

EXECUTIVE SUMMARY

INTRODUCTION

An Environmental Impact Statement (EIS) is an environmental disclosure document prepared by the Federal agency responsible for approving a Proposed Federal Action, in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA). In this case, the Federal Aviation Administration (FAA) is responsible for actions to allow for airport development including revisions to and approval of airport layout plans (ALP) to depict proposed airport development projects at Federally funded airports, providing Federal financial assistance, and approving use of passenger facility charges to fund these development projects. This EIS has been prepared in accordance with FAA Orders 1050.1D, *Policies and Procedures for Assessing Environmental Impacts* and 5050.4A, *Airport Environmental Handbook*.

PROPOSED ACTION FOR CLEVELAND HOPKINS

The Proposed Action is implementation of the Cleveland Hopkins International Airport (CLE) 2006 Master Plan recommendations, described as the Sponsor's Proposed Project in the Final Environmental Impact Statement (FEIS). The purpose of this FEIS is to evaluate the potential impacts associated with:

- constructing a replacement Runway 5L/23R and associated lighting and navigational aids;
- shifting Runway 5R/23L 960 feet southwest along its centerline, and constructing a 2,250-foot extension;
- developing associated ancillary facilities;
- implementing the air traffic actions needed as a result of the above, as well as those actions recommended in the 2000 Final Part 150 Study Update; and
- implementing the land use mitigation actions recommended in the 2000 Final Part 150 Study Update at CLE.

Table ES-1 (included at the end of the Executive Summary) provided a detailed list of each of the items included as part of the Proposed Action (Sponsor's Proposed Project). **Exhibit ES-1** (included at the end of the Executive Summary) displays the Sponsor's Proposed Project as depicted on the future Airport Layout Plan studied in this FEIS.

This FEIS contains an evaluation of the Proposed Action (Sponsor's Proposed Project) as well as alternatives to the Proposed Action. It also includes comments on the Draft EIS and their responses, and the committed measures to mitigate adverse effects of the Proposed Action.

COOPERATING AGENCIES

This EIS involves two cooperating agencies who have jurisdiction by law or special expertise. Implementation of the Proposed Action will require approval by these agencies:

- **Federal Highway Administration (FHWA)** – for environmental processing of related roadway improvements; and

- **National Aeronautics and Space Administration (NASA)** – for demolition and relocation of NASA facilities.

BACKGROUND

Cleveland Hopkins International Airport is an air carrier and air cargo airport owned by the City of Cleveland and operated by the City's Department of Port Control. The airport is located in Cuyahoga County, Ohio, and provides commercial service for the City of Cleveland, Cuyahoga County, the City of Akron, and the remaining metropolitan areas in northern Ohio.

The character of Cleveland's airport has changed as the Continental Airlines hub has matured and the projected activity levels have grown. In an effort to understand the operational limitations of the existing airfield, the FAA conducted the *Cleveland Hopkins International Airport Capacity Enhancement Plan* which was completed in April 1994. The primary goal of the study was to investigate alternatives which would increase airport capacity and reduce delay. The 1999 Master Plan Study Update addressed the study's recommendations and included the development projects which were assessed in this EIS. The Master Plan Update culminated in the development of an Airport Layout Plan (ALP) to depict the projects proposed by the Airport sponsor.

The City of Cleveland also prepared an update of the 1987 Airport Noise Compatibility Program (FAR Part 150 Study) concurrently with the update of the Master Plan. Since concluding the 1994 Capacity Study, the FAA has worked with and encouraged the City to address the recommendations of the Capacity Study. During the Master Plan update, the relocation of Runway 5L/23R was identified as the most beneficial development item to increase airport capacity and reduce operational delays. The FAA determined that an EIS would have to be prepared for the proposed Federal actions needed to allow for the airport development projects in the Master Plan update and air traffic actions in the update to the Part 150 Study. Therefore, the FAA initiated this EIS.

PROJECT DEVELOPMENT PROCESS

The Master Plan is a planning tool to guide airport sponsors in developing an airport by identifying deficiencies and solutions to solve them. Therefore, a periodic update of a Master Plan is necessary to ensure that the key facility recommendations of the plan remain consistent with the airport's character and actual activity levels. Two of the key objectives of a Master Plan, as stated in FAA's Advisory Circular 150/5070-6A that provides the guidance for developing Federally funded studies, are:

- *To establish a realistic schedule for the implementation of the development proposed in the plan, particularly for the short-term capital improvement program; and*
- *To justify the plan technically and procedurally through a thorough investigation of concepts and alternatives on technical, economic and environmental grounds.*

The Draft Master Plan Update for CLE was completed in 1999. The planning period for the Master Plan was 20 years. The Master Plan Update generated forecasts of future aviation activity in addition to a program of facilities requirements.

For Cleveland Hopkins, the Master Plan Update forecasts have slightly higher growth rates than the FAA's Terminal Area Forecast (TAF). These differences in growth rates result in a difference of ten percent in the 2006 enplaned passenger forecast and six percent in the 2006 aircraft operations forecast. However, both forecasts show that the airport can expect moderate growth over the next 15 to 20 years, which is anticipated to occur with or without implementation of the proposed development. Overall, the TAF has better defined the timing of future demand levels and more closely represents actual performance in terms of total annual operations levels. Therefore, the FAA TAF was used as the basis for analysis in this FEIS from the perspective of total annual operations levels.

Based on the analysis conducted during the Master Plan Update, an Airport Layout Plan (ALP) was developed. This plan is a key element in the project approval process and provides guidance for future development of the airport. The ALP is a graphic presentation, to scale, of existing and ultimate airport facilities, their location on the airport, and the pertinent clearance and dimensional information required to show relationships with applicable standards. The FAA approval of the ALP is required for all Federally funded airports to assure safety, efficiency, and utility.

PART 150 STUDY UPDATE

Cleveland prepared an update of the airport's 1987 Part 150 Study concurrently with the Master Plan Update. The FAR Part 150 Update was completed in 2000. The Part 150 Study Update proposed nine noise abatement (air traffic) measures, four land use measures, and three program management measures. The specific noise abatement (air traffic) measures and land use measures are included within the list of proposed actions for the 2006 timeframe shown in Table ES-1.

PURPOSE AND NEED FOR THE PROJECT

The proposed action modernizes the two main parallel runways so that the airfield geometry, distance between runway centerlines, as well as the lengths and widths of runway safety areas and object free areas will meet current design standards and enhance the airport's level of safety and operational capability. The need for this action is further supported by 49 USC 47101 (a)(7), which states it is the policy of the United States "that airport construction and improvement projects that increase the capacity of facilities to accommodate passenger and cargo traffic be undertaken to the maximum feasible extent so that safety and efficiency increase and delays decrease."

Additionally, FAA needs to develop air traffic control and airspace management procedures designed to ensure the safe and efficient movement of air traffic to and from the proposed replacement runway and the Runway 5R extension. Such actions would include, but not be limited to, the establishment or modification of flight procedures and the installation and/or relocation of navigational aids associated with both the replacement runway and the extended runway.

The proposed action addresses the objectives of the airport operator to enhance safety, to reduce delay, and lessen environmental impacts. These issues were identified and analyzed as part of the 1999 Master Plan Study Update which is hereby incorporated by reference into this EIS.

Specifically, the Proposed Action, meets the following needs (each need statement is shown in ***bold italics***):

The need to enhance safety and operational capability of the airport.

The current airfield layout includes five runway intersections on the airfield, four of which affect the Runways 5R/23L and 5L/23R in two locations each, by crosswind Runway 10/28 and Runway 18/36.¹ In addition, crosswind Runway 10/28 is intersected at three points, once each by Runways 5R/23L, 5L/23R, and 18/36. Runway 18/36 is currently intersected by Runways 5R/23L and 5L/23R and terminates at its intersection with Runway 10/28. The presence of runway intersections, especially at or near runway thresholds increases the potential for runway incursions. **Exhibit ES-2** shows the current airfield configuration.

Most of the existing runways at CLE do not have runway end safety areas (RSA) and object free areas (OFA) that meet current FAA design standards (RSA minimum of a 1,000-foot x 500-foot turf area) at the end of each runway. The FAA has reviewed the current ALP and determined that the existing plan provides an acceptable level of safety and that the proposed plan would enhance this acceptable level of safety.

The need to reduce delay and provide sufficient airfield capacity including peak operating periods.

After a detailed analysis of existing and forecast conditions, it was determined that, in order to maximize the airport's ability to serve as a domestic connecting hub, the airfield must have the ability to accommodate heavy arrival and departure demands during peak arrival or departure periods. During these times, at existing and forecast activity levels, the airport has inadequate airfield and airspace capacity. This condition causes delays at CLE and contributes to delays in air transportation throughout the country.

The primary constraint to accommodating the existing and projected increase in operations (and the primary cause of increased delays) is the insufficient lateral separation between the parallel runways. With additional separation between the runways, the airport can operate more efficiently and thereby reduce delay.

The need to provide sufficient runway length to accommodate current and reasonably anticipated air transportation demand.

Historically, CLE has not had the runway facilities that can accommodate most types of aircraft used to provide transoceanic air service. As transoceanic service has diversified to more cities, new, but smaller aircraft types have been introduced into the transoceanic fleet. Some of these new aircraft are using the current runways at CLE to reach a limited number of transoceanic markets (i.e., London). As the air service demand at CLE matures and broadens, demand will grow beyond the capacity of these new smaller aircraft.

¹ Runway 18/36 is currently closed for operations and would be permanently decommissioned as part of the proposed development program.

The primary physical airfield constraint inhibiting the development of long-haul transoceanic flights (over 3,500 nautical miles) originating from CLE is insufficient runway length. Due to this physical constraint, airlines wishing to depart on long-haul transoceanic flights must sacrifice payload in order to have enough fuel capacity for the flight. In addition, during the winter and spring seasons, unscheduled fueling stops on long-haul domestic air service (Los Angeles, San Francisco) have occurred due to strong west headwinds. The Master Plan forecast investigated the potential need for transoceanic service at CLE. These forecasts concluded that CLE could support up to four transoceanic international flights, servicing principal European gateways (i.e., London, Frankfurt, Amsterdam, Paris).

The analysis of runway length requirements determined that a runway length of 11,250 feet is sufficient for a Boeing 767-400ER to depart CLE at 100 percent of maximum take-off weight to London or Paris and at 97 percent of maximum take-off weight to Frankfurt (loss of 3,000 pound of payload). The Boeing 767-400ER is Continental's replacement aircraft for its DC10-30 aircraft now serving international markets and it is reasonably foreseeable that the Boeing 767-400ER would serve current European markets from Cleveland in the future.² In addition, a length of 11,250 feet would also be sufficient for passenger service to other European cities or the Pacific Rim using other modern aircraft such as the Boeing 747-400, 777-200, and the McDonnell-Douglas MD-11.

The need to provide sufficient terminal gate capacity for commuter aircraft and domestic and international jet aircraft.

The airport's combined domestic air carrier, domestic commuter, and international enplaned passenger volumes, as projected in the FAA's Terminal Area Forecast (TAF) and supplemented by the Master Plan forecast, show an increase from 6.0 million enplanements in 1997 to 9.6 million enplanements in 2006. To accommodate this growth, future terminal gate capacity needs to be increased.³

The need to provide sufficient ancillary facilities to accommodate current and reasonably anticipated air transportation demand.

The ancillary facilities needed to support the potential increase in air transportation demand include the reconfiguration of the airport ingress/egress, additional auto parking, and future development of presently undeveloped areas (relocation of support facilities and hangars).

Based on the TAF and supplemented by the Master Plan forecast, CLE will require approximately 4,800 additional parking spaces by 2006 for public on-airport short-term/long-term and airport and rental car employee spaces. This increase in the number of parking spaces should accommodate the projected 2006 demands. If parking facilities beyond these 4,800 parking spaces are required, appropriate Federal environmental review will be conducted prior to action being taken to address that need.

² See letter from Continental Airlines, Inc., October 6, 1999, in Appendix J.

³ For more information on forecasts, see Chapter One, *Background*.

The need to enhance the human environment by reducing noise and other impacts on the surrounding community.

Sound insulation would be offered to residential structures newly impacted by the 65 DNL noise contour, and to residential structures experiencing a 1.5 dB increase in noise in the 65 DNL noise contour because of the project. The remaining houses impacted by 65 DNL or greater would be eligible for mitigation through the Part 150 Program. Implementation of the measures recommended in the 2000 Final Part 150 Noise Compatibility Study Update would abate and mitigate the impacts of aircraft noise for both the existing and projected future conditions. The new and modified air traffic measures would change the operating system of the airfield to reduce delay and increase capacity while providing a means to minimize noise impacts on the surrounding communities.

Furthermore, the FEIS evaluated the 2000 Part 150 Study Update recommended air traffic measures for implementation that would address the operation of the proposed runway development to minimize impacts resulting from increases of 3 dB within the 60 DNL noise contour. Residual impacts due to a 3 dB increase in the 60 DNL noise contour would be mitigated through the sound insulation program recommended in the 2000 Part 150 Study Update. The Part 150 recommended mitigation in the 60 DNL noise contour would be contingent upon the local jurisdictions adopting the 60 DNL noise contour as their local threshold of significance for planning issues.

The need to enhance the flow and capacity of the on- and off-airport roadway system to accommodate existing and future traffic growth.

Implementation of the recommended changes and improvements to the on- and off-airport roadway system would allow for a more efficient flow of traffic and a reduction of congestion. The existing capacity and projected demand for roadway improvements originally identified in the Master Plan, indicated several roadway deficiencies for both on-airport and off-airport roadway facilities.

DEVELOPMENT PROJECTS

The following projects were identified as having the purpose of meeting the identified needs or as providing mitigation for impacts (i.e., wetlands and streams) resulting from implementation of the Sponsor's Proposed Project. This section provides a discussion of the projects to meet the needs for the action and alternatives (shown in ***bold italics***).

Construct a replacement 9,000-foot runway, parallel to and 1,241 feet northwest of existing Runway 5R/23L to improve airfield operational flexibility and result in reduced delay/increased capacity.

The existing runways are too close together to allow the operation of simultaneous arrivals and departures under any weather conditions. Increasing the separation between the parallel runways from 441 to 1,241 feet allows the operation of the two parallel runways simultaneously for arrivals and departures during weather conditions which allow application of Visual Flight Rules (VFR). Additionally, increased lateral separation would also allow independent Localizer Directional Aid (LDA) operations on the parallel runways during visual and marginal instrument weather conditions. In addition, the FEIS addresses air traffic procedures needed to be

developed to operate the replacement runway consistent with the assumptions contained within the FEIS.

Also, there could be an increase in the overall airspace capacity through the use of Simultaneous Offset Instrument Approaches (SOIA) to the parallel runways and the Converging Approach Spacing Aid (CASA) to allow dual dependent approaches to Runways 23R and 28 in the majority of weather conditions. Furthermore, to ensure that at least one runway remains open, the primary arrival runway (replacement Runway 5L/23R) would need to be upgraded to accommodate arrivals in Category III weather conditions and the primary departure runway would need to be upgraded to accommodate operations in Category I weather conditions. These upgrades would ensure that at the airport would be operational more than 99 percent⁴ of the time during Category I weather conditions with at least one runway, thereby allowing the other runway to be closed for snow removal and maintenance.

Furthermore, the Sponsor's Proposed Project would include two parallel taxiways between the runways to provide air traffic controllers with additional flexibility and space to sequence arrivals to cross Runway 5R/23L. Additionally, with additional spacing between runways, maximum use of the LDA approach could be achieved and the siting of navigational aids would be made easier with the increased separation.

Construction of a replacement runway 5L/23R at 9,000 feet, parallel to and 1,241 feet northwest of existing Runway 5R/23L and associated taxiways, would result in construction of the runway through an area of the NASA Glenn Research Center at Lewis Field that is commonly referred to as the South 40 Area. Consequently, if the alternative to construct this new runway is selected, the City of Cleveland would need to remove and relocate or replicate the research and other support facilities currently located in the South 40 Area.

Extend Runway 5R/23L to a length of 11,250 feet by shifting the runway 960 feet southwest along its centerline and construct a 2,250-foot southerly extension with parallel and connecting taxiways and associated lighting and navigation aids relocation.

The Sponsor's Proposed Project proposes a 2,250-foot southerly extension of Runway 5R/23L. Additionally, the northern end of the runway would be shifted south approximately 960 feet in order to eliminate the current intersection with Runway 10/28 and provide a standard runway end safety area. Also required are new parallel and connecting taxiways, associated lighting, and navigation aids relocation. This extension increases the total length of the runway to 11,250 feet which benefits both arrival and departure operations. The most notable benefit of the runway extension is the increased operational utility of the runway for transoceanic flights which would be able to depart from this runway with minimal or no payload restriction on long-haul routes.

An additional potential benefit of the runway extension is its mitigating effect on aircraft noise impacts. As a result of shifting the northern end of the runway, the project reduces noise impacts because aircraft departing from Runway 5L or 5R are at higher altitudes over noise-sensitive areas to the north. Shifting the northern end of the runway also eliminates a runway intersection, thus increasing the safety and efficacy of the airfield.

⁴ The airport is closed due to weather conditions less than one percent of the time.

Implement terminal and landside projects proposed in the updated Master Plan.

The terminal and landside projects proposed for as a part of the Sponsor's Proposed Project include:

- Expand Concourse C.
- Extend the main terminal building to the south to connect it with Concourse D.
- Construct a new satellite concourse located approximately 2,600 feet to the southwest of the existing terminal building.
- Provide an underground peplemover system connecting the existing terminal to the remote concourses.
- Relocate Brookpark Road around the north end of the airport between its intersection with Rocky River Drive on the east and its intersection with the NASA entrance road on the west.
- Develop approximately 4,800 new auto parking spaces for public, employee, and rental car parking.
- Relocate the Federal Inspection Services facilities within Terminal Building.
- Reconfigure the ingress/egress system of the airport.

Implement proposed air traffic, noise abatement, and associated land use mitigation measures proposed in this EIS and the updated Noise Compatibility Plan.

The City of Cleveland prepared a Federal Aviation Regulation (FAR) Part 150 Noise Compatibility Study Update in 2000 to address the changing aircraft noise conditions within the airport environs. The Update included an analysis of impacts from the proposed development of a replacement parallel runway (5L/23R) and a 960-foot shift and 2,250-foot extension to Runway 5R/23L. The approved noise abatement departure measures from the 1987 Part 150 Study were also re-evaluated to determine if new procedures could be identified that would decrease delays due to increased demand. The 2000 Update identified the most compatible way to implement air traffic noise abatement procedures and to mitigate the effects of those procedures through a Noise Compatibility Program (NCP). Proposed noise abatement measures and land use measures considered within the FEIS are listed above in Table ES-1.

Compensate for impacts to approximately 88 acres of wetlands and approximately 7,900 linear feet of streams caused by runway construction.

The proposed replacement runway, runway extension, and corresponding runway safety zones would impact approximately 57 acres of wetlands on the western side of Abram Creek. In addition, this area is also the only on-airport site large enough to accommodate a storm water detention facility with an approximate surface area of 31 acres. Combined the runway and detention facility projects would impact a total of approximately 88 acres of wetlands out of the 94 acres present on site. Additionally, 7,900 linear feet of Abram Creek would be filled and culverted.

Compensatory mitigation for wetland impacts is proposed to be accomplished through the purchase of acreage in the Columbia Station Reservation wetlands project. Compensatory mitigation for stream impacts is proposed to be accomplished through the purchase of acreage and stream footage in several regional stream preservation mitigation projects including the

Spring Brook preservation project located in Geauga County, and the Elk Creek preservation project located in Lorain County. Additionally stream restoration projects have been developed on the Woodiebrook Creek in Geauga County and Doan Brook in Cuyahoga County.

FEIS ALTERNATIVES EVALUATION

Federal and state guidelines concerning the environmental review process require that all prudent, feasible, reasonable and practical alternatives which might accomplish the objectives of a proposed project be identified and evaluated. The examination of alternatives is of critical importance to the environmental review process and serves to establish the conclusion that an alternative that addresses the project need and purpose, and might enhance environmental quality (or have a less detrimental effect), has not been inappropriately dismissed from consideration.

The options available to reasonably meet the need and purpose of the project can be grouped into five categories of alternatives:

- **Other Modes of Transportation:** These alternatives entail the use of other modes of transportation (trucks, trains, rail, and telecommunications and video-conferencing) which could be used to reduce the demand for operations at CLE. Use of other modes of transportation would mitigate noise by reducing the number of required aircraft operations.
- **Use of Other Airports:** These alternatives entail the use of other airports that could be used to move operations away from CLE. Use of other airports would mitigate noise by reducing the number of required aircraft operations.
- **Activity or Demand Management Alternatives:** These alternatives increase the efficient use of existing airport facilities through the establishment of pricing or regulatory actions to delay or eliminate the need for future airport development.
- **Development Concepts:** This range of alternatives recommends air traffic procedure changes along with a development concept to increase capacity and expand the existing airfield, landside⁵, and ancillary facilities⁶ to meet the stated needs.
- **Noise Abatement Actions:** These alternatives would enhance the human environment by reducing noise impacts on surrounding communities.

⁵ Landside development includes the passenger terminal and related infrastructure.

⁶ Ancillary facilities include other desired miscellaneous improvements to airport roadways, new public and employee parking, and relocation of rental car facilities.

ALTERNATIVES EXAMINED AND REJECTED FROM FURTHER CONSIDERATION

Alternatives examined and rejected from further consideration are discussed below.

Use of Other Modes of Transportation Alternatives

Alternative modes of transportation, such as rail, bus, or automobile, can offer feasible alternatives to freight shippers and air travelers, particularly those traveling 500 miles or less.⁷ The evaluation of alternative modes of transportation addresses the capability to meet the needs of freight shippers and travelers currently using CLE. Of critical importance to the evaluation are such factors as trip characteristics and travel needs of the freight shippers and air passengers and the feasibility of using automobile, rail, and bus service, and telecommunications/video-conferencing to accommodate these transportation requirements, based upon travel cost and efficiency.

Based upon the analysis presented in the FEIS, it is unlikely that alternative modes of transportation, such as rail (conventional or high-speed), automobile/bus, and communication technologies, could provide a suitable solution to the identified air transportation needs of the Greater Cleveland Metropolitan Area. Although there may be a reduction in travel due to video conferencing, it would not be enough to offset the increase in aircraft delay. None of these alternatives resolve the basic needs of enhancing safety, reducing delay, or increasing airfield capacity.

Use of Other Airports

There are several smaller airports serving the Cleveland area including: Cuyahoga County Airport, Medina Municipal Airport, Elyria Airport, Lorain County Regional Airport, Akron-Canton and Burke Lakefront. Two of these, Akron-Canton and Burke Lakefront are of sufficient size to accommodate air carrier operations and are discussed in detail below. The remainder of the airports on the list are small, lack sufficient runway capacity, and navigational facilities to handle air carrier operations. Thus they are not viable options to meet the identified purposes and needs for the proposed Cleveland project.

Akron/Canton (CAK) is the region's only other airport with scheduled commercial service. While considerable capacity is available at CAK for additional service, it is too far from the Cleveland metropolitan area to be a viable alternative to CLE and the demand has not developed to warrant the substantial changes that would be necessary to incorporate CAK into the region's transportation network.

Burke Lakefront Airport (BKL) had limited commercial service by commuter airlines in the past. While convenient to a limited segment of passengers, commuter airlines have not found this service profitable and it was discontinued. BKL will continue to have a

⁷ A review of the trip characteristics of air travelers using the airport indicates that a majority begin or end their trip at a point more than 500 miles from the Cleveland. Source: U.S. Department of Transportation, Research and Special Programs Administration, *Origin-Destination. Survey of Airline Passenger Traffic - Domestic*, via Data Base Products, Inc. Rand McNally Road Atlas, Rand McNally, 1990+. Data compiled by: Landrum & Brown, Incorporated.

passenger terminal and will continue to be available as an option for limited commercial service. Past market performance suggests that BKL will not provide additional commercial service capacity relief to Hopkins Airport. In addition, BKL and CLE cannot operate as one airport due to the proximity of the airports to one another and the connection time required to travel between the two facilities, either via traditional modes of transportation or via a new rail connection yet to be developed.

New Airport Construction

Construction of a new, replacement, or supplemental airport is another alternative that could be considered. A series of airport feasibility studies were done in the 1970's for the Lake Erie Regional Transportation Authority to examine possible lake and land sites for a new large hub airport to serve the air carrier needs of Northeast Ohio.⁸ However, this alternative was not considered to be practicable for several reasons, including the large capital investment necessary for the construction of a new airport, the cost of environmental mitigation at a new location, the role of Continental Airlines at CLE, and the inability of cities the size of Cleveland to generate an economy large enough to support two major air carrier airports. Additionally, CLE has a good airfield facility already in place and there still remain opportunities to expand at CLE. Future expansion can be accommodated without the construction of another airport.

Activity or Demand Management Alternatives

Another group of alternatives that are frequently suggested when considering airport development includes traffic demand management and activity restrictions. The primary objective of activity management alternatives is to increase the efficient use of existing airport facilities through the establishment of pricing or regulatory actions by the airport operator, thereby delaying or eliminating the need for future airport development.

Based on the analysis presented in the FEIS, activity or demand management alternatives would not resolve the basic needs at CLE to provide a means for reducing delay during peak operating periods, sufficient airfield capacity during peak operating periods, or sufficient runway length to accommodate potential air transportation demand.

RANGE OF DEVELOPMENT ALTERNATIVES REVIEWED

This FEIS evaluated in depth a series of alternatives to the airside (runways and taxiways) and landside (passenger terminal) infrastructure of the airport. Each alternative was defined and refined, and each was evaluated using a detailed list of criteria.

As determined by the demand capacity and facility requirements analysis conducted as part of the 1999 Master Plan Update and further reviewed and evaluated as part of this FEIS, the needs and issues of the airport operator to reduce delay and lessen noise impacts resulted in the identification of development projects or programs to provide a means for reducing delay and

⁸ *A New Approach to the Cleveland/Northeastern Ohio Region, The Lake Erie International Jetport Project*, Greater Cleveland Growth Association, 1971.

sufficient airfield capacity during peak operating periods, and to provide sufficient runway length to accommodate potential air transportation demand.

The identification and evaluation of airfield alternatives was a two step process. The first step of the airfield alternative evaluation examined a complete range of runway development alternatives. **Exhibit ES-3** (included at the end of the Executive Summary) shows three versions of a “no-build” alternative and nine candidate airfield layout alternatives that were evaluated to determine their potential capability to accommodate the projected future aviation demand. Each alternative (with the exception of the no-build alternatives) provides at least two parallel runways with a minimum of 800-foot lateral separation, reduces runway intersections (except Alternative C3), and provides at least 11,250 feet of runway for departures and 9,000 feet for arrivals. Each alternative was designed for large commercial aircraft (Group V – i.e. Boeing 767-400ER).

The second step of the airfield alternative evaluation focused on runway development Alternatives A1, A2, and B1. All other alternatives shown in Exhibit ES-3 were determined to be neither prudent, feasible, reasonable, nor practical. Each of the shortlisted alternatives (with the exception of the no-build alternatives) provides at least two parallel runways with a minimum of 800-foot lateral separation, reduces runway intersections, and provides at least 11,250 feet of runway length for departures and 9,000 feet for arrivals. Additional analysis details are presented in Chapter Three, *Alternatives*.

The airfield alternatives include components to enhance the terminal, vehicle access, parking, and other supporting and ancillary facilities. These projects were designed and intended to meet the need to provide sufficient capacity to accommodate the reasonably anticipated increase in air transportation demand. The following paragraphs discuss the landside, ancillary, and other projects evaluated and included in each of the development alternatives.

Terminal

The terminal projects identified meet the need of providing sufficient terminal gate capacity for commuter aircraft, and domestic and international jet aircraft. To reconcile the deficiency in projected terminal gate capacity, the passenger terminal needs to be expanded, and expanded in such a way as to comply with the identified planning and design goals and objectives of the airport.

Ancillary Facilities

The ancillary facilities projects identified meet the need to provide sufficient ancillary facilities in support of the potential increase in air transportation demand. The ancillary facilities examined include roadways, curb front, public and employee auto parking, air cargo, airline maintenance, general aviation, and support facilities such as the flight kitchens.

The analysis of existing and future conditions identified a need for expansion of access roadways, air cargo, airline maintenance, commercial fuel storage, flight kitchens, and airport maintenance facilities. In addition, a consolidated aircraft deicing pad and ground run-up enclosure (GRE) are needed to minimize the amount of glycol discharges to the local streams, and reduce noise impacts to surrounding communities, respectively.

Other Actions

The development of a new airfield layout must be accompanied by the development of new air traffic control procedures, the application of new air traffic control technology, and revision of airspace allocations between various airport and air route service functions. The proposed new airfield layout, with the increased separation between the parallel runways would allow for dual approaches and dual departures in visual weather conditions.

However, there are considerable air traffic control issues resulting from local weather conditions associated with haze over Lake Erie that prohibit independent operations on the parallel runways. These air traffic control issues can be alleviated with use of simultaneous offset instrument approaches (SOIA) and converging approach spacing aid (CASA) technology.

ALTERNATIVES ENVIRONMENTALLY ASSESSED IN THE FEIS

Under the National Environmental Policy Act of 1969 (NEPA), the FAA has a responsibility to explore and objectively evaluate all prudent, feasible, reasonable, and practical alternatives, including those beyond the jurisdiction of the Federal government. For major Federal actions in which the Federal Government, as a proprietor, plans and develops a Federal facility, the scope of alternatives considered by the sponsoring Federal agency is wide ranging and comprehensive. However, where the sponsor is not the Federal Government, but is a local government or private applicant, the Federal agency role is necessarily more limited with substantial weight given to the preferences of the local sponsor.

It should be noted that NEPA requires that a No-Build/No-Action Alternative be considered in the environmental assessment of impacts. Although not always prudent, the No-Build/No-Action Alternative is discussed as a potential alternative and serves as a baseline for the assessment of future conditions.

The Proposed Action Alternatives are consistent with the stated purpose and need. The FAA has selected the following range of alternatives for detailed analysis in this FEIS:

Forecast Year 2006

- *Alternative 1: 2006 Baseline Condition (No-Build/No-Action)*
- *Alternative 2: 2006 Air Traffic Actions with a 960-Foot Shift to Runway 5R/23L (Maintain 9,000 Feet) and a Replacement Runway 5L/23R (9,000 Feet) at 1,241 Feet*
- *Alternative 3: 2006 Air Traffic Actions with a 960-Foot Shift and 1,000-Foot Extension to Runway 5R/23L (10,000 Feet) and a Replacement Runway 5L/23R (9,000 Feet) at 1,241-Foot Separation*
- *Alternative 4: 2006 Air Traffic Actions with a 960-Foot Shift and 1,500-Foot Extension to Runway 5R/23L (10,500 Feet) and a Replacement Runway 5L/23R (9,000 Feet) at 1,241-Foot Separation*

- *Alternative 5: 2006 Air Traffic Actions with a 960-Foot Shift and a 2,250-Foot Extension to Runway 5R/23L (11,250 Feet), a 1,200-Foot displacement to Runway 5R Threshold, and a Replacement Runway 5L/23R (9,000 Feet) at 1,241-Foot Separation*
- *Alternative 6 (Sponsor's Proposed Action): 2006 Air Traffic Actions with a 960-Foot Shift and a 2,250-Foot Extension to Runway 5R/23L (11,250 Feet), Displace Runway 5R Threshold by 3,210 Feet, and a Replacement Runway 5L/23R (9,000 Feet) at 1,241-Foot Separation*

Forecast Year 2016

- *Alternative 1: 2016 Baseline Condition (No-Build/No-Action)*
- *Alternative 6 (Sponsor's Proposed Action): 2016 Air Traffic Actions with a 960-Foot Shift and a 2,250-Foot Extension to Runway 5R/23L (11,250 Feet), Displace Runway 5R Threshold by 3,210 Feet, and a Replacement Runway 5L/23R (9,000 Feet) at 1,241-Foot Separation*

The City of Cleveland, as airport sponsor, requests FAA approval of the Sponsor's Proposed Project alternative, which consists of: a replacement second northeast/southwest parallel runway (a 9,000-foot runway spaced 1,241 feet from existing Runway 5R/23L) and construction of a runway extension to create a runway 11,250 feet in length (a 960-foot shift and 2,250-foot extension to Runway 5R/23L) along with the implementation of the 2006 NCP actions and the construction of landside and ancillary facilities. This development alternative would best address the total composite of the airport's needs.

The Sponsor's Proposed Project also would include two parallel taxiways between the runways provide air traffic controllers with additional flexibility and space to sequence arrivals to cross Runway 5R/23L. Additionally, with additional spacing between runways, maximum use of the LDA approach could be achieved and the siting of navigational aids is made easier with the increased separation. Although it is important to consider other facilities when evaluating airfield alternatives, the other concerns (LDA, navigational aids) weigh more heavily in this decision process.

In addition to 2006, the environmental consequences of the Sponsor's Proposed Action (Alternative 6) are provided for 2016, for disclosure purposes only. Specific airport activity levels and their associated environmental impacts were determined not to be reasonably foreseeable at this time following the year 2006. Accordingly that year is set as the end of the planning period for the planning horizon of the EIS. Beyond the year 2006, as time elapses activity levels become less and less certain. The more time which elapses the less certainty exists. However, in an attempt to provide possible impacts the EIS presents possible activity levels and their associated environmental impacts through the year 2016, but for disclosure purposes only. The Sponsor's Proposed Action includes projects in the Airport Master Plan that are planned for implementation before 2006. Under the concept of tiering, when activity levels increase to warrant terminal development and associated parking there will be additional

environmental review and appropriate documentation. Possible terminal development and associated parking actions are the only actions in the Master Plan contemplated for implementation after 2006. These actions are justified independently of the Sponsor's Proposed Action and are not so connected that it would be unwise or irrational to complete the Sponsor's Proposed Action without them.

Independent Utility Airport Development Projects

In addition to the projects assessed under this FEIS, several improvement projects are currently underway. These include:

- Brook Park's Aerospace Parkway (by the City of Brook Park)
- Construction of Interim South Airfield Improvements
 - Deicing Facility/Glycol Recovery System – Phase I
- Construction of Interim West Airfield Improvements
 - West Cargo Ramp/Facility and Taxiway V and W Rehabilitation
 - Other Miscellaneous Taxiway Rehabilitation
 - Consolidated Maintenance Facility
 - Runway 10/28 Road Projects
 - Replacement Employee Parking
- Construction of Interim Terminal Improvements
 - Rehabilitate FIS Facility and International Gate
 - Expand and Renovate Baggage Claim Area
 - Concourse "C" Overlay
 - Relocate Sky Chef
 - New Jetway/International Gate

These projects are not dependent or interdependent upon the approval of the Federal actions being requested in this FEIS. The construction of the Interim South Airfield, West Airfield, and Terminal Improvements have been reviewed under NEPA and found to be categorically excluded. Therefore it is expected that these projects will be completed regardless of the approval and progress of the airport development proposed in this FEIS and has been included in the No-Build/No-Action alternative.

The City of Cleveland has acquired the IX Center property for purposes of preserving its compatibility with the airport. The City leased the property to Park Corporation to maintain the current compatible use for 15 years, until 2014. Thus, future development is not reasonably foreseeable. Any proposal to develop this property would be subject to environmental review in accordance with FAA Order 5050.4.

AFFECTED ENVIRONMENT

A comprehensive inventory of the economic, social, natural, and physical environment within the study area was performed and is contained in Chapter Four, *Affected Environment*. The inventory and evaluation of the existing environment provided the groundwork necessary to determine the potential impacts of the airport development which were accomplished as part of the environmental consequences analysis.

SUMMARY OF IMPACTS

This section provides a summary of the potential environmental impacts associated with the Sponsor's Proposed Project.

Noise / Land Use

Implementation of the Sponsor's Proposed Project would reduce noise impacts through the implementation of air traffic actions and land use mitigation measures. The proposed construction of the ground run up enclosure would further reduce noise impacts. Implementation of the Sponsor's Proposed Project would result in approximately 11,553 housing units and 28,178 people being located within the 60+ DNL noise contour. Within the 65+ DNL noise contour, 3,304 housing units and an estimated population of 8,529 would be impacted. This compares to a total of 13,141 housing units and approximately 32,586 people in the Alternative 1 (No-Build/No-Action) 60+DNL noise contour, and approximately 3,480 housing units and 8,834 people in the Alternative 1 (No-Build/No-Action) 65+DNL noise contour. Thus, the implementation of Sponsor's Proposed Project would result in less noise impacts than Alternative 1 (No-Build/No-Action). Two schools and libraries and two churches are located within the Sponsor's Proposed Project 65+ DNL contour. There are no noise-sensitive facilities in the Sponsor's Proposed Project 75 DNL noise contour.

Of the 8,249 housing units in the Sponsor's Proposed Project 60-65 DNL noise contour, 808 would experience a 3 dB increase in noise in the 60-65 DNL noise contour when compared to 2006 Alternative 1 (No-Build/No-Action). Of the 3,304 housing units in the 2006 Sponsor's Proposed Project 65+ DNL noise contour, 528 would be newly impacted and 454 housing units that would be in the 2006 Alternative 1 (No-Build/No-Action) 65+ DNL noise contour would experience a 1.5 dB increase in noise over baseline levels. The West Park Alliance church and St. Patrick School would also experience a 1.5 dB increase in noise. Housing units and noise-sensitive facilities that would be newly impacted by the 65 DNL noise contour, or impacted by a 1.5 dB increase in the 65+ DNL noise contour, would be eligible for mitigation as part of the proposed project. The remaining 2,322 housing units and noise-sensitive facilities that would be impacted under 2006 Alternative 1 (No-Build/No-Action) and would continue to be impacted under 2006 Sponsor's Proposed Project, would be eligible for Part 150 mitigation.

Social Impacts / Induced Socioeconomic Impacts

The 100th Bomber Group Restaurant, U-Store-It, Analex Building, Dome Energy gas well, and South 40 buildings in the NASA complex would need to be demolished and relocated. No houses would need to relocate. Implementation of the project would not disrupt

established communities or planned development. There would be no environmental justice impacts associated with the project.

The total cost resulting from delays and taxi times anticipated after implementation of the Sponsor's Proposed Project is estimated to be approximately \$84,249,800 – a 70 percent decrease from baseline conditions.

Air Quality

There would be a slight increase in emissions due to the greater taxi distance to the replacement parallel runway in the year 2006. There would be an increase of 17.91 tons per year of carbon monoxide (CO), an increase of 4.75 tons per year of hydrocarbons (HC), and an increase of 0.35 tons per year of sulfur dioxide (SO₂). These increases would be below established Federal and state threshold levels of 100 tons per year. Construction and use of the replacement parallel runway would result in a reduction in emissions of nitrogen oxides (NO_x) by 1.14 tons per year and particulate matter (PM₁₀) by 0.21 tons per year.

Pollutant concentrations at several highly congested intersections in the vicinity of the airport showed there would be exceedances of the 8-hour carbon monoxide standard for baseline conditions. However, the modifications proposed for the affected intersection caused the concentration level to decrease, falling below the baseline concentration level, and, therefore, would comply with the National Ambient Air Quality Standards (NAAQS).

Water Quality

Temporary water quality impacts would likely occur during construction. These would be controlled and minimized through the use of Best Management Practices (BMP) during the construction process. Additionally, a construction National Pollution Discharge Elimination System (NPDES) permit would be required which would set standards for the release of sediment and pollutants into waterways as a result of construction. The Airport Sponsor is has submitted a construction NPDES permit application and it is currently under review by state regulatory agencies.

Water quality would improve as a result of mitigation measures designed into the Sponsor's Proposed Project. Mitigation measures include a central deicing facility and stormwater detention basin and drainage system.

Section 303c (4(f)) / 6(f) Properties / Historic, Architectural, Archaeological, and Cultural Resources

The Rocky River Reservation is the only resource potentially impacted by the Sponsor's Proposed Project that was funded under Section 6(f) of the Land and Water Conservation Act. Under current conditions, the Reservation has approximately 742 acres of land exposed to noise levels in excess of 65 DNL, of which 49 acres is exposed to noise levels in excess of 75 DNL. Under the future No-Build/No-Action Alternative, approximately 297 acres of land would be exposed to noise levels in excess of 65 DNL, of which no land would be exposed to noise levels greater than 75 DNL. Under the Sponsor's Proposed Project, approximately 531 acres of land would be exposed to noise levels in excess of 65

DNL, of which approximately 1.5 acres would be exposed to noise levels in excess of 75 DNL.

Cleveland Metroparks, owner of the Rocky River Reservation, has reviewed the noise analysis and has determined that the 1.5 acres of parkland impacted by 75+ DNL resulting from the proposed development does not constitute a constructive use taking, or conversion of 4(f) or 6(f) land. In addition, five other public parks would be within the 65-70 DNL contour.

Other potential impacts to Section 4(f) properties were evaluated and include the NASA Rocket Engine Test Facility that would be demolished as part of the Sponsor's Proposed Project. Forty-six historic structures would be within the 65+ DNL contour. The Bishop House would be within the 70-75 DNL contour.

In addition, the St. Patrick School and the Grasella House would be newly impacted by the 65 DNL noise contour. Two residential structures, 17804 Glenshire Avenue and 17805 Flamingo Avenue, would experience a 1.5 dB increase in the 65 DNL noise contour. These four structures would be eligible for sound insulation through the environmental mitigation. Forty residential historic structures would continue to experience noise levels of 65 DNL or greater, and thus would be eligible for Part 150 sound insulation.

The FAA, in consultation with NASA, the Ohio Historic Preservation Office, the Advisory Council on Historic Preservation, the National Parks Service, and the City of Cleveland, are developing a Memorandum of Agreement (MOA) in accordance with Section 106 of the Historic Preservation Act regarding the disposition of impacted historic resources. A copy of the draft MOA is include in Appendix W.

Biotic Communities / Threatened and Endangered Species

Approximately 164.45 acres of land currently or proposed to be owned by the airport contains various vegetational communities that would be converted to Urban-Industrial-Turf.

Approximately 1.31 acres of Upland Forest habitat at GRC-Lewis Field would be converted to Urban-Industrial-Turf and approximately four acres of Old Field Scrub-Shrub at GRC-Plum Brook Station would be converted to Urban-Industrial.

Approximately 87 acres of State-listed potentially threatened blunt mountain mint habitat would be converted to new and relocated runways, taxiways, light lanes and the perimeter service road in areas currently consisting of old field, scrub-shrub, and scrub-shrub wetlands.

Wetlands and Streams

Approximately 88 acres of wetlands and 7,900 linear feet of regulated streams would be graded and filled in order to implement the Sponsor's Proposed Project. The relocated runway 5L/23R would impact 31.18 acres of wetlands. The stormwater detention basin would require filling 30.57 acres of wetlands. Lastly, the relocation and extension of 5R/23L would require the filling of 26.10 acres of wetlands. These impacts would be

mitigated in accordance with a joint 401/404 permit which is being developed for the project.

Floodplains

Approximately five acres of floodplain affected by a 100-year flood event would be filled (along with Abram Creek and the existing ravine) in order to accommodate the proposed runway, taxiway, and related improvements. Through mitigation designed into the project, a culvert and stormwater detention facility, there would be no increases to the inflow volume within the floodplain both upstream and downstream of the airport. Additionally, there would be no increases in water velocity as a result of the project.

Energy Supply and Natural Resources

No energy supply or natural resources impacts are anticipated. Increases in energy consumption are anticipated, but sufficient resources exist to meet the projected demand.

Aesthetic and Visual Impacts

During approaches and departures, aircraft would be seen at different elevations and angles as a result of the shifting of Runway 5R/23L, the relocation of Runway 5L/23R, and extending of Runway 5R/23L.

Surface Transportation

The Sponsor's Proposed Project would require roadway relocations that would impact the surface transportation system. These impacts include a change in the surface access pattern and alteration of the traffic volume distribution through the off-airport surface transportation pattern due to the roadway relocations. The proposed terminal expansion proposals would not significantly change the on-airport surface transportation patterns; however, the projected increase in aircraft operations would generate an increase in the number of passengers which, in turn, would increase the traffic volumes of off- and on-airport roadways.

Hazardous Waste

This alternative would cause impacts to the following areas, which have undergone investigation: Riveredge Area; Northwest Cargo Area; Replacement Runway Area; Abram Creek Area; South Airfield Area; NASA Glenn Research Center at Lewis Field; NASA Glenn Research Center at Plum Brook Station. Each of these areas has been identified as having a potential for being contaminated with substances classified under the Resource Conservation and Recovery Act (RCRA) or by the Environmental Protection Agency (EPA) as being hazardous.

Construction Impacts

Potential impacts associated with construction activity of the Sponsor's Proposed Project include the actual construction, equipment noise, construction truck traffic, dust emissions resulting from site development, disruption to plant and wildlife communities, and

disturbance of the water quality. These are all temporary in nature and are not expected to permanently adversely affect the natural and social environments. The FEIS specifically examined the potential air quality impacts associated movement of fill material and found that it is anticipated that air quality thresholds would not be exceeded during construction.

Coastal Resources, Wild and Scenic Rivers, Farmland, Light Emissions, and Solid Waste

No impacts to these categories are anticipated by this project.

MITIGATION

This section provides a summary of the mitigation measures associated with the Sponsor's Proposed Project.

Noise / Land Use

Residential structures newly impacted by the 2006 Alternative 6 (Sponsor's Proposed Project) 65 DNL noise contour, or experiencing a 1.5 dB increase within the 65 DNL noise contour would be potentially eligible for Federally sponsored sound insulation under the FEIS. This mitigation would be voluntary, but if the property owner decided to accept mitigation, the mitigation would be implemented with or without Federal assistance. The residential land uses that are presently within the 2006 Baseline 65 DNL noise contour and would continue to be within the 2006 Alternative 6 (Sponsor's Proposed Project) 65 DNL noise contour would be mitigated pursuant to measures discussed in this FEIS and the Final Part 150 Study Update.

Section 303(c) (4(f)) / 6(f) Properties / Historic, Architectural, Archaeological, and Cultural Resources

A single structure, the National Historic Landmark NASA Rocket Engine Test Facility, would be impacted directly by construction through implementation of the Sponsor's Proposed Project. This structure would be removed, a "physical taking" and is currently the subject of a Memorandum of Agreement (MOA) under review by the Ohio Historic Preservation Office (OHPO).

Residential historic structures newly impacted by the 65 DNL noise contour, or experiencing a 1.5 dB increase in the 65 DNL noise contour would be potentially eligible for Federally sponsored sound insulation under the FEIS. This mitigation would be voluntary, but if the property owner decided to accept mitigation, the implementation of mitigation would be provided with or without Federal assistance.

Residential historic structures that would be in the 2006 Alternative 1 (No-Build/No-Action) 65 DNL noise contour, and would continue to be impacted by noise due to the project, would be eligible for mitigation under the 2000 Final Part 150 Study Update. The mitigation of these structures would be reviewed by the OHPO and included within an MOA.

Water Quality / Wetlands

All measures necessary to mitigate water quality deterioration are designed into the proposed development. These measures include a central deicing facility, an improved stormwater piping system, a stormwater detention basing, and an Abram Creek culvert.

Coordination with the U.S. Army Corps of Engineers (USACE) has determined that an Individual Permit under Section 404 of the Clean Water Act would be required for construction of any build alternatives. Permitting under Section 401 of the Clean Water Act, including compliance with the Ohio Environmental Protection Agency's Anti-Degradation Rules, would also be required for the build alternatives. Coordination is currently on going with the Ohio EPA and USACE.

To compensate for the impacts resulting from the Sponsor's Proposed Project, a wetland restoration project has been developed in coordination with Lorain County Metroparks (LCMP). The project mitigation consists of total of 265 acres of in-kind wetland restoration.

Approximately 7,900 lineal feet of regulated stream channel would be affected by the proposed activities. The City of Cleveland proposes to compensate for their impacts by striving to preserve 7,900 lineal feet of stream and to restore 7,900 lineal feet of stream at various suitable locations throughout the region.

Biotic Communities / Threatened and Endangered Species

Best Management Practices would used to minimize habitat loss. The project area contains approximately 98 acres of habitat containing the State-listed, potentially threatened plant species, blunt mountain-mint, 87 of which would be impacted by the Sponsor's Proposed Project. Blunt mountain-mint is a facultative wetland species and would be expected to occur in the transitional wetlands like the proposed Lorain County wetland mitigation sites.

Under consultation with outside experts (e.g. Ohio Department of Natural Resources (ODNR)), conservation efforts to date have included the collection and storage of blunt mountain-mint seeds and flower-heads from the wetland impact site. To supplement this effort, further contact with ODNR will be initiated to plan and coordinate the transplant of root stock and cuttings. Sufficient voucher specimens will also be provided to the Cleveland Museum of Natural History Herbarium and up to five additional herbariums, if identified by the state or representatives of the Cleveland Museum of Natural History.

Hazardous Materials

The Sponsor's Proposed Project would potentially impact seven areas which have been investigated for possible contamination (Riveredge Area, Northwest Cargo Area, Replacement Runway Area, Abram Creek Area, South Airfield Area, NASA GRC - Lewis Field, NASA GRC - Plum Brook Station). Consideration of and cooperation with the ongoing remedial investigation, feasibility studies, remedial design, and remedial implementation efforts would be a priority and would be conducted in accordance with applicable Federal and state guidelines.

Construction

Potential construction impacts would be reduced through the implementation of an erosion and sediment control plan. Elements of an erosion and sediment control plan would include an interconnected system of erosion and stormwater runoff controls, including best management practices and structural erosion control methods, such as phased clearing and grading, confining construction to the dry season whenever possible, sediment traps and ponds, interceptor dikes and swales, mulching, filter fabric fence, hydro-seeding, and terracing.

Additionally, a NPDES stormwater discharge permit would be required for project construction. Under the National Stormwater Program, the USEPA regulates stormwater discharges from construction sites containing clearing, grading, and excavation activities, if the disturbed land area is five acres or more. To comply with the USEPA regulations, the airport would have to file a "Notice of Intent" (NOI) form.

PUBLIC INVOLVEMENT

The EIS process incorporated a thorough public involvement program which included seven Public Information Workshops: one Public Scoping Meeting, four Public Meetings, one FAA listening session held at two locations (Parma and Olmsted Falls), and one Public Hearing (some of which were conducted concurrent with the FAR Part 150 Study Update process). To allow the public an opportunity to examine the EIS documentation, copies of the Draft EIS were available for review and comment at locations in the Greater Cleveland area. See Appendix A, *Agency Scoping and Coordination* and Appendix B, *Public Involvement*, of this FEIS document to review the public information program materials and agency/public comments.

IMPLEMENTATION SCHEDULE

Upon unconditional approval of the ALP, the first projects to be undertaken by CLE would be the implementation of noise abatement and land use mitigation measures (that are not dependent upon the new airfield reconfiguration), the relocation and filling of Abram Creek, the relocation of NASA facilities, and relocation of Brookpark Road to accommodate the first phase of the replacement Runway 5L/23R construction (the construction of a 7,145-foot runway). The replacement 9,000-foot parallel runway (5L/23R) is expected to be operational by 2004 and the 2,250-foot extension to Runway 5R/23L is proposed to be under construction by 2005. After airfield construction is completed, final air traffic changes (both noise abatement and delay reduction/capacity enhancement) would be developed consistent with the proposals identified in this FEIS. **Table ES-2** provides a general schedule for the major proposed development items by phase.

Table ES-1
Outline of the Proposed Action (Sponsor's Proposed Project) for 2006 Timeframe

Airfield

- Construct a replacement 9,000-foot Runway 5L/23R
- Convert existing Runway 5L/23R to a taxiway
- Construct a second parallel taxiway between Runways 5L/23R and 5R/23L
- Extend Runway 5R/23L to 11,250 feet and shift southwest 960 feet
- Decommission Runway 18/36
- Relocate a portion of the CEI power line

Passenger Terminal

- Expand Concourse C
- Extend main terminal building to the south to connect to Concourse D
- Construct new pier concourse
- Provide peoplemover system

Roadways

- Construct new entrance and exit terminal roadway system
- Relocate Brookpark Road and modify the I-480/Grayton Road interchange to accommodate the Runway 5L/23R relocation
- Redesign the Cargo Road/State Route 237 intersection

Auto Parking

- Construct public parking garage on site of Lot 3 and private hangar
- Consolidate employee parking in NASA Administration lot and surrounding area
- Expand Rocky River Road Lot for employee parking
- Expand rental car storage, ready/return, and rental car employee parking south of rental car area
- Provide employee parking at the Ullrich site

Air Cargo

- Construct new facilities adjacent to NASA
- Construct new facilities to the northeast of the IX Center

Airline Maintenance

- Construct new maintenance hangars east of the IX Center
- New Air Services GA/airline maintenance facility

Support Facilities

- New fuel farm (three 1.4 million gallon tanks)
- Expand existing Continental flight kitchen
- New flight kitchen south of Runway 18/36
- Consolidated airport maintenance facility adjacent to NASA
- New deicing facility
- Construct Ground Runup Enclosure (GRE) adjacent to aircraft maintenance/ GA hangar

Air Traffic Procedure Changes

- Continue restriction of runups and maintenance engine testing as specified in the 1987 (NCP)
- Construct a ground runup facility/enclosure as part of the future development program

Table ES-1 (Continued)
Outline of the Proposed Action (Sponsor's Proposed Project) for 2006 Timeframe

- Continue to encourage the use of distant Noise Abatement Departure Procedures (NADPs)
- From Runways 5R/5L, equitably turn jet departures, between 6:00 a.m. and 11:00 p.m., left to headings within a corridor between 360⁰ and 035⁰ or right to headings within a corridor between 065⁰ to 095⁰, until reaching five miles from the Airport or 5,000 feet above sea level (MSL) in altitude
- From Runways 23R/23L, equitably turn jet departures, between 6:00 a.m. and 11:00 p.m., left to headings within a corridor between 190⁰ and 220⁰ or right to headings with a corridor between 250⁰ and 280⁰, until reaching five miles from the Airport or an altitude of 5,000 feet above mean sea level (MSL)
- Designate Runway 5R as the primary late night departure runway, wind and weather permitting
- Turn late night (11:00 p.m. to 6:00 a.m.) jet departures from Runway 5R to a course to over-fly the industrial areas east of the Airport until reaching an altitude of 5,000 feet above MSL
- From Runways 23R/23L, turn late night (11:00 p.m. to 6:00 a.m.) jet departures left to a corridor of 200⁰ to 220⁰ until reaching an altitude of 5,000 feet above MSL
- Instruct arriving aircraft at night to intercept the final approach course to all runways no closer than four miles
- Implement offset approach procedures to Runway 5R/23L

Land Use Mitigation

- Adopt development controls and standards
- Adopt real estate disclosure policies
- Sound insulate residences within the higher levels (65+DNL) of noise 2006 NCP noise exposure
- Sound insulate residences within and contiguous to the 60 DNL band of the Noise Compatibility Program noise contours

Navigational Aids, Lighting, and Procedures

- Site select, purchase, install, and flight check all necessary navigation aids and lighting to support the proposed development
- Implementation of necessary air traffic control procedures to support the proposed development

NASA South 40 Facilities Planned for Relocation

- Transient Dewar Storage Area - parking areas for mobile storage vessels
- Rocket Engine Test Facility (RETF) - B-Stand and associated vessels, buildings and equipment
- Miscellaneous cryogenic vessels and equipment various pumps, compressors and other equipment that are currently inactive or are in storage
- A Cells component that needs to be relocated together - Supplemental Multi-layer Research facility (SMIRF), Test Cell 7 and the Pressure Proof Test Cell and associated vessels, buildings, and equipment
- Liquid Hydrogen Transfer/Storage Area - paved area with equipment and vessels to store and transfer liquid hydrogen
- B Cells - test Cells 1 and 2 and their associated buildings and equipment
- C Cells - test skids, equipment and buildings for densification testing of liquid hydrogen and liquid oxygen
- Gated storage areas or outside storage areas - paved and fenced areas to store a variety of equipment
- Contractor trailer storage - paved areas for contractor trailer parking and storage
- Consolidated Chemical Storage Facility (CCSF) - Building 212 and associated paved areas and equipment that handle a variety of chemicals and wastes
- Miscellaneous amenity facilities - daycare, fitness, and recreation/picnic facilities

Source: Landrum & Brown, Incorporated, 2000.

**Table ES-2
Generalized Proposed Development Schedule**

Proposed Development Projects	2001	2002	2003	2004	2005	2006	Beyond 2006
Runway 5L/23R - Phase I							
Relocate Brookpark Road							
Relocate NASA Facilities							
Abram Creek Project							
Runway 5L/23R - Phase II							
Extend Runway 5R							
Reconstruct Access Roads							
Expand Terminal/Gate Area							
Implement Noise Abatement Procedures (Existing Airfield)							
Implement Additional Air Traffic Changes (Future Airfield)							
Implement Land Use Mitigation							

Source: Landrum & Brown, 2000.

APPROVAL DECLARATION

Submitted by Responsible Federal Official:

Ernest P. Gubry
Community Planner, Detroit Airports District Office
Great Lakes Region

Date

After careful and thorough consideration of the facts contained herein, and following consideration of the views of those Federal agencies having jurisdiction by law or special expertise with respect to the environmental impacts described, the undersigned finds that the proposed Federal actions are consistent with existing national environmental policies and objectives as set forth in Section 101(a) of the National Environmental Policy Act of 1969.

Jeri Alles
Manager, Airports Division
Great Lakes Region

Date

INSERT EXHIBIT ES-1

Proposed Airfield

INSERT EXHIBIT ES-2

Existing Airfield

INSERT EXHIBIT ES-3

Master Plan Alternatives Evaluation

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