

CHAPTER 20. WATER QUALITY

1. INTRODUCTION AND DEFINITIONS.

a. **General.** Many of the nation's airports are located near waterways. This is because years ago when many airports were built, the cheapest, flattest, and most desirable lands suitable for airports were located near waterways. As a consequence, today's airport activities may cause water quality impacts due to their proximity to waterways. In particular, construction activities or seasonal airport anti-icing/deicing activities are major concerns.

Construction often causes sediment-laden runoff to enter waterways. Biological and chemical breakdown of deicing chemicals in airport runoff can cause severe dissolved oxygen demands on receiving waters. Operations or maintenance are other activities that may affect water quality. Airport-related water quality impacts can occur from both point and non-point sources at airports. If not properly controlled, the resultant water quality impacts may adversely affect animal, plant, or human populations. Therefore, FAA must evaluate project-related discharges, especially those having the potential to affect navigable waterways, municipal drinking water supplies, important sole-source aquifers, or protected groundwater supplies.

b. **Point sources.** These are stormwater or other types of discharges from wastewater treatment plants, sanitary sewer systems, collection basins, or other water collection devices that flow through a conveyance (pipe) and discharge to a waterway. The states and the U.S. Environmental Protection Agency (EPA) issue National Pollutant Discharge Elimination System (NPDES) permits authorizing point source discharges into navigable waters of the United States under Section 402 of the Clean Water Act (CWA) (33 USC Section 1342).

c. **Non-point sources.** These include stormwater runoff from runways, taxiways, aprons, outdoor storage areas, or construction areas that do not flow through conveyance systems. Federal permits are not necessary for non-point source discharges.

d. **Runoff pollutants.** Point source and non-point source runoff may contain pollutants such as metals, oils, greases, hazardous materials, solids, hydrocarbons, pesticides, and herbicides. During dry weather, pollutants can accumulate on impermeable surfaces, but during storms they are washed into creeks, streams, lakes, or other waters causing potential water quality impacts.

2. APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS.

a. **General.** The principal statutory framework for considering water quality in Federal decisions is contained in the CWA. The following chart provides information on this and other important laws that protect surface water, groundwater, and aquatic systems:

| APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS | SUMMARY DESCRIPTION | OVERSIGHT AGENCY |
|---|--|--|
| Federal Water Pollution Control Act, as amended by the Clean Water Floodplains and Floodways Act of 1977 (CWA), 33 USC Chapter 26 | Chapter 26 provides Congress' mandate for developing comprehensive solutions to prevent, reduce, or remove pollution in waters of the United States. Section 401 of the Clean Water Act, 33 USC Section 1341, addresses state issuance of water quality certificates. Section 402 of the Clean Water Act, 33 USC Section 1342, addresses issuance of NDPEs permits, while Section 404 of the Act, 33 USC Section 1344, focuses on dredge and fill permits in navigable waterways including wetlands. | EPA or State or tribal water quality agencies |
| CWA, Section 311, as amended by the Oil Pollution Act of 1990, 33 USC Section 1252 <i>et seq.</i> | Requires owners or operators of above ground facilities storing oil or oil-based products to prepare spill response plans. | EPA |
| Safe Drinking Water Act, as amended (SDWA), 42 USC Section 300.f, <i>et seq.</i> , also known as the Public Health Service Act | Prohibits Federal agencies from funding actions that would contaminate a sole source aquifer or its recharge area. | EPA |
| 40 CFR Parts 142 and 149 | Part 142 provides regulations addressing national primary drinking water supplies. Part 149 provides regulations addressing sole source aquifers. | EPA |
| Fish and Wildlife Coordination Act of 1980, 16 USC Section 661, <i>et seq.</i> | Requires Federal agencies to consult with the Fish and Wildlife Service (FWS) for any action that would alter (impound, divert, drain, or control) a stream or other body of water. | FWS |

3. APPLICABILITY TO AIRPORT DEVELOPMENT PROJECTS. Building airport facilities may temporarily or permanently affect surface waters, groundwater, or drinking water supplies. As a result, when an airport sponsor requests FAA action to support an airport development project, FAA must evaluate the proposed project's potential water quality impacts. Examples of airside airfield development projects that may cause water quality impacts include building or expanding terminals or hangars, building new or extended runways and taxiways, and installing navigational aids (NAVAIDS). Landside development that may alter water quality includes building or moving airport access roads, remote parking facilities, and rental car lots.

4. PERMITS, CERTIFICATIONS, AND APPROVALS.

a. General. There are various water quality permits, certifications, and approvals that may be required to build and operate airport projects. The responsible FAA official must ensure the water quality chapter of the environmental document discloses any known problems in obtaining them.

b. Water quality certificates (WQC). Airport sponsors needing the authorizations or permits noted in subsections 4.b(1) and (2) below must obtain a water quality certificate (WQC). The responsible FAA official must ensure the environmental document prepared for any action involving those authorizations or permits contains information about the status of, and any known problems in obtaining, the WQC. That information is an indicator of potential concerns about WQC issuance that may require further airport sponsor and/or FAA effort to mitigate adverse water quality effects to obtain the certificate. A WQC is required for:

(1) An airport sponsor seeking an NPDES permit from the EPA or a state under Section 402 of the CWA; and

(2) An airport sponsor seeking a permit under Section 404 of the CWA from the U.S. Army Corps of Engineers (Corps) or a state authorized to issue this permit for filling or dredging navigable waters, including jurisdictional wetlands (See Chapter 21 of this Desk Reference.

c. NPDES permits. The environmental document prepared for any proposed airport action having a point source discharge to a navigable waterway or that would disturb at least 1 acre should include information on the status of the NPDES permit needed for that action, as described above in section 4.a of this chapter. It should also include any comments the permit-issuing agency provides. A copy of the NPDES permit is not needed for FAA's approval of an airport layout plan or grant, but the environmental document prepared for the action should discuss any difficulties the issuing agency may have noted about permit issuance. An appendix to the environmental document should contain a copy of the letter from the permit agency or a copy of the permit, if the permit is issued before the document is completed.

Note: 40 CFR Sections 122 through 124 provide more details on NPDES stormwater permits. See Chapter 6, of this Desk Reference (Construction Impacts) for a discussion on stormwater permits and construction activity.

d. Agency opinions on safe drinking water supplies. An airport action has the potential to affect a public drinking water supply, a sole source aquifer, or a Comprehensive State Groundwater Protection Program (CSGWPP). To comply with Section 1424(e) of the Safe Drinking Water Act, the approving FAA official may not approve funds for any action if the EPA Administrator determines the action would contaminate a sole source aquifer. As a result, the environmental document should summarize important opinions from EPA and the state, local, or tribal water quality agencies regarding these impacts and cross-reference the appendix containing the correspondence the agencies or tribe provide.

e. Oil response plan. Environmental documents addressing airport actions having above ground facilities to store or handle oil or oil-based products should include information on the status of an oil recovery response plan. See Section 112(a)(2) of the Oil Pollution Act) for more information, if needed.

f. Other information. The environmental document should contain information from agencies having expertise on water quality issues. This includes comments on the adequacy of proposed mitigation measures, best available technologies (BATs), and best management practices (BMPs). The environmental document should summarize important information these letters contain and cross-reference the appendix and pages where the letters discussing the particular information may be found.

Note: BATs and BMPs typically are parts of the NPDES permit process. BATs refer to the best technology available to minimize water quality impacts resulting from point source discharges. Bacterial decomposition of glycol in stormwater runoff is an example of a BAT. BMPs are schedules of activities, maintenance procedures, and management practices implemented to minimize point source discharge impacts. Examples include using good housekeeping procedures, training personnel in the proper use and handling of chemicals, or using high-pressure water to remove paint from an aircraft instead of solvent-based paint removers.

5. PROCEDURES FOR COMPLIANCE WITH STATUTORY, REGULATORY AND OTHER REQUIREMENTS - ENVIRONMENTAL ANALYSIS.

a. Required consultation. Congress has delegated to each state the primary responsibility for protecting and managing water quality within a state's legal boundaries. Early consultation concerning the topics noted below will improve FAA's evaluation of an action's water quality impacts and identify any additional information necessary to make judgments about the significance of impacts. It will also ensure the environmental document addresses agency concerns and avoid delays due to the lack of that information. The environmental document's water quality chapter shall reflect the results of consultation with regulating and permitting agencies and with agencies that must review permit applications, such as the FWS, which may have specific concerns. It should also summarize and appropriately address agency concerns or comments and cross reference pertinent material in the appendix.

(1) Water quality standard concerns. Contact the state agency having the authority to enforce water quality standards and/or issue WQCs.

(2) NPDES permit concerns. When an airport action would involve a point source discharge, a point source stormwater discharge, or disturb at least 1 acre, contact the state agency or EPA regional office responsible for issuing NPDES permits.

(3) Groundwater protection. When an action may affect a sole source aquifer, contact the state, tribal and local government agencies responsible for developing and managing a Comprehensive State Groundwater Protection Program (CSGWPP) and the EPA regional office responsible for reviewing that program.

(4) Aquatic populations or communities. When an action would affect fish, shellfish, or wildlife populations, contact the FWS and the respective state fishery or wildlife agency.

Note: Consult the National Marine Fisheries Service (NMFS) regional office for actions that may affect anadromous fish or marine mammals. Anadromous fish are fish that live in the ocean but spawn in freshwater (e.g., salmon, shad).

6. DETERMINING IMPACTS.

a. General. Determine if building, operating, or maintaining the proposed airport development action would affect project area surface water, groundwater, or drinking water sources. The responsible FAA official should pay particular attention to potential physical (e.g., temperature changes, siltation, and turbidity) and chemical (e.g., changes in oxygen or nitrogen levels, pH, etc.) impacts associated with the proposed action.

b. Potential impacts. Actions, such as aircraft and runway deicing/anti-icing, storage tank operation, or firefighting training activities have the potential to chemically affect the project area's water quality. As needed, describe impacts addressing the following issues:

- (1) violations of conditions or terms contained in an existing WQC or existing NPDES permit;
- (2) adverse effects on the water quality of sensitive aquatic habitats, including but not limited to, wetlands or critical habitats for Federally or state-protected species;
- (3) threats to the integrity of public drinking water supplies; and
- (4) other areas of concern that water quality agencies identify.

7. DETERMINING IMPACT SIGNIFICANCE.

a. General. After completing the analysis discussed in earlier paragraphs, use the findings to determine the proposed action's degree of impact. For most airport actions, significant impacts can be avoided by design considerations, controls during construction, and other mitigation measures. When the environmental document and appropriate consultation demonstrate that water quality standards can be met, no special water quality problem exists, and no difficulty is anticipated in obtaining permits, it may be assumed that there would be no significant impact on water quality. The responsible FAA official should consider the following factors in consultation with agencies having jurisdiction or special expertise on water quality effects.

| ORDER 1050.1E THRESHOLD | FACTORS TO CONSIDER |
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| When an action has the potential to exceed water quality standards, there are water quality problems that cannot be avoided or satisfactorily mitigated, or there would be difficulty in obtaining a permit or authorization, there may be a significant impact. | The responsible FAA official should also consider if a proposed action or a reasonable alternative would adversely affect a public drinking water supply, sole source aquifer, or waters of national significance (e.g., wild and scenic rivers, national refuges, etc.). |

From: Table 7-1, FAA Order 5050.4B.

b. Mitigation. During the environmental review process, Federal, state, tribal, or local agencies having permitting or regulatory authority over water quality issues sometimes provide letters addressing those issues. Those letters include measures recommended to mitigate water quality effects for purposes of NEPA that are not required for the certificate or permit. The environmental document should summarize the most important information in those letters and accurately cross-reference the appendix and pages in that appendix for further information. If the FAA of the sponsor does not adopt any recommended mitigation, the environmental document should clearly explain why. In addition, the environmental document should clearly describe the measures the sponsor will carry out to:

- (1) meet WQC terms or the conditions of any applicable NPDES permits;
- (2) protect public drinking water supplies or comply with applicable CSGWPPs;
- (3) develop oil response plans designed to contain any potential spills of oil or oil-based products associated with the proposed action;
- (4) meet any other substantial water quality concerns that water quality agencies identify; or
- (5) use BMPs or BATs.

Note: 40 CFR Section 112 and 40 CFR Section 112.20(h) present regulations for oil pollution prevention and the contents of a facility response plan, respectively.

8. ENVIRONMENTAL IMPACT STATEMENT CONTENT.

a. General. FAA must prepare an EIS if mitigation will not reduce water quality impacts below the significance impact threshold in paragraph 7 above. In addition to the information discussed above, to the extent possible the EIS should contain the following information.

(1) The results of added, project-specific, water quality studies FAA and Federal, state, or local water quality agencies agree on during EIS scoping or during the EIS process.

(2) A Memorandum of Agreement (MOA) between the Department of Transportation (DOT) and the Department of the Army (Army) contains a provision for elevating disputes concerning dredge and fill permit applications ("Section 404 permit applications") with the Army. Use of this provision typically occurs when an Army District Engineer is considering denial of a Section 404 permit or requiring conditions that would cause substantial, unacceptable conditions to DOT agencies (e.g., habitat attractive to wildlife hazardous to aviation). Therefore, if an airport action involves a Section 404 permit process that requires the responsible FAA official to elevate permit decisions to Army headquarters, contact the Airport Planning and Environmental Division (APP-400). APP-400 will help the responsible FAA official comply with the provisions of the MOA. APP-400 will also provide the follow-up actions that may be needed at the Washington, D.C., headquarters level to resolve differences. The EIS should contain the results of any dispute resolution process.

b. Mitigation. The EIS should identify and describe any mitigation measures that Federal, state, tribal, or local agencies having permitting or regulatory authority over water quality issues recommend for purposes of NEPA in addition to those required as a condition on any water quality permit or license. FAA and the airport sponsor should fully consider the recommended mitigation and balance its benefits against those of the proposed action. The document should explain why the sponsor or FAA has not adopted any mitigation agencies have recommended. If feasible, the EIS should include an estimated schedule for the airport sponsor to undertake accepted mitigation.