or system flushes to the pavement under freezing conditions, additional hangar space is likely to be required resulting in increased disinfection costs.

Non-Routine Disinfection Cost. Three carriers provided estimates of additional costs associated with re-routing and disinfecting the aircraft. These additional costs ranged from a low of \$5,600 for fuel/crew and out-of-service aircraft cost to over

\$300,000 for taking an aircraft out of service for two days. Note that although costs of non-routine sampling is not provided, non-routine aircraft sampling would incur similar costs associated with aircraft re-routing, crew and fuel costs and out-of-service aircraft cost. Median costs for a non-routine disinfection were estimated at \$6,243. A cost of \$7.3 million was derived for non-routine disinfection cost based on 1,175 corrective disinfection and flushes (Table V-3 of the Preamble to the Proposed Rule).

Summary of Cost Associated with National Primary Drinking Water Regulations: Drinking Water Regulations for Aircraft Public Water Systems; Proposed Rule

	Carrier						Min	Average	Max	Median	Estimated Aggregate Cost ²
	A	B	C	D	E	F					
Rule Reporting and Management	\$924,723	\$453,320	\$520,870	\$382,235	\$466,500	\$350,144	\$350,144	\$516,299	\$924,723	\$459,910	
Routine Sampling Cost	\$531	\$1,035	\$1,102	n/a	\$1,050	\$1,037	\$531	\$951	\$1,102	\$1,037	\$27,571,356
Routine Disinfection Cost	\$643	\$802	\$383	n/a	\$822	\$100	\$100	\$550	\$822	\$643	\$13,191,788
Non-Routine Disinfection Cost	\$6,243	\$802	\$41,938	n/a	\$755	n/a	\$755	\$12,435	\$41,938	\$6,243 ¹	\$7,335,525
Disinfection Cost	\$643	\$802	\$438	n/a	\$755	n/a					
Fuel / Crew Cost	\$5,000	n/a	\$5,500	n/a	n/a	n/a					
Out of Service A/C Cost	\$600	n/a	\$36,000	n/a	>\$300,000	n/a					

n/a = cost not provided by carrier.

Other Cost. In addition to cost to implement the Proposed Rule as set forth in this cost summary, certain carriers will be required to make significant modifications to existing monitoring/disinfection programs at a cost as high as \$325,000 for administrative changes. In addition, one carrier estimated \$1,950,150 cost increase in hangar lease fees per year based on increasing disinfection frequency to quarterly.

1) Median cost for non-routine disinfection is \$6,243. Carrier E costs are estimated at >\$300,755 when out of service A/C costs are considered.

2) Median value of carrier data is used for this calculation. Number of routine samples is from Table V-3 of the Preamble to the Proposed Rule (26,593). Number of routine and non-routine disinfections are based on Table V-3 of the Preamble to the Proposed Rule (20,516 and 1,175 respectively).

**AIR TRANSPORT ASSOCIATION OF AMERICA -
CONCEPTUAL ILLUSTRATION OF FLEXIBLE REGIME FOR
RESPONSE TO POSITIVE TC SAMPLE RESULTS**

Rules Applicable Throughout Process

- 1) Air carrier retains option of implementing more aggressive response than required at any time
- 2) Once aircraft is disinfected, it can be flown with water restored without restrictions
- 3) A negative follow-up sample ends the process (no further response action required)

