

**FAA OFFICE OF AIRPORTS FY2023 SUPPLEMENTAL DISCRETIONARY GRANT PROGRAM
DX-DY APRON RECONSTRUCTION AT BALTIMORE/WASHINGTON INTERNATIONAL
THURGOOD MARSHALL AIRPORT**

PROJECT NARRATIVE

The DX-DY Apron Reconstruction is an important project to maintaining the airfield pavement at BWI Marshall Airport. The project will reconstruct the asphalt pavement in the apron between Concourses DX and DY as well as Taxiway T between Taxiways B and C. The pavement will be replaced with durable concrete pavement which will extend the useful life of this section of the airfield and prevent pavement failures that could result in unplanned impacts airport operations. The project incorporates numerous features to improve sustainability and resiliency of the BWI Marshall Airfield, such as drainage system improvements, installation of an oil-water separator, LED light fixtures, and light-colored concrete pavement that will not contribute to urban heat island effect.

SECTION 1: ELIGIBILITY. The DX-DY Apron Reconstruction project is currently 100% designed and plans to advertise for construction in June 2024, with bids received in August 2024. The project will be able to execute a grant agreement well before the May 31, 2025 deadline.

Environmental Approval: The project was approved in a Categorical Exclusion (CATEX) for *Equipment, Facilities Siting, Construction and Maintenance FY 2023-2024 ACIP Projects at BWI* dated 4/14/2023.

Airspace Review and Approval: 7460 Permit will be filed for this project in May 2024.

Airport Layout Plan: The project does not contain any geometry changes to the airfield pavement and is consistent with the approved BWI Marshall Airport Layout Plan.

1.1 Priority Project Category: The DX-DY Apron Reconstruction project is eligible for the Airfield Operational Resiliency (AOR) project category specified by the FAA. This project will improve the resiliency of at-risk infrastructure and will preserve airfield safety standards. This project will replace pavement that is at the end of its useful life and will install a new drainage system that will more effectively remove runoff from the airfield and will pass through an oil-water separator to remove potential contaminants from entering the local waterways.

SECTION 2: PROJECT DESCRIPTION

2.1 Project Purpose and Scope. The DX-DY Apron Reconstruction project will reconstruct approximately 240,000 square feet of apron pavement between Concourses DX and DY, as well as 1,300 linear feet of Taxiway T at BWI Marshall Airport. The existing asphalt apron pavement is experiencing numerous pavement distresses, and the 2023 Pavement Management Program (PMP) noted a Pavement Condition Index (PCI) of 36-67 for the area, which is classified as poor-fair condition. The portion of Taxiway T adjacent to the DX/DY apron pavement will also be reconstructed, which has a PCI of 52 as noted in the 2023 PMP, classified as poor condition. By reconstructing these areas of pavement in concrete, the pavement will be stronger and more able to accommodate the weight of the aircraft which utilize this section of the airfield. The durable concrete pavement has a longer lifespan than asphalt, and therefore will extend the time until the next rehabilitation project is needed. The project will also install energy-

efficient LED lighting in the Taxiway T centerline and edge lights, as well as install a clear water diversion vault and an oil/water separator (OWS) within the apron pavement. The OWS will collect potentially contaminated storm runoff and filter out oils before stormwater is discharged to the storm system and surrounding waterways.

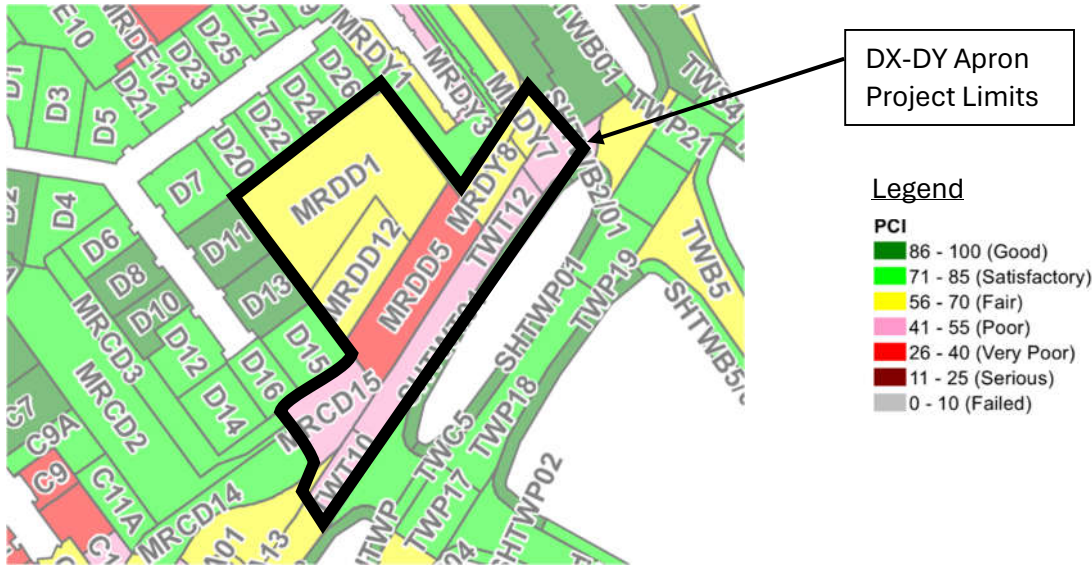
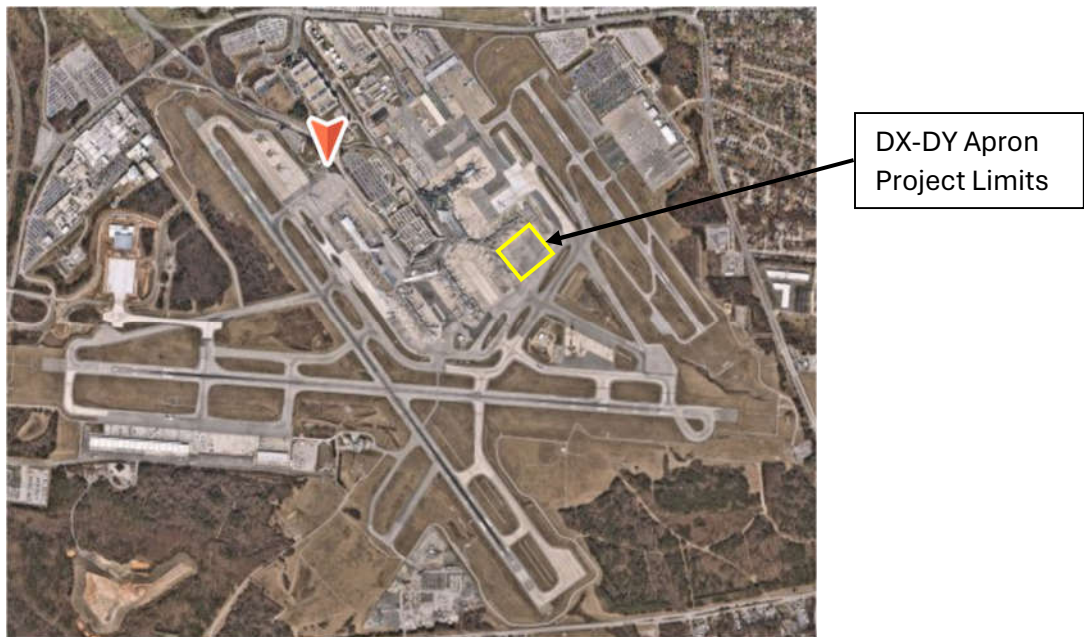
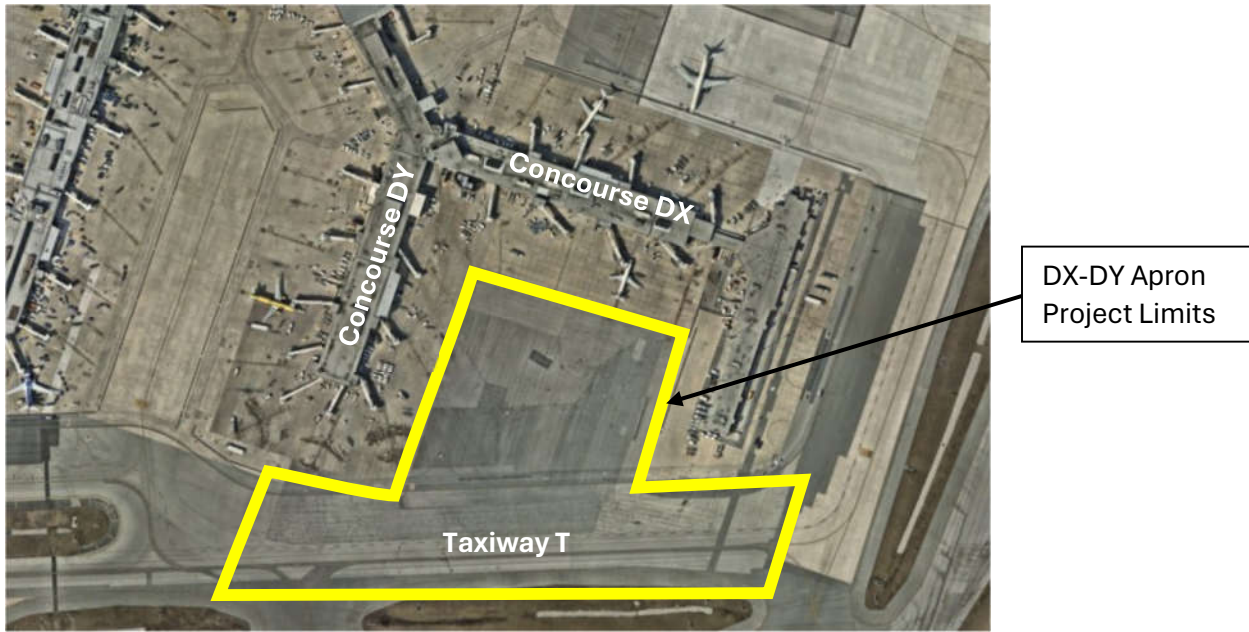


Figure 1: 2023 BWI Pavement Management Program, Pavement Condition Index (PCI) Exhibit

2.2 Location of Project. The project limits are the pavement between the DX and DY concourses, excluding gate aprons, and the portion of Taxiway T between Taxiway B and Taxiway C, and the area of pavement between the apron and taxiway.





2.3 Alignment with Administration Priorities. The project aligns with the Administration priorities of safety and climate change and sustainability.

Safety: By reconstructing the apron pavement which is at the end of its useful life with high strength, durable concrete, the MAA will prevent unplanned pavement failures from occurring which could create FOD and result in unplanned closures of the airfield while an emergency repair can be made. Additionally, the installation of the oil water separator and clean water diversion vault will put this section of the airfield in compliance with the National Fire Protection Agency (NFPA).

Climate Change and Sustainability: The construction project will include several strategies to promote sustainable development. First, this project will reconstruct existing pavement and therefore will not result in any additional earth disturbance or added impervious area. The light-colored concrete pavement to be installed will not contribute to urban heat island effect. Additionally, high-efficiency LED light fixtures will be installed in the taxiway, reducing energy use from the existing incandescent taxiway lights by 30-40%. Lastly, the project contains a specification for Construction Waste Management specifying that at least 75% of construction debris be diverted from the landfill through reuse or recycling. The existing asphalt to be removed is a highly recyclable material, and a waste diversion rate of nearly 100% is possible.

SECTION 3: COST ESTIMATE & FINANCIAL PLAN

Financial Plan

MAA recently received \$617,763 in FY 24 Airport Improvement Program (AIP) Bipartisan Infrastructure Law (BIL) Entitlement funds for the design of the DX/DY apron pavement rehabilitation project. AIP grant 3-24-0005-123-2024 was executed in April 2024.

MAA is requesting \$28.1 million (75%) in federal funds for the construction. The remaining \$9.4 million (25%) will be state funded through Maryland’s Transportation Trust Fund (TTF). The cost is based on the 100% design estimate. Design and construction are included in the ACIP with an NRP score of 73.

	Federal Share (75%)	State Share (25%)	Total Cost
Construction	\$ 25,537,260	\$ 8,512,420	\$ 34,049,680
CMI	\$ 2,553,726	\$ 851,242	\$ 3,404,968
Total	\$ 28,090,986	\$ 9,363,662	\$ 37,454,648

MAA has completed project design and is actively moving into the procurement phase. Construction is anticipated to begin in March 2025 (weather permitting) and is estimated to be completed by November 2026. See Section 5: Proposed Schedule for more information.

SECTION 4: AIRFIELD OPERATIONAL RESILIENCY CRITERIA

- a. the conditions, including natural disaster, from which the proposed project would provide prevention, resiliency, or recovery;

The DX/DY apron project will promote resiliency of the BWI Marshall airfield by improving the drainage system and providing proactive pavement management. The existing apron runoff is only partially intercepted with drop inlets and trench drains. The majority of the runoff is conveyed by sheet flow into the infield area and directly into the stormwater management (SWM) system. The existing condition represents a risk of contaminants, such as deicing fluid or fuel, flowing directly into the SWM system which discharges to surrounding waterways. Additionally, as storm intensity increases, the project will provide stormwater management according to current guidelines and reduce the chance of flooding and release of contaminants associated with increased storm intensities. Additionally, DX-DY Apron is currently out of conformance with NFPA 415, which states the drainage system shall be designed to allow disposal of combustible or flammable liquids into a safely located, approved containment facility. An oil-water separator is the typically used containment facility referenced in NFPA 415, however, none of the DX-DY Apron stormwater runoff currently passes through an oil-water separator. This area has been identified for some time by MAA Environmental Compliance as a target of opportunity. This project provides the opportunity to correct this existing deficiency.

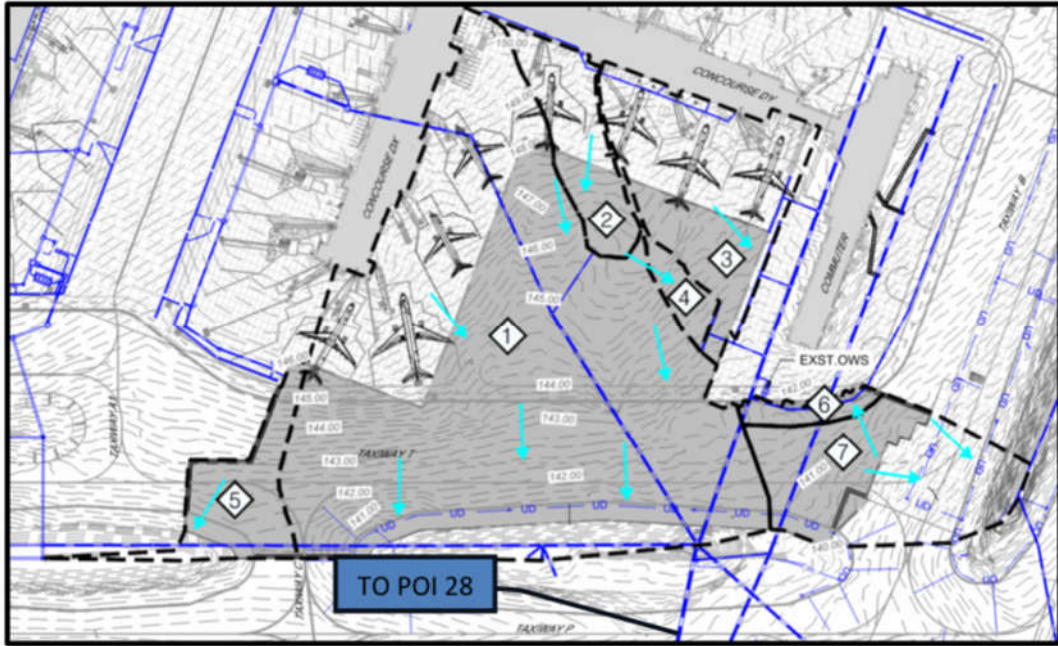


Figure 2: Existing Drainage Conditions

The proposed project corrects this condition by installing a continuous trench drain across the entire apron entrance to intercept all runoff and convey it into a closed drainage system. All drainage will then pass through a new oil water separator (OWS) prior to discharge into the SWM system. This proposed arrangement allows for interception and containment of potential contaminants which may be on the airfield pavement. Lastly, the new drainage and SWM is designed to current criteria and expected rain events and intensities which have increased since the original construction of the apron. This will allow for continued operation and expedient recovery following intense storm events that may impact the existing apron.

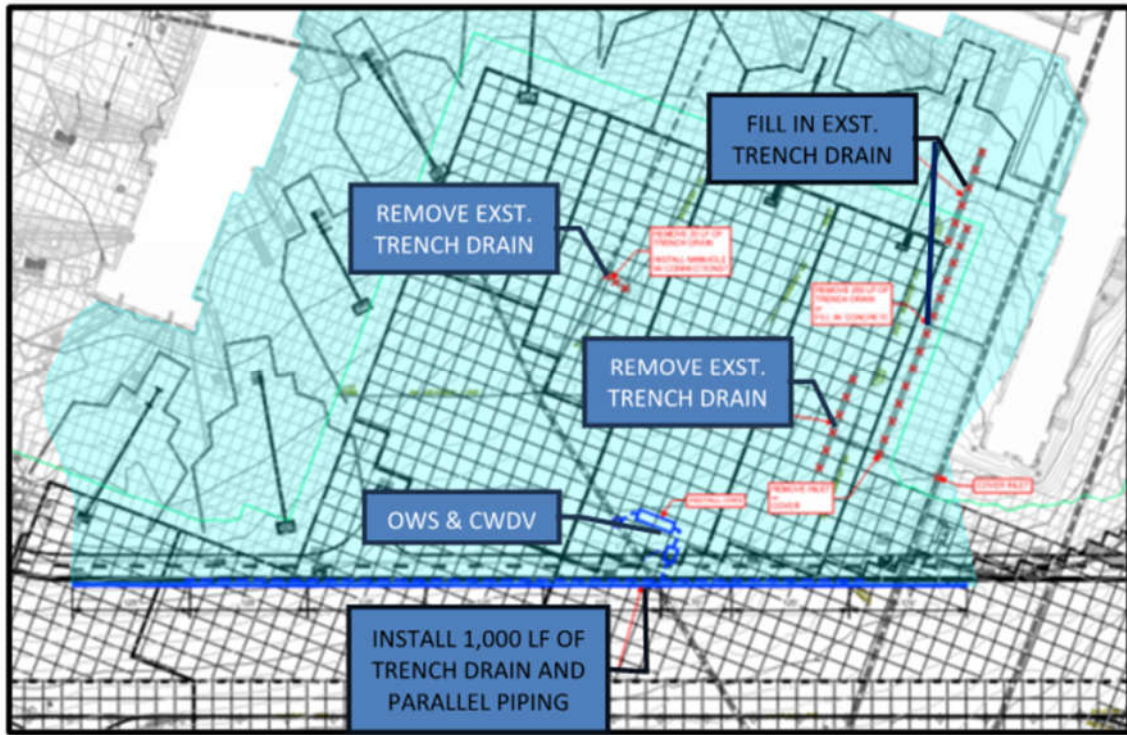


Figure 3: Proposed Drainage Conditions

- b. whether the project pursues prevention of the occurrence (such as levees) or resistance to damage (such as timely appropriate pavement treatments or passive airfield drainage); or recovery from severe impacts (such as stormwater runoff management or snow removal);

By replacing the existing asphalt pavement which has reached the end of its useful life with durable concrete pavement, the airport will significantly enhance the reliability of the airfield in this location and prevent emergency repairs from being needed. Additionally, the comprehensive drainage and stormwater management improvements will remove runoff from the airfield more efficiently and will provide containment of potential contaminants, such as fuel or deicing fluid, from entering adjacent waterways and causing pollution. Additionally, as temperatures increase, the existing asphalt paving is increasingly showing signs of shear stresses exacerbated by the physical properties of the asphalt as it is heated. Replacement of the paving with concrete, less susceptible to heat related failures, will improve overall airfield resiliency.

- c. the likelihood of such impacts occurring in relation to the expected useful life of the proposed development improvements;

The past several years have seen an increase in the frequency and severity of storm events. Airfield infrastructure must be upgraded to accommodate much more runoff than before to ensure operational stability and resiliency during and after storm events. Provision of the new infrastructure and pavement related to this project will provide a level of resiliency against increased storm intensity and increased temperatures now being experienced and expected to continue and grow more intense over the life of the pavement.

- d. any specific reasons why the subject airfield is particularly vulnerable to negative impacts, including those from natural disaster, and the scale of that negative impact to the aviation system.

Airports contain a vast amount of impervious surfaces which create runoff during storm events. The project limits of the DX-DY Apron is approximately 240,000 SF which equates to 20,000 cubic feet of stormwater runoff during a typical 1” rain event. Flooding or ponding on the airfield would result in unsafe conditions and potential closure of a certain area of the airfield. The proposed drainage system will be sized appropriately to accommodate runoff from these storm events and ensure the airfield can operate during and after a storm. Without the proposed improvements, the risk of localized flooding and release of potential pollutants into receiving waters will increase. Additionally, the existing asphalt pavement will continue to deteriorate under increasing heat and existing operational loads leading to failures and potential for property damage and increased delays.

Additionally, Taxiway T is a heavily used taxiway for aircraft to travel to and from the gates and the primary runways. A pavement failure in this area could result in the taxiway becoming unusable for a number of days. Similarly, a pavement failure in the DX-DY apron area could result in gates being unusable by airlines for several days, resulting in operational and financial harm to the airport. By proactively reconstructing these areas in concrete pavement, the useful life of the airfield pavement will be extended by 20 years or more.

SECTION 5: PROPOSED SCHEDULE

Schedule: The project will proceed in a manner that will allow the sponsor to commit to utilizing Federal Funding in a timely manner. To date, the required NEPA documentation is complete as well as the design. Permitting is close to completion and the project is ready for advertisement and bidding. We anticipate the project will be bid in Summer of 2024 with expected grant issuance in Fall 2024. Notice to Proceed is anticipated in late 2024 and construction is expected to be complete by the end of calendar year 2026.

Schedule Element/Milestone	Estimated Date
Construction Advertisement	June 2024
Bids Due	August 2024
Review of bids, execute grant agreement with FAA	September 2024
Maryland Board of Public Works Approval	October 2024
Initial NTP	November 2024
Construction NTP	March 2025
Substantial Completion	November 2026