

Appendix I

Economic and Fiscal Impacts of Continued Operations and Potential Repositioning Scenarios



Hartford-Brainard Airport

Economic and Fiscal Impacts of Continued Operations and Potential Repositioning Scenarios

September 2023

Prepared for:

BFJ Planning

Prepared by:

HR&A

Table of Contents

FOREWORD 3

EXECUTIVE SUMMARY..... 4

METHODOLOGY 6

SCENARIOS AND IMPACT ANALYSIS INPUTS 9

SCENARIOS OVERVIEW 9

MODEL INPUTS 10

IMPLAN MULTIPLIERS 12

ECONOMIC IMPACTS 12

FISCAL BENEFITS..... 17

CONCLUSION 18

APPENDIX 20

Foreword

Public Act No. 22-118, Section 426 mandates that the Connecticut Department of Economic and Community Development (DECD) assess the benefits and opportunity costs to the City of Hartford and the State of Connecticut of the current and alternative uses of the Hartford-Brainard Airport (HFD) property. As part of this legislation, a consultant team led by BFJ Planning (BFJ) will submit to the DECD a Final Report which will synthesize:

- The economic impact, direct, indirect, quantitative, and qualitative, of the current use of the property to the state and the region surrounding the property;
- The economic impact, direct, indirect, quantitative, and qualitative, of alternative uses of the property, including commercial, residential, and recreational opportunities, to the state and the region surrounding the property;
- Identification of any environmental or flood control obstacles to the development of alternative uses of the property, including the conducting of any required testing of the site and the possible avenues and associated costs to render the property environmentally developable;
- Identification of any federal, state, or local governmental obstacles, including existing contractual obligations, to the development of alternative uses of the property, the possible avenues to remove each such obstacle, and the associated costs of pursuing each avenue; and
- The highest and best use of the property, if not its current use, taking into consideration the findings of subdivisions (2) to (4), inclusive, of this subsection and the goals set forth in subsection (a) of this section.

In service of this final report, HR&A Advisors, Inc. (HR&A) previously analyzed the economic and fiscal impacts of existing operations of a general aviation airport at HFD on the city of Hartford, the Capital Region Council of Governments (CRCOG) region, and the state of Connecticut. As part of this report, HR&A analyzed the impact of continued operations, as well as the impact of fully or partially ceasing operations at HFD and repositioning a portion or all the airport for other uses and the related economic and fiscal impacts. This report comprises a substantial portion of the content needed to complete the second bullet of synthesized information above.

HR&A is a consulting firm specializing in measuring the economic and fiscal impacts of major policy interventions and development projects. The firm has studied the impacts of airport operations around the county, including Los Angeles, Santa Monica, and Long Island. HR&A previous analysis of existing operations was supported by Audience Research & Analysis (ARA), and data and findings from that analysis, to the extent they relate to economic and fiscal impacts of continued operations and any underlying assumptions of related scenarios, has been leveraged as part of this study.

Executive Summary

HR&A Advisors, Inc. (HR&A) assessed the economic and fiscal benefits of four potential future scenarios for Hartford-Brainard Airport (HFD) that considered both impacts of continued operations as an airport as well as impacts from potential redevelopment. This analysis considers what economic benefits are supported by the four scenarios in terms of jobs, labor income, and economic output to Hartford, the Capital Region Council of Governments (CRCOG) region, and Connecticut as well as fiscal benefits accruing to the City of Hartford and State of Connecticut. The four scenarios include:

- **Scenario 1:** Airport remains open with limited new development of aviation uses.
- **Scenario 2:** Runway 11-29 closes and industrial uses with accessory uses developed on the site.
- **Scenario 3:** Entire airport closes and primarily industrial uses with accessory office and retail uses developed on the site.
- **Scenario 4:** Entire airport closes and a mix of uses – primarily residential but also including office, retail, industrial, and recreation uses – developed on the site.

HR&A relied on assumptions developed by the consultant team including BFJ, Perkins Eastman, and Tighe & Bond, as well as other third-party data and economic and fiscal studies to inform this analysis.

This analysis considers annual recurring economic and fiscal benefits generated by continued operations of the airport for appropriate scenarios, as well as the one-time and annual recurring impacts of redevelopment for construction and ongoing activities of new uses. HR&A incorporated the quantitative and qualitative impacts of HFD’s continued operations on Scenarios 1 and 2 and the impacts of the airports closure on Scenarios 3 and 4. This analysis leverages previous findings from the report **Hartford-Brainard Airport Economic and Fiscal Impacts of Continued Operations**. In addition, it considers monetized impacts from redevelopment including construction and ongoing activities such as onsite spending and employment.

One-time economic impacts to the State of Connecticut range from \$21 million to \$2 billion driven by the intensity of the development program and required investment. Scenario 1 includes a modest program that redevelops portions of the airport with new buildings and hangars. Scenarios 2 through 4 envision redevelopment of a part or all the airport: Scenario 2 includes an approximately 18-acre site with industrial and some accessory retail uses while Scenarios 3 and 4 consider development of the full site with primarily industrial and residential uses, respectively. Moreover, for Scenarios 3 and 4, there is a much greater investment required in site infrastructure to build out streets, sidewalks, utilities, and other expenditures necessary to make the site ready for development.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
One-Time Impacts				
State of Connecticut				
Employment	120	720	5,300	13,770
Labor Income (\$000,000)	\$10.2	\$61.5	\$447.4	\$1,142.5
Economic Output (\$000,000)	\$20.8	\$117.1	\$897.2	\$2,171.5
Ongoing Impacts				
State of Connecticut				
Employment (Annual)	405	680	3,540	1,845
Labor Income (\$000,000)	\$35.5	\$52.1	\$217.4	\$146.0
Economic Output (\$000,000)	\$66.4	\$106.8	\$501.8	\$365.0

Ongoing impacts are driven primarily by related employment, with Scenario 3 and its redevelopment of the entire airport with industrial uses generating more than \$501 million annually. Despite having higher one-time impacts, Scenario 4 has a smaller impact on an ongoing basis as there are far fewer employment generating uses in the program. Scenarios 1 and 2 generate fewer jobs with Scenario 1 relying largely on ongoing operations of the airport and Scenario 2 contemplates a smaller industrial program on part of the airport site than Scenario 3.

Fiscal benefits from these scenarios range from less than \$1 million to \$63 million in one-time benefits and \$6 to \$80 million in annually recurring benefits. As with economic benefits, fiscal benefits are modest for Scenarios 1 and 2, as they include much smaller development programs than Scenarios 3 and 4. In this case Scenario 3 fiscal benefits remain higher on an ongoing basis than Scenario 4 given the relative intensity of employment uses, but one-time benefits are higher for Scenario 4 given its more intensive development program and site infrastructure.

Achieving the economic and fiscal benefits of closing and redeveloping the entire airport will require a long-term horizon, and any related one-time or recurring annual impacts should be considered carefully against a potential timeline for development. While the impacts of Scenarios 3 and 4 are much greater than Scenarios 1 and 2, the magnitude of the corresponding development programs and relative future demand and market for these uses suggests that achieving these one-time or annual recurring benefits will take several phases and decades to achieve. Moreover, in the case of the mixed-use Scenario 4, the 2,700 housing units included is greater than the number of housing units absorbed in multifamily development in the entire region since 2018, and this would be expected to enter the market during a time when population growth is expected to stagnate in Hartford and to slow to less than 0.2% in annual growth in the broader region. This analysis does not attempt to discount economic impacts in this case as the level of uncertainty of when the airport might close and the timeline for readying the site for development remains very high. Moreover, fiscal benefits will be weighed against the fiscal costs of developing and supporting added workers and residents on the site, including the need to potentially subsidize the development or operations of uses on the site, given the current and long-term market demand for related uses.

Methodology

HR&A analyzed the economic and fiscal impacts of future scenarios for the use of the Hartford-Brainard Airport (HFD) on the City of Hartford, the jurisdiction of the Capital Region Council of Governments (CRCOG or “CRCOG region”), and the State of Connecticut. This included both one-time impacts from non-recurring spending related to capital investments in aviation facilities and real estate development, as well as ongoing impacts from recurring activities either as part of an operational airport, as part of a redeveloped site with non-residential uses, or both. HR&A focused on impacts in terms of employment, labor income, and economic output measured in gross regional product (GRP) annually.

This analysis provides an enhanced understanding of HFD’s place within the local, regional, and state economy, and its potential both as an airport and as a repositioned site with alternative uses, as well as the benefits on public fiscal outcomes. The analysis discusses both quantitative and qualitative impacts in a systematic way that will allow for consideration of several tradeoffs between the status quo and potential alternatives for HFD.

To perform this analysis, HR&A relied on three types of inputs to inform its economic impact model:

1. **Construction Program.** BFJ and Perkins Eastman, with the support of the broader consultant team, advanced four scenarios for study of their related economic and fiscal impacts. These scenarios include:
 - a. Baseline scenario that assumes continued operations of HFD.
 - b. Partial closure scenario that uses a portion of the airport for redevelopment while retaining most aviation facilities and operations.
 - c. Two full closure scenarios envision redevelopment of the entire 204-acre site: one scenario focuses on industrial uses and a second focuses on residential uses but includes a mix of uses throughout the site.

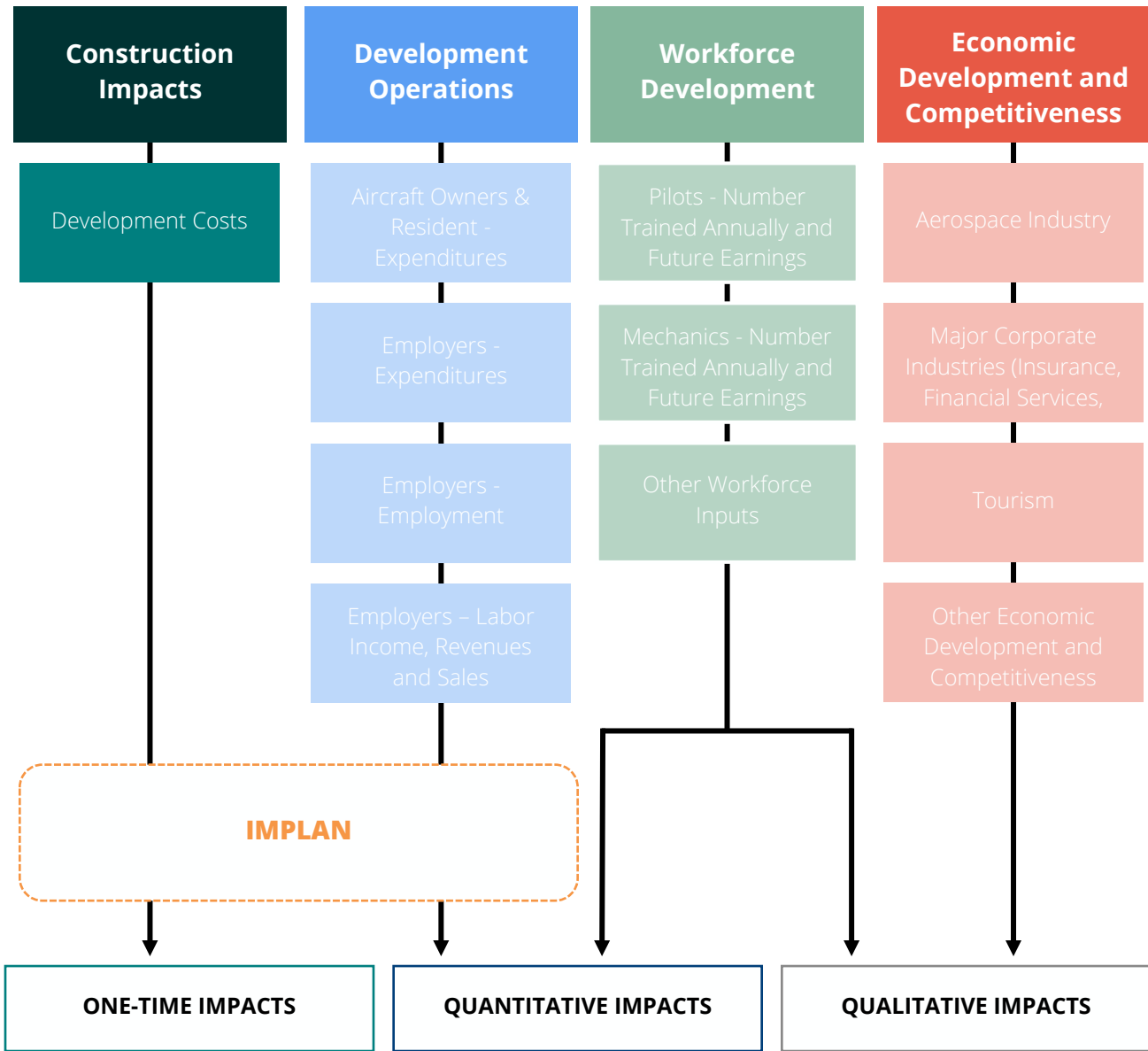
BFJ and Perkins Eastman provided programmatic assumptions while Tighe & Bond provided horizontal infrastructure and remediation cost estimates. More detail on the four scenarios can be found in the **Scenarios and Impact Analysis Inputs** section.

2. **Third-Party Data.** Data collected and analyzed from the U.S. Bureau of Labor Statistics, Bureau of Economic Analysis, U.S. Census Bureau, Marshall and Swift, broker interviews, operator interviews, and Connecticut Airports Authority (CAA) informs assumptions about direct and indirect economic model inputs.
3. **Other Economic and Fiscal Studies.** In addition, our team reviewed third-party analyses of industries within the region to understand their relationship to HFD and how ongoing activities at the general aviation airport may affect their future economic competitiveness. This includes both more directly related industries, such as aerospace, whose labor pool is affected by workforce development occurring at HFD, as well as indirect industries that may see benefits from the existence of a general aviation airport proximate to Downtown Hartford, such as the insurance and financial services industries, whose corporate users may opt to use HFD now or in the future. To support these third-party reports, HR&A relied on discussions with economic development professionals and business representatives in the region to gain additional context on HFD’s role as it relates to regional competitiveness.

Figure 1 below shows a conceptual model of the relationships between inputs and quantitative and qualitative outputs in the one-time and ongoing economic impact analysis.

This analysis considers Construction Impacts, Development Operations, Workforce Development, Economic Development, and Competitiveness impacts as affecting the total economic impact of the selected scenarios. Selected impacts are quantified, while others are analyzed and discussed at a qualitative level. The first section will describe the economic and fiscal impacts of one-time construction impacts for all four scenarios. The second portion of this report will focus on the ongoing impacts for each one of the scenarios.

FIGURE 1 | CONCEPTUAL ECONOMIC IMPACTS MODEL



This analysis focuses on two types of quantitative impacts. The first includes employment levels, labor income, and economic output resulting from the activities related to each scenario, including one-time construction impacts. The analysis relied on the Impact Analysis for Planning (IMPLAN) input-output model IMPLAN for the regions outlined above to measure these impacts.

IMPLAN is a widely used economic tool that allows users to analyze the economic effects of changes in various economic sectors. The model is based on the concept of inter-industry relationships, where the output of one industry serves as an input to another industry. IMPLAN captures these relationships by breaking down the economy into a set of industries and measuring the flow of goods and services between them.¹ The data

¹ The IMPLAN model consists of three components: the industry sector database, the regional social accounting matrix (SAM), and the impact analysis model. The industry sector database provides information on the production, employment, and other economic activities of different industries, while the regional SAM captures the inter-industry relationships specific to a particular region.

summarizes how industries produce and consume commodities and is customized for smaller regions of the country, using each region's unique industry mix and spending patterns.²

FIGURE 2 | ECONOMIC INPUT AND OUTPUT MEASURES



HR&A used IMPLAN and data from airport operations to produce the following:

- **Direct Impacts.** Employment, wages, and output from spending immediately associated with ongoing operations of each scenario.
- **Indirect Impacts.** Employment, wages, and output associated with businesses that supply the businesses and ongoing activities occurring in each scenario.
- **Induced Impacts.** Employment, wages, and output associated with household spending are directly and indirectly affected by each scenario's ongoing operations.

In addition to employment, labor income, and economic output, this analysis measures other quantifiable impacts resulting from ongoing operations in each scenario that are not direct outputs of the IMPLAN model outlined above.

Timing of Impacts

The timing of economic benefits and costs is a fundamental aspect of economic impact analysis, as it profoundly influences the overall assessment of a project, policy, or investment. Typically, such an analysis will consider when economic effects occur and incorporate appropriate discounting mechanisms is vital for accurate decision-making to reflect the time value of money, risk and uncertainty, fair comparison across projects under varying timelines, opportunity costs of development in one place and not another, as well as other policy considerations.

In this case, the uncertainty around the timeline needed to close an FAA public-use airport, remediate the airport and ready the site for development, and construct buildings, as applicable, HR&A has not applied these expenditures to a set of timelines and discounted the totals. Instead, for one-time impacts of redevelopment, we assume all expenditures are not trended forward for construction cost increases and are undiscounted. In addition, ongoing annual impacts presume the full buildout and stabilization of any associated program. In the case of closure of HFD and full development of the site, this is anticipated to occur over several phases and a multiyear period. All values of one-time and ongoing impacts are expressed in 2023 dollars.

² Scenarios 1 and 2 build include analysis and outputs from the ongoing operations developed as part HR&A's previous analysis of HFD's ongoing operations. While the impacts modeled in the full closure scenario will occur in Scenarios 3 and 4, the values are not incorporated into the outputs shown in this report.

Scenarios and Impact Analysis Inputs

HR&A modeled the economic and fiscal impacts of four scenarios, including three repositioning scenarios that contemplate the partial or full closure of HFD and redevelopment of the site. This section includes a description of those scenarios as well as a high-level description of the inputs for the economic and fiscal impact analysis. A more detailed set of input tables can be found in [Appendix B – IMPLAN Model Inputs](#).

Scenarios Overview

BFJ and Perkins Eastman, with input from HR&A and the broader consultant team, developed a set of scenarios for the future of HFD. As part of this process, BFJ advanced four scenarios for analysis of the economic and fiscal impacts as part of the highest and best use analysis.

- **Scenario 1: Airport remains open with limited new development of aviation uses.** This scenario presumes the airport remains open and any development is related to aviation uses. This includes a new air traffic control tower near the intersection of the crosswind runway and main runway, extension of the main runway to 5,000 feet, additional hangars, and the development of 94,000 SF of aviation uses, including 29,000 SF of new hangar space. All existing ongoing airport operations will continue to occur.
- **Scenario 2: Closure of Runway 11-29 and development of industrial uses.** This scenario assumes that the crosswind runway is closed and approximately 18 acres of HFD is made available for redevelopment. This scenario assumes development of two 100,000 SF single-story industrial buildings that could support warehouses, manufacturing, and research and development facilities with an emphasis on aerospace, as well as a 20,000 SF accessory retail program off Brainard Road. Additionally, all on-airport development of aviation-related uses that occurs in Scenario 1 is assumed to occur in Scenario 2, and all existing ongoing airport operations will continue to occur.
- **Scenario 3: Closure of airport and redevelopment with primarily industrial buildings with accessory office and retail uses.** This scenario includes development of the 204-acre airport with more than 2.6 million SF of industrial development along with 140,000 SF of office to support industrial spaces and 100,000 SF of accessory retail oriented on Maxim Road.
- **Scenario 4: Closure of airport and redevelopment with mixed-use development including residential, office, retail, industrial, and recreation uses.** This scenario includes development of the 204-acre airport with more than 2,700 rental housing units of different typologies, 105,000 SF of retail, 262,000 SF of industrial/flex space, and 255,000 SF of indoor recreation and 75,000 SF outdoor recreation use. In addition, this Scenario includes a new school building, community center, and library to serve this new neighborhood. Costs associated with these public facilities are not included as part of this analysis.

In the case of those repositioning scenarios that envision closure and redevelopment of a part or all the airport (i.e. Scenarios 2, 3, and 4), all programs are illustrative and intended only to serve as “test-fits” to determine the buildable capacity of these sites. They are not intended to suggest a final master plan for the site, and it is expected that a private developer would consider these among other possible configurations.

Moreover, the redevelopment and stabilization timelines will vary by scenario, with Scenarios 1 and 2 likely requiring a substantially shorter period to plan, construct, and absorb users than Scenarios 3 and 4 that envision the full build out of the 204-acre site. This will result in the City, region, and State experiencing the one-time economic and fiscal impacts of development over varying timelines based on the scenario, as well as a different length of time before reaching the stabilizing annual recurring benefits of the full buildout.

The development programs of the four scenarios are summarized in Table 1 below.

TABLE 1 | DEVELOPMENT PROGRAM BY SCENARIO

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Site Area (acres)	N/A	18 ac	204 ac	204 ac
Development Program (GSF)				
Townhome	-	-	-	660,000 GSF
8-Story Mid-rise Residential	-	-	-	472,320 GSF
4-Story Low-rise Residential	-	-	-	2,028,738 GSF
Industrial	50,000 GSF	250,000 GSF	2,360,000 GSF	262,000 GSF
Retail	-	20,000 GSF	100,000 GSF	105,600 GSF
Office	15,000 GSF	15,000 GSF	140,000 GSF	-
Indoor Recreation	-	-	-	255,000 GSF
Outdoor Recreation	-	-	75,000 GSF	75,000 GSF
School/ Community Center/ Library	-	-	-	169,000 SF
Hangar	29,000 GSF	29,000 GSF	-	-
Total Development Program	94,000 GSF	314,000 GSF	2,675,000 GSF	3,991,500 SF
Sitewide FAR	<i>N/A</i>	<i>0.28</i>	<i>0.30</i>	<i>0.43</i>
Residential Program (in dwelling units)				
Townhome	-	-	-	220 Units
8-Story Mid-rise Residential	-	-	-	472 Units
4-Story Low-rise Residential	-	-	-	2,029 Units
Total Dwelling Units	-	-	-	2,721 Units
Sitewide Density	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>13.34 DU/acre</i>
Total Parking Spaces	<i>N/A</i>	360 Spaces	4,520 Spaces	5,966 Spaces
Parking Spaces per 1,000 GSF of Development	<i>N/A</i>	0.87	1.69	1.55

Source: Perkins Eastman

Model Inputs

HR&A developed inputs for the IMPLAN analysis from a variety of sources, including:

- **Interviews with market experts** to confirm construction and operations costs;
- **Market Data** from Costar, Market reports, and brokers;
- **Marshall and Swift** construction cost estimators;
- **Scenarios development program** developed by Perkins Eastman and BFJ Planning; and
- **Remediation and infrastructure costs** estimated by Tighe & Bond.³

Table 2 summarizes the model inputs in terms of:

- **One-time expenditures** on development of the associated program by scenario. These are likely to be borne primarily by the developer(s) of the associated programs by may also include private and public spending related to buildout of the site (horizontal infrastructure) and onsite supportive social infrastructure such as parks, schools, and other community facilities. One-time expenditures include hard costs and soft costs of development, but exclude financing costs.
- **Ongoing expenditures and employment** related to activity occurring in each scenario. This approach uses a combination of business spending by selected industries, consumer spending by selected industries, and full-time employment for selected industries to generate direct inputs that calculate direct, indirect, and induced economic impacts in terms of total employment, labor income, and total economic output. It is important to note that each industry uses one input method in order to avoid double counting of total economic impacts.

³ All values in this report are also rounded to avoid a false sense of precision lent by these inputs.

More detailed breakdowns of inputs used in the model in terms of industry and input type can be found in [Appendix B – IMPLAN Model Inputs](#).

TABLE 2 | EXPENDITURES AND JOBS INPUTS BY SCENARIO

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
One-Time Impacts				
One-time Expenditure Inputs (dollars in millions)	\$11.6	\$62.2	\$497.2	\$1,364.3
Ongoing Impacts				
Annual Expenditure Inputs for onsite activity (dollars in millions)	\$24.7	\$34.6	\$49.5	\$121.1
Jobs Inputs for Onsite Activity	95	205	1,990	800

In the case of one-time impacts these comprise capital investments in horizontal infrastructure needed to prepare the site for development, as applicable, and the vertical development of additional uses depending on the scenario. In the case of ongoing expenditures, this is expressed in two ways. First, it relies on spending generated by activity occurring at the airport if it were to remain open, as contemplated in Scenarios 1 and 2, as well as any spending at retail uses in Scenarios 2, 3, and 4 to calculate related economic benefits. Second, it considers ongoing employment at developed uses at the airport that is not captured through spending categories (i.e. aviation operations and retail spending).

One-time expenditures in Scenario 1 include 94,000 SF of new development in the form of a vertiport facility and supporting office, as well as new hangar space. Planned capital investments for the aviation facilities at the airport – including the construction of a new air traffic control tower – are already contemplated as part of ongoing impacts, as they are considered to comprise an annual average investment the CAA must make to maintain the airport. Ongoing impacts in Scenario 1 include continued operations of the airport with some incremental traffic resulting from the extended runway and new hangars and vertiport. (For more detail on how economic impacts of existing operations were calculated, see previous HR&A report: **Hartford-Brainard Airport Economic and Fiscal Impacts of Continued Operations**.) Ongoing impacts of new development are based on an assumed job density by use and type measured as SF per job. (For job density ratios of all uses, see: [Appendix B – IMPLAN Model Inputs](#).)

Scenario 2 contemplates the closure of the crosswind runway and development of industrial uses and accessory retail on the 18-acre portion of HFD. It assumes construction of a facility with space for advanced manufacturing and general industrial uses in addition to a 20,000 SF retail use. As with Scenario 1, Scenario 2 assumes similar economic impacts of continued airport operations as closing the crosswind runway is anticipated to have modest effects on airport operations. In addition, spending that occurs at the retail use and employment at the industrial development are used to generate inputs for economic analysis.

Scenarios 3 and 4 both involve closure of HFD and redevelopment of the 204-acre site. Scenario 3 redevelopment is focused on industrial uses with 2,360,000 SF of industrial redevelopment including a mix of warehousing and advanced manufacturing, as well as an outdoor recreation facility and accessory office and retail uses. Scenario 4 focuses on mixed-use development that is primarily residential in nature, with more than 2,700 units of

multifamily and townhome development. Ongoing impacts for both Scenarios 3 and 4 consider employment derived from industrial, office, and recreation uses and spending at retail uses.⁴

Scenarios 2, 3, and 4 also include one-time expenditures related to horizontal infrastructure investments needed to make the site ready for redevelopment. All horizontal and vertical cost assumptions are included in [Appendix C – Vertical and Horizontal Cost Assumptions](#).

IMPLAN Multipliers

For each scenario, HR&A analyzed the drivers of expenditures and employment and mapped spending and job values to IMPLAN multipliers that correspond with the associated economic activity. (For more detail on the IMPLAN multipliers used, see: Appendix A – IMPLAN Multipliers

[Table A - 1 | Selected IMPLAN Data for Hartford, CROG Region, and Connecticut.](#))

Economic Impacts

HR&A used the assumptions generated through the analyses above as inputs to the IMPLAN input-output model, focusing on jobs supported, labor income, and economic output for the City of Hartford, CROG Region, and the state of Connecticut. For Scenarios 1 and 2 HR&A relied on outputs from the analysis of the economic impact analysis of existing operations at HFD estimated in the previous report.⁵ This section lays out impacts by scenarios with a brief description of key drivers of these outputs by scenario.

Scenario 1

In Scenario 1, HFD operations remain largely unchanged from current conditions, but there would be some development on existing vacant land for buildings that support airport operations. This includes a 50,000 SF vertiport, four new hangars totaling roughly 29,000 SF, and one 15,000 SF aviation supporting office building. Additionally, an extended, 5,000-foot main runway will allow for an increase in the share of jet engine planes to be able to utilize HFD. This is estimated to increase overnight visitation to the region via HFD. The construction timeline of Scenario 1 would be shorter than other scenarios because of the minimal construction volume. These impacts would likely reach stabilization relatively quickly.

Extending the runway will also ensure the airport complies with FAA guidance regarding safety and allows HFD to have a runway that meets many aircraft insurers' guidelines for use, potentially opening up the airport to a broader range of corporate jets that could aid broader economic development and corporate locations strategies in Hartford. Additionally, the added vertiport will increase the region's competitiveness in terms of the aviation and aerospace industries, especially as the VTOL (Vertical Take off and Landing), drones, and other advanced aerial technologies continue to develop. Qualitative impacts discussed in the previous report of ongoing operations – such as workforce development, supporting State economic priorities, and public service uses – would also apply to this scenario.

Table 3 outlines the one-time and ongoing employment, labor income, and economic output – measured in GRP – impacts of Scenario 1 in terms of direct impacts, as well as indirect and induced impacts.

⁴ Scenario 4 would provide housing for approximately 6,290 residents. Based on the estimated regional population growth predictions, this would mean that for the residential program to stabilize, it would need to capture approximately one-fifth of all residential growth in the CROG between now and 2040. Over the same period, Hartford is projected to grow by fewer than 500 total residents. Given these trends, HR&A chose not to include spending from residents in its ongoing impacts, as these households are not likely to comprise net-new residents to the area.

⁵ For this analysis, HR&A relied on the midpoint of the high and low estimates of impacts.

TABLE 3 | SCENARIO 1 EMPLOYMENT, LABOR INCOME, AND ECONOMIC OUTPUT

Employment	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	80	80	80	255	255	255
Indirect	-	10	10	5	45	50
Induced	-	20	30	5	65	100
Total	80	110	120	265	365	405
Labor Income (\$000,000)	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	\$6.9	\$6.9	\$6.9	\$23.3	\$23.3	\$23.3
Indirect	\$0.1	\$1.0	\$1.2	\$0.5	\$3.6	\$4.3
Induced	\$0.1	\$1.4	\$2.2	\$0.2	\$4.3	\$7.8
Total	\$7.0	\$9.2	\$10.2	\$24.0	\$31.3	\$35.5
Economic Output (\$000,000)	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	\$11.6	\$11.6	\$11.6	\$34.3	\$34.3	\$34.3
Indirect	\$0.2	\$2.6	\$3.3	\$1.1	\$8.6	\$10.9
Induced	\$0.2	\$3.7	\$5.9	\$0.6	\$12.0	\$21.3
Total	\$12.1	\$18.0	\$20.8	\$36.0	\$54.8	\$66.4

Employment values are rounded to the nearest 5; labor income and economic output values to the nearest \$100,000. Totals may not add due to rounding. Costs are not netted out.

Source: HR&A analysis of IMPLAN, 2023.

Scenario 2

As with Scenario 1, Scenario 2 assumes HFD ongoing operations remain largely the same with the enhancement from an extended runway. Scenario 2 differs in that it includes a larger development program on the 18-acre portion of the airport closed. Scenario 2 includes all the development that occurs in Scenario 1, including full ongoing operations of the airport, and additional development occurring on the crosswind runway. The runway closure will likely have no impact on ongoing airport operations because it is rarely used and any loss in activity on the crosswind runway would be made up on the extended runway. Table 4 summarizes the economic impact of Scenario 2.

Scenario 2 focuses on industrial development as it is market appropriate and the most compatible with the surrounding uses, including the immediately adjacent wastewater treatment plan. The partial site redevelopment would include the development of one 100,000 SF building that will include 50,000 SF of flex industrial and 50,000 SF of advanced manufacturing space. A second building will be 100,000 SF of industrial or manufacturing space. There will also be 20,000 SF of retail space. The construction timeline of Scenario 2 would be shorter than Scenarios 3 and 4 because of the minimal construction volume. These impacts would likely reach stabilization relatively quickly, and the program may be feasibly developed in a single phase.

Qualitative benefits included in Scenario 1 will largely accrue to Scenario 2 as well.

TABLE 4 | SCENARIO 2 EMPLOYMENT, LABOR INCOME, AND ECONOMIC OUTPUT

Employment	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	470	470	470	405	405	405
Indirect	5	60	75	10	90	105
Induced	5	125	175	5	100	165
Total	480	655	720	420	595	680
Labor Income (\$000,000)	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	\$41.4	\$41.4	\$41.4	\$30.3	\$30.3	\$30.3
Indirect	\$0.6	\$6.2	\$7.2	\$0.6	\$7.0	\$8.9
Induced	\$0.5	\$8.1	\$12.9	\$0.3	\$6.9	\$12.8
Total	\$42.5	\$55.8	\$61.5	\$31.2	\$44.2	\$52.1
Economic Output (\$000,000)	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	\$62.2	\$62.2	\$62.2	\$47.6	\$47.6	\$47.6
Indirect	\$1.5	\$16.3	\$19.9	\$1.7	\$17.9	\$24.4
Induced	\$1.2	\$22.4	\$34.9	\$0.8	\$19.0	\$34.8
Total	\$65.0	\$101.0	\$117.1	\$50.1	\$84.6	\$106.8

Employment values are rounded to the nearest 5; labor income and economic output values to the nearest \$100,000. Totals may not add due to rounding. Costs are not netted out.

Source: HR&A analysis of IMPLAN, 2023.

Scenario 3

In Scenario 3, HFD operations completely shut down to allow for the full redevelopment of the site. The full closure of the airport would require all existing airport users and tenants to relocate or cease operation. The closure alone with no redevelopment would support limited economic activity in Hartford, with most continuing operations occurring in the CRCOG region or the state.⁶ For purposes of these scenario analyses, we did include these closure scenario impacts for Scenarios 3 and 4, which means the scenarios are accounting for the closure of the airport. For a detailed discussion of the closure scenario and its impacts, please see previous HR&A report: **Hartford-Brainard Airport Economic and Fiscal Impacts of Continued Operations**. Table 5 summarizes economic impacts resulting from Scenario 3.

The current market and the positioning of the site indicate that industrial and warehousing uses have strong market potential. There currently already is a large industrial redevelopment project at Rentschler Field, but there are also limited large plots of land located near a major artery. Scenario 3 would include 2,360,000 SF of warehousing or manufacturing space, 14,000 SF of supportive office space, 100,000 of retail, and 75,000 SF comprising building related to an outdoor driving range. This full redevelopment would also require significant investment in infrastructure such as roads, water and sewer, and other utilities. While the industrial market is relatively strong in the CRCOG, the delivery of 2,360,000 SF of industrial space would still need to be phased in to stabilize appropriately, unless built to suit for a specific user.⁷ The construction timeline of Scenario 3 would be substantially longer than Scenarios 1 and 2 because the scenario involves the demolition and remediation of the

⁶ These impacts are discussed at length in the previous report on economic impacts of ongoing operations.

⁷ For example, many major distributors own their own industrial space, purchasing a development that is built to their own specifications rather than renting space.

entire site and the construction of 2,680,000 SF of new space. Furthermore, full absorption of the site would take years.

TABLE 5 | SCENARIO 3 EMPLOYMENT, LABOR INCOME, AND ECONOMIC OUTPUT

Employment	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	3,475	3,475	3,475	2,280	2,280	2,280
Indirect	40	440	535	55	510	630
Induced	50	900	1,290	10	375	630
Total	3,565	4,820	5,300	2,345	3,165	3,540
Labor Income (\$000,000)	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	\$301.7	\$301.7	\$301.7	\$123.6	\$123.6	\$123.6
Indirect	\$3.8	\$42.3	\$51.1	\$3.3	\$34.8	\$45.3
Induced	\$3.4	\$59.3	\$94.6	\$0.6	\$25.8	\$48.5
Total	\$309.0	\$403.3	\$447.4	\$127.4	\$184.2	\$217.4
Economic Output (\$000,000)	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	\$497.2	\$497.2	\$497.2	\$231.6	\$231.6	\$231.6
Indirect	\$10.0	\$113.1	\$143.1	\$11.1	\$100.4	\$138.2
Induced	\$9.0	\$163.2	\$256.8	\$1.6	\$71.3	\$132.0
Total	\$516.1	\$773.6	\$897.2	\$244.3	\$403.3	\$501.8

Employment values are rounded to the nearest 5; labor income and economic output values to the nearest \$100,000. Totals may not add due to rounding. Costs are not netted out, but the loss of airport activity is accounted for.

Source: HR&A analysis of IMPLAN, 2023.

Employment, labor income, and GRP are all substantially higher in Scenario 3 than in Scenarios 1 and 2. Employment is highest for Scenario 3 than all other scenarios. Even though industrial uses have relatively low job densities, the alternative scenario with the residential mixed-use buildout is primarily comprised of residential development which has even lower job densities.

Scenario 3 will build on the area’s current industrial nature and create a significant number of new jobs for all levels of education. Additionally, the new industrial space can be positioned to support Connecticut’s economic goals such as aerospace, metal working and metal products, production technology machinery and equipment, and medical device manufacturing. While HFD would close, there would be an opportunity to position some of the warehousing and manufacturing to be focused on aviation, which may allow CT Aerotech to capitalize on its current location. There will also be a potential increase in truck traffic, especially if much of the space is focused on warehousing. The closure of the Airport and redevelopment of the site will require the remediation of the soil which will benefit the broader area. Additionally, the redevelopment may create additional costs for the City such as added infrastructure maintenance (e.g., street repairs) that have not been quantified in this scenario.

Scenario 4

Table 6 outlines the one-time and ongoing employment, labor income, and economic output – measured in GRP – impacts of Scenario 4. The impacts below include the impacts from the closure scenario as this would occur in a full redevelopment scenario.

TABLE 6 | SCENARIO 4 EMPLOYMENT, LABOR INCOME, AND ECONOMIC OUTPUT

Employment	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	8,525	8,525	8,525	1,975	1,975	1,975
Indirect	70	1,210	1,470	30	230	285
Induced	125	2,630	3,775	5	235	380
Total	8,720	12,365	13,770	2,015	2,440	2,640
Labor Income (\$000,000)	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	\$747.5	\$747.5	\$747.5	\$91.9	\$91.9	\$91.9
Indirect	\$5.6	\$95.2	\$117.8	\$2.0	\$17.0	\$22.7
Induced	\$8.8	\$173.0	\$277.3	\$0.6	\$17.3	\$31.4
Total	\$761.9	\$1,015.6	\$1,142.5	\$94.5	\$126.3	\$146.0
Economic Output (\$000,000)	One-Time			Ongoing (Annual)		
	Hartford	CRCOG Region	Connecticut	Hartford	CRCOG Region	Connecticut
Direct	\$1,096.9	\$1,096.9	\$1,096.9	\$208.0	\$208.0	\$208.0
Indirect	\$14.4	\$248.6	\$322.0	\$7.0	\$51.2	\$71.6
Induced	\$23.0	\$476.6	\$752.7	\$1.5	\$47.8	\$85.3
Total	\$1,134.2	\$1,822.2	\$2,171.5	\$216.6	\$307.1	\$365.0

Employment values are rounded to the nearest 5; labor income and economic output values to the nearest \$100,000. Totals may not add due to rounding. Costs are not netted out, but the loss of airport activity is accounted for.

Source: HR&A analysis of IMPLAN, 2023.

In Scenario 4, the site would be fully transformed into a residential mixed-use development. The added investment this entails in terms of horizontal and vertical construction costs drives substantial one-time employment, measured in job-years. In addition to nearly 4 million SF of private development including more than 2,7000 housing units, the scenario also contemplates the construction of a public school, community center, and more than 14 million SF of public parks and open space both along the edge of the development adjacent the river and within the neighborhoods. The one-time jobs, labor income, and economic output impacts the largest of all four scenarios because of the intensive residential development. The program for Scenario 4 is 1.5X larger than Scenario 3, the second largest development footprint. This results in Scenario 4 generating 3.4X the one-time jobs, 3.4X the one-time labor income, and 3.2X the one-time economic output of Scenario 3.

The residential program may require several phases and a lengthy timeline to fully build out and stabilize. Scenario 4 would add 2,721 multifamily units and townhouses to Hartford’s current housing stock, which would be more than six times the approximately 430 multifamily units currently under construction. Put another way, from 2018 to 2023 the City of Hartford absorbed approximately 300 multifamily units annually. Even if the residential program at the HFD site as part of Scenario 4 were able to capture 100% of all demand in Hartford, the project would take nine years to fully absorb, thus a realistic timeline would likely take much longer, and relating one-time and ongoing economic impacts should be viewed with that lens.

Scenario 4 is a complete reimagining of the HFD site. The plan will bring a significant amount of new, high-quality housing to Hartford. To support all new housing will be significant neighborhood amenities that will be developed for both residents to use and visitors. Amenities include the development of three neighborhood parks and a park on the riverfront. Additionally, the development of a new school, library, and community center will benefit the broader Hartford community. This analysis does not quantify the cost to the City and State in terms of new

infrastructure such as road improvements in the surrounding area, the costs of added burdens to the school system, and cost of providing services to the development.

The new development will also include the development of a recreation facility that would include ball fields that could be used for tournaments. Tournaments, depending on how they are programmed and how frequently they are, could bring in a significant number of visitors including both day visitors and overnight visitors that would spend money on food and hotels in the region. These numbers have not been quantified as they would vary significantly depending on programming.

Fiscal Benefits

Economy activity generated by the outcomes of the four scenarios in this report result in fiscal benefits that accrue to the City of Hartford and State of Connecticut in the form of taxes and fees, including:

- **Local property taxes** generated from the site, including in the case of continued operations the payment in lieu of taxes (PILOT) that the State makes on behalf of the CAA to the City of Hartford for property it owns within the municipality.
- **Sales taxes** from retail sales of construction materials and ongoing retail spending in the redevelopment scenarios and broader region.
- **Personal and corporate income taxes** based on labor and business income at the HFD site and within broader region to support activity in redevelopment or ongoing activities.
- **Other taxes and fees** related to HFD's use as an aviation facility such as Gross Earnings Tax on petroleum products sales, registration fees, etc.

To determine the fiscal benefits owing to the scenarios, this analysis relies on the historical relationship between personal income and statewide collections for sales taxes, personal income taxes, and corporate income taxes. The labor income output of the input-output model is then applied to this ratio to estimate aggregate increases in these taxes owing to direct, indirect, and induced impacts of operations at HFD.

To estimate property taxes of redeveloped property, HR&A assumed that private development has a market value that is equal to its net operating income divided by a market and use appropriate cap rate, and that this market value is assessed at the full rate in the City of Hartford and levied the appropriate millage rate by use: for purposes of this analysis a rate of 68.95 mills is used, as even in Scenario 4 none of the development is contemplated as owner-occupied single-family homes.

Scenarios 1 and 2 assume the CAA will retain ownership of HFD and the State will continue to pay its PILOT as it has done historically.⁸ This analysis attributes a portion of that larger payment to HFD. In addition, fees related to aircraft registration and fuel sales at HFD are assumed to remain consistent with existing operations. There is limited new development so the impacts are still largely driven by the ongoing operations scenario with some additional impacts from the new development. All the one-time fiscal impacts stem from new construction in Scenario 1. Scenario 2 has a more substantial horizontal and vertical development program and results in a

⁸ The Airport is located on CAA-owned land and is exempt from paying property tax to the City of Hartford. The CAA is a quasi-public agency, so the land that it owns, including HFD, is treated as a part of the PILOT, similarly to other State-owned land. To partially reimburse municipalities for foregone property tax revenue on State-owned land, the State of Connecticut has a payment in lieu of taxes (PILOT) program that provides annual grants to municipalities. Payments for State-owned property are equal to 45% of the baseline property taxes on the property if it were not exempt.

PILOT is appropriated, and the State has generally underfunded this appropriation. Recent legislation acknowledges this underfunding and directs greater shares of limited PILOT funding to higher need municipalities. Connecticut municipalities were broken into three tiers, with Tier 1 receiving the highest level of reimbursement. Hartford is considered a Tier 1 city, and it receives a PILOT equal to 50% of the PILOT payment attributed to State-owned property within the city. Tier 1 cities receive the highest payments as a share of baseline property tax. This results in the State paying an effective rate of 22.5% of the property tax owed attributed to the Airport.

greater magnitude of one-time benefits. The ongoing fiscal impacts in Scenario 2 are larger than Scenario 1 as the new development generates more economic activity than the underutilized crosswind runway.

Table 7 summarizes fiscal benefits of the four studied scenarios.

TABLE 7 | ONE-TIME AND ONGOING FISCAL BENEFITS

(\$000,000)	One-time				Ongoing (Annual)			
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Sales Taxes	\$0.2	\$1.1	\$7.3	\$19.2	\$0.6	\$0.9	\$3.7	\$2.5
Individual Income Taxes	\$0.3	\$2.0	\$14.2	\$37.0	\$1.1	\$1.7	\$7.0	\$4.7
Corporate Income Taxes	\$0.1	\$0.4	\$2.7	\$7.0	\$0.2	\$0.3	\$1.3	\$0.9
Subtotal State Taxes	\$0.6	\$3.5	\$24.2	\$63.1	\$2.0	\$2.9	\$12.0	\$8.1
Property Tax*	-	-	-	-	\$0.7	\$0.7	\$29.1	\$57.3
Other Fiscal Benefits	<\$0.1	<\$0.1	-	-	<\$0.1	<\$0.1	-	-
Subtotal City Taxes	<\$0.1	<\$0.1	-	-	\$0.8	\$0.8	\$29.1	\$57.3
Property Tax to Other Municipalities**	-	-	-	-	\$2.7	\$4.3	\$20.1	\$14.7
Total Fiscal Benefits	\$0.6	\$3.5	\$24.2	\$63.1	\$5.7	\$7.8	\$61.3	\$80.1

Values for State sales, individual income, corporate income taxes, and Other Local Governments property taxes rely on the midpoint of elasticity related to labor income and economic output.

* - Property Taxes for the City of Hartford include State PILOT share attributed to HFD. Other Fiscal Benefits include Aircraft Registration Fees and Gross Earnings Tax on Petroleum Products Sales.

** To estimate the impact of HFD operations on property taxes broadly – and not on the Airport– this analysis considers the relationship between Connecticut's economic output and total local property tax collections in the state. In 2022 this ratio was \$40.14 in statewide local property tax collections per \$1,000 in statewide economic output.

Scenarios 3 and 4 result in substantially greater fiscal benefits both from one-time development of the entire 204-acre site and the ongoing impacts of employment, retail spending, and other activity occurring on the reposition scenarios. In Scenario 3, the dedication of almost all the land for job generating uses drives fiscal impacts related to personal income and corporate income. Scenario 4 has substantially higher one-time fiscal impacts because of more valuable development and the magnitude of development and cost of development for the residential program. Conversely, ongoing benefits are still larger than Scenario 3, but by a much smaller margin because there are fewer jobs created—a factor that drives the property tax value to other municipalities and the State income taxes. In Scenario 4 the value of residential property over industrial property in Hartford is significantly higher, so the value to the City of Hartford is much higher than in the other scenarios. This is an important consideration as it is not clear what municipalities would be impacted.

Lastly, despite significantly higher one-time and ongoing impacts of Scenarios 3 and 4, these values will likely be spread out over a greater number of years – in the case of one-time impacts – or take longer to reach stabilization and full impacts – in the case of ongoing benefits.

Conclusion

The impacts of all of scenarios exceeds the existing impact of the HFD ongoing operations, but it is important to consider the feasibility for each scenario, the costs associated with each scenario—both in terms of development costs and the additional fiscal burden that could arise in each scenario (not examined in this analysis) --, and the regional need for each scenario. Scenarios 1 and 2 maintain the existing airport operations but expand the opportunity to capitalize on the existing underutilized land. Repositioning the underutilized land to focus on aviation and aerospace supportive uses could allow HFD to reach its full potential, but it may also be difficult to justify the development cost without guaranteed users.

Scenario 3 is a costly redevelopment effort but fits in well with the existing character of the surrounding area. There is already a similar large project occurring across the river at Rentschler Field, so the development would have to compete with a nearby large warehousing and manufacturing facility. This could lead to the new development having difficulty being absorbed by the market. Conversely, the site is well-located, and the market

analysis conducted by HR&A indicates that industrial uses have the strongest market potential. Additionally, this scenario would create 2,150 new jobs, the most of any scenario.

Finally, Scenario 4 includes significant new residential development and commercial development. While there is limited population growth in the region, existing housing and new developments have low vacancy rates and have been well-absorbed by the market. Most new residential developments in Hartford have required significant subsidy to be developed, and this project would also likely need significant subsidy to be redeveloped as it is in an unproven market for residential development and would require remediation. Providing such a subsidy would preclude the use of those public resources in other public policy and economic development priorities including the revitalization of downtown Hartford and provision of additional housing throughout the rest of the City and region. Furthermore, there are currently limited transportation options. The proposed program would also bring significant neighborhood amenities to the area including parks, a school, and library. Additionally, the new recreational facility could bring in visitors to Hartford and create new jobs for residents and help support local businesses.

Technical Appendix

Appendix A - IMPLAN Multipliers

TABLE A - 1 | SELECTED IMPLAN DATA FOR HARTFORD, CRCOG REGION, AND CONNECTICUT

	Description	Employment Multiplier	Labor Income Multiplier	Output Multiplier
Hartford				
58	Construction of new multifamily residential structures	0.0215	0.0183	0.0338
448	Tenant-occupied housing	0.0136	0.2058	0.0069
412	Retail - Miscellaneous store retailers	0.0223	0.0338	0.0588
509	Full-service restaurants	0.0201	0.0342	0.0414
468	Marketing research and all other miscellaneous professional, scientific, and technical services	0.0877	0.0580	0.0453
391	All other miscellaneous manufacturing	0.0000	0.0000	0.0000
265	Semiconductor machinery manufacturing	0.0000	0.0000	0.0000
356	Other aircraft parts and auxiliary equipment manufacturing	0.0000	0.0000	0.0000
422	Warehousing and storage	0.0285	0.0261	0.0507
505	Fitness and recreational sports centers	0.0210	0.0500	0.0565
480	Elementary and secondary schools	0.0060	0.0041	0.0143
402	Retail - Motor vehicle and parts dealers	0.0266	0.0211	0.0318
60	Maintenance and repair construction of nonresidential structures	0.0441	0.0416	0.0385
62	Maintenance and repair construction of highways, streets, bridges, and tunnels	0.0487	0.0413	0.0364
482	Other educational services	0.0236	0.0314	0.0559
420	Scenic and sightseeing transportation and support activities for transportation	0.0401	0.0261	0.0517
399	Wholesale - Petroleum and petroleum products	0.1563	0.1442	0.0145
408	Retail - Gasoline stores	0.0647	0.0467	0.0597
507	Hotels and motels, including casino hotels	0.0357	0.0399	0.0432
450	Automotive equipment rental and leasing	0.3062	0.0343	0.0658
406	Retail - Food and beverage stores	0.0228	0.0286	0.0437
57	Construction of new single-family residential structures	0.0282	0.0241	0.0350
54	Construction of new highways and streets	0.0265	0.0264	0.0351
55	Construction of new commercial structures, including farm structures	0.0245	0.0232	0.0358
CRCOG Region				
58	Construction of new multifamily residential structures	0.3447	0.2701	0.5226
448	Tenant-occupied housing	0.1240	1.5535	0.0588

	Description	Employment Multiplier	Labor Income Multiplier	Output Multiplier
412	Retail - Miscellaneous store retailers	0.2355	0.4063	0.6043
509	Full-service restaurants	0.2420	0.4526	0.4979
468	Marketing research and all other miscellaneous professional, scientific, and technical services	0.8105	0.5293	0.4234
391	All other miscellaneous manufacturing	0.4643	0.8118	0.3606
265	Semiconductor machinery manufacturing	0.0000	-	-
356	Other aircraft parts and auxiliary equipment manufacturing	0.5809	0.3306	0.3536
422	Warehousing and storage	0.4163	0.4680	0.6943
505	Fitness and recreational sports centers	0.1877	0.5392	0.4932
480	Elementary and secondary schools	0.1807	0.1684	0.4909
402	Retail - Motor vehicle and parts dealers	0.4067	0.3390	0.4758
60	Maintenance and repair construction of nonresidential structures	0.7133	0.6087	0.5910
62	Maintenance and repair construction of highways, streets, bridges, and tunnels	0.8447	0.6949	0.6686
482	Other educational services	0.2684	0.3761	0.5733
420	Scenic and sightseeing transportation and support activities for transportation	0.4738	0.3037	0.6438
399	Wholesale - Petroleum and petroleum products	1.2292	1.2120	0.1232
408	Retail - Gasoline stores	0.6809	0.5200	0.6092
507	Hotels and motels, including casino hotels	0.3816	0.4400	0.4978
450	Automotive equipment rental and leasing	2.6252	0.2850	0.5539
406	Retail - Food and beverage stores	0.2911	0.4387	0.5627
57	Construction of new single-family residential structures	0.4681	0.3772	0.5623
54	Construction of new highways and streets	0.4173	0.3743	0.5528
55	Construction of new commercial structures, including farm structures	0.3774	0.3314	0.5278

Description	Employment Multiplier	Labor Income Multiplier	Output Multiplier
Connecticut			
58 Construction of new multifamily residential structures	0.4677	0.3989	0.7840
448 Tenant-occupied housing	0.2008	2.2539	0.1055
412 Retail - Miscellaneous store retailers	0.3330	0.5948	0.9307
509 Full-service restaurants	0.3543	0.6874	0.7944
468 Marketing research and all other miscellaneous professional, scientific, and technical services	1.1745	0.7217	0.6581
391 All other miscellaneous manufacturing	0.8335	1.0377	0.5992
265 Semiconductor machinery manufacturing	2.1457	1.1513	0.8156
356 Other aircraft parts and auxiliary equipment manufacturing	0.8512	0.5210	0.5638
422 Warehousing and storage	0.5645	0.7358	1.0813
505 Fitness and recreational sports centers	0.2942	0.7608	0.7769
480 Elementary and secondary schools	0.2879	0.2942	0.8493
402 Retail - Motor vehicle and parts dealers	0.6176	0.5267	0.8017
60 Maintenance and repair construction of nonresidential structures	0.9476	0.8418	0.8420
62 Maintenance and repair construction of highways, streets, bridges, and tunnels	1.0972	0.9377	0.9225
482 Other educational services	0.4120	0.6311	0.9973
420 Scenic and sightseeing transportation and support activities for transportation	0.7205	0.3976	0.9372
399 Wholesale - Petroleum and petroleum products	1.7717	1.1706	0.1932
408 Retail - Gasoline stores	0.8927	0.7177	0.8734
507 Hotels and motels, including casino hotels	0.5735	0.6453	0.8095
450 Automotive equipment rental and leasing	2.2957	0.4346	0.7368
406 Retail - Food and beverage stores	0.4192	0.6536	0.8899
57 Construction of new single-family residential structures	0.6245	0.5418	0.8270
54 Construction of new highways and streets	0.5615	0.5200	0.7724
55 Construction of new commercial structures, including farm structures	0.5197	0.4813	0.7757

Source: IMPLAN, 2023

Appendix B – IMPLAN Model Inputs

Scenario 1

TABLE B-1 | ONE-TIME EXPENDITURES MODEL INPUTS

IMPLAN Code	Description	Direct Spending	Description
55	Construction of new commercial structures, including farm structures	\$9,450,000	Captures construction spending on the new development dictated by Scenario 1.
54	Construction of new highways and streets	\$1,500,000	Captures all street and parking construction costs related to the new development. Also captures horizontal construction costs
51	Construction of new manufacturing structures	\$720,000	Captures construction spending on the new manufacturing facilities as dictated by Scenario 1.

Source: Perkins Eastman Analysis; HR&A Analysis; IMPLAN, 2023.

TABLE B-2 | ONGOING EXISTING AIRPORT OPERATIONS EXPENDITURES MODEL INPUTS (ANNUAL)

IMPLAN Code	Description	Direct Spending	Description
AIRCRAFT OWNER ONSITE EXPENDITURES			
402	Retail – Motor vehicle and parts dealers	\$401,000	Captures spending on supplies as reported by the survey.
420	Scenic and sightseeing transportation and support activities for transportation	\$4,057,000	Captures all other spending related to the aviation industry on-site. This approach is consistent with previous studies relies on a code that captures a broad range of activities related to non-commercial use. The activities covered include aircraft hangar rental; aircraft maintenance and repair; fueling aircraft; and insurance as reported by the survey.
AIRCRAFT OWNER OFFSITE EXPENDITURES			
408	Retail - Gasoline stores	\$43,000	Captures spending offsite as other retail (the median spending was \$375, as reported in the survey).
412	Retail - Miscellaneous store retailers	\$83,000	Captures spending offsite as convenience retail (the average spending was \$718, as reported in the survey).
509	Full-service restaurants	\$172,000	Captures spending offsite as food and beverage and convenience retail (the average spending was \$1,495, as reported by the survey).
EMPLOYER EXPENDITURES			
402	Retail - Motor vehicle and parts dealers	\$1,289,000	Captures annual expenditures on equipment leases and purchases (e.g., tugs, cables, power units, baggage carts, etc.)
482	Other educational services	\$1,026,000	Captures payroll for educational staff at CT Aero Tech and the two flight schools located on HFD. The code 482 was used because it best aligns with the code used in the 2012 report.
420	Scenic and sightseeing transportation and support activities for transportation	\$9,525,000	Captures all other spending related to the aviation industry on-site. This approach is consistent with previous studies relies on a code that captures a broad range of activities related to non-commercial use. The activities covered include aircraft hangar rental; aircraft maintenance and repair; fueling aircraft; and insurance as reported by the survey.

ANNUALIZED CAPITAL EXPENDITURES			
60	Maintenance and repair construction of nonresidential structures	\$1,638,000	Captures 50% of the average annual CAA capital expenditure (\$3.3 million) over the next five years.
62	Maintenance and repair construction of highways, streets, bridges, and tunnels	\$1,638,000	Captures 50% of the average annual CAA capital expenditure (\$3.3 million) over the next five years.
VISITOR EXPENDITURES			
408	Retail - Gasoline stores	\$148,000	5% of spending
507	Hotels and motels, including casino hotels	\$1,186,000	40% of spending
450	Automotive equipment rental and leasing	\$889,000	30% of spending (includes car rental)
406	Retail - Food and beverage stores	\$148,000	5% of spending
509	Full-service restaurants	\$593,000	20% of spending
NEW DEVELOPMENT			
473	Business support services	48	Captures the impacts of new office space.
420	Scenic and sightseeing transportation and support activities for transportation	15	Captures the impacts of new hangar space.
422	Warehousing and storage	33	Captures the impacts of new warehousing space.

Source: ARA Survey of Aircraft Owners at HFD, 2023; HR&A Analysis; IMPLAN, 2023.

Scenario 2

TABLE B-3 | ONE-TIME EXPENDITURES MODEL INPUTS

IMPLAN Code	Description	Direct Spending	Description
55	Construction of new commercial structures, including farm structures	\$14,510,000	Captures construction spending on the new development dictated by Scenario 2 excluding manufacturing.
54	Construction of new highways and streets	\$26,185,000	Captures all street and parking construction costs related to the new development. Also captures horizontal construction costs
51	Construction of new manufacturing structures	\$26,920,000	Captures construction spending on the new manufacturing facilities as dictated by Scenario 2.

Source: Perkins Eastman Analysis; HR&A Analysis; IMPLAN, 2023.

TABLE B-4 | ONGOING EXPENDITURES FOR NEW DEVELOPMENT MODEL INPUTS (ANNUAL)

IMPLAN Code	Description	Direct Jobs	Description
-------------	-------------	-------------	-------------

356	Other aircraft parts and auxiliary equipment manufacturing	26	Captures advanced manufacturing impacts.
422	Warehousing and storage	65	Captures the impacts of new warehousing space.
473	Business support services	48	Captures the impacts of new office space.
420	Scenic and sightseeing transportation and support activities for transportation	15	Captures the impacts of new hangar space.
422	Warehousing and storage	33	Captures the impacts of new warehousing space.
391	All other miscellaneous manufacturing	52	Captures the impacts of new manufacturing space.
412	Retail - Miscellaneous store retailers	\$9,889,513	Captures spending in new retail development.

Source: HR&A Analysis; IMPLAN, 2023.

Scenario 3

TABLE B-5 | ONE-TIME EXPENDITURES MODEL INPUTS

IMPLAN Code	Description	Direct Spending	Description
55	Construction of new commercial structures, including farm structures	\$396,220,000	Captures construction spending on the new development dictated by Scenario 3 excluding manufacturing.
54	Construction of new highways and streets	\$34,208,000	Captures all street and parking construction costs related to the new development. Also captures horizontal construction costs
51	Construction of new manufacturing structures	\$55,800,000	Captures construction spending on the new manufacturing facilities as dictated by Scenario 3.

Source: Perkins Eastman Analysis; HR&A Analysis; IMPLAN, 2023.

TABLE B-6 | ONGOING EXPENDITURES FOR NEW DEVELOPMENT MODEL INPUTS (ANNUAL)

IMPLAN Code	Description	Direct Jobs	Description
ANNUALIZED CAPITAL EXPENDITURES			
391	All other miscellaneous manufacturing	186	Captures all undefined manufacturing space.
422	Warehousing and storage	1,307	Captures the impacts of new warehousing space.
473	Business support services	443	Captures the office space developed.
505	Fitness and recreational sports centers	53	Captures the golf driving range developed.
VISITOR EXPENDITURES			
412	Retail - Miscellaneous store retailers	\$49,448,000	Captures the retail space developed.

Source: Perkins Eastman Analysis; HR&A Analysis; IMPLAN, 2023.

Scenario 4

TABLE B-7 | ONE-TIME EXPENDITURES MODEL INPUTS

IMPLAN Code	Description	Direct Spending	Description
55	Construction of new commercial structures, including farm structures	\$221,847,000	Captures construction spending on the new commercial development dictated by Scenario 4 including recreation and retail.
54	Construction of new highways and streets	\$41,880,000	Captures street and parking construction costs related to development. Also captures horizontal construction costs
57	Construction of new single-family residential structures	\$261,964,147	Captures construction spending on the new townhouse development dictated by Scenario 4.
58	Construction of new multifamily residential	\$985,484,172	Captures construction spending on the new multi-family development dictated by Scenario 4.

Source: Perkins Eastman Analysis; HR&A Analysis; IMPLAN, 2023.

TABLE B-8 | ONGOING EXPENDITURES FOR NEW DEVELOPMENT MODEL INPUTS (ANNUAL)

IMPLAN Code	Description	Direct Jobs	Description
422	Warehousing and storage	171	Captures all street and parking construction costs related to the new development.
505	Fitness and recreational sports centers	232	Captures the golf driving range and indoor recreation developed.
448	Tenant-occupied housing	59	Captures all ongoing housing impacts.
480	Elementary and secondary schools	338	Captures all impacts from the school development.

IMPLAN Code	Description	Direct Spending	Description
412	Retail - Miscellaneous store retailers	\$24,971,000	Captures retail spending from the new retail onsite. The spending PSF was derived from Retail MAXIM based on selected national establishments. Does not include new resident spending.
406	Retail - Food and beverage stores	\$41,790,000	Captures residential spending from the new retail onsite. The spending PSF was derived from Retail MAXIM based on selected national establishments. Does not include new resident spending.

Source: Perkins Eastman Analysis; HR&A Analysis; IMPLAN, 2023.

All Scenarios

TABLE B-9 | EMPLOYMENT RATIOS

Use Type	NSF per Worker
Residential	51,000
General Retail	400
Restaurant	400
Office	200
Other Manufacturing	1,900
Hangar	1,900
Aircraft part man	1,900
Warehousing	1,500
Recreation	1,393
Schools	500

Source: HR&A Analysis; New York City Department of City Planning, Environmental Review Division Guidelines (2019), PDX, 2018; Chelsea Piers Economic Impact Assessment.

Appendix C – Vertical and Horizontal Cost Assumptions

TABLE C-1 | HORIZONTAL INFRASTRUCTURE DEVELOPMENT UNIT COST ASSUMPTIONS

Assumption	Value
Soil Remediation (sitewide)	\$1,500,000
Abatement and Demolition (aviation buildings only)	\$6,600,000
Roadways (per linear foot)	\$450 - \$500
Water and Sewer (per linear foot)	\$450
Power (per linear foot)	\$250
Telecommunications (per linear foot)	\$175
Park/Open Space (per SF)	\$0.85

Source: Tighe & Bond

TABLE C-2 | VERTICAL DEVELOPMENT UNIT COST ASSUMPTIONS

	Townhome	Mid-rise Residential	Low-rise Residential	Industrial	Retail	Office	Indoor Recreation	Outdoor Recreation
Construction (per GSF)								
Building Hard Cost	(\$168)	(\$395)	(\$282)	(\$112)	(\$231)	(\$200)	(\$142)	(\$173)
Parking Hard Cost	(\$5)	(\$5)	(\$5)	(\$5)	(\$11)	(\$11)	(\$4)	(\$12)
Tenant Improvements	-	-	-	(\$6)	(\$16)	(\$16)	(\$8)	-
Soft Cost	(\$42)	(\$96)	(\$69)	(\$42)	(\$92)	(\$84)	(\$53)	(\$45)
Financing Cost	(\$16)	(\$37)	(\$27)	(\$12)	(\$24)	(\$21)	(\$14)	(\$17)
Total Cost	(\$231)	(\$534)	(\$383)	(\$177)	(\$373)	(\$331)	(\$221)	(\$247)

Source: HR&A analysis of Marshall and Swift (2023)