Section 5.0 Cumulative Impacts

5.1. Introduction

The Council on Environmental Quality (CEQ) regulations (40 CFR §§ 1500 -1508) define the impacts and effects that must be addressed and considered by federal agencies in satisfying the requirements of the National Environmental Policy Act (NEPA) process. There are three types or categories of effect (or impact) that must be considered: direct, indirect and cumulative.

Direct impacts are caused by the action and occur at the same time and place. Direct impacts have a broad focus and are based on the project footprint.

Indirect impacts are caused by the action and are realized later in time or are farther removed in distance but are in the chain of cause-and-effect relationship. Indirect impacts may include land development occurring after a project is constructed.

Cumulative impacts are the summation of impacts on a resource resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes those actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The geographic focus of cumulative impacts is narrow and based only on resources where incremental impact exists.

5.2. Project Related Direct Impacts

The first step in performing a cumulative impact analysis is to identify which resources to consider in the analysis. If a project will not cause a direct or indirect impact on a resource, it will not contribute to a cumulative impact on the resource. The analysis will focus on the resources that could be substantially affected by the project in combination with other past, present and reasonably foreseeable actions. Direct impacts associated with the Preferred Alternative 23 are all ecological in nature and are summarized as follows:

- Impact on wetlands – 3.918 acres of low quality wetland
- Impact on jurisdictional ditches – 1,937 linear feet of drainage ditch
- Impacts on tree impacts associated with obstruction removals
- Impacts on property within the Runway Protection Zone
- Impacts on Indiana Bat and Northern Long-Eared Bat roosting trees

The context of the proposed action's impacts is localized to the existing Cuyahoga County Airport (Airport or CGF) property. The wetlands, streams, ditches, floodplain and soils of the project area have all been severely modified since the original construction of the Airport. The wetlands are all of low quality, the streams have been modified, channelized, and in some places enclosed in

culverts and the ditches were constructed and maintained to drain the runway and taxiways. Even though the Airport is situated on what was once considered prime farmland soil, it has not been actively farmed in decades and no new, active farmland will be lost as a result of the project. The severity of the proposed action's impacts on the environment is expected to be minimal.

5.3. Resource Study Area

Cumulative effects are considered within geographic and temporal boundaries. Project related impacts, as identified in the impact section of the Environmental Assessment (EA), are all ecological in nature consisting primarily of wetlands, ditches and water quality. The study area for the cumulative impact evaluation is focused on the drainage basin (Euclid Creek Watershed) where any direct and indirect impact would occur.

The Euclid Creek watershed is a tributary to Lake Erie and drains an area of 23 square miles from 12 communities in Cuyahoga and Lake Counties, including the entire project area. The Euclid Creek Watershed is home to an estimated 60,000 people and has subsequently been impacted by urbanization due to the effects of urban runoff. Overall, the existing environmental conditions and land use patterns in the project area have been, and are expected to continue to be shaped by commercial and residential development.

Euclid Creek Watershed: The current "health" or status of a resource must be understood before the effects of the proposed action can be assessed. The water quality of Euclid Creek is not in attainment with Ohio EPA's water quality standards of a fishable, swimmable water body. Water quality in Euclid Creek and its tributaries is impaired in terms of its ability to sustain aquatic life, primarily due to overload of nutrients and organic matter (such as lawn fertilizers washing off the surface); siltation caused by high velocity flows causing and carrying eroded soils; and changes in habitat, especially along riparian zones (dams), that would otherwise mitigate such problems. Major issues impacting Euclid Creek are:

- Nutrients, such as phosphorous, caused by polluted urban runoff and land management practices;
- Low fish populations due to loss of habitat and barriers;
- Flash flows that increase erosion of stream banks; and,
- Presence of remaining illicit discharges from private septic systems and public combined sewer overflows.

Historically, Euclid Creek and its tributaries are located within areas of industrial, commercial and residential development where dams (nine in total), culverts and concrete streambeds have impaired the health and diversity of aquatic life. A large percentage of the drainage area consists of structures, roads, parking lots and other impervious surfaces resulting in increased storm water volumes. Early development attempted to direct storm water runoff as quickly as possible to the Creek and its tributaries to prevent localized flooding. This only added to stream bank erosion, downstream flooding and overall stream degradation.

Potential Project Related Indirect Impacts: Indirect impacts are often related to changes in land use. While land use changes are the direct result of local planning decisions, there may be indirect impacts associated with projects that affect the rate and pattern of development. In general, projects in a new location or projects in which there is a dramatic change in travel patterns are more likely to contribute to indirect impacts than projects in areas which are already developed, or involve a smaller increase in development.

The Airport is a well-established facility having been owned and operated by Cuyahoga County since 1946. The proposed improvements to the runway are unlikely to spur landside development as would a new airport at a new location. The intended purpose of the project is to enhance safety, not to promote economic development or increase operations, however, the proposed improvements may facilitate some natural growth at the Airport.

A facility requirements analysis in the 2010 Master Plan Update identified a need for up to 34,000 square feet of additional corporate hangar space. The Airport Master Plan Update proposes an area for new hangers extending further along the flight line to the northeast. It is expected that general aviation-related development may consist of new and improved availability of T-hangers and new corporate hanger space.

In addition to aviation-related development, two areas on Airport property and bordering on Richmond Road are designated for specific uses. One is the site at the southeast corner of Richmond Road and Curtiss Wright Parkway that is reserved for development of a mutual aid fire/rescue facility. North of this site along Curtis Wright Parkway, is an area reserved for expansion of landside commercial development. For the foreseeable future, development is located on Airport property and has been planned for eventual Airport development since the original Airport Layout Plan (ALP) developed in the early 1970's.

The Airport does not currently meet the most current Federal Aviation Administration (FAA) design standards for the Runway Safety Areas (RSAs). RSAs are buffer areas around the runway that need to be kept clear for safety in case of an aircraft undershoot or overshoot of the runway. The FAA requires that RSAs be brought into compliance to the extent practicable as part any runway improvement project. The project being evaluated in this EA is first and foremost a safety enhancement project to rehabilitate the runway and improve the safety areas to the extent practicable. The project is not intended to expand existing or future operations and growth of the Airport. Any future indirect impacts as a result of Airport improvements are not expected to have an adverse cumulative effect on wetlands, streams, water quality, floodplains, or agricultural lands that cannot be appropriately mitigated. However, environmental resources (i.e. wetlands and water resources) are present on and in the vicinity of the Airport and future development projects will be required to avoid, minimize and mitigate any potential environmental impacts and will be subject to all applicable state and federal permitting requirements.

5.4. Other Reasonably Foreseeable Actions

According to the Airport Master Plan Update and future ALP, the airport's intermediate-range projects (five years) include construction of two 10-bay T-hangars, design and construction of an

apron for based aircraft and demolition of County T-hangars. The Airport's long range projects (ten years) include design and construction of corporate hangars, expansion of a corporate apron and the design and construction of an aircraft run-up enclosure.

Web pages from the local communities including Richmond Heights, Highland Heights, South Euclid, Lyndhurst and Willoughby Hills were reviewed to identify other current or proposed projects in the study area that could contribute to a cumulative impact. Other sources including: Cuyahoga County Department of Development, Cuyahoga County Engineer's Office, Lake County Engineer's Office, the Northeast Ohio Areawide Coordinating Agency (NOACA) Transportation Improvement Program (TIP) and the Ohio Transportation Review Advisory Council list of Major New Projects 2008-2013 were also reviewed to identify other current or proposed projects in the study area that could contribute to a cumulative impact. Proposed future projects in the study area include:

- A 3.2 million dollar project to repair Highland Road from Euclid Avenue to Richmond Road (1.1 miles southwest of the Airport) in the summer of 2014.
- Renewed residential construction activity at Trebisky Woods subdivision (1.4 miles southwest of the Airport) and Highland Woods (1.9 miles southwest of the Airport) subdivision.
- Continued residential development at Legends at Aberdeen(1.4 miles east of Airport)
- A 4 million dollar roadway improvements to Minor Road (1.5 miles east of Airport)
- Jackson Street resurfacing Project in Lake county (11 miles NE of Airport)
- Oakwood Commons in South Euclid (4 miles southwest of Airport) is a new, large retail development center constructed on the site of a former golf course.

The study area is highly developed with residential and commercial land use. There are no new roadway projects planned. Most major projects are confined to existing arterial roadway repaving and rehabilitation. Projects are not expected to result in new impact on wetlands and streams. With the improving economy, there are several ongoing and new residential developments adding new residential homes and other impervious surfaces to the watershed. However, the new developments have requirements for storm water retention/detention basins on site to mitigate the flow of additional storm water runoff. According to local development reports, most new commercial/retail development is taking place by remodeling existing vacant space.

One new retail development site is the 40-acre Oakwood Commons, anchored by Wal-Mart Supercenter located on the former site of Oakwood Country Club. The construction of a large retail center on former green space would be expected to have a large impact on the watershed. However, the new facility is being constructed with sustainable design elements. Major elements include several acres of permeable pavement, restoration of the existing on-site stream, and six acres of created storm water wetlands/water quality ponds. The wetlands are designed to store 50% more volume than is necessary for a 100-year storm. The developer has also donated 21 acres of land to the City of South Euclid for a passive recreational park.

This is not the only improvement to the Euclid Creek watershed that has taken place in the last 10 years. The overall health of the watershed has been improving in recent years. The Euclid Creek Watershed Council and Friends of Euclid Creek have implemented the Watershed Action Plan for the Euclid Creek, established in 2005, to promote inter-jurisdictional cooperation in addressing watershed issues. Highlights of recent activity include:

- Richmond Heights awarded $187,000 for Rain Garden/Bioretention/Porous Pavement parking area;
- South Euclid awarded $166,000 OEPA grant for City Hall porous parking lot project;
- Highland Heights Bishop Road conservation site with 12 acres of high quality wetlands and stream;
- Acacia Country Club Land Preservation of 155 acre parcel at headwaters of West Branch of Euclid Creek;
- East Branch Dam Removal and Stream Restoration Project
- Mayfair Lake Dam Removal Project

5.5. Cumulative Impacts

The trend of the local community's' actions in the Euclid Creek watershed has changed from degradation and loss of ecological resources towards preservation of existing ecological resources, improving the health of existing ecological resources, and requiring mitigation where resources are impacted by new development. Recent and foreseeable future efforts in the Euclid Creek watershed are towards increasing wetland areas and improving streams and the associated water quality. The effects of recent trends listed above along with public and student programs for rain barrel workshops, stream monitoring, organized stream cleanups, riparian planting programs, and bioretention programs indicate that there is an ongoing initiative to improve the health of the Euclid Creek watershed.

Although a minor amount of residential, commercial and industrial development could be expected to occur as a result of the project, most of the assumed development is expected to be infill by nature, consisting of redevelopment of existing built-up areas, including brownfields, rather than the development and disturbance of outlying areas of limited woodlands, green space, parkland or other natural areas. Impacts on existing natural features and further habitat fragmentation are not expected to occur as a result of Preferred Alternative 23 project.

Future Airport improvements as part of this project will primarily occur within the existing Airport footprint and will utilize and improve the existing access points. This type of development will minimize potential secondary development and minimize creation of new impervious surfaces and the associated adverse indirect environmental impacts on surface water quality. No significant contributions to cumulative impacts will result from the construction of Preferred Alternative 23.

These past, present and reasonably foreseeable future projects are unlikely to result in significant environmental impacts individually or when taken together (cumulatively). Any environmental

impact from these projects would be minimized and mitigated through the regulatory process to the extent practicable.