Manassas Regional Airport
Master Plan Update

Chapter 5
Implementation Plan and Financial Feasibility

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CHAPTER 5

IMPLEMENTATION AND FINANCIAL FEASIBILITY

5.1 INTRODUCTION

The preceding chapters of this Master Plan identified an aviation demand forecast and the future facilities needed to meet that forecast demand, as well as those needed to maintain sustainability/improve airport safety. This chapter identifies a financially feasibly Capital Improvement Plan (CIP) to implement Master Plan recommendations over the planning period. The comprehensive CIP will be used to guide future airport development and position HEF to meet the established vision for ultimate facility development. The future investments identified in the Airport's CIP involve many interrelated components that must be identified and implemented in a coordinated manner.

This chapter begins by identifying potential sources for capital project funding. Consideration is given to historical airport funding trends and Federal Aviation Administration (FAA) funding guidance to establish achievable future funding expectations. This allows for realistic CIP sequencing with rough order-of-magnitude (ROM) costs based on reasonable design and construction estimations. The process results in a practical, fundable, and implementable plan that the Airport can use to guide project timing and budgeting for facility improvements to meet future development needs.

In summary, this chapter:

- Provides an overview of project implementation process
- Documents the Airport's approved 5-year CIP
- Assesses the funding outlook from federal, state, and local sources based on historical trends
- Presents airport financial trends and projections
- Presents the updated 20-year CIP, including ROM cost estimates for all projects, including detailed project descriptions
- Provides a phasing plan for the 5-year, 10-year, and 20-year planning horizons
- Evaluates the feasibility of funding the updated 20-year CIP

5.1.1 Implementation Process

Enhancing airport infrastructure involves a detailed process that often begins years before construction starts. At HEF, the initial stages have already commenced to progress improvements to the airfield facilities, signifying a dedicated effort to upgrade facilities. The major implementation steps for a complex, federally funded Airport Improvement Program (AIP) projects are shown in **Figure 5-1** illustrating that work should commence a minimum of five years prior to the actual need for the facility. This lead-in time is usually very helpful for coordination with the FAA and/or Virginia Department of Aviation (DOAV) regarding funding, environmental entitlement, and other regulatory compliance requirements, as well as time to complete site or facility design, and time to complete facility construction.

FIGURE 5-1
TYPICAL STEPS TO COMPLETE AN AIRPORT PROJECT

Typical Steps Four Years Prior to Construction

- ❑ Identify the project in the approved Airport Layout Plan and consult with FAA Airports District Office (ADO)
- ❑ Submit 5-year CIP *(by February 1st)*
- ❑ Validate project justification and funding eligibility and identify funding sources
- ❑ Determine probable level of environmental review *(planning may need to begin much earlier if EIS required)*
- ❑ Determine if ALP and/or Exhibit 'A' need updating
- ❑ Identify required flight procedure modifications and need for aeronautical survey
- ❑ Coordinate with local officials and airport users on project plans

Typical Steps Three Years Prior to Construction

- ❑ Refine project scope, cost estimates, and funding sources
- ❑ Determine if a Benefit/Cost Analysis or if FAA Letter of Intent (LOI) are necessary
- ❑ Determine if a reimbursable agreement is necessary for affected navigational aids (NAVAIDs)
- ❑ Initiate aeronautical survey as required
- ❑ Begin purchase or assembly of all necessary land for the project

Typical Steps Two Years Prior to Construction

- ❑ Refine project scope
- ❑ Solicit professional design services
- ❑ Prepare preliminary design, site planning, and cost estimates
- ❑ Initiate reimbursable agreements and coordinate any NAVAID requirements with the FAA
- ❑ Complete aeronautical survey and submit requests for new/modified flight procedures with the FAA
- ❑ Submit a request for airspace review of projects under non-rulemaking authority (NRA)
- ❑ Begin Benefit/Cost Analysis if determined to be necessary *(projects seeking over $5M discretionary)*
- ❑ Initiate environmental assessment or categorical exclusion documentation
- ❑ Coordinate with local officials and airport users on refined project scope and schedule

Typical Steps One Year Prior to Construction

- ❑ Complete airspace study
- ❑ Complete project scope of work
- ❑ Complete environmental documentation
- ❑ Complete 90 percent design, plans, and specifications after FAA environmental findings are made
- ❑ Refine and update cost estimates
- ❑ Execute reimbursable agreements to support NAVAIDs, if relevant
- ❑ Prepare and coordinate Construction Safety Phasing Plan
- ❑ Initiate Safety Management Systems (SMS) process
- ❑ Secure all necessary local funding
- ❑ Secure environmental and other necessary permits

(Figure continued next page)

- ❑ Submit Benefit/Cost Analysis *(by March 1st)*
- ❑ Coordinate Safety Risk Management Panel with FAA-ATO or FAA-ARP, as necessary
- ❑ Finalize construction bidding, grant application, and grant acceptance schedules

Year of Construction

- ❑ Complete 100 percent design, plans, and specifications
- ❑ Complete FAA environmental documentation for current fiscal year *(by January 15th)*
- ❑ Advertise and secure bids according to ADO schedule
- ❑ Submit grant applications *(by May 1st, if discretionary funds expected bid by April 1st)*
- ❑ Accept federal grants *(within 30 days of offer)*
- ❑ Coordinate with local officials and airport users on the progress and schedule
- ❑ Issue notice-to-proceed
- ❑ Monitor environmental mitigation requirements during construction
- ❑ Provide weekly inspection reports

After Construction

- ❑ Submit final report and provide final test results *(within 60 days of construction end)*
- ❑ Close any accepted federal grants *(within 90 days of project acceptance)*
- ❑ Monitor environmental mitigation measures
- ❑ Submit final As-Built ALP and Exhibit 'A'

Source: Federal Aviation Administration - "Steps to AIP Funding for Your Airport Project: Quick Reference Guide", September 2016; Adapted by RS&H, 2024.

5.1.2 NEPA Implementation Process

The environmental entitlement for projects within each development phase, which involves obtaining necessary approvals and permits in compliance with applicable federal rules and regulations, will need to be completed in advance of the design and construction to allow for project completion. FAA Order 1050.1F, *Policies and Procedures for Considering Environmental Impacts*, and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airports*, require the evaluation of airport development projects as they relate to specific environmental impact categories.

Environmental Assessments (EAs) and Environmental Impact Statements (EISs) represent the most rigorous forms of environmental analysis, requiring a comprehensive assessment of impact categories in accordance with FAA Orders 1050.1F and 5050.4B. In contrast, Categorical Exclusions (CATEXs) demand evaluations of exceptional circumstances to confirm that projects, which usually have minimal environmental impacts, do not warrant more extensive analysis in EAs or EISs.

The ROM project costs incorporate allocations for environmental study and documentation related to CIP projects. For many included in the CIP, CATEXs are anticipated. However, if any project may cause an extraordinary circumstance (such as impacts to more than 0.5 acres of wetlands, threatened or endangered species, or known cultural resources), it would necessitate an EA. It's important to highlight that the final determination regarding the type of NEPA document required for each project, as well as its scope, rests with the FAA and would not occur until a refined scope for proposed improvements is developed as the need for the project draws nearer.

5.2 APPROVED 5-YEAR CAPITAL IMPROVEMENT PLAN

The Airport coordinates with DOAV and the FAA to maintain a 6-year CIP that identifies and prioritizes airport projects. A current CIP must be filed with DOAV for a sponsor to be eligible to receive entitlement or discretionary funds. **Table 5-1** depicts the current 5-year CIP for fiscal year (FY) 2024 to FY 2028, current as of July 1, 2024.[1] The Airport's 5-year CIP for HEF exceeds $53.6 million.

The master planning process revisits the current CIP and aligns the Airport's capital program with the updated and FAA-approved forecast of future aeronautical activity. The updated CIP combines near-term projects already programmed and funded with new projects reflect the long-term needs for the Airport.

[1] The most current version of the CIP has undergone revisions and updates in planning sessions with airport staff and the FAA since the initiation of the master planning process. These revisions deviate from the information presented in **Table 3-8** Existing Airport CIP Projects (FY 2023-2028), as outlined in Chapter 2, *Inventory and Facility Requirements*.

TABLE 5-1
APPROVED 5-YEAR CAPITAL IMPROVEMENT PLAN (2024-2028)

FAA FY	Project	Total Project Cost	Federal Funds	State Share	Local Share
FY 2025					
2025	Maintenance Facilities & Equipment, Security Capital Projects	$550,000	$0	$408,000	$142,000
2025	Air Traffic Control Tower	$850,000	$0	$0	$850,000
2025	Fuel Farm Upgrade	$50,000	$0	$40,000	$10,000
2025	West Hangar Redevelopment and Expansion	$200,000	$0	$160,000	$40,000
		$1,650,000	**$0**	**$608,000**	**$1,042,000**
FY 2026					
2026	Maintenance Facilities & Equipment, Security Capital Projects	$360,000	$0	$276,000	$84,000
2026	Air Traffic Control Tower	$20,000,000	$18,000,000	$0	$2,000,000
2026	Fuel Farm Upgrade	$500,000	$0	$400,000	$100,000
2026	Rehabilitation of Runway 16L-34R	$10,000,000	$9,000,000	$800,000	$200,000
		$30,860,000	**$27,000,000**	**$1,476,000**	**$2,384,000**
FY 2027					
2027	Maintenance Facilities & Equipment, Security Capital Projects	$370,000	$0	$296,000	$74,000
2027	Rehabilitation of Runway 16L-34R	$10,000,000	$9,000,000	$800,000	$200,000
2027	East Apron Rehabilitation	$650,000	$585,000	$52,000	$13,000
2027	Taxilane X-Ray (Design/Construct)	$200,000	$180,000	$16,000	$4,000
		$11,220,000	**$9,765,000**	**$1,164,000**	**$291,000**
FY 2028					
2028	Maintenance Facilities & Equipment, Security Capital Projects	$595,000	$0	$476,000	$119,000
2028	North East Apron and Taxilane Expansion	$600,000	$540,000	$48,000	$12,000
		$1,195,000	**$540,000**	**$524,000**	**$131,000**
FY 2029					
2029	North East Apron and Taxilane Expansion	$3,500,000	$3,150,000	$280,000	$70,000
2029	East Apron Rehabilitation	$4,000,000	$3,600,000	$320,000	$80,000
2029	Taxilane X-Ray (Design/Construct)	$2,000,000	$1,800,000	$160,000	$40,000
2029	Taxiway B Widening and Lightning	$600,000	$540,000	$48,000	$12,000
2029	New East Ramp Taxiway	$500,000	$450,000	$40,000	$10,000
		$10,600,000	**$9,540,000**	**$848,000**	**$212,000**
Total 5-Year CIP (FY 2025-2029)		**$55,525,000**	**$46,845,000**	**$4,620,000**	**$4,060,000**

Source: Airport Records, 2024; Prepared by RS&H, 2024

5.3 AIRPORT FUNDING OUTLOOK

Generally, airports are unable to meet all capital development funding needs from internal funding sources. Federal, state, local, and private funding often combine with airport funds and bond proceeds (supported by airport revenues and/or municipal support) to generate the funds required to undertake capital improvement projects. Federal funding sources, notably AIP grants, can be subject to modifications by Congress or oversight by other entities controlling those funds. At the state level, many states contribute grant funding to support local airport programs. Locally, funding sources often include airport sponsor funds, bond proceeds driven by airport revenues or municipal support, and occasionally, private contributions.

To create a funding plan that effectively addresses HEF's capital development needs, it is crucial to assess and integrate evaluations of available funds from each source, considering historical allocations or awards for capital projects at HEF. Moreover, since project eligibility criteria can differ across funding sources, adopting a diverse funding approach is instrumental in successfully financing capital improvement endeavors. Planning project funding requires careful consideration of available funds from different sources and their specific eligibility criteria. The provided analysis aids in identifying potential funding sources and evaluating the eligibility of each project element for various programs or funding sources. The analysis conducted during the development of this Master Plan has identified projects intended to enhance the existing 5-year CIP. This expansion extends the capital project and funding plan to cover the 20-year planning horizon. The subsequent subsections outline the key external funding sources intended to support the preferred development.

5.3.1 Federal Funding Outlook

The primary federal sources of funding available to the Airport are grants from the FAA's AIP and the 2021 Bipartisan Infrastructure Law (BIL). Once HEF becomes a Part 139-certificated facility and scheduled commercial passenger service begins, an application can be filed with the FAA to participate in the Passenger Facility Charge (PFC) program. By receiving federal funding for capital improvement projects, the Airport has an obligation to adhere to federal grant assurance requirements. These assurances obligate the Airport to comply with applicable federal law and guidance under the Code of Federal Regulations (CFR) Title 14, FAA Advisory Circulars, FAA Orders, and FAA Memos.

5.3.1.1 Airport Improvement Program

Federal funding is accessible to airports through the AIP based on the airport category designated in the National Plan of Integrated Airport Systems (NPIAS) and the priority of the improvement as determined within the national priority ranking system. In the NPIAS classification, HEF is categorized as a National-level general aviation airport. This classification identifies the highest level of general aviation airports that are non-primary, and currently lacking commercial passenger air service, while offering high levels of activity of jet and multiengine aircraft.[2]

Based on HEF's NPIAS categorization as a reliever airport with a National role, recent HEF entitlement funding has been approximately $150,000 per fiscal year. The introduction of scheduled commercial passenger service should elevate the NPIAS classification for HEF to a primary, non-hub commercial airport, which will qualify for a

[2] Airport Categories, Federal Aviation Administration. Accessed: https://www.faa.gov/airports/planning_capacity/categories, July 2024

minimum of $1.3 million annually based upon enplanement levels. Entitlement funds must be used within three fiscal years immediately following the year the funds were originally allocated.

In addition to annual entitlement funds, discretionary grants are offered through the AIP depending on the availability of funds and the FAA's assessment of need and priority ranking. Discretionary funding is based on a project's ranking in the National Priority List, as determined by the process found in FAA Order 5100.39A, *Airports Capital Improvement Plan*.

Since 2012, HEF has obtained discretionary funding for several projects. Grant awards have been primarily to improve airfield pavements, such as $7.9 million in 2012 and 2013 for the extension of Runway 34R-16L, $2.7 million for the rehabilitation of Runway 34L-16R, and more than $13.6 million over the last 10 years to rehabilitate, extend or construct taxiways and taxilanes. Other projects include apron rehabilitation, runway and taxiway lighting and airfield guidance signage.

5.3.1.2 Bipartisan Infrastructure Law

In November 2021, the Bipartisan Infrastructure Law (BIL) was signed by the President of the United States that included a reserve for airport development to be invested in various projects, including runways, taxiways, safety, and sustainability initiatives, as well as terminal, airport-transit connections, and roadway projects The distribution of these funds is overseen by the FAA's Office of Airports (ARP). These investments are intended to enhance and improve the overall capabilities and facilities of airports across the country.[3] The BIL included three funding allocations for airports, two of which are available to the Port Authority for development at TOL, the Airport Improvement Grant and The Airport Terminal Program. The third funding allocation was reserved for FAA internal use for the rehabilitation and development of FAA-owned facilities. BIL funding sources are available for the five-year duration of federal fiscal years 2022 through 2026.

5.3.1.2.1 Airport Improvement Grant

The Airport Improvement Grant, or AIG, allocates $15 billion (or $3 billion per year from 2022-2026) across all airports currently within the NPIAS, employing a comparable process and methodology to the AIP based on airport classification and passenger activity levels. The Airport has received $763,000, $844,000, and $851,000 for FY2023 through FY2024, respectively, and anticipates annual allocations at similar levels through 2026.[4] The use of these funds follows the same use and eligibility parameters as AIP funding. The funds allocated through the BIL will remain available for obligation until the conclusion of the fourth fiscal year following their distribution. If any funds that are unobligated by the fifth fiscal year will be recovered by the FAA and repurposed for competitive grants. This ensures that the allocated funds are effectively used for infrastructure projects within the specified time frame, and any unused funds are redirected towards other deserving projects through a competitive grant process.

5.3.1.2.2 FAA Contract Tower (FCT) Competitive Grant Program

As part of the BIL Airport Infrastructure improvement initiative, $100 million has been allocated over five years starting in FY2022 through the FAA Contract Tower Competitive Grant Program. The program aims to enhance

[3] Bipartisan Infrastructure Law - Airport Infrastructure. Accessed: https://www.faa.gov/bil/airport-infrastructure, July 2024

[4] Bipartisan Infrastructure Law Airport Infrastructure Grant Funding Amounts. Accessed: https://www.faa.gov/general/bipartisan-infrastructure-law-airport-infrastructure-grant-funding-amounts, July 2024

the safety and efficiency of air traffic control services by modernizing airport-owned air traffic control towers. As an airport-owned facility, improvements are eligible for FCT program funds.

5.3.1.2.3 Airport Terminal Program

The Airport Terminal Program (ATP) allocates $5 billion, or $1 billion per year from 2022-2026, in supplemental discretionary funding opportunities specifically reserved for the development and improvement of airport passenger terminal facilities. This program requires a unique application process and maintains the same eligibility criteria as the Airport Improvement Program (AIP), but offers a greater federal share of project costs based on airport classification. Applications for each fiscal year begin with a Notice of Funding Opportunity (NOFO). As of this writing, ATP grants have been awarded through FY2024, the application period for FY2025 ATP grants has closed and applications are in review. ATP grant awards to date have surpassed $2.9 billion.

Depending upon the location and proposed user improved areas, terminal modernization or upgrade projects included in the updated, 20-year CIP for HEF may be eligible for ATP discretionary grant funding.

5.3.1.3 Passenger Facility Charges

As mentioned, the introduction of commercial service at HEF will make the Airport eligible to participate in the PFC program. Under the PFC program, HEF will be able to collect $4.50 per enplaned passenger and per flight segment. For a one-way trip, a maximum of two PFCs can be charged, and for a round trip, up to four PFCs can be charged, with a total cap of $18.00 per round trip. PFC fees are collected by air carriers during ticket sales and remitted to the airport, less an administration fee of $0.11 per collected PFC deducted.

Once approved by the FAA, PFC collections can be utilized to produce cash flow for airport capital programs, with project eligibility focused on preserving or enhancing safety, security, or capacity, reduce noise, or increase competition among air carriers. Projects funded by PFCs can include expansions to non-revenue terminal areas and equipment, runway upgrades, Aircraft Rescue and Firefighting (ARFF) equipment, baggage systems, gate improvements and boarding bridges, and noise abatement measures, among others. Additionally, revenues from PFC collections can be pledged as debt service to PFC-backed bond issuances. Participation in the PFC program will offer access to a new capital funding stream for HEF.

5.3.2 State Funding Outlook

The Commonwealth of Virginia offer a number of grant programs for public airports from funds authorized in the Code of Virgina:

- Commonwealth Aviation Fund[5]: The Commonwealth Aviation Fund provides funding for capital planning and engineering projects that focus on airport facility development. The Commonwealth Aviation Fund is the source for state entitlement[6] and state discretionary funding. The amount of Commonwealth Aviation Fund funding available by state airport service role is determined by the formulas prescribed in the Code of Virginia.

[5] Virginia Department of Aviation, Airport Program Manual, Accessed: https://doav.virginia.gov/wp-content/uploads/Files/DocumentLibrary/Airport_Program_Manual.pdf#chapter-5, July 2024

[6] Funding eligibility is based upon airport role in the Vermont Air Transportation System (VATSP) and the NPIAS. Only Air Carrier airports are eligible for state entitlement funding.

For most federally funded projects, DOAV and the sponsor will each fund a share of eligible costs not covered by the federal participation. DOAV's funding portion is 80 percent of the non-federal share when state discretionary funds are involved. For most state-funded projects, DOAV and the sponsor will each fund a share of eligible costs. State participation percentages are based on the type of project undertaken and the state funding program used for the project

- Aviation Special Fund: The Aviation Special Fund is accumulated from taxes, fees, etc., and funds programs offering airport maintenance, facility and equipment, security, and promotion projects.

To be eligible for state grant funding, airports are required to submit reports including: the annual based aircraft survey, annual certification of financial responsibility, annual self-reporting of state aviation funding received, and, for sponsors of air carrier airports, *Entitlement Utilization Report and Plan*.

Beyond discretionary and entitlement funding, the state administers the following additional grant programs:

- Maintenance Program: The Maintenance Program provides funding for non-recurring maintenance to assist sponsors keep the facilities in a safe and economical operating condition. The program is designed to encourage and assist airport sponsors with the implementation of preventative maintenance programs that will extend the useful life of the facilities and reduce the frequency of their replacement or reconstruction. DOAV's Airport Services Division manages the program.

  The state's participation rate for projects under the Maintenance Program varies, and ranges from 80 percent (except for AWOS equipment; fueling systems; terminal buildings; the purchase of maintenance equipment; and the maintenance of equipment) to 95 percent for sponsor-owned AWOS equipment. The state's participation in other maintenance projects is based ratios and calculations detailed in the Virginia Department of Aviation, *Airport Program Manual*.

- Facilities and Equipment Program: The Facilities and Equipment Program provides funding for the installation of electronic communication, navigation, and information systems that enhance the safety of flight and the utilization of Virginia's air transportation system. The state's participation is dependent upon whether the system/equipment will be owned and maintained by the DOAV or the sponsor.

- Voluntary Security Program: The Voluntary Security Program provides funding for projects to enhance the security of public-use general aviation airports in Virginia. The Voluntary Security Program funds 100 percent of projects to conduct security audits and develop security plans. For projects at airports certified as a Secure Virginia Airport[7], the program funds 90 percent of eligible costs for the design and installation of security improvements that address deficiencies identified in plans and audits. For projects at airports not certified as a Secure Virginia Airport, the program funds 80 percent of eligible costs for those projects. DOAV will review security audits and plans and will review and approve engineering agreements, plans, and specifications for security improvements. When funds are not

[7] Certification for general aviation airports requires an initial security audit conducted by an outside agency and publishing a security plan, which must be approved by DOAV.

available under the Voluntary Security Program, a sponsor may submit project requests under the Commonwealth Aviation Fund for consideration by the VAB.

Other state airport funding programs include the Aviation and Airport Promotion Program and the Governor's New Airline Service Incentive Fund (for airlines), which was established in 2020.

5.3.3 Local Funding Outlook

As a department of the City of Manassas, the Airport receives annual general fund allocations for the operating budget to operate, staff, and maintain the facility. Primary operating revenues from financing airport operations are from rental income from tenant leases, hangar rentals, aircraft tie downs fees, and from fuel sales and flowage fees. Revenues are also generated from other miscellaneous user fees, such as annual operating permits, rental car company fees, among others.

The Airport's largest annual operating expenses are services and supplies, wages and benefits, utilities, security, and the ATCT. **Table 5-2** shows recent historical revenues and expenses, and a conservative projection of operating financial performance for the 20-year planning period. Importantly, this projection follows the most current Airport Financial Plan[8], which includes a pro forma through FY 2029, and extends the projection through 2039. The purpose of the projection is to present a baseline financial condition to assess the near, mid- and long-term financial feasibility of implementing ACIP presented in Section 5.4, *Airport Development Phasing and Funding Plan*. The projection assumes no substantial changes to the recent operating profile or users at HEF.

As indicated in the Airport Financial Plan, recent trends indicate strong financial performance, where revenues have well-exceeded expenses since 2017. The compound annual growth rate (CAGR) for total airport revenues during that period was 6.7 percent and operating expenses at 1.8 percent, helping the Airport continuously exceed the annual strategic goals of 100 percent of annual expenses and a debt coverage ratio of 1.5[9].

[8] *2022 Airport Financial Plan, Manassas Regional Airport (HEF),* June 16, 2022.

[9] The debt coverage ratio is net revenues divided by debt service.

TABLE 5-2
AIRPORT REVENUES AND EXPENSES - (HISTORICAL AND PROJECTED)

	Historical				
	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Operating Revenues					
Franchises and leases	$1,663,878	$1,519,148	$1,853,911	$1,951,260	$2,145,378
Hangar rentals	$617,029	$950,664	$963,623	$985,510	$923,943
Tie Downs & Other	$283,329	$251,014	$308,001	$433,918	$196,570
Fuel sales	$144,057	$270,809	$272,499	$244,676	$241,298
Total Operating Revenues	**$2,707,481**	**$2,991,636**	**$3,398,035**	**$3,615,365**	**$3,507,188**
Expenses					
Wages and benefits	$778,810	$710,717	$732,441	$737,371	$777,972
Services and supplies	$564,305	$521,968	$677,501	$590,701	$636,366
Utilities	$109,730	$136,447	$144,136	$148,557	$126,636
Security	$85,348	$86,855	$91,131	$85,621	$91,877
FAA tower and misc.	$134,764	$139,681	$169,458	$153,119	$161,712
Total Operating Expenses	**$1,673,247**	**$1,595,688**	**$1,814,667**	**$1,715,369**	**$1,794,562**
Total Revenues	**$1,034,234**	**$1,395,948**	**$1,583,368**	**$1,899,996**	**$1,712,626**

	Projected								
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Operating Revenues									
Franchises and leases	$2,288,461	$2,357,115	$2,427,828	$2,500,663	$2,575,683	$2,652,953	$2,732,542	$2,814,518	$2,898,954
Hangar rentals	$1,007,329	$1,037,549	$1,068,675	$1,100,735	$1,133,757	$1,167,770	$1,202,803	$1,238,887	$1,276,054
Tie Downs & Other	$307,833	$317,068	$326,580	$336,378	$346,469	$356,863	$367,569	$378,596	$389,954
Fuel sales	$189,113	$194,786	$200,629	$206,648	$212,848	$219,233	$225,810	$232,585	$239,562
Total Operating Revenues	**$3,792,735**	**$3,906,517**	**$4,023,713**	**$4,144,424**	**$4,268,757**	**$4,396,820**	**$4,528,724**	**$4,664,586**	**$4,804,524**
Expenses									
Wages and benefits	$1,240,303	$1,289,915	$1,341,512	$1,395,172	$1,450,979	$1,509,018	$1,569,379	$1,632,154	$1,697,441
Services and supplies	$1,346,008	$1,399,848	$1,455,842	$1,514,076	$1,574,639	$1,637,624	$1,703,129	$1,771,255	$1,842,105
Utilities	$162,781	$169,292	$176,064	$183,106	$190,431	$198,048	$205,970	$214,208	$222,777
Security	$103,293	$107,425	$111,721	$116,190	$120,838	$125,671	$130,698	$135,926	$141,363
FAA tower and misc.	$241,456	$251,115	$261,159	$271,606	$282,470	$293,769	$305,519	$317,740	$330,450
Total Operating Expenses	**$3,093,841**	**$3,217,595**	**$3,346,299**	**$3,480,150**	**$3,619,356**	**$3,764,131**	**$3,914,696**	**$4,071,284**	**$4,234,135**
Total Revenues	**$698,894**	**$688,923**	**$677,414**	**$664,274**	**$649,400**	**$632,689**	**$614,028**	**$593,302**	**$570,388**

TABLE 5-2 (CONTINUED)
AIRPORT REVENUES AND EXPENSES - (PROJECTED)

	Projected					
	FY 2034	**FY 2035**	**FY 2036**	**FY 2037**	**FY 2038**	**FY 2039**
Operating Revenues						
Franchises and leases	$2,985,922	$3,075,500	$3,167,765	$3,262,798	$3,360,682	$3,461,502
Hangar rentals	$1,314,336	$1,353,766	$1,394,379	$1,436,210	$1,479,296	$1,523,675
Tie Downs & Other	$401,652	$413,702	$426,113	$438,896	$452,063	$465,625
Fuel sales	$246,749	$254,151	$261,776	$269,629	$277,718	$286,050
Total Operating Revenues	**$4,948,659**	**$5,097,119**	**$5,250,033**	**$5,407,534**	**$5,569,760**	**$5,736,852**
Expenses						
Wages and benefits	$1,765,338	$1,835,952	$1,909,390	$1,985,765	$2,065,196	$2,147,804
Services and supplies	$1,915,789	$1,992,421	$2,072,117	$2,155,002	$2,241,202	$2,330,850
Utilities	$231,688	$240,955	$250,594	$260,617	$271,042	$281,884
Security	$147,018	$152,899	$159,015	$165,375	$171,990	$178,870
FAA tower and misc.	$343,668	$357,414	$371,711	$386,579	$402,043	$418,124
Total Operating Expenses	**$4,403,501**	**$4,579,641**	**$4,762,826**	**$4,953,339**	**$5,151,473**	**$5,357,532**
Total Revenues	**$545,159**	**$517,478**	**$487,206**	**$454,194**	**$418,287**	**$379,321**

Source: Airport Records; RS&H Analysis, 2024

5.3.3.1 Customer Facility Charges

Another source of generating local funding for the capital program at HEF are Customer Facility Charges (CFCs), which will become an option with the introduction of scheduled commercial passenger service. CFCs are a user fee applied to each rental car transaction and are collected by rental car agencies and passed on to the Airport sponsor similar to PFC program collection process. However, CFCs are regulated at the state level and implemented through local ordinance rather than overseen by the FAA. Revenues from CFC collections are primarily used for funding rental car facilities, associated infrastructure, and operational expenses, and can be utilized for debt service on CFC-backed bond issuances.

Similar to participation in the PFC program, the launch of commercial service and introduction of rental car services at HEF will make the Airport able to establish a CFC program. However, CFCs may not be appropriate or a good fit for HEF during the near term period when routes and destinations are in startup phase, and passenger volumes may be insufficient to produce high demand for rental car agencies or vehicles.

5.3.3.2 Issuance of Debt

A review of existing Airport debt indicates a total principal and interest owed of about $627,000, which will be retired in full in FY 2026.

Table 5-3 presents a summary of recent historical annual debt service, and the Debt Coverage Ratio (DCR) for the Airport for the planning period. As shown, HEF's DCR is projected to improve through the planning period as the Airport pays down outstanding debt.

The DCR is a metric of net revenues to annual debt service, which assesses debt capacity and the ability of operating income to cover debt service payments. DCR is an integral metric used by lenders to evaluate creditworthiness. Typically, for long-term debt secured by revenues or PFCs, the standard minimum threshold accepted by lending institutions is 1.25. The DCR for the Airport has exceeded this minimum by more than 200% since 2017, indicating a strong financial position.

TABLE 5-3
AIRPORT DEBT COVERAGE RATIO (HISTORICAL AND PROJECTED)

	Historical				
	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Category					
Operating Revenues	$2,707,481	$2,991,636	$3,398,035	$3,615,365	$3,507,188
Operating Expenses	($1,673,247)	($1,595,668)	($1,814,667)	($1,715,369)	($1,715,626)
Net Revenues	**$1,034,234**	**$1,395,968**	**$1,583,368**	**$1,899,996**	**$1,791,562**
Annual Debt Service	**($407,689)**	**($451,760)**	**($453,410)**	**($239,080)**	**($240,412)**
Debt Coverage Ratio (DCR)	**2.54**	**3.09**	**3.49**	**7.95**	**7.45**

	Projected								
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Category									
Operating Revenues	$3,792,736	$3,906,517	$4,023,713	$4,144,424	$4,268,757	$4,396,820	$4,528,724	$4,664,586	$4,804,524
Operating Expenses	($3,093,841)	($3,217,595)	($3,346,299)	($3,480,150)	($3,619,356)	($3,764,131)	($3,914,696)	($4,071,284)	($4,234,135)
Net Revenues	**$698,895**	**$688,922**	**$677,414**	**$664,274**	**$649,400**	**$632,689**	**$614,028**	**$593,302**	**$570,388**
Annual Debt Service	**($209,150)**	**($208,075)**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Debt Coverage Ratio (DCR)	**3.34**	**3.31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Projected					
	FY 2034	FY 2035	FY 2036	FY 2037	FY 2038	FY 2039
Category						
Operating Revenues	$4,948,659	$5,097,119	$5,250,033	$5,407,534	$5,569,760	$5,736,852
Operating Expenses	($4,403,501)	($4,579,641)	($4,762,826)	($4,953,339)	($5,151,473)	($5,357,532)
Net Revenues	**$545,159**	**$517,478**	**$487,206**	**$454,194**	**$418,287**	**$379,321**
Annual Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Debt Coverage Ratio (DCR)	**0**	**0**	**0**	**0**	**0**	**0**

Source: Airport Records; RS&H Analysis, 2024

5.3.4 Airport Funding Outlook Summary

As shown in the approved 5-year CIP shown in **Table 5-1**, the Airport has identified a need for federal funding for eligible projects of more than $46.8 million between 2025-2029. During the same period, State and Local share of those projects is identified at $4.6 and about $4.1 million, respectively. Federal participation is shown at 82 percent of the 5-year program, which is a significant increase over previous periods and is driven by a number of large projects described in the next section. These projects include a new Air Traffic Control Tower, improvements to Runway 16L-34R, North East Apron and taxilane expansion, rehabilitation of the East Apron, and construction of Taxilane X-Ray. Costs associated with these projects are included in the 20-Year CIP in **Table 5-5.**

Beyond 2028, as these larger projects are completed, levels of required funding support through the AIP and DOAV will adjust based on the next set of projects. Additionally, federal funds available to HEF will no longer benefit from the BIL AIG allocations or the terminals and ATCT grants, which ends in 2026. As implementation of the HEF capital program evolves, it is reasonable to anticipate that funding support could normalize at a lower level than the near term period.

Based on these assumptions, the funding outlook for HEF from federal, state, and Airport sources is estimated as shown in **Table 5-4**. Mid- and long-term funding outlook reflects modest increases in DOAV and Local share funds.

TABLE 5-4
ANTICIPATED FUNDING OUTLLOK BY SOURCE

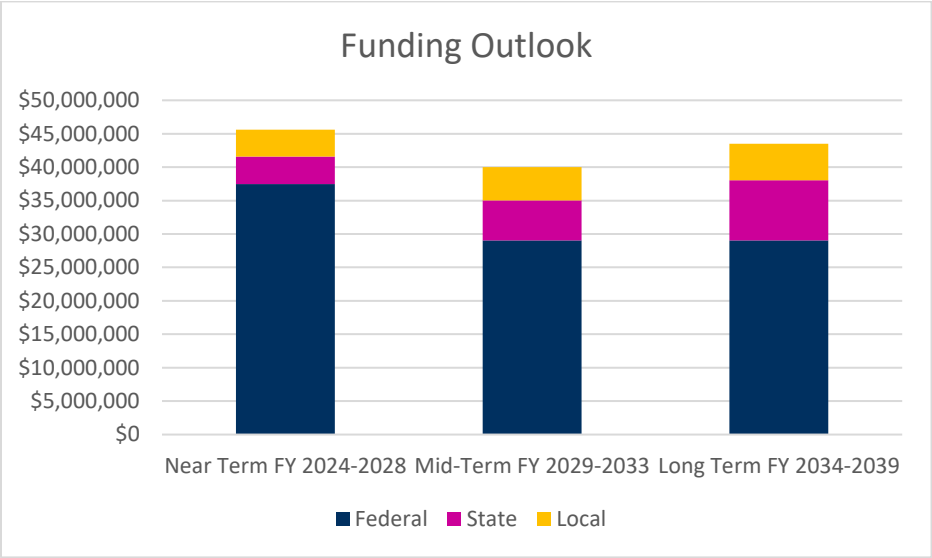
	Near-Term FY 2024-2028	Mid-Term FY 2029-2033	Long-Term FY 2034-2043	Total
Funding Source				
Federal	$37,485,000	$29,025,000	$29,025,000	$95,535,000
State	$4,100,000	$6,000,000	$9,000,000	$19,100,000
Local	$4,045,000	$5,000,000	$5,500,000	$14,545,000
Total	**$45,630,000**	**$40,025,000**	**$43,525,000**	**$129,180,000**

Note: BIL funding concludes with FY 2026 allocations.
Source: FAA; Airport Financial Records; RS&H Analysis, 2023

Drawing on the overview of funding sources outlined in this section, and under the assumption that no significant changes to FAA funding programs or state match participation occur, HEF might anticipate access to funding around $130 million for the 20-year planning period. While the scope and timing of projects, availability of funds, and competition with other airports and their priorities will have an impact, this assumption is helpful for planning purposes to identify a baseline outlook of funding for the CIP.

As shown, funding levels for the mid- and long-term periods are estimated to increase overall with a shift in federal, state, and local shares. The funding outlook is illustrated in **Figure 5-1**.

FIGURE 5-2
ANTICIPATED FUNDING OUTLOOK BY SOURCE



Source: RS&H Analysis, 2024

5.4 AIRPORT DEVELOPMENT PHASING AND FUNDING PLAN

This section outlines the airport development phasing and funding plan for the 20-year planning period, broken down to illustrate near-, mid-, and long-term phases. Each phase is ordered to complete smaller, enabling projects prior to larger projects, and follow implementation steps necessary to accomplish the objectives of the Airport. Each development phase aligns with aviation activity forecasts detailed in Chapter 1, *Aviation Activity Forecast*. The CIP by term and estimated costs is shown in **Table 5-5**.

The planning-level cost estimates provided for each project are ROM calculations that consider the gross areas of the project and multiply them by a realistic unit cost factor. Assumptions include adjustments over the 20-year period to account for construction cost inflation at five (5) percent annually. Design costs were estimated to be eight (8) percent of construction costs, and construction administration is included at six (6) percent of construction costs.

Finally, a contingency of 20 percent is included for all projects, which are intended to reflect scope, design, changes, permitting, and environmental study and documentation for every project. As described, the ROM estimates provide an approximation of costs and are valuable in the early planning stages to gauge the financial implications of the proposed projects. As the projects progress, more detailed and accurate cost estimates will be developed to refine the budgeting and funding requirements.

The following subsections offer descriptions of the projects outlined in the updated 20-year CIP. These projects are strategically organized according to the airport's priority, their capacity to enable further developments, and the accessibility of funding.

TABLE 5-5
CAPITAL IMPROVEMENT PLAN (NEAR TERM)

Proj. No.	Project	Total Project Cost	FAA Participation			Total Federal	PFC	Local Share	DOAV Share	Unfunded / Ineligible
			Entitlement	Discretionary	BIL					
Phase I (2024-2028)										
1	Realignment of Observation Road	$4,892,204	$0	$0	$2,458,000	$2,458,000	$0	$0	$218,489	$2,215,715
2	Bridge Strengthening - Runway 16L/34R and Taxiway B (Design)	$2,816,000	$150,000	$2,384,400	$0	$2,534,400	$0	$140,800	$140,800	$0
3	New FAA ATCT Phase 2 (Design)	$2,737,600	$300,000	$0	$2,300,720	$2,600,720	$0	$136,880	$0	$0
4	New FAA ATCT Phase 3 (Construction)	$38,100,000	$1,000,000	$3,429,000	$31,766,000	$36,195,000	$0	$1,905,000	$0	$0
5	Runway 16L-34R Reconstruction and Strengthening (Design)	$1,112,000	$0	$1,000,800	$0	$1,000,800	$0	$22,240	$88,960	$0
6	Terminal Parking Lot Rehabilitation and Expansion	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Terminal Building Expansion (north and south)	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Satellite Parking #1 Construction and New Entrance Road	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Taxiway E Fillet Widening (Design and Construction)	$1,740,000	$0	$1,566,000	$0	$1,566,000	$0	$34,800	$139,200	$0
10	Bridge Strengthening - Runway 16L/34R and Taxiway B (Construction)	$32,384,000	$0	$29,145,600	$0	$29,145,600	$0	$647,680	$2,590,720	$0
11	Runway 16L-34R Reconstruction and Strengthening (Construction)	$16,100,000	$1,300,000	$13,190,000	$0	$14,490,000	$333,600	$322,000	$954,400	$0
12	South West Hangar Redevelopment (Design)	$1,229,000	$0	$995,490	$0	$995,490	$0	$22,122	$88,488	$122,900
13	East Ramp Strengthening, Reconfiguration, and Rehabilitation (Design and Construction) - Phase 1	$7,000,000	$0	$5,670,000	$0	$5,670,000	$0	$126,000	$504,000	$700,000
14	Taxilane X (Design and Construction)	$5,373,000	$0	$4,352,130	$0	$4,352,130	$0	$96,714	$386,856	$537,300
15	Maintenance Equipment Storage (MES)/Snow Removal Equipment (SRE) Facility (Design)	$1,196,000	$0	$753,480	$0	$753,480	$0	$16,744	$66,976	$358,800
16	Maintenance Equipment Storage (MES)/Snow Removal Equipment (SRE) Facility (Construction)	$15,840,000	$1,300,000	$8,679,200	$0	$9,979,200	$0	$221,760	$887,040	$4,752,000
17	Fuel Farm Upgrades (Design and Construction)	$17,241,000	$0	$0	$0	$0	$0	$0	$0	$17,241,000
18	Install Backup Airfield Generators	$550,000	$445,500	$0	$0	$445,500	$0	$9,900	$39,600	$55,000
19	Acquire Multi-function SRE (2)	$1,774,000	$854,500	$742,100	$0	$1,596,600	$0	$35,480	$141,920	$0
20	South West Hangar Redevelopment (Construction)	$17,941,000	$0	$14,532,210	$0	$14,532,210	$0	$322,938	$1,291,752	$1,794,100
21	West Apron Hangar Expansion - Phase 1 (Design)	$1,960,000	$0	$1,587,600	$0	$1,587,600	$0	$35,280	$141,120	$196,000
22	Taxiway B Reconstruction and Strengthening (South of the Bridge)	$12,400,000	$0	$10,654,440	$0	$10,654,440	$561,733	$236,765	$947,061	$0
23	Taxiway B Widening (Design)	$435,000	$0	$391,500	$0	$391,500	$0	$8,700	$34,800	$0
	Total Short-Term	**$182,900,000**	**$5,400,000**	**$99,100,000**	**$36,600,000**	**$141,100,000**	**$900,000**	**$4,400,000**	**$8,700,000**	**$28,000,000**

Note: Totals shown are rounded.
Source: RS&H Analysis, 2024

TABLE 5-5 (CONTINUED)
CAPITAL IMPROVEMENT PLAN (MID-TERM)

Proj. No.	Project	Total Project Cost	FAA Participation			Total Federal	PFC	Local Share	DOAV Share	Unfunded / Ineligible
			Entitlement	Discretionary	BIL					
Phase II (2029-2033)										
24	West Apron Hangar Expansion - Phase 1 (Construction)	$27,266,000	$0	$22,085,460	$0	$22,085,460	$0	$490,788	$1,963,152	$2,726,600
25	East Ramp Strengthening, Reconfiguration, and Rehabilitation (Design and Construction) - Phase 2	$7,000,000	$0	$5,670,000	$0	$5,670,000	$0	$126,000	$504,000	$700,000
26	Taxiway B Widening (Construction)	$5,756,000	$1,318,000	$3,564,396	$0	$4,882,396	$331,115	$108,498	$433,991	$0
27	Runway 16L/34R Widening (Design)	$1,251,000	$0	$1,125,900	$0	$1,125,900	$0	$25,020	$100,080	$0
28	Runway 16L/34R Widening (Construction)	$16,563,000	$1,318,000	$13,259,277	$0	$14,577,277	$366,026	$323,939	$1,295,758	$0
29	East Ramp Strengthening, Reconfiguration, and Rehabilitation (Design and Construction) - Phase 3	$7,000,000	$1,318,000	$4,352,000	$0	$5,670,000	$0	$126,000	$504,000	$700,000
30	West Apron Hangar Expansion - Phase 2 (Design)	$1,453,000	$0	$1,176,930	$0	$1,176,930	$0	$26,154	$104,616	$145,300
31	New East Ramp Taxiway (Design and Construction)	$1,243,000	$0	$1,118,700	$0	$1,118,700	$0	$24,860	$99,440	$0
32	Expanded East Ramp and Taxilane between Taxiway Delta and Echo (Design)	$576,000	$0	$518,400	$0	$518,400	$0	$11,520	$46,080	$0
33	Runway 16L/34R Extension (Design)	$500,300	$0	$0	$0	$0	$500,300	$0	$0	$0
34	Taxilane C and Taxilane D Relocation (Design)	$253,500	$228,150	$0	$0	$228,150	$0	$5,070	$20,280	$0
35	Taxilane C and Taxilane D Relocation (Construction)	$3,360,000	$1,089,850	$1,934,150	$0	$3,024,000	$0	$67,200	$268,800	$0
36	West Apron Hangar Expansion - Phase 2 (Construction)	$20,250,000	$0	$16,402,500	$0	$16,402,500	$0	$364,500	$1,458,000	$2,025,000
37	Expanded East Ramp and Taxilane between Taxiway Delta and Echo (Construction)	$7,620,000	$0	$6,858,000	$0	$6,858,000	$0	$152,400	$609,600	$0
38	Glen-Gerry Property Reimbursement	$1,960,000	$0	$0	$0	$0	$0	$0	$0	$1,960,000
39	Runway 16L-34R Extension (Construction)	$7,000,000	$1,318,000	$4,245,531	$0	$5,563,531	$818,298	$123,634	$494,536	$0
40	Vehicle Service Road (Design and Construction)	$11,700,000	$0	$10,530,000	$0	$10,530,000	$0	$234,000	$936,000	$0
	Total Mid-Term	**$120,800,000**	**$6,600,000**	**$92,900,000**	**$0**	**$99,500,000**	**$2,100,000**	**$2,300,000**	**$8,900,000**	**$8,300,000**

Note: Totals shown are rounded.
Source: RS&H Analysis, 2024

TABLE 5-5 (CONTINUED)
CAPITAL IMPROVEMENT PLAN (LONG-TERM)

Proj. No.	Project	Total Project Cost	FAA Participation			Total Federal	PFC	Local Share	DOAV Share	Unfunded / Ineligible
			Entitlement	Discretionary	BIL					
Future (2034-2039)										
41	East Apron T-hangar (Demolition)	$1,462,000	$0	$0	$0	$0	$0	$0	$0	$1,462,000
42	ARFF Station (Design)	$2,125,000	$0	$1,338,750	$0	$1,338,750	$0	$29,750	$119,000	$637,500
43	ARFF Station (Construction)	$28,160,000	$1,780,647	$15,634,531	$0	$17,415,178	$516,860	$387,004	$1,548,016	$8,292,942
44	Airport Master Plan Update	$1,000,000	$900,000	$0	$0	$900,000	$0	$20,000	$80,000	$0
45	West Apron Hangar Expansion - Phase 3 (Design)	$6,642,000	$1,780,647	$3,599,373	$0	$5,380,020	$0	$119,556	$478,224	$664,200
46	West Apron Hangar Expansion - Phase 3 (Construction)	$92,410,000	$2,614,910	$72,237,190	$0	$74,852,100	$0	$1,663,380	$3,000,000	$12,894,520
47	8 Acre Land Acquisition - Prince William County	$12,000,000	$0	$0	$0	$0	$0	$0	$0	$12,000,000
48	Parking Garage Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Long-Term	**$143,800,000**	**$7,100,000**	**$92,900,000**	**$0**	**$100,000,000**	**$600,000**	**$2,300,000**	**$5,300,000**	**$36,000,000**
Total Program (2024-2039)		**$447,500,000**	**$19,100,000**	**$284,900,000**	**$2,500,000**	**$340,600,000**	**$3,600,000**	**$9,000,000**	**$22,900,000**	**$72,300,000**

Note: Totals shown are rounded.
Source: RS&H Analysis, 2024

5.4.1 Projects Currently Underway

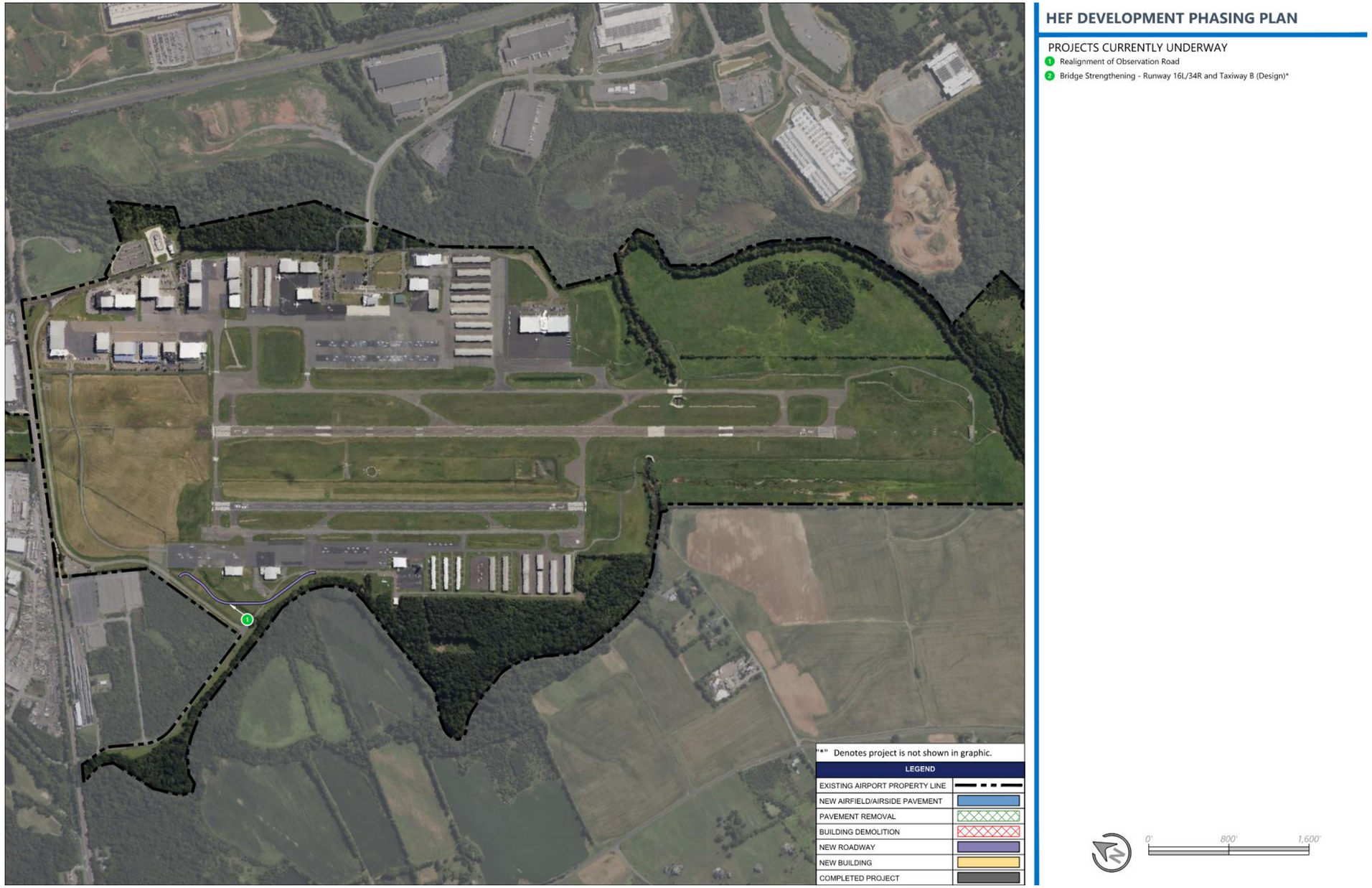
At the time of this Master Plan, one FY 2024 development project has been funded and is currently being completed. The project underway in FY 2024 is detailed below.

a) Realignment of Observation Road – Construction (2024)
Relocate parts of Observation Road to capture more usable airside land. The road has been deeded to the City as surplus property, so the project will be coordinated with the City's transportation program. With the increase in the amount of usable airside land, the airport could build hangars, ramps, etc.

b) Bridge Strengthening – Runway 16L/34R and Taxiway B – Design (2024)
The East Apron serves one FBO, corporate hangars, T-hangars, and the terminal. Most business jet operations occur on the east airfield and the East Apron. In preparation for commercial service introduction to the Airport, there will be an expansion of the terminal facility on the East Apron. This reconfiguration and strengthening will allow the terminal to accommodate aircraft operated by the airlines. This project will include restriping of the ramp to meet the required taxilane safety areas, aircraft parking areas and remain overnight (RON) spaces. This increased operations by scheduled airlines will require the pavement to be strengthened, reconfigured and rehabilitated.

Figure 5-3 illustrates these projects underway at HEF.

FIGURE 5-3
PROJECTS CURRENTLY UNDERWAY



Source: Airport Records; RS&H Analysis, 2024

5.4.2 Near-term Development Projects

Near-term capital improvements encompass development projects slated to commence within the upcoming five-year period (FY 2024 to FY 2028). The provided list of near-term development projects is strategically phased based on priority, their capacity to enable further advancements, and the availability of funding. These projects' implementation aims to tackle capacity constraints while ensuring the overall viability and sustainability of the airport.

Near-term programmed development at HEF is shown as projects 1-23 in the following list and on **Figure 5-4** at the conclusion of this subsection.

1. **Realignment of Observation Road – Construction (2024)**
   Relocate parts of Observation Road to capture more usable airside land. The road has been deeded to the City as surplus property, so the project will be coordinated with the City's transportation program. With the increase in the amount of usable airside land, the airport could build hangars, ramps, etc.

2. **Bridge Strengthening – Runway 16L/34R and Taxiway B – Design (2024)**
   The East Apron serves one FBO, corporate hangars, T-hangars, and the terminal. Most business jet operations occur on the east airfield and the East Apron. In preparation for commercial service introduction to the Airport, there will be an expansion of the terminal facility on the East Apron. This reconfiguration and strengthening will allow the terminal to accommodate aircraft operated by the airlines. This project will include restriping of the ramp to meet the required taxilane safety areas, aircraft parking areas and remain overnight (RON) spaces. This increased operations by scheduled airlines will require the pavement to be strengthened, reconfigured and rehabilitated.

3. **New FAA ATCT Phase 2– Design (2025)**
   Design a replacement Airport Traffic Control Tower to be located west of the existing site. The existing tower is at the end of its useful life and the maintenance cost is steadily increasing. State grant funding was received in FY 2023 to complete a siting study for the new tower.

4. **New FAA ATCT Phase 3 – Construction (2025)**
   Construct a replacement Airport Traffic Control Tower to be located west of the existing site. The existing tower is at the end of its useful life and the maintenance cost is steadily increasing. State grant funding was received in FY 2023 to complete a siting study for the new tower.

5. **Runway 16L-34R Reconstruction and Strengthening – Design (2025)**
   The runway pavement has reached the end of its useful life as the last rehabilitation was performed over 20 years ago. The projected demand of scheduled commercial airline service will require the pavement to be reconstructed and strengthened to support scheduled commercial airline service. The project entails the repaving of 16L/34R, restriping of the runway, and the replacement of airfield signs and lights. In addition, this scope will include NAVAID service road realignment and blast pad redesign on the 16L approach end.

6. Terminal Parking Lot Rehabilitation, Expansion and Parking Garage - Design/Construction (2025) – PRIVATELY FUNDED AND CONSTRUCTED

The program will be conducted in two segments. The first segment envisions a temporary modular facility designed for safety and speed to market followed by the future fully expanded terminal in its completed configuration. Avports Manassas' intent will be to optimize site development and construction phasing to minimize impacts to the interim operations, temporarily moving existing functionality and tenants as required to ensure continuous operations. The proposed interim terminal includes all "landside" functional areas for commercial passengers, from check-in to security and baggage handling, with those passengers then flowing into the existing terminal building to await boarding. This approach maximizes the visibility of the existing terminal building and provides a comfortable gate experience.

7. Terminal Building Expansion (North and South) (2025) - Design/Construction PRIVATELY FUNDED AND CONSTRUCTED

This represents the second segment in the terminal development. The second segment incorporates the full build-out of all 25,000 ft2 required by the franchise agreement, including 10,000 ft2 of incremental space with a robust commercial concessions program centered around the technology and services we know today's guests and airlines demand. Capital expenditures are estimated to be between $75 and $125 million over the course of the Project, with most of those monies expended during years 1 to 4 as we prepare the Airport for commercial service.

8. Satellite Parking #1 Construction and New Entrance Road (2025) – Design/Construction PRIVATELY FUNDED AND CONSTRUCTED

The area identified for Satellite Parking #1 is located east of the Airport and along Wakeman Drive. The area is currently wooded and has been subject to a previous environmental review in the EA West Corporate Development/East Parcel Development dated March 2018.

9. Taxiway E Fillet Widening Design and Construction (2025)

The current dimensions of Taxiway E are inadequate according to design standards for the type of aircraft anticipated to operate commercial scheduled airline services at the airport. Given that the critical aircraft for this airport will fall under the Taxiway Design Group (TDG) 3 classification, the project aims to modify Taxiway E to conform to these standards. This will involve widening the taxiway's fillets. The project proposes to increase the width of Taxiway E from 40 feet to 50 feet. This expansion is necessary to provide the additional space required for the safe maneuvering of aircraft classified under TDG 3. In order to achieve this, it's essential to relocate the taxiway lights and signage. These adjustments will be made on both sides of the entrance off Taxiway E, ensuring that the necessary infrastructure remains functional and effective while also improving safety and compliance with design standards. This upgrade will likely enhance operational efficiency and safety for the aircraft and services utilizing this taxiway.

10. Bridge Strengthening – Runway 16L/34R and Taxiway B – Construction (2025)

The existing bridges on Runway 16L-34R and Taxiway B require some form of strengthening to support the weight of commercial aircraft operations. The bridges were built in the 1980s to support Boeing 737-200 and Gulfstream V aircraft. In the early 2010s the bridges were widened to the full width of the safety areas. Based on prior documentation, the maximum weight the existing bridges can support with regular use is 110,000 pounds by the 737-200. The Airport's critical aircraft maximum takeoff weight exceeds this weight limit, therefore necessitating the bridge strengthening project. This project will reinforce the bridges however the method of reinforcement is not known at this time.

11. Runway 16L-34R Reconstruction and Strengthening – Construction (2026)

The runway pavement has reached the end of its useful life as the last rehabilitation was performed over 20 years ago. The projected demand of scheduled commercial airline service will require the pavement to be reconstructed and strengthened to support scheduled commercial airline service. In addition, this scope will include NAVAID service road realignment and blast pad redesign on the 16L approach end.

12. Southwest Hangar Redevelopment – Design (2026)

The southwest side of the airport has two rows of hangars that are over 55 years old. There are two rows of the hangars that are a pole barn construction and have reached their useful life. These hangars need to be replaced with steel hangars and meet new FAA standards for separation. A drainage plan for this area needs to be developed as well as a phasing plan to redevelop this complex. This project would consist of development plan that would layout the redevelopment of the southwest side of the Airport and include phasing, hangar sizes and types, drainage improvements, cost estimates, survey and geotechnical investigation, and paving design.

13. East Ramp Strengthening, Reconfiguration, and Rehabilitation – Design/Construction (2026) Phase 1

The East Apron serves one FBO, corporate hangars, T-hangars, and the terminal. Most business jet operations occur on the east airfield and the East Apron. In preparation for commercial service introduction to the Airport, there will be an expansion of the terminal facility on the East Apron. This reconfiguration and strengthening will allow the terminal to accommodate aircraft operated by the airlines. This project will include restriping of the ramp to meet the required taxilane safety areas, aircraft parking areas and remain overnight (RON) spaces. This increased operations by scheduled airlines will require the pavement to be strengthened, reconfigured and rehabilitated.

14. Taxilane X-Ray – Design/Construction (2026)

This project entails building a Taxilane perpendicular to Taxilane Y in order to open the SE Corporate Pad Site (Lot B) for the development of Corporate Hangars. The project would include constructing a taxilane that is approximately 600 feet long and 50 feet wide. It is anticipated that the new taxilane would have edge reflectors instead of edge lights to save cost.

15. Maintenance Equipment Storage/Snow Remove Equipment Facility – Design (2026)

Airport staff have identified the need to expand and relocate the Maintenance Equipment Storage (MES)/Snow Removal Equipment (SRE) Facility to accommodate new larger multi-use SRE building and provide a storage facility with a layout which meets the growing needs of the airport. The proposed facility would be located to the northeast corner of the airport on undeveloped land adjacent to Wakeman Drive within the AOA. The entire lot will be modified during construction to accommodate the proposed building, paved parking outside of the building, and work area during construction. This area provides the necessary room to provide pavement for snow removal training while expanding the storage capacity for essential maintenance equipment. The Airport intends to purchase new snow removal equipment (SRE) to efficiently accommodate required snow removal operations typically experienced during the snow season. The existing building is in a hangar on the south portion of the East Apron. The existing building is in good condition but is inadequate to accommodate new SRE equipment and will require relocation due to expansion of the terminal. Further the layout and orientation of the existing building creates challenges. These challenges include providing adequate storage space and equipment maneuverability in the building. As well as pavement away from the movement area for snow and ice training and pavement marking training, a cost-effective consideration for the Airport and its maintenance staff.

16. Maintenance Equipment Storage/Snow Remove Equipment Facility – Construction (2027)

Refer to project number 15.

17. Fuel Farm Upgrades and Truck Staging Area - Design and Construction (2028)

The fuel farm is approaching 25 years of age. There are approximately 3 million gallons of fuel that flow through the farm annually. As the fuel farm ages, the airport will need to upgrade and repair the facility. This may include expansion of the containment area and possible environmental regulation upgrades. This project is not in the Airport Layout Plan. This project also includes upgrading the pavement geometry to provide a staging area for fuel trucks.

18. Install Backup Airfield and Terminal Generators (2028)

Purchase and install a back-up generator for the airfield lighting (80KW) system that includes runway 16L/34R and Taxiway B. This generator would also be a back-up for the PAPIs, wind cone, and the MALSR. A second generator would be purchased and installed for the airport terminal building (120KW). This generator would allow the terminal building to have continuing operations if electrical power was lost, as well as be used by the city for an emergency operations center if necessary.

19. Acquire Multi-function SRE (2)- (2028)

During the planning period, the purchase of two pieces of multi-function snow removal equipment (SRE) such as combination plow and brooms is programmed to improve the ability of a single piece of equipment to respond to the diverse needs of snow operations. The airport's inventory of snow removal equipment are over 20 years old and need replaced.

20. Southwest Hangar Redevelopment – Design (2028)

The southwest side of the airport has two rows of hangars that are over 55 years old. There are two rows of the hangars that are a pole barn construction and have reached their useful life. These hangars need to be replaced with steel hangars and meet new FAA standards for separation. A drainage plan for this area needs to be developed as well as a phasing plan to redevelop this complex. This project would consist of development plan that would layout the redevelopment of the southwest side of the Airport and include phasing, hangar sizes and types, drainage improvements, cost estimates, survey and geotechnical investigation, and paving design.

21. West Apron Hangar Expansion Phase 1 – Design (2028)

This project involves expansion of the West Apron to accommodate hangar growth on the west side of the airport. Developing General Aviation (GA) facilities on the west side of the airport will allow separation of GA operations from air carrier and larger jet operations which will improve overall safety and efficiency within the airport operations area. The project will include two t-hangar facilities, five box hangars, and landside parking for the flying public.

22. Taxiway B Reconstruction and Strengthening (South of Bridge)

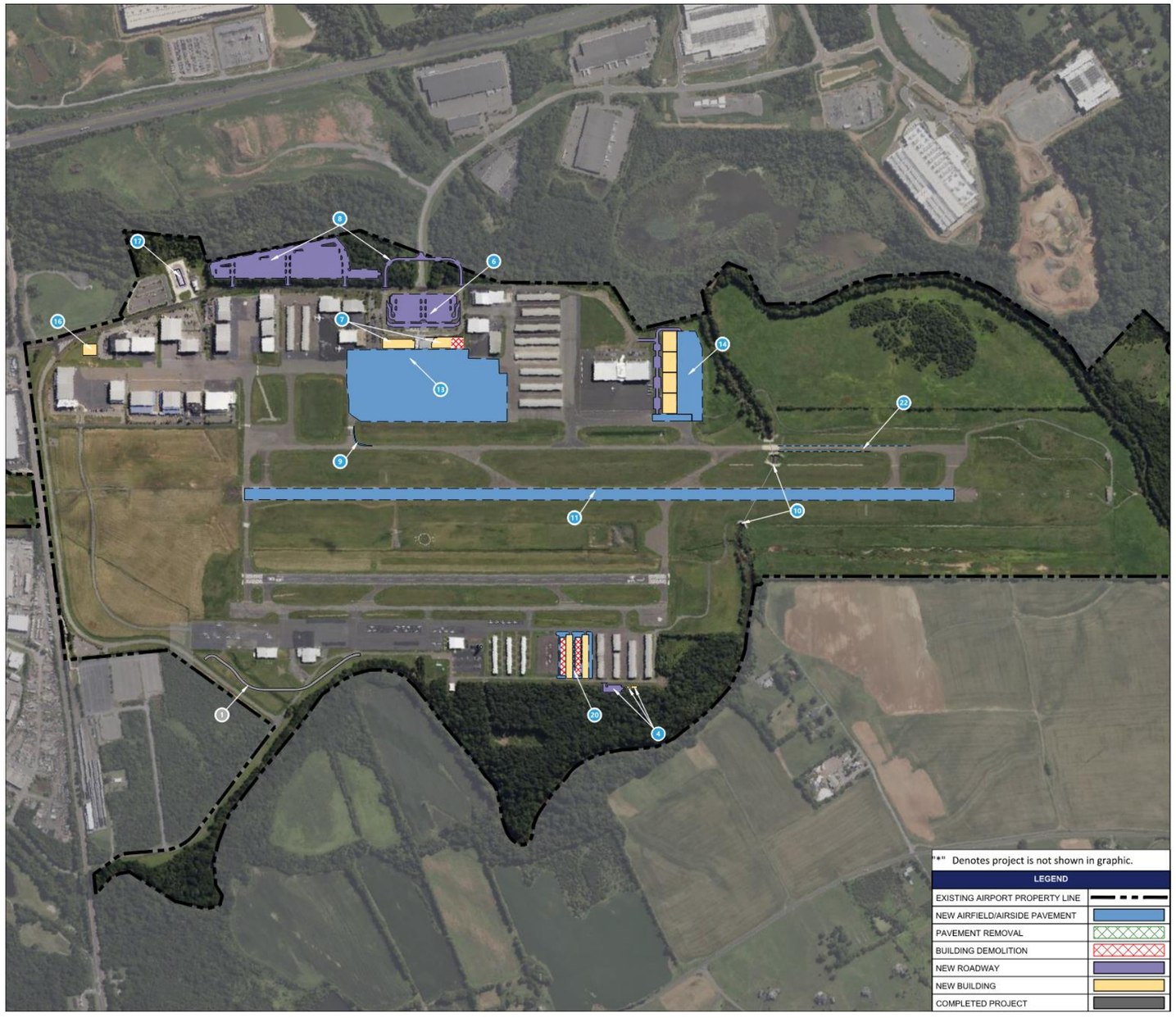
Taxiway B is a parallel taxiway, providing aircraft access for the full length of the primary runway (16L-34R) from the east apron areas. The taxiway has two high-speed exits along with connecting taxiways at both ends of the Runway. The Taxiway B pavement has reached the end of its useful life. The pavement will need to be strengthened to support scheduled commercial airline service. As part of this project, the strengthening will also include the concrete bridge section that traverses Broad Run Creek. The existing runway lights and signs will be replaced with LED lights and signs. The existing pavement grades will remain the same to promote proper drainage. Replacement markings will need to be applied throughout new pavement.

23. Taxiway B Widening – Design (2028)

Taxiway B is a parallel taxiway, providing aircraft access for the full length of the primary runway (16L-34R) from the east apron areas. The taxiway has two high-speed exits along with connecting taxiways at both ends of the Runway. The width for Taxiway B will be widened from 40 feet to the recommended standard width of 50 feet as the critical aircraft's taxiway design group is 3. Infrastructure improvements such as electrical, grading, and drainage work needed to support pavement widening.

Figure 5-4 illustrates near term capital projects at HEF.

FIGURE 5-4
NEAR-TERM PROJECTS



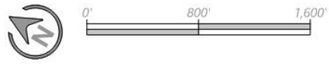
HEF DEVELOPMENT PHASING PLAN

PROJECTS CURRENTLY UNDERWAY

1. Realignment of Observation Road
2. Bridge Strengthening - Runway 16L/34R and Taxiway B (Design)*

NEAR TERM (PAL 1) PROJECTS (2024-2028)

3. New FAA ATCT Phase 2 (Design)*
4. New FAA ATCT Phase 3 (Construction)
5. Runway 16L-34R Reconstruction and Strenghtening (Design)*
6. Terminal Parking Lot Rehabilitation and Expansion
7. Terminal Building Expansion (north and south)
8. Satellite Parking #1 Construction and New Entrance Road
9. Taxiway E Fillet Widening (Design and Construction)
10. Bridge Strengthening - Runway 16L/34R and Taxiway B (Construction)
11. Runway 16L-34R Reconstruction and Strengthening (Construction)
12. South West Hangar Redevelopment (Design)*
13. East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 1
14. Taxilane X (Design and Construction)
15. Maintenance Equipment Storage (MES)/Snow Removal Equipment (SRE) Facility - (Design)*
16. Maintenance Equipment Storage (MES)/Snow Removal Equipment (SRE) Facility - (Construction)
17. Fuel Farm Upgrades (Design and Construction)
18. Install Backup Airfield Generators*
19. Acquire Multi-function SRE (2)*
20. South West Hangar Redevelopment (Construction)
21. West Apron Hangar Expansion - Phase 1 (Design)*
22. Taxiway B Reconstruction and Strengthening (South of the Bridge)
23. Taxiway B Widening (Design)*



Source: RS&H, 2023

5.4.3 Mid-term Development Projects

Mid-term capital improvements encompass development projects slated to begin during the second five-year period of the planning phase (FY 2029 to FY 2033). The provided mid-term project list is strategically phased to reflect priority, include projects that enable further developments, and consider funding availability. Implementation of these projects is planned based on demand, with each project allocated to a specific year according to enabling projects and expected funding.

The mid-term programmed development at HEF is shown in the following list as projects 24-39 and on **Figure 5-5** at the conclusion of this subsection.

24. West Apron Hangar Expansion Phase 1 – Construction (2029)
Refer to project 21.

25. East Ramp Strengthening, Reconfiguration, and Rehabilitation Design and Construction – Phase 2 (2029)
Refer to project 13.

26. Taxiway B Widening – Construction (2029)
Taxiway B is a parallel taxiway, providing aircraft access for the full length of the primary runway (16L-34R) from the east apron areas. The taxiway has two high-speed exits along with connecting taxiways at both ends of the Runway. The width for Taxiway B will be widened from 40 feet to the recommended standard width of 50 feet as the critical aircraft's taxiway design group is 3. Infrastructure improvements such as electrical, grading, and drainage work needed to support pavement widening.

27. Runway 16L/34R Widening – Design (2029)
The width for Runway 16L-34R will be widened from 100 feet to the recommended standard width of 150 feet as the critical aircraft for the runway has a maximum certified takeoff weight greater than 150,000 lbs. Infrastructure improvements such as electrical, grading and drainage work needed to support pavement widening, depth of pavement rehabilitation, and method of bridge rehabilitation/strengthening.

28. Runway 16L/34R Widening – Construction (2030)
Refer to project 27.

29. East Ramp Strengthening, Reconfiguration, and Rehabilitation Design and Construction – Phase 3 (2031)
Refer to project 13.

30. West Apron Hangar Expansion Phase 2 - Design (2031)
This project involves further expansion, Phase 2, of the West Apron and realignment of Observation Road to accommodate box hangar development at the midpoint of the West Apron. Developing

General Aviation (GA) facilities on the west side of the airport will allow separation of GA operations from air carrier and larger jet operations which will improve overall safety and efficiency within the airport operations area. The project will include seven box hangars and landside parking for the flying public.

31. New East Ramp Taxiway – Design and Construction (2031)

This project involves the design and construction of a new taxiway entrance onto the East Ramp from Taxiway B. With the arrival of scheduled service, the Airport will experience increased activity of larger aircraft on the East Ramp. In order to increase flow and efficiency, a second taxiway would need to be constructed to give pilots and air traffic control options when entering and exiting the east ramp. This project will be designed for ADG III aircraft, located south of Taxiway E and perpendicular to Taxiway B.

32. Expanded East Ramp and Taxilane between Taxiway Delta and Echo – Design (2031)

This project will construct a new taxilane providing access between Taxiway D and Taxiway E. The new taxilane will enable aircraft to pass north and south on Taxilane Z without interfering with the aircraft parked on the FBO ramp. The new taxilane will allow additional area on the east ramp to be utilized for commercial service and provide the ability to have additional gates at the terminal building. It is not anticipated that this new taxilane will be used for commercial service aircraft so it will be constructed for ADG III.

33. Runway 16L-34R Extension (Design)*

The previous 500-foot runway extension was completed in 2012. During the planning phase of the first runway extension, a runway length analysis was conducted that showed that it was justifiable to extend the runway 800 feet. The FAA at the time did not have the funds, and the Airport needed to update its ALP, so the runway was only extended 500 feet when there was justification for 800 feet. The additional 500-foot extension will give pilots an extra safety margin when they are landing in inclement weather or when there's snow or ice on the runway. The project will also result in a slight noise reduction for areas north of the airport as planes could pass at a higher altitude.

34. Taxilane C and Taxilane D Relocation – Design (2032)

Taxiway/Taxilane C provides a direct path from an aircraft apron to the runway. This can lead to situations where pilots could lose situational awareness and inadvertently enter the runway, resulting in a runway incursion. Additionally, a fence line and concrete drainage ditch penetrates Taxiway/Taxilane C's taxilane object free area (TLOFA). This project shifts taxiway/taxilane C, the existing runup area, and taxilane D to the south as to avoid the direct access to the runway from the apron, and to eliminate the TLOFA penetration.

35. Taxilane C and Taxilane D Relocation – Construction (2032)

Refer to project 34.

36. West Apron Hangar Expansion Phase 2 - Construction (2032)
Refer to project 30.

37. Expanded East Ramp and Taxilane between Taxiway Delta and Echo – Construction (2032)
This project will construct a new taxilane providing access between Taxiway D and Taxiway E. The new taxilane will enable aircraft to pass north and south on Taxilane Z without interfering with the aircraft parked on the FBO ramp. The new taxilane will allow additional area on the east ramp to be utilized for commercial service and provide the ability to have additional gates at the terminal building. It is not anticipated that this new taxilane will be used for commercial service aircraft so it will be constructed for ADG III.

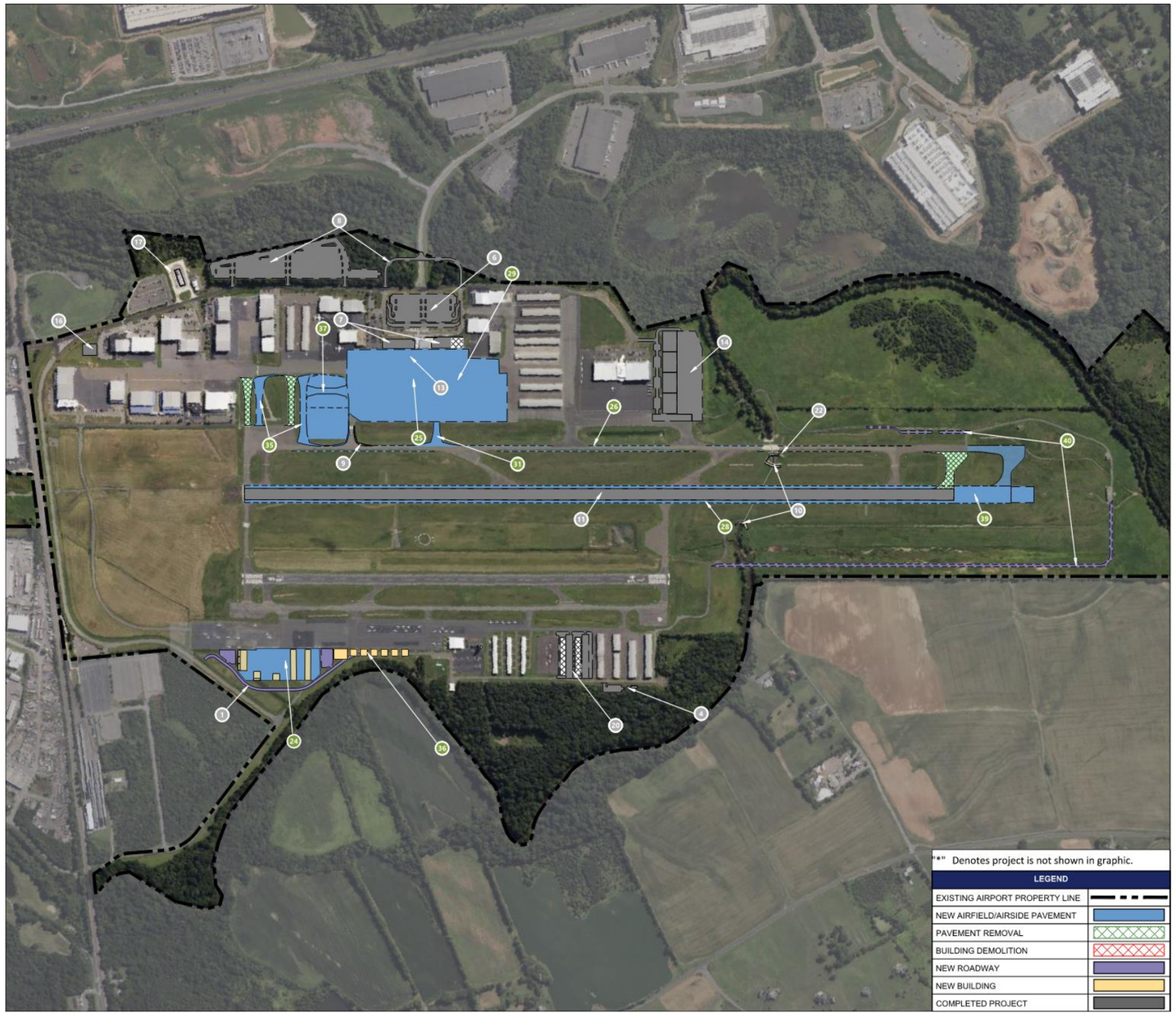
38. Glen-Gerry Property Reimbursement
Reimbursement from purchase of Glen-Gery property for non-aeronautical use in the Airport Safety Overlay District.

39. Runway 16L-34R Extension (Design)*
Refer to project 33.

40. Vehicle Service Road – Design and Construction (2033)
This project addresses shortcomings in the dedicated Vehicle Service Road (VSR), where existing surfaces are either unpaved or below standard, forcing vehicles like Operations vehicles, SRE, and fuel trucks to access the airfield runway and taxiway surfaces. The project's primary goal is to design and construct improvements that establish safe and adequate routes for these vehicles, minimizing their dependence on airfield surfaces. Most of the vehicle service road development will focus on the southern end of the airport.

Figure 5-5 illustrates mid-term capital projects at HEF.

FIGURE 5-5
MID-TERM PROJECTS



HEF DEVELOPMENT PHASING PLAN

PROJECTS CURRENTLY UNDERWAY

1. Realignment of Observation Road
2. Bridge Strengthening - Runway 16L/34R and Taxiway B (Design)*

NEAR TERM (PAL 1) PROJECTS (2024-2028)

3. New FAA ATCT Phase 2 (Design)*
4. New FAA ATCT Phase 3 (Construction)
5. Runway 16L-34R Reconstruction and Strenghtening (Design)*
6. Terminal Parking Lot Rehabilitation and Expansion
7. Terminal Building Expansion (north and south)
8. Satellite Parking #1 Construction and New Entrance Road
9. Taxiway E Fillet Widening (Design and Construction)
10. Bridge Strengthening - Runway 16L/34R and Taxiway B (Construction)
11. Runway 16L-34R Reconstruction and Strengthening (Construction)
12. South West Hangar Redevelopment (Design)*
13. East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 1
14. Taxilane X (Design and Construction)
15. Maintenance Equipment Storage (MES)/Snow Removal Equipment (SRE) Facility - (Design)*
16. Maintenance Equipment Storage (MES)/Snow Removal Equipment (SRE) Facility - (Construction)
17. Fuel Farm Upgrades (Design and Construction)
18. Install Backup Airfield Generators*
19. Acquire Multi-function SRE (2)*
20. South West Hangar Redevelopment (Construction)
21. West Apron Hangar Expansion - Phase 1 (Design)*
22. Taxiway B Reconstruction and Strengthening (South of the Bridge)
23. Taxiway B Widening (Design)*

MID-TERM (PAL 2) PROJECTS (2029-2033)

24. West Apron Hangar Expansion - Phase 1 (Construction)
25. East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 2
26. Taxiway B Widening (Construction)
27. Runway 16L-34R Widening (Design)*
28. Runway 16L-34R Widening (Construction)
29. East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 3
30. West Apron Hangar Expansion - Phase 2 (Design)*
31. New East Ramp Taxiway - Design and Construction (2031)
32. Expanded East Ramp and Taxilane between Taxiway Delta and Echo (Design)*
33. Runway 16L-34R Extension (Design)*
34. Taxilane C and Taxilane D Relocation (Design)*
35. Taxilane C and Taxilane D Relocation (Construction)
36. West Apron Hangar Expansion - Phase 2 (Construction)
37. Expanded East Ramp and Taxilane between Taxiway Delta and Echo - (Construction)
38. Glen-Gerry Property Reimbursement*
39. Runway 16L-34R Extension (Construction)
40. Vehicle Service Road (Design and Construction)

0' 800' 1,600'

Source: RS&H, 2024

5.4.4 Long-term Development Projects

Long-term capital improvements encompass development projects projected to initiate during the final ten years of the planning period (FY 2034 to FY 2039). Most projects in the long-term are focused on expansion of airside and landside pavements to support privately funded aeronautical development. The provided long-term project list is strategically phased to reflect priority, incorporate projects enabling further advancements, and consider funding availability. These projects' implementation is planned based on demand, with each project designated for a specific year according to enabling projects and expected funding.

The long-term programmed development at HEF is shown in the following list as projects 40-48 and on **Figure 5-6** at the conclusion of this subsection.

41. East Apron T-hangar – Demolition (2034)

This project involves the demolition of two T-hangar facilities located on the East apron, south of the Chantilly Maintenance Hangar, which have reached the end of their useful life. Removing these T-hangars will free up valuable space for a corporate hangar pad site. Additionally, hangar development on the West apron will help offset the loss of T-hangar storage on the airport's east side due to the demolition.

42. ARFF Station – Design (2034)

The Airport is currently not certified as a 14 CFR Part 139 compliant airport and therefore is not required to have ARFF services onsite. To support the introduction of scheduled commercial service, the FAA has identified the need for the Airport to construct an ARFF facility. Currently the City of Manassas Fire and Rescue Department (Department) responds to aircraft accidents and incidents at the Airport. Although the Airport maintains two ARFF vehicles, ARFF service is not currently available that would meet FAA Part 139 requirements. The current emergency response procedures require Department personnel to drive from the nearest fire station (2.9 miles away) to the airport and deploy the ARFF vehicles located in T-hangar C-3. The response time with the existing agreements in place will be improved by the construction of an on-airport ARFF facility. The preferred concept includes a new ARFF facility with 4 bays on the north side of Taxilane C. The area where the future building is proposed sits just outside the departure surface and near the building restriction line (BRL).

43. ARFF Station –Construction (2034)

The Airport is currently not certified as a 14 CFR Part 139 compliant airport and therefore is not required to have ARFF services onsite. To support the introduction of scheduled commercial service, the FAA has identified the need for the Airport to construct an ARFF facility. Currently the City of Manassas Fire and Rescue Department (Department) responds to aircraft accidents and incidents at the Airport. Although the Airport maintains two ARFF vehicles, ARFF service is not currently available that would meet FAA Part 139 requirements. The current emergency response procedures require Department personnel to drive from the nearest fire station (2.9 miles away) to the airport and deploy the ARFF vehicles located in T-hangar C-3. The response time with the existing agreements in place will be improved by the construction of an on-airport ARFF facility. The preferred concept includes a

new ARFF facility with 4 bays on the north side of Taxilane C. The area where the future building is proposed sits just outside the departure surface and near the building restriction line (BRL).

44. Airport Master Plan Update (2035)
Airport master plans are conducted approximately every 10 years and are necessary to inform the development of an FAA-approved forecast and Airport Layout Plan. These items enable FAA funding for Airport Improvement Program (AIP) eligible projects based on the forecast growth and timing for the runway extension.

45. West Apron Hangar Expansion Phase 3 - Design (2036)
This project involves final expansion, Phase 3, of the West Apron and additional realignment of Observation Road to accommodate new tie downs and T-hangar development at the south end of the West Apron. Developing General Aviation (GA) facilities on the west side of the airport will allow separation of GA operations from air carrier and larger jet operations which will improve overall safety and efficiency within the airport operations area. The project will include 13 tie downs, eight T-hangar facilities, and landside parking for the flying public.

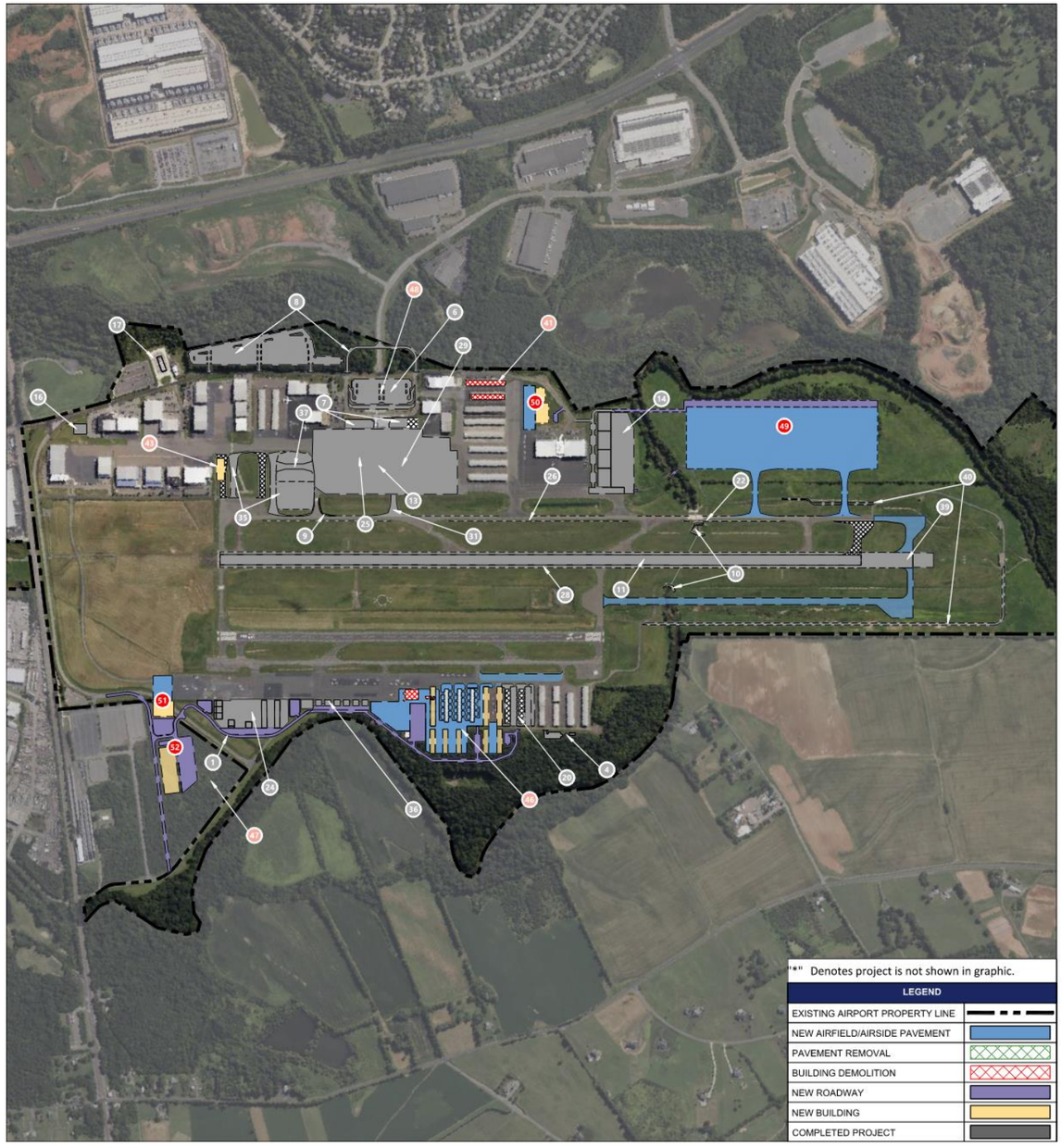
46. West Apron Hangar Expansion Phase 3 - Construction (2037)
Refer to project 45.

47. 8 Acre Land Acquisition – Prince William County (2040)
This involves a strategic land acquisition of approximately 8-acres in Prince William County, aimed at creating a contiguous airport area at the Northwest corner, between Observation Road and Piper Lane. The project seeks to improve control over compatible development, enhance airport access as potential AAM terminal facility, and provides opportunities to generate non-aeronautical revenue.

48. Parking Garage Construction
The existing terminal area parking lot has 119 parking spaces which includes 5 accessible parking spaces and is located on one portion of a lot divided into four sections. The other three sections in this lot are currently undeveloped. The vacant quadrants adjacent to the existing parking lot in front of the terminal is proposed to be converted to parking. The parking garage will be constructed in the vacant quadrants. The parking garage is expected to contain charging stations for electric and hybrid vehicles.

Figure 5-6 illustrates long term capital projects at HEF.

FIGURE 5-6
LONG-TERM PROJECTS



HEF DEVELOPMENT PHASING PLAN

PROJECTS CURRENTLY UNDERWAY

1. Realignment of Observation Road
2. Bridge Strengthening - Runway 16L/34R and Taxiway B (Design)*

NEAR-TERM (PAL 1) PROJECTS (2024-2028)

3. New FAA ATCT Phase 2 (Design)*
4. New FAA ATCT Phase 3 (Construction)
5. Runway 16L-34R Reconstruction and Strenghtening (Design)*
6. Terminal Parking Lot Rehabilitation and Expansion
7. Terminal Building Expansion (north and south)
8. Satellite Parking #1 Construction and New Entrance Road
9. Taxiway E Fillet Widening (Design and Construction)
10. Bridge Strengthening - Runway 16L/34R and Taxiway B (Construction)
11. Runway 16L-34R Reconstruction and Strengthening (Construction)
12. South West Hangar Redevelopment (Design)*
13. East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 1
14. Taxilane X (Design and Construction)
15. Maintenance Equipment Storage (MES) and Snow Removal Equipment (SRE) Facility-(Design)*
16. Maintenance Equipment Storage (MES) and Snow Removal Equipment (SRE) Facility - (Construction)
17. Fuel Farm Upgrades (Design and Construction)
18. Install Backup Airfield Generators*
19. Acquire Multi-function SRE (2)*
20. South West Hangar Redevelopment (Construction)
21. West Apron Hangar Expansion - Phase 1 (Design)*
22. Taxiway B Reconstruction and Strengthening (South of the Bridge)
23. Taxiway B Widening (Design)*

MID-TERM (PAL 2) PROJECTS (2029-2033)

24. West Apron Hangar Expansion - Phase 1 (Construction)
25. East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 2
26. Taxiway B Widening (Construction)
27. Runway 16L-34R Widening (Design)*
28. Runway 16L-34R Widening (Construction)
29. East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 3
30. West Apron Hangar Expansion - Phase 2 (Design)*
31. New East Ramp Taxiway - Design and Construction (2031)
32. Expanded East Ramp and Taxilane between Taxiway Delta and Echo (Design)*
33. Runway 16L-34R Extension (Design)*
34. Taxilane C and Taxilane D Relocation (Design)*
35. Taxilane C and Taxilane D Relocation (Construction)
36. West Apron Hangar Expansion - Phase 2 (Construction)
37. Expanded East Ramp and Taxilane between Taxiway Delta and Echo - (Construction)
38. Glen-Gerry Property Reimbursement*
39. Runway 16L-34R Extension (Construction)
40. Vehicle Service Road (Design and Construction)

LONG-TERM (PAL 3) PROJECTS (2034-2039)

41. East Apron T-hangar (Demolition)
42. ARFF Station (Design)*
43. ARFF Station (Construction)
44. Airport Master Plan Update*
45. West Apron Hangar Expansion - Phase 3 (Design)*
46. West Apron Hangar Expansion - Phase 3 (Construction)
47. 8 Acre Land Acquisition - Prince William County
48. Parking Garage Construction

BEYOND PLANNING PERIOD PROJECTS

49. South East Airport Complex Site Development (Construction)
50. East Apron Corporate Hangar Development
51. West Apron AAM Terminal Facility
52. West Apron Corporate Building

0' 1,000' 2,000'

Source: RS&H, 2023

5.4.5 Notable Projects Recommended to Occur Beyond the Planning Period

Other projects have been identified for HEF that are anticipated for implementation beyond the 20-year planning period. ROM estimates are not included for these projects:

- Southeast Airport Complex Site Development – Design
- East Apron Corporate Hangar Development
- West Apron AAM Terminal Facility
- West Apron Corporate Building

5.5 CIP FUNDING NEED

A summary of CIP funding needs by planning period and funding sources is presented in **Table 5-6**. As shown, the total 20-year capital improvement plan program amounts to nearly $448 million, includes costs for AIP-eligible projects, ineligible portions of those project costs where applicable, and ineligible projects. Near-, mid-, and long-term funding needs surpass $183 million, $121 million, and $144 million, respectively.

TABLE 5-6
ANTICIPATED FUNDING BY SOURCE

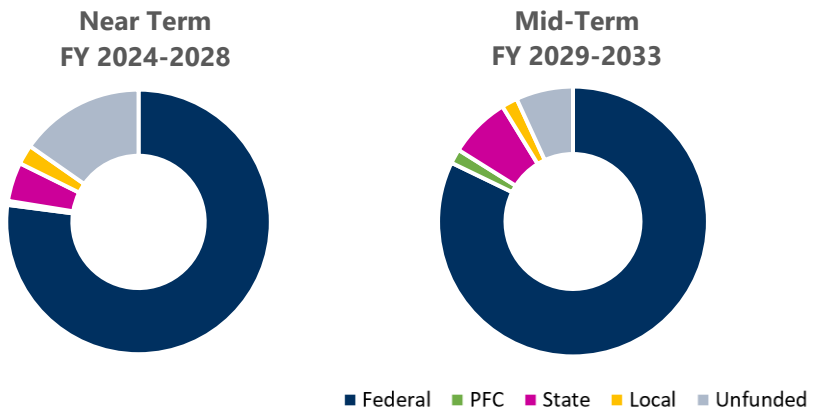
	Near Term FY 2024-2028	Mid-Term FY 2029-2033	Long Term FY 2034-2039	Total
Funding Source				
Entitlement	$5,400,000	$6,600,000	$7,100,000	$19,100,000
Discretionary	$99,100,000	$92,900,000	$92,900,000	$284,900,000
BIL AIG	$2,500,000	$0	$0	$2,500,000
BIL ATP/FTC	$34,100,000	$0	$0	$34,100,000
PFC	$900,000	$2,100,000	$600,000	$3,600,000
State Match	$8,700,000	$8,900,000	$5,300,000	$22,900,000
Local Share	$4,400,000	$2,300,000	$2,300,000	$9,000,000
Total	**$155,100,000**	**$112,800,000**	**$108,200,000**	**$376,100,000**
Unfunded / Ineligible[1]	$28,000,000	$8,300,000	$36,000,000	$72,300,000
Total Need	$183,100,000	$121,100,000	$144,200,000	$448,400,000

Notes: BIL funding concludes with FY 2026 allocations.
Unfunded/ineligible project costs are based on planning-level, ROM and prorated costs.
Source: RS&H Analysis, 2024

As shown in **Table 5-6**, overall implementation of the CIP will require substantial funding from federal and state funding partners. **Figure 5-7** illustrates how shares of funding evolve over the for the 20-year planning period, where reliance on Federal funding (AIP entitlement, AIP discretionary grants, and BIL funding) is a larger share of all funding needs in the first two periods, with steady participation by the DOAV on eligible projects, and the smallest portions being from the Airport and PFCs. Funds for ineligible

projects or ineligible portions of AIP-eligible projects are significant, but is a smaller share of needs during the mid-term period.

FIGURE 5-7
FUNDING NEED BY SOURCE BY TERM



Source: RS&H Analysis, 2024

5.6 FUNDING AVAILABILITY AND FINANCIAL FEASIBILITY

The analysis presented in this chapter identifies funding sources for CIP projects through the 20-year planning period, and will require substantial federal and state funding to implement. To win grant awards from federal and state programs, it will be necessary to identify local/sponsor funding to compete well for discretionary grants. The following summarizes the outlook of funding availability by source:

- **HEF Funding**

  As described in previous sections, HEF operating performance is reliably producing annual net income that can be used to implement the CIP. Additionally, with defeasance of outstanding debt in 2026, the Airport will make even more cash flow available. The projection of airport financial performance indicates that more than $4.8 million in net income generated during the 20-year planning period may be added to available cash reserves to fund the local share of AIP-eligible projects and leverage participation by the state.

  Eligible projects in the near term may require a local share of more than $4.3 million, which is driven by the largest the design and construction of a new FAA ATCT and the strengthening and reconstruction of Runway 16L-34R and bridge strengthening. The larger funding need is for wholly ineligible projects or ineligible portions of eligible projects. Local funding need for ineligible project costs for the near term is estimated to be nearly $28 million, most of which is associated with fuel farm upgrades which is anticipated to be ineligible and design and construction of a combined maintenance equipment and snow removal equipment facility, which is only partially eligible.

For the 20-year period, the local share and ineligible project funding need is estimated to surpass $77 million, with nearly $8.8 million in local share and ineligible costs more than $68.5 million. This need makes the feasibility of funding capital projects from Airport cash flow not realistic.

» **Entitlement Funds**

The HEF CIP applies AIP entitlement funds for AIP-eligible projects throughout the planning period, allocating anticipated annual amounts to 20 of the total 48 projects. As described, entitlement funding will increase with the introduction of passenger service to a minimum of $1.3 million annually. In the CIP, entitlement funds have been allocated prior to estimating the funding amount from other sources, including BIL, discretionary, PFC, and state and local match funds, and reflect assumptions of project eligibility. The outlook for entitlement funding need in the near-term is about $5.4 million based on the forecast of annual enplanements. A delay in the launch of passenger service will keep annual entitlement funds for HEF at the current level, which is $150,000 annually, will delay implementation of certain CIP projects, and increase reliance on competitive discretionary grants.

» **Discretionary Grants**

Since 2010, TOL has received about $18.4 million in discretionary AIP grants, which is approximately $1.3 million annually. The CIP has identified a need for substantial discretionary grant funding support for the 20-year period, estimating the discretionary funding need at 64 percent of the total program through 2029. This level of need from AIP program discretionary grants is far beyond historic funding levels for the Airport and will be quite difficult to attain without quick, sustained success with the introduction of passenger service.

Importantly, there are a number of large projects where eligible funding is estimated to be in the range of $10-20 million (e.g., Runway 16L-34R reconstruction, strengthening, and widening and vehicle service road), some of which are hangar projects. While certain hangar projects are AIP-eligible, they are not as competitive against airfield pavement improvements, and are most appropriately implemented when user demand reaches a critical mass to make them affordable. Therefore, while overall need for discretionary funds projects is high, priority will be given to runways, taxiways, and aprons. Despite the priority on airfield pavements, the availability of AIP discretionary funds and the competitiveness of important projects such as Runway 16L-34R and Taxiway B improvements will depend on the success of commercial passenger service. This makes decisions about timing and phasing of eligible airfield projects, and timeline for commercial service readiness and launch a pressing challenge.

» **PFC Revenues**

PFC funding will become a potential source of revenue for capital projects at HEF once commercial passenger service is in place. Based on the approved forecast of enplanements, PFC revenues could begin as soon as mid-2025 and grow to surpass $500,000 annually if the market responds as hoped. Due to the uncertainty of commercial service and enplanement levels, the CIP applies projected PFC revenues beginning in 2025, but remains conservative as the Airport has several strategies for use of PFC funding including: reimbursement of the City's local share for

eligible projects; "pay-as-you-go", where collections are used on active projects; impose only, which allows the collection of PFCs for three years and the use of those PFC funds in the subsequent 2-year period; and, for eligible debt service.

Participation in the PFC program presents an opportunity for HEF to improve cash flow for capital projects directly related to passenger service. While PFC funds are shown in the CIP for airfield pavement projects, the CIP reserves PFC fund collections because they have broader usability that the AIP for terminal buildings, baggage facilities, boarding bridges, and public, some non-revenue generating areas, and for revenue-generating spaces if they improve air carrier competition. Depending upon the impact of commercial service, it is advisable to preserve the use of PFC collection for terminal area improvements.

- **BIL Program Infrastructure Funds**
  The Airport has pledged BIL AIG allocations from FY 2022-2024 to fund a portion of the cost to realign Observation Road on the northwest side of the airfield. HEF anticipates annual in BIL AIG allocations for the remaining program years (2025-2026) to be similar to previous years and intends to utilize those allocations to reimburse for the Airport's share of the Observation Road project cost.

- **State Match Funds**
  As described, the DOAV has a robust funding program and the CIP includes continuous and sizeable support from the DOAV for the implementation of the capital program. The generous match provision in DOAV funding program for eight (8) percent of eligible projects, not including other funding opportunities for recurring maintenance, facilities and equipment, and security projects is an important part the HEF CIP, and is programmed for $8.7 million in the near term and $8.9 million in each of the subsequent mid- and long-term periods. The programmed need for DOAV support is not small, but within the limits of the annual program cap of $3 million annually per airport.

- **Other Funds**
  The CIP includes three projects to improve terminal and terminal and remote parking are programmed the in the near term and will be funded by Avports via agreement with the City. Beyond those projects, external funding sources will be important to help fund ineligible portions of AIP-eligible projects and ineligible projects. External funding can include private interests, other local, federal, or state funding programs.

Depending upon the financial performance of the Airport, and enplanement levels which impact AIP entitlement grant funding and PFC revenues, significant supplementary financial support will be needed to implement the planned CIP, especially in the near- and mid-term where ineligible project costs are high. If adequate funding is not available from these sources, initiation of certain projects may need to be deferred to later years, or the use of bond issuance or low interest loans or commercial notes may be utilized as the City has done in the past. The Airport has an opportunity to win some portion of total

funding through the BIL Airport Terminals Program/Federal Contract Tower Program to support the design and construction of a new ATCT.

5.6.1 Opportunities for Revenue Enplanement

As the Airport begins to implement the CIP in the near- and mid-term periods, identification of funding sources and revenue generation will become increasingly necessary to implement identified projects. As shown in the review of HEF's operating financial performance (see **Table 5-2**), the airport generates income from various sources, which are primarily facility rent, user fees, and fuel sales. These opportunities for enhancing revenues, if realized in the near- and mid-term periods could positively impact implementation of the HEF CIP by improving the airport's cash flow and fund availability for the local share of AIP-eligible and other projects

5.6.1.1 Facility Rents

The largest source of Airport revenues is rental payments from leases with terminal, hangar, and other facility tenants. Since 2017, these revenues account for an average of 85 percent of total operating revenues annually, growing from about $2.3 million in 2017 to budgeted levels of over $3 million in 2023. It is these revenues that helped sustain the airport during the global COVID-19 pandemic, increasing while activity and revenues from some user fees declined during 2020 and 2021.

The CIP includes projects that will generate additional revenues through attracting new tenants and users for South West hangar redevelopment in the near term and a three-phase expansion of West Apron hangars anticipated for the mid- and long-term periods.

5.6.1.2 Rates and Charges

Another approach to enhance revenues at HEF is to explore increases to certain rental rates and fees paid by tenants and aeronautical users. Airports generally revise fees, rates, and charges periodically, either on an annual basis or every few years to reflect increasing costs and market demand. These adjustments are influenced by local or regional economic indicators, such as the Consumer Price Index (CPI), to align with prevailing economic conditions. A snapshot of leasing and policy and rates and charges in place at the airport includes the following fees:

- Hangar rent
- Tie-down rent
- Commercial operator permit fees (annual)
- Fuel flowage fees
- Terminal rent

When considering fee increases, the Authority should strive to strike a balance between covering the costs of providing facilities and maintaining competitiveness in the market. A rate-making methodology should be established that can demonstrate the link between costs and fee rates for airfield, terminal, apron, and fuel flowage fees, and periodic appraisals of hangar facilities can help re-set fair market values over time.

5.6.1.3 Financial Performance and Competitiveness

When commercial service is established, the Airport will be able to begin tracking a metric that the airline industry monitors and compares across similar airports, which is Cost per Enplaned Passenger (CPE). CPE

is the average expense incurred by airlines per passenger for utilizing airport facilities and is a key indicator of the cost of operating at an airport.

A transparent rate-making methodology can provide context for the CPE metric, providing insights into operating costs and the rate and fee structure, which airports balance to remain competitive for air carrier services. Depending upon the rate methodology, airports like HEF with significant non-airline aeronautical revenues can utilize portions of these revenues to offset and reduce the airline rate base to yield a CPE that is competitive.