

**CHAPTER 6. CONSTRUCTION IMPACTS**

**1. INTRODUCTION.** Airport construction may cause various environmental effects primarily due to dust, aircraft and heavy equipment emissions, storm water runoff containing sediment and/or spilled or leaking petroleum products and noise. In most cases, these effects are subject to Federal, State, or local ordinances or regulations. While the long-term impacts of the proposed action are usually greater than construction impacts, sometimes construction may also cause significant short-term impacts. Descriptions of the many construction impacts associated with airport actions are often covered in the descriptions of other environmental impact categories. Therefore, to avoid repeating information in chapters of an environmental assessment (EA) or environmental impact statement (EIS) that address a specific environmental resource, a document’s construction impacts chapter, if one is prepared, should describe the general types and natures of construction-related impacts and the measures proposed to minimize potential, construction-induced adverse effects.

**2. APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS.**

At the Federal level, construction impacts often concern water and air quality effects and, to a lesser extent, noise. The National Pollutant Discharge Elimination System (NPDES) permitting program contained in 40 Code of Federal Regulations (CFR) Part 122 addresses construction disturbances of 1 acre or more. General Conformity regulations in 40 CFR Part 93, Subpart B, address construction effects in nonattainment or maintenance areas. See Chapters 1 and 20 of this Desk Reference for more information on evaluating project effects on air quality and water quality, respectively. For other resources, analyses done to meet Federal laws, regulations, and guidelines would govern how to assess construction effects on those resources.

APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS	SUMMARY DESCRIPTION	OVERSIGHT AGENCY
40 CFR, Part 122, NPDES	<p>Part 122.26(a)(9) requires an NPDES permit for storm water discharges due to “small construction activity” (<i>i.e.</i>, disturbing 1 acre, but less than 5 acres).</p> <p>Part 122.26(a)(1)(ii) requires an NDPEs permit for storm water discharges due to construction activities disturbing at least 5 acres of land.</p> <p>In both instances, the discharge must be covered under an NPDES industrial storm water permit, unless another individual or general NPDES permit already covers the construction discharge.</p>	U.S. Environmental Protection Agency (EPA) or a state to which EPA has delegated NPDES authority.

<p>Clean Air Act Section 176(c), 49 USC, Section 7401 <i>et. seq.</i>, as amended</p>	<p>Include construction-related air quality emissions when a sponsor proposes an action in a nonattainment or maintenance area.</p>	<p>Federal Aviation Administration (FAA)</p>
<p>The National Environmental Policy Act (NEPA), 42 USC, Sections 4321-4347</p>	<p>NEPA's purposes are:</p> <ul style="list-style-type: none"> <li>• to declare a national policy which will encourage productive and enjoyable harmony between man and his environment;</li> <li>• to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man;</li> <li>• to enrich the understanding of the ecological systems and natural resources important to the Nation; and</li> <li>• to establish a Council on Environmental Quality.</li> </ul>	<p>Council on Environmental Quality (CEQ)</p>

**3. APPLICABILITY TO AIRPORT DEVELOPMENT ACTIONS.**

Building new airport facilities may cause temporary impacts to wildlife and fisheries habitats, water and air quality, ambient noise levels, historic resources, and local traffic patterns. Typical airport actions causing construction impacts include: airside activities (e.g., new or expanded terminal and hangar facilities, new airports or extended runways and taxiways, navigational aids [NAVAIDS], etc.) and landside activities (e.g., new or relocated access roadways and remote parking facilities and rental car lots).

**4. PERMITS, CERTIFICATIONS, AND APPROVALS.**

**a. General.** Construction equipment can increase off-site, ambient noise levels. In addition, exhaust from equipment, dust, or burning debris can degrade local air quality. The air quality analyses undertaken to comply with the disclosure requirements of the National Environmental Policy Act and substantive requirements of the Clean Air Act General Conformity regulations *must* include air quality emissions the project's construction activities would cause (refer to Chapter 1, Air Quality, for more information). Off-site local traffic patterns could be disrupted and cause air quality impacts as well. Erosion may degrade water quality. As a result, FAA should consider the concerns of agencies responsible for protecting local air or water quality or maintaining traffic flow. Environmental documents prepared for airport actions involving construction should

contain information on the status of the airport sponsor's efforts in getting any necessary permits.

**b. NPDES storm water permit for construction.** EPA notes excavating 1 acre or more often requires the operation of equipment (i.e., bulldozers, cranes, dump trucks, etc.) disturbing or removing trees or ground cover or filling or leveling land. According to EPA, these disturbances cause sediment runoff rates typically 10 to 20 times those of agricultural areas and 1,000 to 2,000 times the rates of forested areas.<sup>1</sup> As a result, substantial adverse water quality impacts could occur when airport construction disturbs 1 acre or more. The storm water regulation (found at 40 CFR Section 122.26) has two provisions regarding construction activity. One provision addresses a construction activity that would disturb 5 or more acres. Another provision addresses a "small construction activity," that is, a project disturbing 1 acre or more but less than 5 acres.

(1) In either instance, an airport sponsor must obtain an NPDES storm water discharge permit as outlined in 40 CFR Section 122.26(c).

(2) For a "small construction activity," compliance with NPDES requirements is not necessary if:

(a) the rainfall erosivity factor<sup>2</sup> is less than 5 during the period of construction activity; or

(b) stormwater controls are not needed based on an EPA approved "total maximum daily load" or an equivalent analysis that determines that such allocations are not needed to protect water quality. See 40 CFR Sections 122.26(b)(15)(i)(A) and (B).

(3) FAA does not require an airport sponsor to have an NPDES permit when it approves a project, when it accepts a sponsor's EA, or when it completes an EIS. However, if the sponsor receives the permit before the EA or EIS is finished, the EA or EIS should include a copy of the permit. In all cases, EAs and EISs should explain what the airport sponsor has done to obtain the permit and the status of the sponsor's NPDES storm water permit application. Provide letters from the permitting agency that indicate if there are any pending issues regarding permitting.

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<sup>1</sup> EPA Stormwater Phase 2 Final Rule, Construction Site Runoff Control, Minimum Control Measure, EPA Fact Sheet 2.6, January 2000; <http://rvkog.org/pdf/rainstorming/subsection1.1.5.pdf>

<sup>2</sup> Erosivity factor ("R" in the Revised Universal Soil Loss Equation): The rainfall erosivity factor is determined per Chapter 2 of *Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, pages 21–64, dated January 1997.

c. **Air quality issues.** Construction activity emissions due to the proposed or preferred alternative must be included as part of any analysis when calculating “direct emissions.

d. **Agency letters.** To determine the information needs of agencies concerned with construction-related impacts, contact the agencies listed in each of the chapters addressing those resources the proposed construction activities would affect. For example, when construction could degrade nearby water quality, consult with the resource agencies listed in Chapter 20, Water Quality.

## 5. REGULATORY COMPLIANCE PROCEDURES – ENVIRONMENTAL ANALYSIS.

Environmental documents should refer the reader to other chapters in an EA or EIS that address air quality or water quality in detail. The document’s respective construction impact section should include proof that needed consultation has occurred. In particular, the section on construction impacts should include consultation with EPA or the appropriate State agency (when EPA has an approved NPDES program).

## 6. DETERMINING IMPACTS.

a. **General.** To avoid repeating discussions and to reduce the bulk of an EA or EIS, the construction section of those documents should refer the reader to the chapters addressing the resources construction would affect (e.g., chapters on noise, air quality, water quality, biotic communities, etc.). The construction chapter, if one is prepared, should present only a general description of impacts that the EA or EIS does not discuss elsewhere. Generally, this would be a summary of specific construction-related impacts, and their expected durations and consequences (i.e., sedimentation increases would/would not smother fish eggs).

b. **Mitigation.** This construction chapter of the environmental document should discuss the measures the sponsor will take to minimize the impact of construction (e.g., proper muffling of equipment noise, dust control, detention basins, detours, etc.). At a minimum, the environmental document should discuss the specifications described in Item 156 of Advisory Circular (AC) 150/5370-10A, *Standards for Specifying Construction of Airports*.

## 7. DETERMINING IMPACT SIGNIFICANCE.

a. **General.** Significant construction impacts would most likely occur when unusual circumstances exist (e.g., excavating ecologically sensitive areas, construction-induced traffic congestion that would substantially degrade air quality). After completing the above analyses, use the findings and the significance threshold for the resource(s) construction would affect to determine the degree of construction impacts. A significant impact would

occur when the severity of construction impacts cannot be mitigated below FAA's threshold levels for the affected resource.

**b. Mitigation.** During the environmental review process, agencies having jurisdiction or special expertise about affected resources normally provide letters addressing impacts on those resources. Often, those letters include recommended measures to mitigate those effects. An appendix to the environmental document should include copies of those letters. The environmental document should summarize the most important information in those letters and accurately cross-reference the appendix and pages in the appendix for further information.

(1) If the FAA or the sponsor does not adopt any recommended mitigation, the environmental document should clearly explain why the recommendation was not adopted. If feasible, provide an estimated schedule for undertaking accepted construction mitigation.

(2) All on-site construction activities must be conducted in accordance with FAA AC 150/5370-10, *Standards for Specifying Construction of Airports*, and by using best management practices (BMPs). These measures must be considered throughout the preparation of plans and specifications for each construction project. The construction contractor should meet the adopted plans and specifications throughout the project construction period. Implementing these measures will prevent or minimize most potential construction-related impacts to the environment and surrounding community. FAA AC 150/5370-10, Item P-156, provides further information on potential mitigation measures.

## 8. ENVIRONMENTAL IMPACT STATEMENT CONTENT.

**a. General.** Sometimes, construction impacts alone due to airport construction may cause a significant impact identified and the impacts cannot be avoided or mitigated below the applicable significance threshold(s) for the affected resource. In those cases, FAA must prepare an EIS addressing the impacts. Where appropriate the EIS should contain a discussion of the concerns resource agencies identified and the reasons why impacts cannot be mitigated below an applicable threshold (e.g., where the Fish and Wildlife Service has prepared a Jeopardy Biological Opinion).

**b. Mitigation.** The EIS should describe proposed mitigation when expertise agencies provide that information. FAA should fully consider the mitigation and balance its benefits against those of the proposed action. If feasible, the EIS should also provide an estimated schedule for undertaking accepted mitigation and explain why the sponsor or FAA does not adopt any mitigation a resource agency recommends.