

International Parkway Advanced Mobility Program - Infrastructure Modernization: Terminals A & B

2022 RAISE Grant Application

Submitted April 2022
Opportunity: DTOS59-22-RA-RAISE
Prepared for: U.S. Department of Transportation
Name: FY 2022 National Infrastructure Investments



North Central Texas
Council of Governments



April 14, 2022

The Honorable Pete Buttigieg
Secretary United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590



Re: 2022 RAISE Grant Application

Dear Secretary Buttigieg,

The North Central Texas Council of Governments (NCTCOG) and the Dallas Fort Worth International Airport (DFWIA) are pleased to expand our decades of partnership with the submittal of this Fiscal Year (FY) 2022 RAISE Grant Application for the International Parkway Advanced Mobility Program - Infrastructure Modernization: Terminals A and B. NCTCOG is a voluntary association of, by, and for local governments, established to engage in regional planning and strengthen the fulfillment of common needs. This function is further extended in our role as the Dallas-Fort Worth region's Metropolitan Planning Organization (MPO), as we aim to expedite mutual mobility, accessibility, and economic vitality objectives on behalf of the area's multimodal transportation providers. This project represents a firm commitment to support DFWIA, and its continued prominence among the world's busiest aviation hubs, in providing reliable infrastructure to enhance the connectivity and convenience of essential passenger and cargo air travel services.

Together, our agencies seek \$25 million in RAISE Grant funds to remove and replace obsolete and condition-deficient access ramps from International Parkway (IP) to Terminals A and B. Given IP is the backbone of DFWIA's landside transportation network, maximizing regional connectivity and improved access to DFWIA's terminals is a project of national importance. Reconfiguration of the ramp as standard-design right-hand exits will ensure a renewed state of good repair for critical infrastructure, increased safety for the traveling public, and improved mobility and reliability for all airport users (travelers, employees, and vendors) including those from underserved, overburdened, or disadvantaged communities.

Faced with an imminent need to replace inefficient left-hand exits, ramps, and bridges, DFWIA developed a solution to create a more efficient airport roadway system for the future, while also addressing aged infrastructure. The project will reduce annual maintenance costs, reduce safety conflicts through less weaving and improved driver reaction capabilities, and with accompanying "future-proof" measures the project will help expedite readiness for planned vehicle automatization initiatives. Realization of these vast mobility and sustainability benefits will ensure DFWIA can meet and exceed the service expectations of its 72 million annual passengers, support the direct gainful employment of over 228,000 people regionwide, and persist as the powerful economic engine that drives North Texas.

We are grateful for your consideration of this proposal and look forward to coordinating in the future. Should you have any questions regarding our application, please do not hesitate to contact me at (817) 608-2345 or via email at jneal@nctcog.org.

Sincerely,

Jeffrey C. Neal

Jeffrey C. Neal
Senior Program Manager
Streamlined Project Delivery and Data Management



Application Snapshot

Project Title: International Parkway Advanced Mobility Program - Infrastructure Modernization: Terminals A and B

Applicant: North Central Texas Council of Governments (NCTCOG)

Application Contact: Jeffrey C. Neal, Senior Program Manager

Organizational DUNS: 1024622560000

Tax Identifier: 75-6049012

Location of Supplemental Materials*: <https://www.dfwairport.com/business/about/investors/>

* Please navigate to the Grants tab to find full application

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Introduction

The North Central Texas Council of Governments (NCTCOG), together with the Dallas Fort Worth International Airport (DFWIA), join efforts to realize the **International Parkway Advanced Mobility Program - Infrastructure Modernization: Terminals A and B** (i.e., the project). The project consists of **replacing two pieces of critical infrastructure at one of the nation's busiest airports, including the end-of-their life, non-standard, left-hand exits and associated ramps and bridges from International Parkway (IP) to terminals A and B**. NCTCOG is a voluntary association of, by and for local governments, established to assist in regional planning. NCTCOG's purpose is to strengthen both the individual and collective power of local governments and to help them recognize regional opportunities, eliminate unnecessary duplication, and make joint decisions. DFWIA is the primary international airport serving the Dallas–Fort Worth metroplex area in the U.S. state of Texas and it is the largest hub for American Airlines, which is headquartered near the airport and manages terminal A traffic in its entirety. In 2021, DFWIA was the second-busiest airport in the US serving nearly 250 combined domestic and international destinations, and providing air travel and cargo infrastructure essential to people and businesses.

IP provides regional connectivity to the state highway system and is part of both the National Highway System (NHS) and the Texas Highway Freight Network (TxHFN). The project of national importance will improve the state of good repair of critical infrastructure, increase safety for the traveling public, and improve mobility for transportation system users including those from underserved, overburdened, or disadvantaged communities.

The current left-hand exits and associated ramps and bridges from IP to terminals A (American Airlines designated and busiest terminal at the airport) and B were constructed in the 1970s as part of the original

Project at a Glance

International Parkway (IP) is the backbone of DFWIA's landside transportation network, providing access to DFWIA's terminals. The left-hand exits from IP to Terminals A and B have reached the end of their design life and need to be replaced.

Purpose and Need

DFWIA must replace the flyover bridges connecting IP to Terminals A and B since they have a fracture critical design and are in poor condition. The new right-hand exit flyover bridges and ramp exits are more intuitive, functional, and safer.

Goals

- Replacing critical infrastructure that is at the end of its design life
- Reducing annual maintenance costs
- Improving ground-side access network efficiency
- Using environmentally friendly materials and future proofing applications to accommodate automation technology

Benefits Summary

Improve Safety

More intuitive right-hand exits improve reaction time and reduce lane conflicts to decrease weaving and collisions

Avoid Significant O&M Costs

New right-hand exits significantly reduce annual costs of maintenance and unscheduled repairs

Enhance Network Efficiency

More efficient infrastructure improves surface transportation network mobility, reliability, and connectivity for both DFWIA and the region surface transportation network while contributing to greater regional connectivity

airport design. For the past 50 years, the left-hand exits have been used by vehicles carrying passenger-laden private vehicles, buses, shuttles, emergency and public service vehicles, and delivery vehicles. Because of their integrated design with the rest of DFWIA's landside roadway system, the IP left-hand exits have been essential for efficient vehicle access to terminal parking facilities, as well as curbside pick-up and drop-off areas. After 50 years of increasingly heavy use, the existing left-hand exits, ramps, and bridges from IP to terminals A and B are experiencing extensive wear and tear and reached the end of their service life. A Texas Department of Transportation (TxDOT) inspection in 2018 found extensive cracking on both bridges, many of which extended to the structural steel. Since then, inspection frequency of critical components has increased from 24 months to 12 months, and multiple touchups have been performed. Inspection reports have indicated near-term reconstruction must be considered before further deterioration could result in the bridges deemed unsafe to use, requiring immediate closure. Closure of any one of the exits, ramps, and bridges will trigger a cascading series of detours that will be extraordinarily disruptive and cause significant delays for all passengers and employees at the airport, beyond those just using terminals A and B. Additionally, DFWIA will need to spend significant financial resources for continued repair and maintenance of the structures, and this will only prolong service and accessibility disruptions.

Under the no-build scenario, the existing end-of-life infrastructure remains in place and continues to be operated and maintained at a reduced vehicle capacity and at a reduced speed limit to address deteriorating conditions and safety concerns with the structures. The existing flyover bridges to terminals A and B are connected, therefore the project is defined to replace the infrastructure connecting both terminals to IP.

Faced with an imminent need to replace the end-of-life left-hand exits, ramps, and bridges,

DFWIA has developed a solution that will not only address the failing infrastructure but also create a more efficient airport roadway system expected to reduce crashes and save lives; in addition to build the infrastructure of the future. The proposed conversion of the flyover ramps to right-hand exits are consistent with national and TxDOT design standards and have an extended useful life of 100 years. Reconstructing the flyovers will maximize project benefits, including reducing the need for lengthy detours to the ice roads, compared to maintaining the existing structures. Additionally, the right-hand exits can be built while the left-hand exits remain open limiting service disruption during construction. Dynamic signage and additional infrastructure to accommodate other developing technologies will also be incorporated, along with innovative and adaptive features to prolong the lifecycle of the new right-hand exit bridges and ultimately create a more sustainable and resilient roadway network. This will include provisions enabling integration of smart traffic management, vehicular communication and/or automation, and electric power service access, whether accomplished via pavement embedding or side fire remote linkages.






Implementation of the project results in significant mobility, safety, and economic benefits for DFWIA users and the North Texas region. Benefits include significant operations and maintenance (O&M) avoided, vehicle collision reductions, travel time savings, higher reliability, and less congestion for all IP users accessing the terminals and traveling through it. The project restores primary access to terminals A and B in a safer, more intuitive, and efficient configuration. Additionally, the use of innovative design and delivery approaches results in a short construction timeline and minimized user disruption. Such benefits are crucial to meet and exceed the service expectations of approximately 72 million passengers per year and support the employment of over 228,000 people, including the more than 2,000 directly




employed by the Airport's Board. Such figures are likely to be growing quickly as the regional, domestic, and world economies recovers from the COVID-19 pandemic.

The application is tailored to appropriately address all merit criteria outlined in Section E.1.(i) of the 2022 RAISE Notice of Funding Opportunity (NOFO), including safety,

environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness and opportunity, state of good repair, partnership and collaboration, and innovation. The project will bring to the region a significant number of benefits. Table 1 summarizes how the merit criteria aligns with the project.

Table 1: Alignment with Criteria Select

Selection Criteria	Ranking	Language from the NOFO	Project Benefit
 Safety	MEDIUM-HIGH	Reduce fatalities and/or serious injuries	Accidents avoided from current configuration
			Accidents avoided from potential detours
		Mitigating systemic safety issues	Dynamic signage
 Environmental sustainability	MEDIUM-HIGH	Reduce emissions from auto/heavy vehicles	Emissions avoided from TTS
		Promote energy efficiencies	Carbon cure concrete
 Quality of life	MEDIUM-HIGH	Increase accessibility for all travelers	Better/more convenient accessibility for all travelers
		Increase accessibility for lower income travelers and airport users	Better/more convenient accessibility for lower income/nonbusiness travelers and employees
		Reduce damages resulting from emergencies	Secure timely emergency response
 Mobility and community connectivity	MEDIUM	Increase mobility for all users of a project, particularly non-motorized travelers (those using buses)	Reliability improvements
			Congestion avoided from detours and from speed reduction
 Economic competitiveness and opportunity	HIGH	Improve system operations to increase travel time, reliability, speed	Travel time savings (TTS) on the bridges
			TTS from IP speed increase
			Airport competitiveness

Selection Criteria	Ranking	Language from the NOFO	Project Benefit
 State of new repair	HIGH	Modernize core infrastructure assets	Address current or projected O&M cost avoided on the bridges
			Residual value
			Pavement cost avoided due to ice roads detours
 Partnership and collaboration	MEDIUM-HIGH	Collaborate with other public and private entities	North Central Texas Council of Governments (NCTCOG) Texas DOT (TxDOT) Regional Transportation Council (RTC) American Airlines (AA)
		Incorporate private sector entities, particularly DBEs, in transportation planning, design or building	High DBE percentage
 Innovation and technology	HIGH	Deploy innovative technologies	Maintenance sensors Real-time incident management
		Use innovative practices	Autonomous vehicle adaptation design
		Incorporate innovating funding and financing	Design Build Approach

A benefit-cost analysis (BCA) indicates the delivery of this approximately \$37.8 million (in 2020 year dollars) project will generate approximately \$75.5 million in benefits over its first twenty years of operation. This equates to a benefit-cost ratio (BCR) of 2:1 with a net present value of approximately \$37.7 million in 2020 dollars assuming a 7 percent discount rate. A technical memo detailing the methodology, assumptions, and findings of the BCA can be found in Attachments 2 and 3.

Compared to the DFWIA's application in the 2020 BUILD cycle, this application has been enhanced to account for feedback received

from USDOT personnel during the debrief on the 2020 application. In summary, the traffic model has been revised and the partnerships have been strengthened.

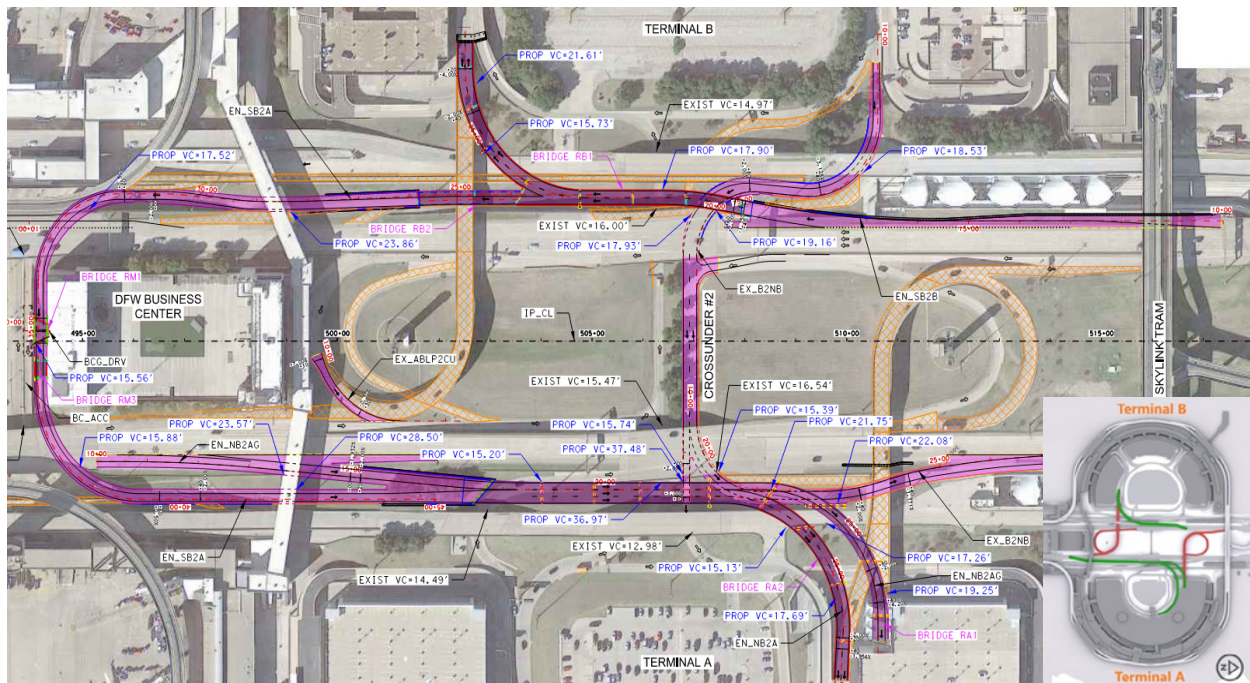
Project Description

The project includes the replacement of the existing terminal A and B left-hand-exit flyover bridges from IP with right-hand-exit solutions. The design is a modified approach for the corridor-wide IP flyover bridge concept that has been developed and vetted with internal and external stakeholders. The benefits of the right-hand-exit approach include improved safety, enhanced reliability, travel time savings, minimized construction related impacts to passengers, and the modernization of IP infrastructure.

Visualization Tool

Existing Flyover: <https://vimeo.com/407739684>

Project: <https://vimeo.com/407740349>



Notes:

Main graphic: Infrastructure in orange represents the current infrastructure under the no-build scenario, while infrastructure in purple represents the new infrastructure under the build scenario.

Insert graphic: Red lines represent current infrastructure, while the green lines show the new accesses to the terminals.

Figure 1: Project Overview

The project includes the following elements:

- Construction of new right-hand exits to two of DFWIA's five passenger terminals Construction of associated roadway and ramp connectors
- 100 years old useful life infrastructure
- All subsurface utilities in the footprint of the project will be replaced, rerouted or repaired as necessary
- Any slope failures, or locations at risk, within the limits of the project will be rehabilitated

The project also includes:

- Provisions for autonomous vehicles
- Dynamic signage
- Connectivity to live traffic models
- Provisions for future electrical vehicle charging (e.g., design to embed conduit)

- Digital twin integration
- CCTV integration with current and future technologies

Project Location

The project is specifically located in the portion of DFWIA incorporated within the City of Grapevine, Tarrant County, Texas in the Dallas-Fort Worth-Arlington MSA. The project is encompassed within Census Tract 9800. See Figure 2 illustrating DFWIA's location in relation to the larger urban region.

The project is located in the Central Terminal Area (CTA) of DFWIA. The CTA is characterized by its symmetrical design, with semi-circular passenger terminals, parking rings, and other commercial facilities. All terminals, parking areas, and two on-site hotels are accessible from IP. The existing flyover bridges originate via left-hand exits from the IP in both directions, and they are

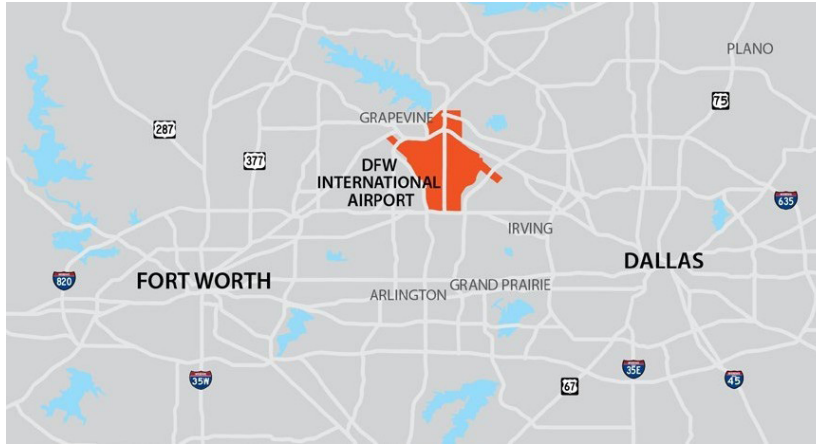


Figure 2: Project Location

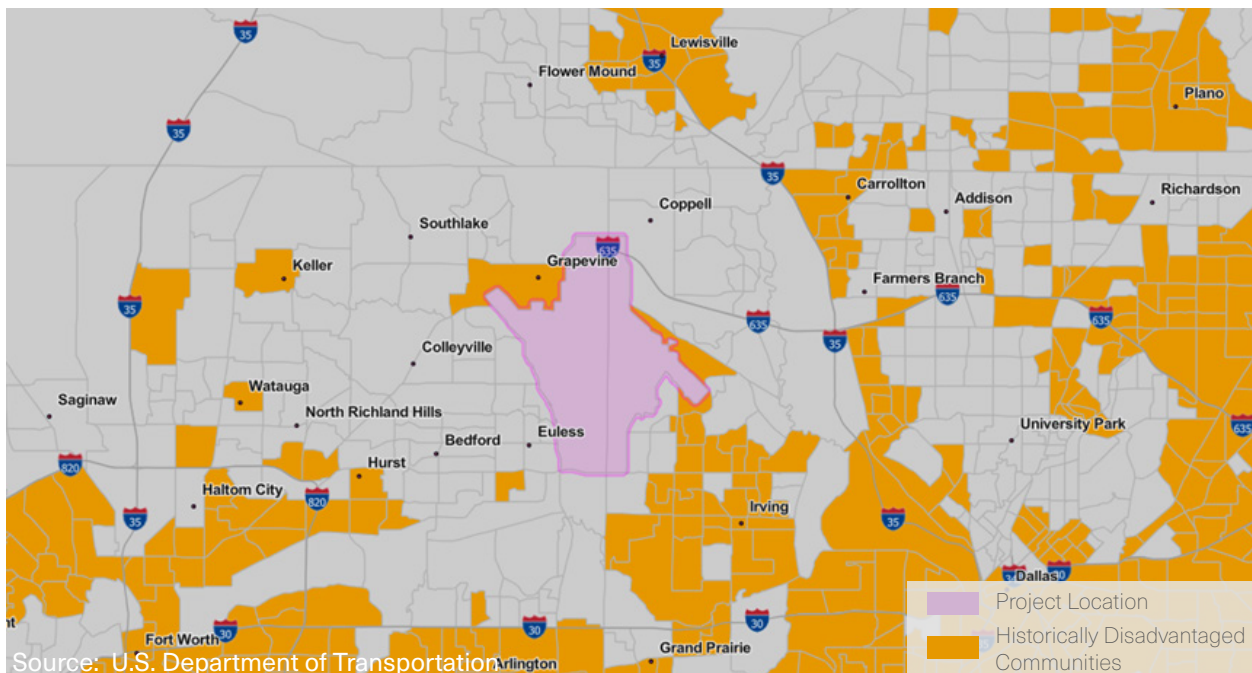
the only efficient way to access destinations within the CTA.

The project is placed along IP, a tolled six-lane divided highway that runs the north-south length of the airport. IP carries traffic to, from, and through the airport. IP is part of both the NHS and the THFN, and it provides regional connectivity to the state highway system. IP passes below cross-field taxiways (one in the north and one in the south) before entering the CTA. In addition to IP, DFWIA's roadway network also has service roads which are two-lane, one-way roadways that run parallel to IP and primarily serve airport-related uses

such as terminal and airside deliveries. There are also one-lane roadways adjacent to each flyover which are intended to serve as a detour route when the flyovers need to be closed (i.e., ice roads).

The project is partially in Dallas County, which is Federally-designated for having locations verified as Areas of Persistent Poverty (APP). Further, the

project would serve numerous historically disadvantaged communities in its immediate vicinity, as shown on Figure 3. According to 2019 Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES), approximately 36 percent of workers whose workplace resides within the two census block groups that comprise DFWIA have "low-to-moderate monthly earnings – that is, at or below \$3,333 per month. Approximately 12 percent of DFW-area workers live in an APP-designated Census tract, while approximately 29 percent of DFW-area workers live in a Census tract designated as a Historically Disadvantaged



Source: U.S. Department of Transportation

Figure 3: Historically Disadvantaged Communities in the Vicinity of DFWIA

Community (HDC). Thus, both the surrounding historically disadvantaged communities and DFW-area workers who live in those communities stand to gain from the mobility, safety, and economic benefits generated by the project. A detailed equity analysis is included in this application Attachment 11.

Grant, Funds, Sources and Uses of all Project Funding

The project is critically important to DFWIA's ability to operate as a leading international airport and is a top priority for DFWIA, its airline and travel industry partners, NCTCOG, TxDOT and the Dallas-Fort Worth Region. DFWIA is aiming to proactively build the new infrastructure so that it will be operational by 2025. To meet this deadline for constructing the scope of the project, **DFWIA and NCTCOG requests USDOT's support and partnership through the grant of \$25 million**, or approximately

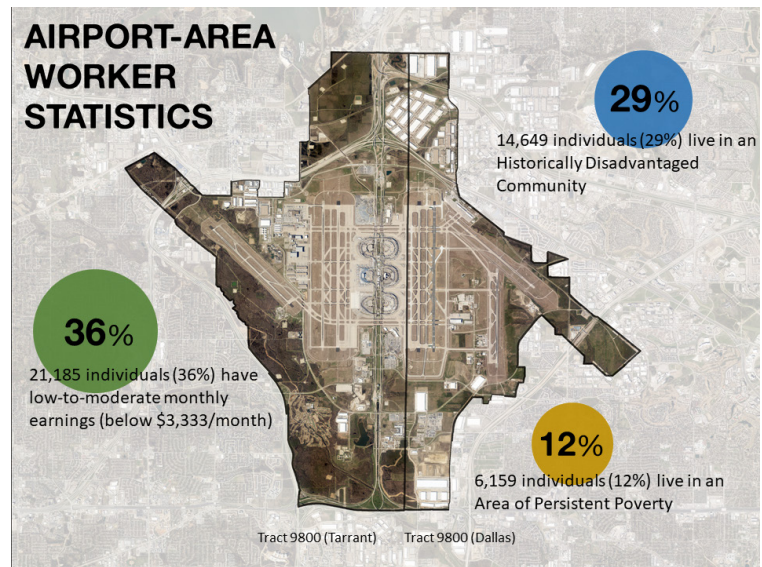


Figure 4: Airport-Area Worker Statistics

49 percent of the project's total cost. Table 2 summarizes the project cost by main category per year. A detailed cost description is included in this application Attachment 7.

DFWIA and its partners demonstrate their strong commitment to the project by providing a 51 percent local match for the project totaling \$51 million (see Table 3).

Table 2: Project Costs by Year (YOE\$)

Cost Category	2021	2022	2023	2024	Total
Professional Services	\$674,223	\$1,232,753	\$4,523,295	\$4,523,295	\$10,953,566
Utilities	\$92,586	\$169,285	\$621,152	\$621,152	\$1,504,176
Construction	\$2,082,326	\$3,807,337	\$13,970,122	\$13,970,122	\$33,829,907
Contingency	\$-	\$-	\$2,314,382	\$2,314,382	\$4,628,765
Total	\$2,849,135	\$5,209,375	\$21,428,952	\$21,428,952	\$50,916,414

Note: Contingency is approximately 9 percent of total project cost; project costs presented above are estimated based on 70 percent design completion.

Table 3: Project Costs and Funding Sources (YOE\$)

Cost Category	Total Cost	RAISE Request (\$)	RAISE Request (%)	Local Match (\$)	Local Match (%)
Professional Services	\$10,953,566	\$-	0%	\$10,953,566	100%
Utilities	\$1,504,176	\$-	0%	\$1,504,176	100%
Construction	\$33,829,907	\$25,000,000	74%	\$8,829,907	26%
Contingency	\$4,628,765	\$-	0%	\$4,628,765	100%
Total	\$50,916,414	\$25,000,000	49%	\$25,916,414	51%

Note: Contingency is approximately 9 percent of total project cost; project costs presented above are estimated based on 70 percent design completion.

The local portion of the total project costs will be funded by DFWIA joint capital funds. DFWIA's substantial local match will leverage USDOT's contribution of federal dollars from the RAISE program to deliver the project's significant benefits in a more efficient manner for the benefit of the region and nation. DFWIA is confident there will be no challenges providing the specified local match for the project and has attached documentation to this application demonstrating its commitment of the local match (see Letter of Financial Commitment in Attachment 5). The project has not received any specifically allocated federal funding.

Financial Plan

Once the project is complete, the project operation and maintenance (O&M) cost will be minimal. The new flyover bridges are to be built using prestressed concrete and are not fracture critical. Deck replacement for new TxDOT bridges is not required for 30-40 years following initial construction.

Federal funding is needed to accelerate delivery of the mission critical project to accomplish two key objectives: (1) improve safety and accessibility to support terminal A expansion that will be complete in 2025, and (2) reduce the cost of doing business for our airline partners and terminal tenants to ensure continued growth in good paying union and

“Right-side ramps are markedly superior in their operational characteristics and safety to those that leave or enter on the left. With right-side ramps, merging and diverging maneuvers are accomplished into or from the slower moving right travel lane. Since a high majority of ramps are right-side, there is an inherent expectancy by drivers that all ramps will be right-side, and violations of driver expectancy may adversely affect operation and safety characteristics.”

– TxDOT Roadway Design Manual

non-union jobs as well as overall economic growth for the region.

Merit Criteria

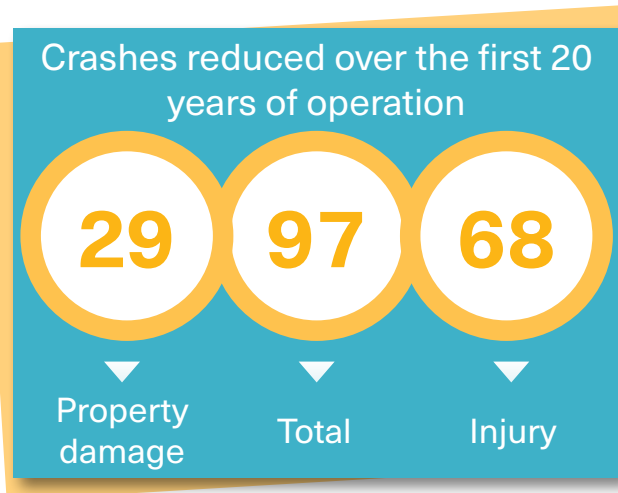
NCTCOG and DFWIA are excited about the extensive positive impacts the project will bring to the region. As per the 2022 RAISE NOFO, all merit criteria, including safety, environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness and opportunity, state of good repair, partnership and collaboration, and innovation are discussed in further detail in this section.

Safety

Existing signage, lane marking, and ramp configurations of IP are confusing to many drivers unfamiliar with DFWIA. Currently access to the passenger terminals in both directions requires the use of left-hand exits. Left-hand exits are an uncommon roadway configuration experienced by most drivers, and such ramps are inconsistent with both national and TxDOT design standards. To use the left-hand exits, drivers must merge with faster moving traffic in the left lane and then decelerate to safely access the exit. The exit ramps themselves, each with a single lane and minimal shoulders, flow into a low-speed and low-radius 90- or 270-degree turn as they climb to ultimately cross over IP. The ramps converge into a two-lane flyover, also with minimal shoulders, prior to completion of the low-speed turn and climb. These circumstances exacerbate merging conditions as drivers must quickly determine how soon and from what lane direct access ramps to parking garages and various arrival/departure pick-up and drop-off zones may occur.

In addition to the left-hand exits, IP has multiple decision points from the time a driver enters IP to when they access their terminal.

The numerous decision points cause drivers who are unfamiliar with the airport to make quick, often unsafe, decisions and maneuvers to reach their destination. This



leads to unpredictable actions, including cutting across multiple lanes and weaving between lanes, and/or excessive slowing in the left-hand lane.

Making matters worse, spacing between the flyover exits also does not comply with TxDOT standards, and the wayfinding signage does not timely and effectively communicate which lane drivers need to be in to take a particular exit. These additional factors exasperate unsafe roadway conditions by limiting the time drivers must change lanes to use any of the terminal flyover ramps. Figure 5 displays how DFWIA addresses traffic detours due to accidents on current flyover infrastructure.

A compilation and summary observation of the crash data available on the TxDOT Crash Record Information System (CRIS) identified

contributing factors to crashes on the IP, many of which are associated with a tendency for drivers to make driving errors that do not position themselves to take the left-hand exit to their intended terminal.

There are numerous contributing factors in the crash reporting system; a grouping of these contributing factors for the 80 reported crashes in the 2017-2019 period are summarized below, and a crash analysis is included in this application (see Table 4 and Attachment 8). Of the 80 crashes, **55 percent can be attributed to driver inexperience with use of the left-hand exits**, including:

- Drivers changing lanes at the last minute to enter the left-hand exits
- Drivers being inattentive to the fact that their exit would be on the left-hand side
- Driver speed differentials between those familiar with the left-hand exits and those that are not

Table 4: Percent of Crashes Attributable to Left-Hand Exits

Contributing Factor	% of Crashes
Changed Lane when unsafe	30%
Changed Lane when unsafe, driver inattention	9%
Driver inattention	8%
Changed Lane when unsafe, failure to control speed	4%
Failed to drive in single lane	4%
Subtotal attributable to Left Hand Exits	55%



Figure 5: Traffic Detour Due to Accident on Left-Hand Terminal Exit

Figure 6 displays the current conflicts drivers face when accessing Terminal B from IP. By changing the exit ramp configuration alone, the project will cut the number of IP decision points by more than half and substantively decrease potential unpredictable actions drivers may make on the corridor. The project will also increase exit spacing to be consistent with TxDOT standards and add more intuitive wayfinding signage, allowing drivers more time and clarity to plan and make decisions. Additionally, transitioning the corridor to feature more standard

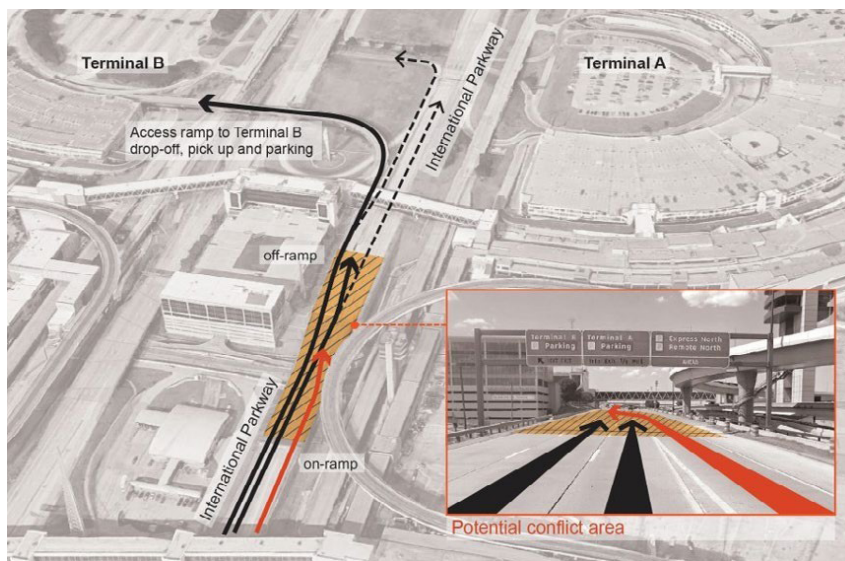


Figure 6: Rendering of Conflict Caused by Existing Flyovers

right-hand exits will allow IP to function like a typical highway where the left lane is the fast lane and slower traffic stays to the right. Since all entrance ramps from the terminals occur on the right-hand side, lane-by-lane speed differentials will only occur on one side of the highway rather than both sides, a condition more familiar and expected by drivers. This improved predictability on DFWIA's roadway network will in turn create a safer environment for all users. **Through all these improvements, the project is anticipated to reduce the number of crashes on IP by 97 crashes over its first twenty years of operations, preventing 68 injuries.**

Currently, buses and shuttles must use alternate surface routes for terminal A/B accessibility due to the current design and condition of the bridges. Once the project is complete, buses and shuttles will be able to use the flyover bridges to access both terminals. The alternate surface routes, sometimes referred to as ice roads for mitigating occasional winter storm events, have not been designed for frequent use by the buses and shuttles. The use of the ice roads is prone to more accidents and near misses, which will be avoided in the future when the buses and the shuttles will drive through the new flyover bridges.

Environmental Sustainability

DFWIA is located in Tarrant and Dallas counties which are part of the Environmental Protection Agency's (EPA) designated non-attainment areas for the pollutant ozone per the National Ambient Air Quality Standards (NAAQS). The project will preemptively prevent events causing congestion contributing to this and other air quality issues in the region. If the flyovers needed to close due

to its failing condition, traffic will be rerouted to a series of detours which will cause prolonged periods of sustained delays, increased idling, and increased vehicle miles traveled (VMT). The project requires a one-month detour during construction, minimizing air quality impacts associated with construction.

The project forecasts an overall lower number of vehicle hours traveled (VHT) than the no-build scenario, there is a net decrease in idling emissions produced by congestion at the bridges. The right exit ramps facilitate an increase in speed as well as a decrease in congestion due to merging across the IP, resulting in a decrease in idling emissions in the build scenario. A summary of the emissions decreases associated with vehicle hours traveled is shown in Table 5. **The value of the reduction in emissions over the first twenty years of operation of the build scenario is approximately \$0.5 million in discounted benefits.**

Table 5: Idling Emissions Due to Changes in Vehicle Hours Traveled (2025-2044)

Item	Terminal A	Terminal B	Total
NO _x (metric tons)	2.35	7.06	9.40
PM _{2.5} (metric tons)	0.01	0.04	0.05
CO ₂ (metric tons)	1,085.38	3,264.61	4,349.99

Based on the DFWIA's Draining Report and Preliminary Drainage Flood Plain Report, DFWIA determined that the new drainage design is determined to be conditionally acceptable. The design is in compliance with DFWIA's Design Criteria Section 334-Storm Drainage Utilities and the iSWM Criteria Manual for stormwater drainage criteria, water quality, streambank protection, conveyance, and flood mitigation. Based on the calculated runoff peak discharges, no increase is anticipated in the 100-year flood plain elevations. Additionally, the project 100-year stormwater drainage plan will not:

- Impact existing infrastructure
- Have a high probability of loss of human life
- Affect safe airport operations
- Interrupt aircraft services

To enhance sustainability, the project is proposing to use carbon removal concrete in the construction of the right-hand exits. Carbon removal concrete traps CO₂ caught by industrial gas suppliers into concrete during mixing. Once the CO₂ is incorporated into the concrete, it is contained for the life of the concrete preventing it from being released back into the environment.

DFWIA is considered a small municipal separate storm sewer system (MS4) entity and subject to Texas Pollutant Discharge Elimination System (TPDES) General Permit requirements. An authorized Stormwater

Environmental Sustainability Highlights



Employs carbon removal concrete

Minimizes idling emissions



Follows SWPPP and SDMP

Management Plan (SWMP) and Stormwater Pollution Prevention Plan (SWPPP) is in effect to satisfy these requirements. DFWIA's Code of Rules and Regulations; Chapter 6A Stormwater, establishes uniform requirements and methods to control the introduction of pollutants into the airport separate storm sewer system for compliance with the requirements of the TPDES permits. DFWIA monitors water quality and MS4 discharges through visual inspections and sampling from representative outfalls and monitoring locations shown in the SWMP. Outfalls are sampled for a wide range of parameters, including, but not limited to, pH, temperature, dissolved oxygen, total petroleum hydrocarbons, oil and grease, and metals.

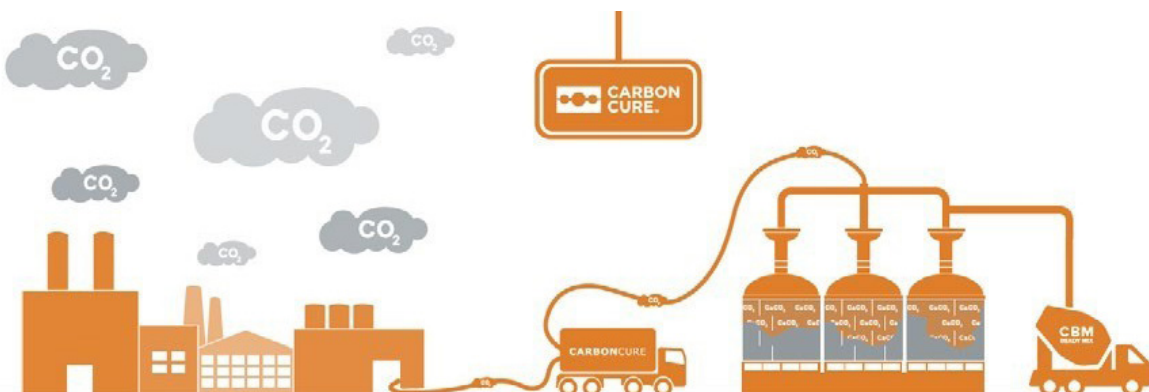


Figure 7: Carbon Removal Concrete Process
Source: CarbonCure

Prior to the issuance of a construction permit at DFWIA, contractors are required to submit several plans outlining strategies to minimize environmental impacts associated with construction. These documents and plans institute requirements above and beyond State and Federal regulatory obligations and aim to prevent water pollution from discharges associated with construction. Projects disturbing areas of one acre or more must detail sediment and erosion control best management practices (BMPs) in a construction SWPPP, in accordance with TPDES Construction General Permit requirements. Furthermore, DFWIA's Contaminated Media Management Plan (CMMP) provides airport employees and contractors with guidance on soil management and potential environmental concerns that may be encountered during the disturbance, excavation, and relocation of soils at the airport. A Soil Management Plan is required to ensure proper handling and disposal of soils.

Part of DFWIA's strategic approach to sustainability includes development of a formalized Stormwater Drainage Master Plan (SDMP), published in 2018. The SDMP allows for a more preemptive approach to managing stormwater quantity and quality issues and preserving existing ecosystems. Green stormwater infrastructure strategies are incorporated, which improve the biological systems inside and outside the airport.

Sustainability efforts highlighted with the project will supplement numerous other initiatives embraced by DFWIA as commitments to support its neighbors and protect the environment. The airport's long-standing stewardship efforts have received significant recognition in recent years via both awards and accreditation. Already designated in 2016 as North America's first carbon neutral airport, DFWIA became the first airport in the world to achieve newly established carbon neutral levels announced in 2020 by Airports Council International (ACI). By earning the new 4+ level in ACI's

global Airport Carbon Accreditation Program, airport carbon footprints were independently verified to examine the efficacy of emission reduction commitments via investments in heating and lighting efficiency technology, electric and/or alternate-fuel vehicles, public transport incentive schemes, and stakeholder engagement to encourage elimination of additional emissions. DFWIA also received a United Nations Global Climate Action Award during the same year acknowledging implementation of its Renewable Natural Gas Initiative. This acclaim was derived from progress in transitioning DFWIA's compressed natural gas (CNG) vehicle fleet to renewable natural gas (RNG) produced from local landfills, resulting in an additional major reduction to the airport's carbon footprint. Additional information and accolades regarding DFWIA's extensive sustainability efforts, policies, accountability reports, and management plans can be examined at: <https://www.dfwairport.com/business/community/sustainability/>.

Quality of Life

The project will improve the quality of life for passengers, workers, and visitors to DFWIA. As the main international airport in the region, 7.5 million residents and more than 6,000 businesses in the North Texas region rely on DFWIA to access domestic and international destinations. **The project increases convenience, accessibility, and reliability for travelers of all types and purposes, dramatically reducing any potential impedances it may cause to jobs, businesses, tourism, and/or other quality of life needs and opportunities.**

Increase Reliability and Accessibility to All Travelers (including lower income travelers)

People who are going to the airport have heightened anxiety in meeting a set schedule to board their flight on-time or pick-up a passenger who landed. Residents, visitors, and business travelers alike have high expectations for a reliable and efficient

transportation system at DFWIA providing convenient access the terminals and their various parking options, establishing confidence they may conduct necessary business at the airport with little to no delay.

Additionally, the project improves accessibility to terminals A and B for people parking on the airport satellite parking lots and that need to take the bus or the shuttle from the parking lots to the terminals. Hourly/daily rates at the satellite parking lots are less than the prime parking locations next to the terminals; therefore, the people using the satellite parking lots are in average people of lower income that those parking next to the terminals or are non-business travelers (see Figure 8). Since buses and shuttles under the no build scenario are driving through the ice roads, lower income travelers are taking longer trips than the people parking next to the terminals.

If the terminal flyover ramps are deemed unsafe and unusable because of their deteriorating condition, millions of people will be impacted by significant delays bottlenecks during peak periods due to detours triggered as a result of closures. If one of the flyovers is deemed unsafe and unusable, DFWIA will need to implement a long-term management

plan where traffic is detoured onto the one-lane surface road adjacent to the flyover during any extensive maintenance or possible rehabilitation, or while any new/alternate infrastructure using the same configuration is constructed. DFWIA knows from experience the detrimental operational impacts rerouting traffic onto the one-lane surface roads may cause. During repairs in the spring of 2019 to the terminal A flyover bridge and a joint connecting the flyover bridge to a secondary bridge, traffic was diverted onto the single-lane surface roads over a two-month period. Passengers experienced peak-hour delays of up to 45 minutes resulting in increased safety/security risks, increased emissions, and many passengers missing flights. Such outcomes can translate into tangible quality of life impacts and economic losses, particularly when travel for emergencies or other urgent needs incur unacceptable or irrecoverable delays.

The project will save travel time and prevent future flyover closure delays by replacing the failing infrastructure in a way that minimizes construction impacts. As a result, **the right-hand exit configuration minimizes passenger delay impacts to the greatest extent possible, and it improves the reliability of the transportation system.**

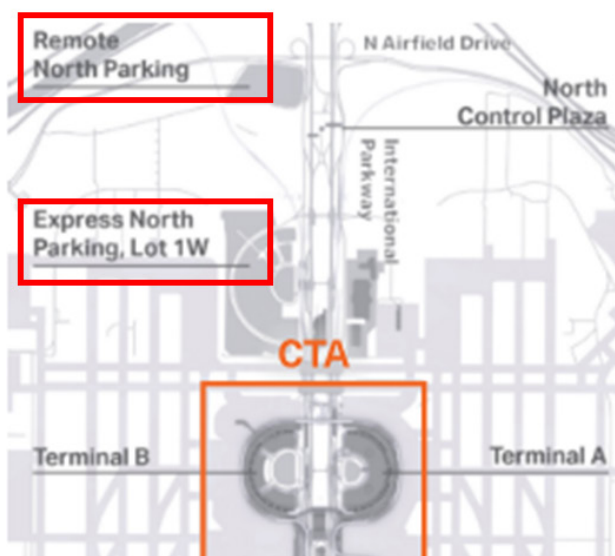


Figure 8: Satellite Parking Lots Adjacent to Terminals A & B

Reduce Barriers to Jobs and Businesses

Approximately 60,000 people are employed at DFWIA's passenger terminals, and many rely on their positions at the airport for their economic welfare. **By implementing the project, DFWIA will minimize potential delays to employees benefiting both job attainment and retention.** Airport employees are a diverse set of workers including full-time staff supporting the airport's operations (gate/pushback operators, safety/security personnel, maintenance workers, baggage handlers, ticket counter agents, etc.), and hourly workers employed by terminal retailers, restaurants, and other service providers. Under the no-build scenario, DFWIA employees are negatively impacted by the delays the detours and, potential,

closures will trigger. Hourly employees who work at terminals park outside of the CTA and arrive at or depart the terminals by bus. Traffic rerouting results in employees' buses being caught in the delays on the one-lane ice road detours. Such potential impacts to the frequency and reliability of employee bus trips could cause employees to be late for their shifts, as well as cause them to budget significant additional time to their commuting schedule. Such changes in time and operating costs for transportation create more pronounced impacts/barriers for low-income workers, households with limited or unavailable personal vehicle use. As a result, the project will have expansive economic and quality of life outcomes extending more equitable benefits to people of all income types, social needs, and employment circumstances.

Secure Timely Emergency Response

As one of the busiest airports in the nation, security is a top priority for DFWIA. The flyovers are the fastest way for first responders and emergency services to reach terminals in the event of any incident, including threats to national security. If the flyover has a weight limit, it would be impossible for emergency responders to access the terminals to address the security concern in a timely manner with the available detour routes. If the project is not implemented, DFWIA will be left more vulnerable to security problems because the response times would be hindered by the inefficient detour routes and traffic congestion. Implementing the project is an investment in ensuring the long-term security of our nation.

Mobility and Community Connectivity

Over the full year prior to the COVID-19 pandemic outbreak (i.e., 2019), **DFWIA processed over 75 million passengers and nearly 800,000 tons of cargo.** In terms of global rankings, this travel demand brought DFWIA to 10th place by passenger volume, 32nd by weight of cargo movements, and



3rd by overall takeoff and landing operations. During a period of several months at the height of the pandemic in 2020, DFWIA had acquired the title of “busiest airport in the world” due to a variety of unique factors. That year, DFWIA became the first airport in the world to earn the Global Biorisk Advisory Council's (GBAC) STAR accreditation by establishing and maintaining a high-standard cleaning, disinfection, and infectious disease prevention program to minimize risks associated with infectious agents. Additionally, DFWIA became one of two North American airports to achieve International Air Transport Association (IATA) Center of Excellence for Independent Validators (CEIV) community status. As a certification set aside to improve the handling and transport by air of perishable products, DFWIA had positioned itself to capitalize on cold chain capabilities and time-sensitive goods distribution. Such proficiencies outside of the health care realm may not be considered more of a necessity in keeping the airport's business activities optimized. These factors have contributed to DFWIA remaining well above its global annual pre-pandemic rankings as local, regional, and national economies rebound. Therefore, **providing safe, convenient, and**

reliable transportation to and from DFWIA's passenger and cargo hubs is essential for the airport to continue to meet and exceed such high travel demands.

Though replacement of the IP flyover ramps at terminal A and B will better accommodate the growing accessibility and parking needs for auto-oriented trips, other trip types and purposes will benefit as well. Bus trips provided for airport employees, passengers from remote long-term parking lots, rental car center users, and hotel shuttle riders will have much greater accommodations. Service vehicles and goods delivery shuttles are also common users. Today, high-weight and extended-length vehicles are prohibited from using the flyover ramps because of their deteriorating condition and inability to safely bear large loads. Should the flyovers ultimately be closed for more frequent repairs or fail completely, those vehicles will accompany the many others forced to negotiate through bottlenecked detour routes. Through-traffic on IP and its parallel ice roads will also be impacted, both of which are also essential for cargo movements and commuter trip to/from origins and destinations outside of the CAT or beyond airport property. These challenges demonstrate how a much broader community and more comprehensive share of mobility needs beyond just passenger accessibility will be affected if the project is not executed.

Higher percentages of these trips can impinge on connections to opportunities, barriers to/from underserved areas, and limitations on transportation choices in consideration of the project's effects.

Thus, it is crucial to expedite replacement of the flyovers so that mobility and community connectivity benefits for all populations can be secured and maximized.

Economic Competitiveness and Opportunity

Supporting over a **quarter million regional jobs and contributing approximately \$37 billion to the economy each year**, DFWIA is an important economic driver for the region,

Texas, and nation. In 2020, DFW earned the Airports Council International's title of Best Large Airport for customer satisfaction among North American airports serving more than 40 million passengers each year. This is the third time in the last five years that DFW has received this acknowledgment. For DFWIA to maintain and/or increase its economic competitiveness, the airport needs to ensure that its transportation system allows passengers, employees, and other users to access its terminals in a safe, timely and reliable manner.

The existing left-hand flyover ramps are the only efficient way to access DFWIA passenger terminals. With the flyovers at the end of their useful lives, the project offers a design that has more direct and intuitive configuration that will meet the long-term needs of the airport.

The new, safer right-hand exit configuration will improve speeds for vehicles accessing the terminals and also IP driving through vehicles. The implementation of the project will result in the avoidance of 3.3 million hours of vehicle hours traveled (VHT) over the first twenty years of operations of the right hand exists, equating to \$41.9 million in discounted benefits.

If one or more of the flyovers were to close due to increasing deterioration of safety and performance conditions, there will be serious ramifications to airport operations, employment retention/opportunities, and service accessibility. Traffic will be routed to detours threatening DFWIA's ability to efficiently serve passengers and significant delays affecting all airport traffic. The traffic delays could degrade flight frequencies and on-time performance outcomes at DFWIA, thereby resulting in impacts to national aviation systems. Transportation network companies (TNCs) and delivery vehicles will face added impedances that will increase costs doing business. Construction of the project will enable the flyovers to remain open except for a one-month transition closure and



associated diversion per terminal, minimizing the construction impacts to passengers, employees, TNCs, and delivery vehicles.

As the economic engine of the North Texas region, DFWIA recognizes its responsibility to neighboring communities. DFWIA is committed to driving economic vitality by creating business opportunities. A few notable results of this objective include:

- The Asian American Contractors Association of Texas (AACATX) recognized DFWIA as its Partner of the Year for being one of the first and most supportive partners since the organization's founding and for helping communities recover during the pandemic.
- As a valued leader in supplier diversity, DFWIA earned the Corporation of the Year Award for demonstrating outstanding commitment to the Women's Business Council Southwest.

DFWIA Advocacy Partners:



- The Regional Black Contractors Association (RBCA) honored noteworthy accomplishments made by DFWIA to increase participation of Black contractors in Airport projects, and for working collaboratively with RBCA to improve processes and procedures that may create obstacles to the success of minority businesses looking to do business at DFWIA.

These accolades could not have been accomplished without creating strong partnerships and coordinated efforts across the community. DFWIA owes credit for its successes in business diversity to its many advocacy partners in North Texas.

Good Paying Jobs

Consistent with the policy intent of Executive Order 13985, Advancing Racial Equity and Support for Underserved Communities through the Federal Government, the IP Bridge Replacement project will create **1,000 good paying construction jobs, and upon completion support thousands of permanent union and non-union jobs** for various skill sets with higher-than-average wages and benefits.

Procurement of construction services for the project follows DFWIA's strong commitment for engagement from all businesses and particularly for Disadvantaged, Small, Minority and Women Business Enterprises (D/S/M/WBEs). DFWIA is committed to ensuring non-discrimination in the award and administration of procurements, removing barriers to participation, promoting the utilization of D/S/M/WBEs, and assisting in the development of firms that can compete successfully in the marketplace.

To support this commitment, DFWIA has developed a best-in-class Capacity Building Program to introduce newly certified firms to DFWIA, assist in growing existing firms, increase outreach to diverse businesses, disseminate information on airport policies/processes/procedures, and provides access to decision makers and networking.

DFWIA's Title VI program also ensures non-discrimination in all solicitations and contracts. Each year since 2012, DFWIA has awarded more than 30 percent of its business contracts to diverse firms. **During FY2021, \$227 million or 37 percent of the total value in available contracts were awarded to D/M/WBEs and over 33 percent were paid to DBEs alone under the Federal program.**

State of Good Repair

The existing flyover ramps were constructed in the early 1970's when operations at DFWIA were inaugurated, and the facilities have served the airport for nearly 50 years. As the only efficient way for passengers to access the terminals, the flyovers are a critical



Figure 9: 2019 Terminal A Heavy Repairs

Good			Fair		Poor			
9	8	7	6	5	4	3	2	1
Excellent	Very Good	Good	Satisfactory	Fair	Poor	Serious	Critical	Imminent Failure
Budget Remains Open							Bridge Required to Close	

Note: Terminals A and B flyover bridges have been ranking poor and serious in the last inspection reports.

Figure 10: Flyovers Condition Rating Based on National Bridge Inventory Scale

HIGHLIGHTS



- **\$226 million** spent with small, disadvantaged, minority- and women-owned business enterprises
- **\$122 million** revenue generated by Airport Concessions Disadvantaged Business Enterprises
- **800** individuals participated in Capacity Building Program
- **13** Advocacy Partner organizations
- **3,429** employee volunteer hours
- **\$440,245.89** raised for the United Way

infrastructure asset for the airport's operations. The flyovers are at the end of their useful life and recent condition reports are indicative of their rapidly deteriorating state of repair (see Attachment 9 for detailed information about the bridge inspection reports). If the flyovers fail or are closed for extensive repair and/or rehabilitation, the airport could face serious operational ramifications impacting up to 72 million annual passengers and more than 60,000 employees, and many of which use terminals A and B.

In 2019, terminal A bridge inspection report documented cracks between the girder webs and interior stiffeners; DFWIA performed major repairs with new weld material to address those cracks. Figure 9 shows the level of maintenance needed to address the cracks on the flyover bridge to terminal A.

In 2018, TxDOT's Bridge Division completed a Critical Inspection Finding (CIF) report which concluded the flyovers to terminals A and B are in "Serious" condition. The inspection findings also designated the flyovers in "Poor" condition according to the Federal Highway Administration's (FHWA) Pavement and Bridge Condition Performance Measures final rule, and they were additionally classified as "Structurally Deficient." (Figure 10).

The flyovers to terminal A and B accounted for 53 of cracks (Figures 11 and 12), with 17 occurring within the base structure steel. Since that time multiple repairs have been conducted and inspection frequency of critical components has been increased. Given the bridges' age and condition, they will continue to face increasing maintenance frequency and cost to maintain a "Fair" inspection rating. Additionally, these fracture-critical bridges are more susceptible to collapsing than other types of bridges because they do not have redundant structural elements to compensate load bearing for areas where multiple cracks exist.

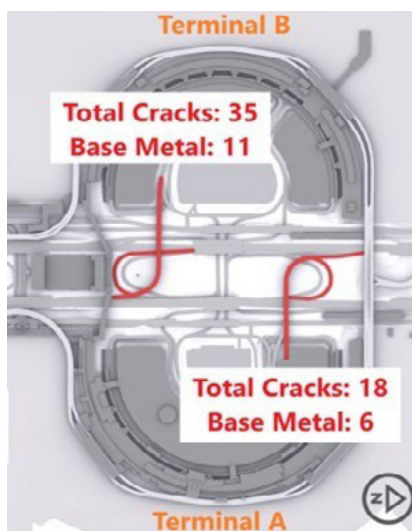


Figure 12: Summary of Cracks on Existing Flyover Bridges

weight or volume restrictions or close them completely. Coupled with the fact that the existing flyovers do not comply with TxDOT's current standards for exit design, exit spacing, and vertical clearance, DFWIA in consultation with TxDOT determined replacement the best course of action.

As the condition of the flyover bridges continue to deteriorate, it is only a matter of time before they become unsafe to use, and DFWIA will be required to either impose increasing



Figure 11: Examples of Base Metal Cracks on Existing Flyovers

The deteriorating condition of the flyovers required TxDOT to annually reevaluate the condition of the bridges to ensure they are still safe to use. Following any of these more frequent inspections, TxDOT could reach the likely conclusion any one of the flyovers may degrade to "critical" condition, and the heightened risk to safety will require it to be closed. If the project is delayed or unable to be implemented, and even one of the flyovers was deemed unsafe, not only will traffic not be able to use the flyover to access the terminal, but roadways passing beneath the flyover will need to closed as well. These will include the IP, the parallel service roads, and the one-lane surface road adjacent to the flyover in both directions. As a result, the closure of a single flyover will cause severe travel time and reliability impacts for all traffic going to, from, and through DFWIA.

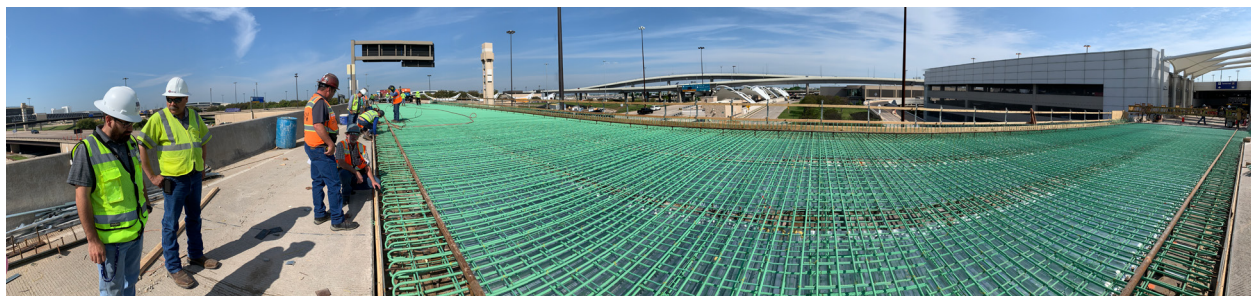


Figure 13: Exposed Terminal A Deck During 2019 Repairs

The conversion of the existing flyovers to right-hand exit ramps will **replace the failing, outdated infrastructure** with new assets in compliance with national and TxDOT design standards.

Implementation of the project will generate significant O&M cost savings for DFWIA while also bringing crucial landside infrastructure to a state of good repair. Under the no-build scenario, costs associated with the ongoing infrastructure O&M to ensure a suitable state of good repair includes both the capital costs associated with replacement as well as the costs associated with inspections and maintenance of the infrastructure during its first 20 years of operations.

O&M costs under the no-build are estimated at \$13.5 million in 2020 dollars over the first 20 years of operations. O&M costs for the new flyover bridges, proposed to be prestressed concrete structures as opposed to fracture critical steel, will be minimal with no major repairs, maintenance items, or deck replacements over the initial 20 years of their collective lifecycle. Table 6 presents the projected O&M costs under the no-build scenario.

DFWIA conducts regular assessments of existing infrastructure. The findings from those reports are translated into capital projects that address the needed major rehabilitation or replacement. These projects are funded through the airport's Joint Capital

Account and must be approved by the signatory airlines to receive funding. DFWIA is committed to the long-term maintenance of all infrastructure assets and plans to conduct regular maintenance on the new bridges to ensure they remain in a state of good repair. DFWIA will conduct regular inspections on the new infrastructure and perform both preventative and condition-based maintenance. DFWIA has a multi-million-dollar maintenance budget and plans to allot the appropriate amount in future budgets to maintain the right-hand exits.

Partnerships and Collaboration

As a critical project for one of the largest economic drivers in the region and state, the project has received support from the DFW Board, airlines and public agencies.

In March 2020, DFWIA staff presented the project to the DFWIA Board of Directors, the airport's policy-making body composed of 12 members, with 11 of whom appointed by the city councils of the Airport's owner jurisdictions. Seven members represent the City of Dallas and four represent the City of Fort Worth, in accordance with each city's ownership interest in the Airport. A 12th, non-voting board position representing one of the Airport's four neighboring cities—Irving, Grapevine, Euless and Coppell—is filled on an annual, rotating basis. **The Board expressed support for advancing the project.**

Subsequently, DFWIA staff and leadership

Table 6: No-Build Scenario Annual O&M Costs (in thousands, 2020\$)

ITEM	2025	2030	2035	2040	2045
Spall Concrete Repairs (annually)	\$34	\$34	\$34	\$34	\$34
Clean Rust (annually)	\$34	\$34	\$34	\$34	\$34
Preform Misc. Repairs (annually)	\$135	\$135	\$135	\$135	\$135
Conduct TCP (Traffic Control Plan) (5 years)	\$270	\$270	\$270	\$270	\$270
Repair Guardrail (5 years)	\$68	\$68	\$68	\$68	\$68
Resurface Deck (5 years)	\$135	\$135	\$135	\$135	\$135
Replace Deck (20 years)	\$338	\$0	\$0	\$0	\$338
Replace Expansion Joints (20 years)	\$135	\$0	\$0	\$0	\$135
Replace Bearings (20 years)	\$135	\$0	\$0	\$0	\$135
Repair Fracture Critical Steel Beams (20 years)	\$169	\$0	\$0	\$0	\$169
Total	\$845	\$676	\$676	\$676	\$1,318

Letters of Support

US Rep. Beth Van Duyne
 US Rep. Eddie Bernice Johnson
 US Rep. Collin Allred
 American Airlines
 TX Sen. Nathan Johnson
 TX Sen. Jane Nelson
 TX Rep. Giovanni Capriglione
 TX Rep. Julie Johnson
 City of Dallas - Mayor Eric Johnson
 City of Euless - Mayor Linda Martin
 City of Fort Worth - Mayor Mattie Parker
 City of Grapevine - Mayor William D. Tate
 City of Irving - Mayor Rick Stopfer
 Dallas County - Judge Clay Jenkins
 Tarrant County Judge Glen Whitley
 Greater Arlington Chamber of Commerce
 Dallas Regional Chamber
 Fort Worth Chamber of Commerce
 Grapevine Chamber of Commerce
 HEB Chamber of Commerce
 Irving-Las Colinas Chamber of Commerce
 North Texas Commission (NTC)
 Regional Transportation Council

met with representatives from American Airlines, the signatory airline at DFWIA, to gain feedback on the project and garner support.

Following the subsequent presentation, **DFWIA received full support from American Airlines to expedite the project.** These presentations were a first step for DFWIA to secure majority-in-interest (MII) funding from the consortium of the airport's resident airlines. In the recent months, DFWIA secured \$21 million toward the project construction. This substantial contribution from the airlines demonstrates concurrence in the project's importance to DFWIA operations and the impact the project will have on their business activities.

DFWIA also received support from the North Central Texas Council of Governments (NCTCOG), the region's transportation planning agency, and TxDOT. The project's importance to the region resulted in NCTCOG adding it to the regional Transportation Improvement Program (TIP).

TxDOT is also a critical partner in the project. The TxDOT Bridge Division is closely monitoring the condition of the flyovers to ensure they are still safe for vehicles to use. When TxDOT rated the flyovers to terminals A and B as "Serious" condition, TxDOT worked with DFWIA to determine the best course of action was to replace the flyovers. DFWIA worked with TxDOT to ensure the designs for the new right-hand exits comply with the current TxDOT standards.

DFWIA and NCTCOG have an extensive and consistently strong history of partnership in the interests of expediting multimodal transportation projects for mutual benefit. Maximized accessibility to/from DFWIA has been a leading regional priority for NCTCOG, with acknowledgment of the airport central role in the continued economic vitality of North Texas. Through NCTCOG's leadership, consensus-building through multiple levels of government, and development of innovative financing strategies (in collaboration with both TxDOT and the private sector), billions of dollars in major projects both accessing and surrounding DFWIA have been advanced, many during times of economic uncertainty like in recent years through the wake of COVID-19. The \$1.2 billion DFWIA Connector Project, which from 2010 to 2014 reconstructed segments of Interstate Highway (IH) 635 and State Highways (SH) 114 and 121 at the airport's northern entrance, was the largest funding recipient in the nation by the America Recovery and Reinvestment Act (ARRA). Shortly afterward, the reconstruction of SH 183 at the airport's southern entrance was facilitated via NCTCOG and TxDOT comprehensive development agreement (CDA) authority through the \$2.1 billion North Tarrant Express (NTE) Project out of the Fort Worth area to the west, and the \$900 million MidTown Express Project out of the Dallas/Irving area to the east. A long-awaited east-west thoroughfare connection through the airport (East-West Connector) was funded by NCTCOG in 2020 through a multifaceted strategic programming initiative using combinations of local and Federal funds.

Finally, NCTCOG and DFWIA partnership for this RAISE Grant proposal is the continuation of collaborative project funding requests performed annually since 2016 through the FASTLANE, INFRA, and BUILD programs.

NCTCOG's active and comprehensive initiatives toward regional partnership and collaboration was most recently exemplified through its deployment of the COVID-19 Infrastructure Program. Like an earlier program conducted during the 2009-2011 worldwide economic downturn, the COVID-19 Infrastructure Program was intended to address the pandemic's setbacks to local and regional economies by expanding investments in multimodal transportation infrastructure projects, as well as expediting critical subarea studies and strategic programs to elicit additional projects for near-future construction. Selected capital projects met one or more Metropolitan Transportation Plan (MTP) guiding principles concerning mobility, quality of life, system sustainability, and implementation, and/or assist in achieving progress toward Federal targets for performance management. Across four separate project solicitations conducted between June 2020 and April 2021 for the COVID-19 Infrastructure Program, 97 discrete projects or programs with an overall cost of approximately \$600 million were authorized using combinations of available local, private, regional, state, and Federal funds. Eighty-

five of those projects include dedicated construction and/or service installation activities totaling just over \$503 million, with a vast majority anticipated for letting by 2025 or earlier.

The Federal Aviation Administration (FAA) is the lead agency for National Environmental Protection Agency (NEPA) documentation.

DFWIA has a long history working with FAA on environmental compliance documents. As a result of DFWIA's strong partnership with FAA, DFWIA is confident they will be able to complete the necessary environmental documentation in a streamlined and timely manner. Attachment 6 includes the letters of support.

Innovation

Innovative Technologies

DFWIA strives to create the "airport of the future". DFWIA is deploying innovative technologies as part of the project to **improve roadway operations, enhance sustainability, and create safe work zones during construction**. These technologies are intended to prepare DFWIA's infrastructure for future connected and automated vehicle deployments and enable smarter and more sustainable project delivery, operations, and maintenance. Table 7 summarizes the technologies DFWIA is planning to incorporate into the project.

Table 7: Summary of Innovative Technologies

Technology	Description
Dynamic Signage	Dynamic signage will be used to inform motorists about specific temporary events and real-time traffic conditions. The project will construct wayfinding signage along IP to direct drivers to/from terminals with real-time information.
Carbon Removal Concrete	DFWIA will use carbon removal concrete to construct the proposed bridges which injects waste CO ₂ into concrete during mixing, enabling the production of stronger, more sustainable concrete.
Drones	Drones are useful when inspecting large areas or areas difficult to reach via other means. DFWIA will use drones to take video footage of the bridges to streamline bridge inspections.
Maintenance Sensors	DFWIA will install temperature sensors on the proposed bridges to detect icing and automatically send messages to maintenance crews to remove icing in specific locations.
Construction Safety	During construction, DFWIA will use smart watches and tablets to ensure a safe work environment for construction workers. Given current public health concerns, location tracking to maintain social distancing and connected infrared cameras to detect fevers can be deployed to ensure construction workers safety.
Real-Time Incident Management	Leverage the digital twin developed for DFWIA by the EPA's ATHENA project directed by National Renewable Energy Laboratory and Oak Ridge National Laboratory to install sensors on the proposed bridges to provide real-time incident management.

DFWIA has a history of successfully evaluating and deploying innovative and technological solutions. DFWIA's Planning Department is already piloting digital signage at terminal A to direct curbside usage in real-time.

Additionally, in February 2020 DFWIA launched an automated vehicle pilot in partnership with Easy Mile to transport passengers within the south remote parking lot. The project will be designed to support continued improvement in connected autonomous vehicles. DFWIA currently uses drones to monitor construction and operation. Additionally, DFWIA deployed sensors to measure and monitor construction solutions through stress sensors as well as pavement temperature sensors on the airfield to notify maintenance crews of icing. Finally, DFWIA's dedicated Innovation Division continuously ideates, incubates, and implements innovative technologies and solutions to meet DFWIA's needs. DFWIA has the capacity, experience, and processes in place to evaluate and deploy innovative solutions and technologies as part of the project.

DFWIA just announced their pilot program that will integrate its existing autonomous vehicle technology. The \$1.5 million program is funded by the NCTCOG to demonstrate how an automated parking ecosystem might alleviate the high traffic and heavily congested curbside drop-off and pick-up areas at the airport. The program will create the most advanced live autonomous ecosystem. The program will consist of three subsystems: low-speed vehicle automation for automated valet parking, supervisory parking management for autonomous vehicles, and active digital curb management. The program aims to provide a solution to the overutilized and heavily congested curbside drop-off and pick-up areas at DFWIA.

Innovative Project Delivery

DFWIA evaluated multiple delivery options for the project, including traditional design-bid-build, design-build (DB), construction manager at-risk (CMAR), construction manager/

general contractor (CM/GC), and Progressive DB (PDB). After evaluating each of these options in detail, DFWIA selected the Design-Build method as the preferred method.

Design and construction duration is anticipated to take three years, which will greatly reduce the timeframe necessary under other methods. A primary consideration of Design-Build is the need for the owner to release a certain amount of control to the team to advance design and construction concurrently, while at the same time maintaining design oversight throughout. DFWIA has the resources and staffing to provide strong design oversight and to address any issues quickly. NEPA and FONSI documents will be completed prior to the selected designer-contractor initiating work, which will help provide clarity on scope and permitting needs. In addition, costs and schedules will be controlled carefully to avoid scope creep throughout the design and construction process. Finally, alternative delivery methods are most successful when upper management is supportive of the approach. The Design-Build details have been vetted with and approved by DFWIA Airport leadership, the DFWIA Airport Board and the airline shareholders.

DFWIA has experience with Design-Build projects. The Dallas Area Rapid Transit (DART) Orange Line I-3 Expansion was a successful design-build involving construction of 4.7 miles of new light rail from Belt Line Road to DFWIA Airport. The construction of a new building for the Department of Public Safety along South Airfield Drive on DFWIA property was also a design-build.

Innovative Financing

DFWIA uses an innovative approach to financing capital projects. Expenditures funded through the Joint Capital Account (JCA) or through proceeds of Joint Revenue Bonds require approval from the signatory airlines through a majority-in-interest (MII) vote. The MII process works by DFWIA submitting information about the project to the Signatory

Airlines (including cost estimates, the impact of cost on rentals, fees and charges, operating cost changes anticipated as a result of such project and preliminary drawings, if appropriate). Signatory Airlines make an informed decision about the project based on the information provided. A capital project is deemed approved: (i) upon the affirmative vote of a MII as certified in writing by the Chairman of the Airline Advisory Board, or (ii) upon the passage of 60 days from the date of submission of such project by DFWIA without the Signatory Airlines either voting on such project or failing to notify DFWIA of the result of such vote. Figure 14 describes the MII funding process. The project received MII funding.



Figure 14: Overview of MII Funding Process

properties adjacent to IP are owned and operated by DFWIA. No additional right-of-way acquisition is required.

The project design is currently 70 percent complete. Design will be completed in the first quarter of 2023. **The Design-Build procurement for the project is underway with construction scheduled to start in November 2022 and to open the January 2025.** Using a Design-Build project delivery method, DFWIA is confident it will be able to deliver the project in a timely manner. **DFWIA will spend the funds well in advance of the September 30, 2031, liquidated deadline.** A summary schedule is found below, and a detailed schedule of all activities is included in this application Attachment 10.

Project Readiness

Project Schedule

Since the project is vitally important to DFWIA's operations, DFWIA spent the past several years completing studies and proving the technical feasibility of the project. The

Table 8: Project Schedule

	2021				2022				2023				2024				2025	
Items	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Planning, Design Procurement, and Professional Services																		
DB RFQ																		
DB RFP																		
Environmental Approvals																		
Utilities																		
Construction																		
Mobilization																		
Construction Permits																		
Girder Procurement																		
Finalize OBA to Board Secretary																		
OBA for Construction																		
CA Processes Contract - Construction																		
Notice to Proceed																		
Validation/Design																		
Substantial Completion																		
G7 - Asset Handover																		
Opening																		

Required Approvals

Environmental Permits and Reviews

The Federal Aviation Administration (FAA) is the lead federal agency and is currently reviewing the submitted preliminary EA for the project. The project meets the requirements of a Focused EA, which allows for streamlined completion and documentation. The project warranted an EA, since there is known soil contamination from soil exposed to jet fuel several years ago within the project area. The project is not anticipated to involve significant social, economic or environmental impacts individually or cumulatively.

DFWIA anticipates that FAA will leverage the “One Federal Decision” federal program to streamline the environmental review and permitting process to get projects built faster. DFWIA staff have extensive experience working with FAA on NEPA environmental documents. **It is anticipated NEPA clearance for the project will be completed in June 2022.**

Table 9: Environmental Assessment Schedule

Item	Schedule
Preliminary DRAFT EA	April 15, 2022
DRAFT EA published for public review	April 25, 2022
FINAL EA	May 25, 2022
FONSI	June 15, 2022

State, Local and Federal Approvals

The project does not affect any Section 4(f) properties, require the issuance of an Individual Permits from the United States Army Corps of Engineers (USACE), or impact any federal or state threatened and endangered species. The project will not require a Section 404 permit under the Clean Water Act from the USACE. DFWIA coordinated with the Texas Historic Commission (THC) and confirmed, no identifiable historic properties, archaeological sites, or other cultural resources are present or affected by the project. The right-hand exit design will not directly or indirectly impact the terminal buildings or associated curbside.

The project requires the approval of a Texas Pollutant Discharge Elimination System

(TPDES) Construction General Permit and DFWIA will coordinate with TxDOT in obtaining the permit. The right-hand exit design will not directly or indirectly impact the terminal buildings or associated curbside. The right-hand exit ramps will connect to the existing ramps and roadways connecting to the terminal roadways.

Federal Transportation Requirements Affecting State and Local Planning

The project's importance to the region resulted in the NCTCOG adding it to the regional Transportation Improvement Program (TIP). The project will be constructed entirely on airport-owned right-of-way within the CTA; and it will not displace any existing homes or businesses. DFWIA has coordinated with all affected stakeholders as part of the project, including DFWIA police and fire, the airlines (through the DFWIA Airport Board), bus operators and will coordinate with the larger public. The project will comply with Buy America clause.

Stakeholder Coordination

DFWIA is committed to providing transparent information about its performance and impact on environmental, social and governance (ESG) issues. The airport publishes a ESG report annually. DFWIA will provide updates to the public concerning the project scope, schedule and any construction detours through on-airport signage, news and media outlets, social media and updates to City Councils within neighboring jurisdictions. DFWIA has an extensive community engagement program and maintains excellent relationships with the surrounding City Managers and Council Members well-versed in constructing complex infrastructure projects that must maintain critical operations and safety throughout the lifespan of the project. DFWIA will establish an airport stakeholder committee to keep all airline partners and terminal tenants informed of each phase of construction and to receive feedback so that construction sequencing can be adjusted to minimize operational distributions or passenger and employee inconvenience.

Assessment of Project Risks and Mitigation Strategies

Table 10 assess the risks that may pose a threat to the ability of the project to meet its objectives, schedule. The table also identifies mitigation actions to each risk.

Table 10: Project Risks and Mitigation Strategies Matrix

Category	Risk	Mitigation
Environmental Compliance	The Focused EA must be completed prior to initiation of construction.	DFWIA has completed a number of streamlined EA documents with FAA as the lead agency and has proven methods to coordinate efficiently and develop required documentation. The anticipated timeline to FONSI signature is 3 months or less. The location of the right-hand exit ramps is not anticipated to have water, wildlife, historic or biological issues.
Construction Impacts to Passenger Traffic	Any construction occurring along IP or associated ramps to terminals has the potential to impact passenger traffic, and therefore on-time air departures which will require departing passengers to arrive slightly earlier for their flights.	The current construction plan for the right-hand exits will require approximately one month of detour for each new right-hand terminal entry. A detailed traffic control plan will be developed, and advanced public service announcements (TV, radio, website) will be issued along with on-site detour personnel (police) and signage. Will also review traffic control plans to ensure that International Parkway traffic volume capacity and flow impacts are minimized.
Customer Experience	Since airport's inception, origin/destination traffic has used the left-hand exits to access terminals. It may take passengers' time to adjust to this new configuration.	The new configuration will be more intuitive for traffic accessing the terminals and will result in safer driving conditions as it will lessen weaving across lanes. New permanent signage directing traffic to the right hand exits into terminals will be installed to provide clear direction.
Existing Utility Adjustments, Relocations	DFWIA campus has numerous existing utilities along the IP corridor.	The team will confirm recent utility system evaluation results with independent field verification
Cost Volatility	The current unknowns associated with the COVID-19 pandemic may have long-term impacts on the world economy, supply chain and associated construction materials costs.	The federal government is emphasizing preservation of jobs and construction projects to help sustain our local economy. This project would support through putting many people to work. To offset escalation impacts, procurement of the Design Build team sooner than later is planned to lock down prices for material, equipment, and labor.

Benefit-Cost Analysis

In compliance with USDOT's guidelines, DFWIA has prepared a BCA for the project. Table 11 summarizes the key economic benefits in 2020 dollars over a 20-year analysis period (2025-2044) discounted at 7 percent. Over the 20-year assessment period, the project generates \$37.8 million in benefits at a 7 percent discount rate and has a **Benefit-Cost Ratio (BCR) of 2.0:1, meaning, that for every \$1 the project costs, the region benefits \$2.** Additionally, the project has a **Net Present Value (NPV) of \$37.7 million** discounted at 7 percent in 2020 dollars. See Attachments 2 and 3 for more information on the methodology, assumptions, and findings of the BCA.

Supplemental Material

This application is supported by the following documentation, which has been attached to the application package.

- SF-424
- Project Information Template
- BCA Technical Memorandum
- BCA Workbook (unlocked)
- BCA Workbook (locked)
- Letter of Financial Commitment
- Letters of Support
- Summary Schedule
- Detailed Project Cost
- Bridge Inspection Reports Comparison
- Crash Summary Report
- Equity Analysis
- Traffic Model Assumptions Memorandum
- Photos

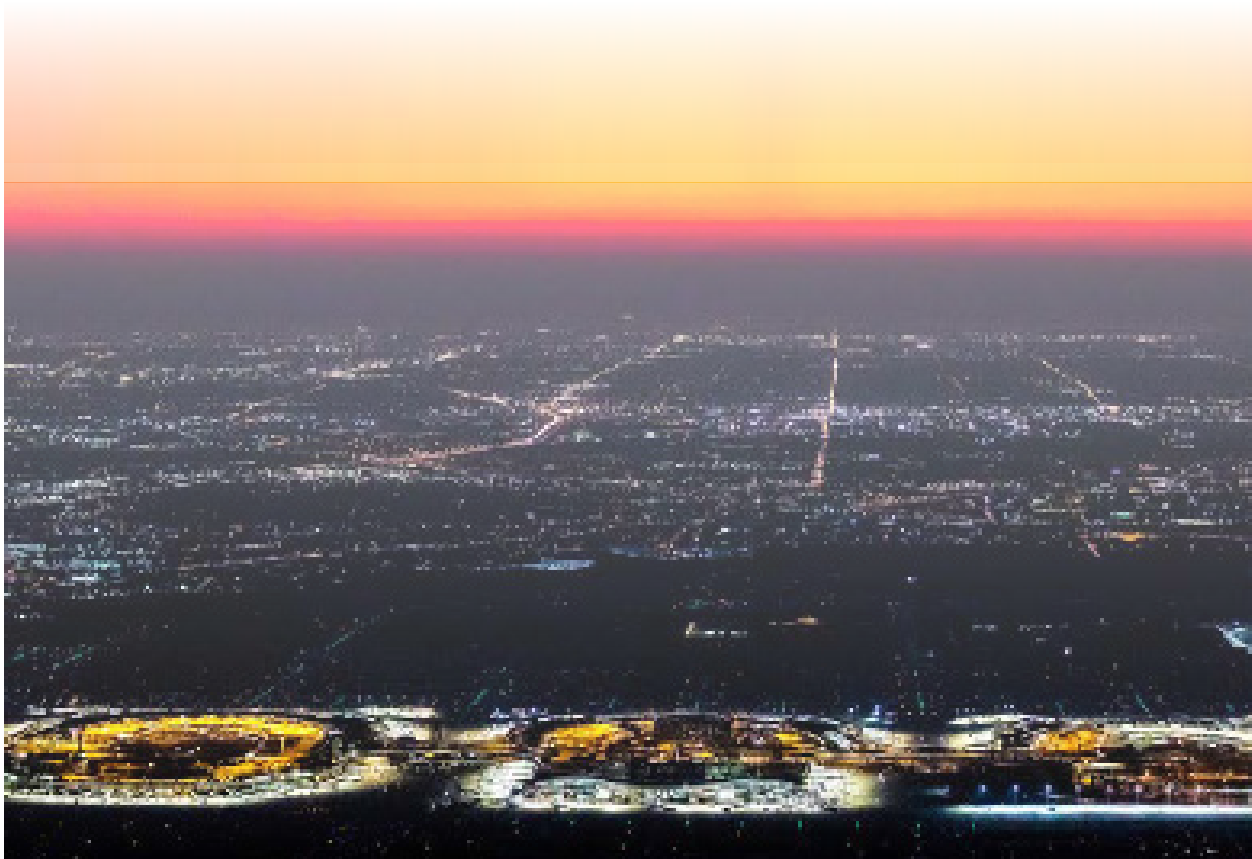


Table 11: Summary of Benefits Delivered by Long Term Outcomes (2025-2044)

Values stated in 2020\$ Million, Discounted at 7%	Terminals A & B	Terminal A	Terminal B
Costs			
Capital Costs	\$37.8	\$18.9	\$18.9
Benefits			
Safety Benefits			
Reduced Roadway Fatalities and Crashes	\$8.2	\$2.7	\$5.5
Accidents Avoided from Potential Detours		Qualitative	
Dynamic Signage		Qualitative	
Sub-Total Safety Benefits	\$8.2	\$2.7	\$5.5
Environmental Sustainability			
Idling Emissions Avoided*	\$0.3	\$0.1	\$0.2
Carbon Removal Concrete		Qualitative	
Sub-Total Environmental Sustainability	\$0.3	\$0.1	\$0.2
Quality of Life			
Better Accessibility for All Travelers		Qualitative	
Better Accessibility for Lower Income Travelers and Airport Users/Employees		Qualitative	
Secure timely emergency response		Qualitative	
Mobility and Community Connectivity			
Reliability Improvements	\$8.4	\$8.4	Qualitative
Congestion Reduction		Qualitative	
Sub-Total Mobility and Community Connectivity	\$8.4	\$8.4	Qualitative
Economic Competitiveness and Opportunity			
Travel Time Savings (TTS) on the Flyovers	\$41.9	\$7.2	\$34.7
TTS from IP Speed Increase		Qualitative	
Airport Competitiveness		Qualitative	
Sub-Total Economic Competitiveness	\$41.9	\$7.2	\$34.7
State of Good Repair			
O&M Costs Avoided	\$13.5	\$6.7	\$6.7
Residual Value	\$3.2	\$1.6	\$1.6
Pavement Cost Avoided Due to Ice Roads Detour		Qualitative	
Sub-Total State of Good Repair	\$16.7	\$8.3	\$8.3
Partnership and Collaboration			
NCTCOG and DFWIA Partnership		Qualitative	
Partnership with Private Sector (e.g., AA)		Qualitative	
High DBE Percentage		Qualitative	
Innovation and Technology			
Maintenance Sensors		Qualitative	
Real-Time Incident Management System		Qualitative	
O&M Costs	~\$0.0	~\$0.0	~\$0.0
Total Benefits	\$75.5	\$26.8	\$48.7
Benefit-Cost Ratio	2.0	1.4	2.6
Net Present Value	\$37.7	\$7.9	\$29.8

Note: CO₂ is discounted at 3%.

Benefit-Cost Analysis Technical Memorandum

International Parkway Advanced Mobility Program - Infrastructure Modernization: Terminals A and B

2022 RAISE Grant Application

Prepared for: Dallas Fort Worth International Airport

April 2022

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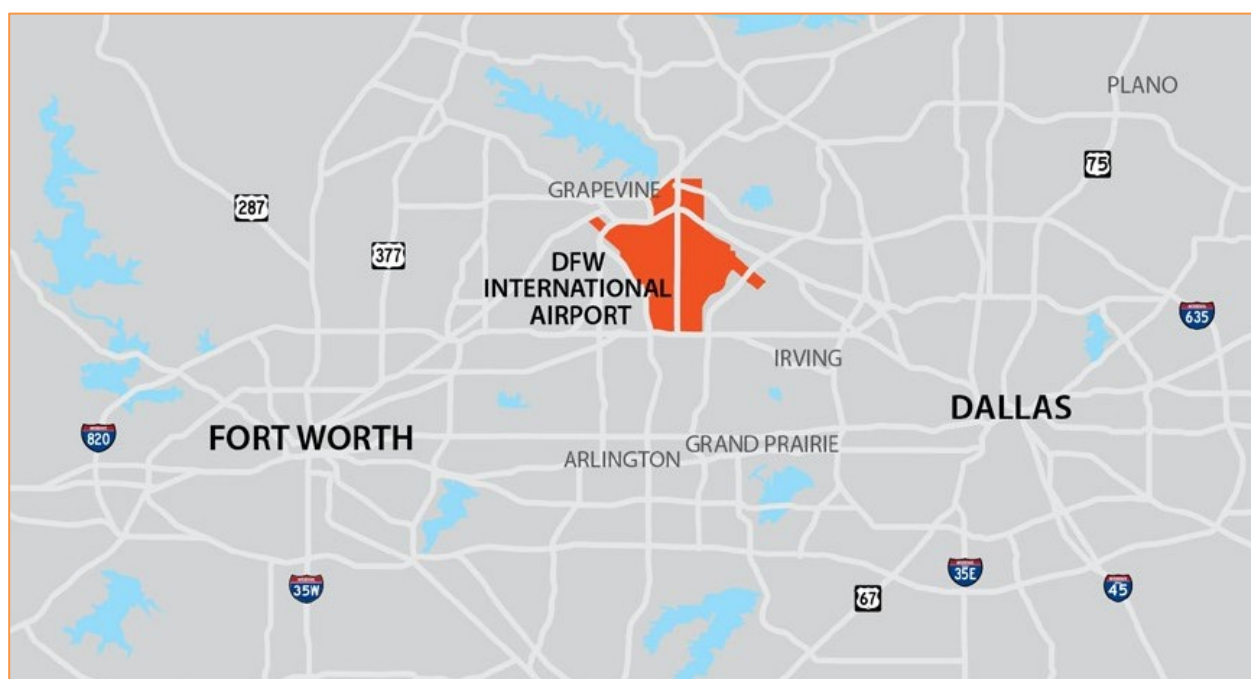
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1. Introduction

A benefit-cost analysis (BCA) was conducted for the International Parkway Advanced Mobility Program - Infrastructure Modernization: Terminals A and B (i.e., the Project) to support the discretionary grant application for the U.S. Department of Transportation's (USDOT) RAISE grant program.

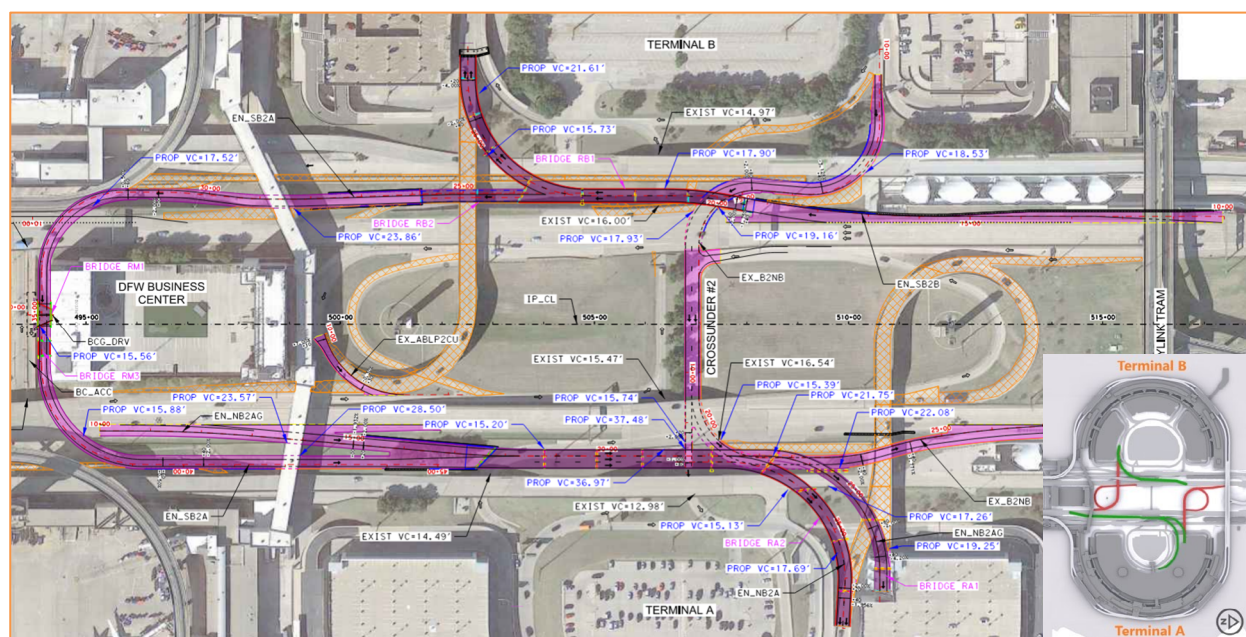
The Project consists of replacing the end-of-life and inefficient flyover bridges connecting International Parkway (IP) with the Dallas-Fort Worth Airport (DFWIA) terminals A and B. The Project is in the Central Terminal Area (CTA) of DFWIA, which is located in the City of Grapevine, Tarrant County, Texas in the Dallas--Fort Worth--Arlington, Texas Urbanized Area (see Figure 1).

Figure 1: Project Location



The BCA analysis evaluates the basket of economic benefits resulting from the delivery of the Build scenario when compared to the No Build scenario. In the No Build scenario, the existing end-of-life infrastructure remains in place and continues to be operated and maintained at a reduced vehicle capacity (i.e., only personal vehicles can use the bridges) and at a reduced speed limit (i.e., speed is reduced to 10 mph instead of 20 mph) to address deteriorating conditions and safety concerns with the structures. Under the Build scenario, new bridges along right hand exit ramps from IP to terminals A and B will be constructed to replace the existing left lane flyovers, resulting in more intuitive driver decision making and efficiencies in travel times and safety. Additionally, under the Build scenario, traffic driving through IP can travel 10 mph faster than under the No Build scenario. The existing flyover bridges to terminals A and B are connected, therefore the Project is defined to replace the infrastructure connecting both terminals to IP. Figure 2 compares the Build and the No Build traffic flows under each scenario.

Figure 2: Project Engineering Overview



Notes: Big graph: Infrastructure in orange represents the current infrastructure under the No Build scenario, while infrastructure in purple represents the new infrastructure under the Build scenario. Insert graph: Red lines represent current infrastructure, while the green lines show the new accesses to the terminals.

The BCA analysis was conducted in accordance with the USDOT's 2022 Benefit-Cost Analysis Guidance for Discretionary Grant Programs¹ for a 24-year analysis period beginning with capital outlays in 2021 through to 2024 and operations from 2025 to 2044. Operations of the new infrastructure will commence in January 2025 under the Build scenario. The Project schedule is presented in Figure 3.

Figure 3: Project Schedule

Items	2021				2022				2023				2024				2025	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Planning, Design, Procurement, and Professional Services																		
DB RFQ																		
DB RFP																		
Environmental Approvals																		
Utilities																		
Construction																		
Mobilization																		
Construction Permits																		
Girder Procurement																		
Finalize OBA to Board Secretary																		
OBA for Construction																		
CA Processes Contract - Construction																		
Notice to Proceed																		
Validation / Design																		
Substantial Completion																		
G7 - Asset Handover																		
Opening																		

The realization of the Project will deliver a variety of benefits, most notably an increase in mobility and community connectivity, a reduction in vehicle hours traveled (VHT), a reduction in vehicular accidents, and the avoidance of millions in operations and maintenance costs. Table 1 summarizes the current problem, the proposed solution with associated benefits and the affected population. Notable economic benefits that the Project will deliver, consistent with the overarching long-term outcomes criteria sought after by the USDOT's RAISE program.

¹ <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>

Table 1: Project Matrix

Current Status/ Baseline & Problem to Be Addressed	Change to Baseline or Alternatives	Types of Benefits	Affected Population
The existing configuration of International Parkway (IP) that services Dallas Fort Worth International Airport contains left-hand exits to reach terminals A and B on the other side of the IP. Additionally, the existing fly-over bridges have reached the end of their useful life.	The Project replaces the flyover bridges to Terminals A and B; new bridges offer left hand exits with standard right-hand configurations.	Safety Benefits:	
		Reduced Roadway Fatalities and Crashes	Roadway users
		Accidents Avoided from Potential Detours	Roadway users
		Dynamic Signage	Roadway users
		Environmental Sustainability	
		Idling Emissions Avoided	Northern Texas community
		Carbon Removal Concrete	Northern Texas community
		Quality of Life	
		Better Accessibility for All Travelers	Roadway users
		Better Accessibility for Lower Income Travelers and Airport Users/Employees	All roadway users and non-users
		Secure Timely Emergency Response	All roadway users and non-users
		Mobility and Community Connectivity	
		Reliability Improvements	Roadway users
		Congestion Reduction	Roadway users
		Economic Competitiveness and Opportunity	
		Travel Time Savings (TTS) on the Flyovers	Roadway users
		TTS from IP Speed Increase	Roadway users
		Airport Competitiveness	Northern Texas community
		State of Good Repair	
		O&M Costs Avoided	DFW airport, taxpayers
		Residual Value	DFW airport, taxpayers
		Pavement Cost Avoided Due to Ice Roads Detour	DFW airport, taxpayers
		Partnership and Collaboration	
		NCTCOG and DFWIA Partnership	Northern Texas community
		Partnership with Private Sector (e.g., AA)	DFW airport, private sector
		High DBE Percentage	Northern Texas community
		Innovation and Technology	
		Maintenance Sensors	All roadway users
		Real-Time Incident Management System	All roadway users

2. Benefit Analysis Assumptions

The BCA evaluates the benefits and costs of implementing the Project (i.e., Build scenario) against the No Build scenario in which the Project does not occur. The analysis utilizes information from several sources from both government agencies and consultants engaged by the applicant, as well several assumptions which are compliant with the latest USDOT guidance.

General

Discounted Rates

Consistent with the USDOT's guidance for discretionary grants, a real discount rate of 7 percent was used for this analysis. Project investments are expressed in constant 2020 dollars. In instances where assumptions or cost estimates are expressed in dollar values for other years, the Chained Price Index information from the White House Office of Management and Budget's Gross Domestic Product and Deflators has been used to bring these to 2020-dollar figures.² Benefit valuations for future years are expressed in 2020 dollars, discounted to 2020 at 7 percent.

Evaluation Period

The evaluation period in this assessment is 24 years, extending from January 2021 through to the end of 2044. This evaluation period begins in the year in which capital expenditures for the Project began, plus 20 years of operations of the infrastructure improvements and other associated works of the Project. This analysis assumes that construction of the Project begins in 2022 and will continue through to 2024. Operations of the right turn exits terminals A and B will begin in January 2025. During the construction period, traffic to the terminals will be affected negligibly, therefore there will be no traffic diversions and delays associated with construction. All benefits and costs are assumed to occur at the end of the year.

Key Benefit-Cost Evaluation Measures

The BCA converts potential gains (benefits) and losses (costs) resulting from the implementation of the Project into monetary units and compares them. The following two common benefit-costs evaluation measures are included in this analysis.

Net Present Value (NPV)

NPV compares the net benefits (benefits less costs) after being discounted to present values using the real discount rate assumption. The NPV provides a perspective on the overall dollar magnitude of cash flows over time in 2020 dollars (2020\$).

Benefit-Cost Ratio (BCR)

The BCR expresses the relation of discounted benefits to discounted costs as a measure of the extent to which the project benefits either exceed or fall short of their associated costs.

Travel Demand Model

A traffic simulation model was used to provide Annual Average Daily Traffic (AADT) information for the corridor in different scenarios and at different timeframes, estimating the volume of traffic in both north- and south-bound directions entering and exiting each terminal, as well as the travel times or delays, and diversion for shuttles and buses.

Travel Demand Model Assumptions

The volume of passengers using the DFWIA is highly correlated to the volume of vehicles accessing the terminals. For the travel demand forecast, DFWIA provided its forecast to reach 72 million annual passenger (MAP) by 2025 and 90 MAP by 2034. These data points were used to model and estimate annual volumes of vehicles accessing the terminals. The analysis assumes that traffic will be constant after 2034.

The AADT reported is the Peak Month Average Day traffic. This is considered as the AADT in an international airport because of the high seasonal variations.

² White House Office of Management and Budget. Historical Tables, Table 10.1 – Gross Domestic Product and Deflators Used in the Historical Tables 1940-2025. Accessed from <https://www.whitehouse.gov/omb/budget/historical-tables/>

Table 2: Forecasted AADT for Cars, Buses, and Shuttles

MAP Level	Year	Traffic Volumes (AADT) - Cars		Traffic Volumes (AADT) - Buses		Traffic Volumes (AADT) - Shuttles	
		Terminal A	Terminal B	Terminal A	Terminal B	Terminal A	Terminal B
72	2025	9994332	3891096	108398	45778	737109	640886
74	2026	10195009	4021248	110575	47309	751910	662323
76	2027	10395685	4151400	112751	48840	766710	683760
78	2028	10596362	4281552	114928	50371	781510	705197
80	2029	10797038	4411704	117105	51902	796311	726634
82	2030	10997714	4541856	119281	53434	811111	748070
84	2031	11198391	4672008	121458	54965	825912	769507
86	2032	11399067	4802160	123634	56496	840712	790944
88	2033	11599743	4932312	125811	58027	855513	812381
90	2034	11800420	5062464	127987	59558	870313	833818

Source: Shenoy Analytics' Traffic Model 2022

Traffic Time

For the analysis period (2025-2044), the traffic model produced annual VHT for traffic time on each terminal as per the Table 3.

Table 3: VHT for No Build and Build Scenarios in Hours (2025-2044)

MAP Level	Year	Terminal A		Terminal B	
		No Build	Build	No Build	Build
72	2025	2675830	2716025	261074	32608
74	2026	2782772	2794052	283593	52281
76	2027	2891809	2873002	307005	73156
78	2028	3002941	2952878	331309	95234
80	2029	3116168	3033679	356505	118515
82	2030	3231490	3115404	382594	142999
84	2031	3348906	3198054	409575	168685
86	2032	3468418	3281629	437449	195575
88	2033	3590024	3366128	466215	223667
90	2034	3713726	3451553	495874	252962

Source: Shenoy Analytics' Traffic Model 2022

Travel Time Savings

Annual travel time savings estimations were derived from the Shenoy Analytics' 2022 traffic simulation model. Travel times were estimated for both north- and south-bound traffic entering and exiting each terminal at DFWIA from/to the IP Plaza. The savings in VHT were then allocated by cars, buses, and shuttles according to the traffic model volume of each mode. This allows the analysis to account for different savings on passengers and drivers for shuttles, buses, and cars.

Annualization Factor

As the DFWIA operates around the year. However, the analysis assumes an annualization factor of 330 days operations per annum; this same annualization factor was used when developing forecasts of traffic volumes within the

assessment.

Value of Time

Travel time savings are converted from hours to dollars. This is performed by assuming that travel time is valued as a percentage of the average wage rate, with different percentages assigned to different trip purposes. This analysis used blended rate for autos, buses, and shuttles—\$18.69, \$22.74, and \$21.39 an hour, respectively. These blended rates were based on the DOT's Recommended Hourly Value of Travel Time Savings, as shown in Table 4, and assumes a mix of drivers, personal travelers, and business travelers consistent with the 2017 US Air Passenger's main trip purpose survey, which showed a 29 percent to 71 percent distribution between business and personal travelers, respectively.³

Table 4: Hourly Value of Travel Time Savings, All Users (2020\$ per person-hour)

Category	Hourly Value
Value of Time - Business	\$29.40
Value of Time - Personal	\$16.20
Value of Time - All Purposes	\$17.80
Value of Time - Bus Drivers	\$33.60

Source: US Department of Transportation (2022)

Vehicle Hours Travelled (VHT)

Vehicle hours travelled (VHT) is used in a variety of benefits and costs categories, including travel time savings. Vehicle hours used in this analysis comprise the estimates of travel times avoided or added for auto, bus, and shuttle vehicles under the No Build and Build scenarios.

Average Vehicle Occupancy

Average vehicle occupancy allows for the estimation of total travel time savings. This analysis assumes an average vehicle occupancy of 1.67 for autos under the Build and No Build scenario, as taken from the USDOT's 2022 BCA Guidance. Buses were assumed to have an occupancy rate of 10, while shuttles were assumed to have a conservative 5 occupancy rate. Both bus and shuttle occupancy rates include the driver.

Safety

In reconfiguring the exit ramps from left side off-ramps to right side off-ramps, the analysis assumes the Project will result in a crash modification factor (CMF) of 0.67, or the inverse of the Crash Modification Factors (CMF) clearing house value of 1.49 for the left side off-ramp countermeasure.⁴

The Project will result in safety benefits by inducing more natural and intuitive exit on the right lane of IP for the average driver behavior. When drivers see signage to exit on the right for accessing a terminal, they are aware that safer turns are ahead and they will avoid exiting on the left lane, which might be perceived as an unsafe condition. The methodology for calculating this benefit is described in this section.

Accident data from 2015-2019 provided by DFWIA for north and south-bound ramps to Terminals A and B were used as the basis for the safety analysis.⁵ Accident data were reported in two forms: by number of accidents, categorized as fatal, injury, or property damage only; and number of KABC's, categorized as fatal, or injury. Average daily traffic counts were de-escalated from 2025 to 2015, by applying the comprehensive annual traffic-growth rate from 2025-2044 to the 2025 traffic count at each terminal. The daily traffic counts were averaged from 2015 to 2019 to calculate accident rates per traffic count, which were then escalated proportionate to traffic growth throughout the analysis period. Crash types were monetized in accordance with USDOT guidance, which is shown in Table 5.

³ US Air Passenger's main trip purpose in 2017, by type, <https://www.statista.com/statistics/539518/us-air-passengers-main-trip-purposes-by-type/>

⁴ CMF Clearing House, Countermeasure: left side off ramp, http://www.cmfclearinghouse.org/study_detail.cfm?stid=168

⁵ Due to COVID-19 pandemic, analysis excludes data from 2020 and 2021. Data from 2020 and 2021 are outliers and do not represent operations under normal conditions.

Table 5: Crash Type Values (2020\$)

Crash Type	Monetized Value
Property Damage Only (PDO) Crashes (per vehicle)	\$4,600
Injury Crash	\$302,600
Fatal Crash	\$12,837,400

Source: US Department of Transportation (2022)

Idling Emissions

Changes in VHT as a consequence of the Project will create environmental and sustainability impacts relating to automobile, buses, and shuttles. Three types of emissions are identified, measured, and monetized: particulate matter (PM2.5), carbon dioxide (CO₂) and nitrogen oxide (NOx).

Idling Emissions Quantification and Approach

Emission rates differ between vehicle types based on their fuel efficiency, average speed, and driving conditions. This analysis uses emissions factors from the Environmental Protection Agency (EPA) and Federal Transit Administration (FTA), which provide emissions factors for automobiles and buses. To accommodate the differing vehicle types included in this analysis (auto, bus, and shuttle) the emission factors have been weighted with the associated traffic composition and blended into one rate. Autos account for 89 percent of the vehicles, and buses and shuttles account for the remaining 11 percent of vehicles.

This analysis quantifies idling emissions generated under the No Build and Build scenario utilizing emission factors in grams of emissions per hour, or g/VHT. Different hours traveled by vehicles due to the Project will generate a reduction in idling emissions. Values for each emission type were sourced from the USDOT 2022 BCA Guidance.

Table 6: Emission Factors (g/VHT) – Blended Rate for Modeled Traffic Composition

	NOX	PM2.5	CO2
Emission Factor (g/VHT)	3.578	0.018	1654.937

Sources:

"Idling Vehicle Emissions for Passenger Cars, Light-Duty Trucks, and Heavy-Duty Trucks Emission Facts", EPA420-F-08-205, October 2008

"Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks", EPA420-F-08-024, October 2008

Fact #861 February 23, 2015 Idle Fuel Consumption for Selected Gasoline and Diesel Vehicles

Greenhouse Gas Emissions from a Typical Passenger Vehicle, EPA

Reliability

The reliability economic assessment models the value travelers place on both typical travel time and typical travel time reliability. In other words, reliability represents the variability in a typical travel time for the same trip from day to day. If there is a large variability, the travel time is considered unreliable, whereas a low variability will be considered a reliable travel time.

As stated in the BCA Guidance, the USDOT does not currently have a specific recommended methodology for valuing reliability benefits. Therefore, to calculate the increase or reduction in reliability for the Project, the No Build and Build scenarios for Terminals A and B were ran in the SHRP2 Strategic Highway Research Program Reliability Module, provided by Cambridge Systematics & Weris, Inc, dated April 14, 2014 (see Figure 4).

Figure 4: SHRP2 Strategic Highway Research Program Reliability Module

Scenario Inputs

Scenario Name: Terminal A No Build

Description (optional):

Buttons: New Scenario, Delete Current Scenario, Save Scenario, Copy Current Scenario, Results

Scenario Data:

- Time Horizon: 20 years
- Analysis Period: 6:00 AM to 7:00 PM
- Highway Type: Signalized
- Beg. Milepoint: 1
- End Milepoint: 5
- No. of Lanes (One-way): 2
- Free Flow Speed: 10 mph

Traffic Data:

- Current AADT: 32848
- Estimated Annual Traffic Growth Rate: 0.88 %
- Truck Data: Pct. Trucks in Traffic: 8 %
- Capacity Data: Peak Capacity: (empty) pcph
- Terrain: Flat

Travel Time Unit Cost (per vehicle hr):

- Personal: 29.73 \$/hr
- Commercial: 33.6 \$/hr

Effect of Incident Management Strategy:

- Reduction in Incident Frequency: 0 %
- Reduction in Incident Duration: 0 %

Reliability Ratio:

- Value of Reliability over Value of Travel Time
- Personal: 0.8
- Commercial: 1.1

Route Information (optional):

- Route: (empty)
- Beg. Landmark: (empty)
- End Landmark: (empty)

The inputs used for the model under the No Build and Build scenarios for terminals A and B are listed in Table 7.

Table 7: SHRP2 Reliability Module Inputs

Input	Terminal A		Terminal B	
	No Build	Build	No Build	Build
Annual Average Daily Traffic (AADT), 2025	32848	32848	13872	13872
Annual Growth Rate	0.88%	0.88%	1.41%	1.41%
Actual Average Speed	10	20	10	20
Reduction in Incident Frequency	0	51%	0	51%
Truck Ratio*	8%	8%	15%	15%
Constants Across All Terminals and Scenarios				
Time Horizon, years	20			
Analysis Period	6:00AM to 7:00PM			
Travel Time Unit Cost, Personal (per vehicle, 2020\$)	\$29.73			
Travel Time Unit Cost, Commercial (per vehicle, 2020\$)	\$33.60			
Highway Type	Signalized			
Terrain	Flat			
Reliability Ratio, Personal (default)	0.8			
Reliability Ratio, Commercial (default)	1.1			
Miles Traveled	5			
Reduction in Incident Duration	0			
Number of Lanes	2			
Arterial	Yes			

Source: STV INC.; *Truck ratio assumes shuttles and buses

Infrastructure Operation and Maintenance

A summary of the O&M costs under the No Build scenario is shown in Table 8. For the Build scenario, under which a new infrastructure configuration to right turn exits from the IP is introduced to access each terminal, the operations and maintenance (O&M) cost is nearly zero, as there are no major repairs anticipated within the period of analysis.

Table 8: Operations and Maintenance Costs Under No Build Scenario (2020\$)

Year	Total O&M Costs	Per Terminal O&M Costs
2025	\$2,906,326	\$1,453,163
2026	\$405,534	\$202,767
2027	\$405,534	\$202,767
2028	\$405,534	\$202,767
2029	\$405,534	\$202,767
2030	\$1,351,780	\$675,890
2031	\$405,534	\$202,767
2032	\$405,534	\$202,767
2033	\$405,534	\$202,767
2034	\$405,534	\$202,767
2035	\$1,351,780	\$675,890
2036	\$405,534	\$202,767
2037	\$405,534	\$202,767
2038	\$405,534	\$202,767
2039	\$405,534	\$202,767
2040	\$1,351,780	\$675,890
2041	\$405,534	\$202,767
2042	\$405,534	\$202,767
2043	\$405,534	\$202,767
2044	\$405,534	\$202,767
Total	\$13,450,207	\$6,725,103
20-Year Average	\$672,510	\$336,255

Source: STV INC.

Residual Value

The Project infrastructure is comprised of three major categories of infrastructure: roadway, utilities, and bridges. These categories have an anticipated service life of 60 years for roadway and utilities, and a service life of 100 years for bridges, per Bureau of Economic Analysis (BEA) and Virginia DOT sources, respectively.^{6 7} These assets have a useful life longer than the 20 years following commencement of operations; therefore, a residual value can be estimated, and it can be discounted back to a net present value and included in the project benefits per terminal. Table 9 provides an overview of the useful life of these assets and the percentage of each asset which may be applicable for the residual value after the period of analysis.

⁶ Table C.—BEA Rates of Depreciation, Service Lives, Declining-Balance Rates, and Hulten-Wyckoff categories , https://apps.bea.gov/scb/account_articles/national/wth2594/tableC.htm

⁷ https://www.virginiadot.org/vtrc/main/online_reports/pdf/18-r1.pdf

Table 9: Assumed Useful Life of Assets under the Build Scenario (2020\$)

Asset Type	Assumed Useful Life (years)	Residual Value Applicable
Roadway	60 (BEA)	40 (66.7%)
Utilities	60 (BEA)	40 (66.7%)
Bridges	100 (VDOT)	80 (80%)

Sources: BEA Rates of Service Lives; VDOT Bridge Service Life Design.

3. Outcomes

Safety Benefits

Safety outcomes comprise the increase or reduction in the incidence of accidents, injuries, and fatalities as consequence of the implementation of the Project. The No Build and Build scenarios both forecast increased traffic volumes over time; however, the Build scenario's right exit ramps forecast to allow for more safe and efficient access to and from the terminals. Traffic counts throughout the analysis period are commensurate to traffic passenger growth, and resultantly, traffic forecasts under the Build scenario are the same as traffic forecasts under the No Build scenario.

Table 10: Safety Benefits Summary

Selection Criteria	Ranking	Language from the NOFO	Project Benefit	Quantitative
Safety	MEDIUM-HIGH	Reduce fatalities and/or serious injuries	Accidents avoided from current configuration	Y
			Accidents avoided from potential detours	
		Mitigating systemic safety issues	Dynamic signage	

Reduced Roadway Fatalities and Crashes

The implementation of the Project will realize significant reductions in accidents for passengers and non-passengers arriving and departing DFWIA. Table 11 shows the total decrease of accidents associated with the assumed CMF of 0.67 over the analysis period.

Table 11: Reduction in Accidents (2025-2044)

Terminal	Property Damage Only (PDO)	Injuries Reduced	Fatalities Reduced
Terminal A	19.1	22.1	0.0
Terminal B	9.2	46.2	0.0

Source: STV INC.

Safety benefits were calculated by multiplying the value of crash types, displayed in Table 5 by accidents avoided at each terminal, summarized in Table 11. Safety benefits are summarized in Table 12.

Table 12: Total Safety Benefits (2020 \$M)

Terminal	Accidents Avoided
Terminal A	\$2.7
Terminal B	\$5.5
Total	\$8.2

Source: STV INC.

The total reduction in fatalities, injuries, and PDO over the 20-year period of analysis from improved safety is valued as \$8.2 million, discounted at 7 percent.

Accidents Avoided from Potential Detours

Under the No Build scenario, buses and shuttles have to use the ice roads due to current design of the bridges. Under the Build scenario, buses and shuttles will be able to use the flyover bridges to access terminals A and B. The ice roads have not been designed to be used by the buses and shuttles, therefore, are not equipped to handle that traffic. The use of the ice roads is prone to more accidents and near misses, which will be avoided under the Build scenario, since the buses and the shuttles will drive through the new flyover bridges to access terminals A and B.

Dynamic Signage

Dynamic signage is electronic messaging roadway signage which informs motorists about specific temporary events and real-time traffic conditions along the roadway. These devices help mitigate systemic safety issues by alerting motorists of potentially dangerous conditions prior to the motorists experiencing these conditions. The Project will construct wayfinding signage along IP to direct drivers to/from terminals with real-time information, which will improve safety in the Build scenario when compared to the No Build scenario.

Environmental Sustainability

The Project will preemptively prevent congestion contributing to air quality improvements in the region.

Table 13: Environmental Sustainability Summary

Selection Criteria	Ranking	Language from the NOFO	Project Benefit	Quantitative
Environmental sustainability	MEDIUM-HIGH	Reduce emissions from auto/heavy vehicles	Emissions avoided from TTS	Y
		Promote energy efficiencies	Carbon removal concrete	

Idling Emissions Avoided

As the Build scenario forecasts an overall lower number of vehicle hours traveled (VHT) than the No Build scenario, there is a net decrease in idling emissions produced by congestion at the bridges. The right exit ramps facilitate an increase in speed limits as well as a decrease in congestion due to merging across the IP, resulting in a decrease in idling emissions in the Build scenario. A summary of the emissions decreases associated with vehicle hours travelled is shown in Table 14.

Table 14: Idling Emissions Due to Changes in Vehicle Hours Travelled (2025-2044)

	Terminal A	Terminal B	Total
NOX (metric tons)	2.35	7.06	9.40
PM _{2.5} (metric tons)	0.01	0.04	0.05
CO ₂ (metric tons)	1085.38	3264.61	4349.99

Source: STV INC.

Per BCA guidance, NOX and PM_{2.5} emissions are discounted at 7 percent while CO₂ is discounted at 3 percent. The total savings per terminal discounted (Total) column is a sum of the two discounted columns. The emissions in Table 14 produced an overall cost increase as presented in the Table 15.

Table 15: Idling Emissions Costs (2025-2044) (2020\$)

	NOX and PM2.5 Emission Saving	NOX and PM2.5 Discounted (7%)	CO2 Emission Savings	CO2 Emissions Discounted (3%)	Total Savings Per Terminal Discounted (Total)
Terminal A	\$52,967	\$15,215	\$77,710	\$44,803	\$60,018
Terminal B	\$156,621	\$61,283	\$219,644	\$141,367	\$202,650
Total Savings	\$209,588	\$76,498	\$297,355	\$186,170	\$262,668

Source: STV INC.

Carbon Removal Concrete

To enhance sustainability, the Project is proposing to use carbon removal concrete in the construction of the right-hand exits. Carbon removal concrete traps Carbon Dioxide (CO₂) caught by industrial gas suppliers into concrete during mixing. Once the CO₂ is incorporated into the concrete, it will be contained for the life of the concrete preventing it from being released back into the environment. DFWIA will use carbon removal concrete to construct the proposed bridges which injects waste CO₂ into concrete during mixing, enabling the production of stronger, more sustainable concrete.

Quality of Life

The Project improves the quality of life for passengers, workers, and visitors to DFWIA. As the main international airport in the Northern Texas region, 7.5 million residents and more than 6,000 businesses \ rely on DFWIA to access domestic and international destinations.

Table 16: Quality of Life Summary

Selection Criteria	Ranking	Language from the NOFO	Project Benefit	Quantitative
Quality of life	MEDIUM-HIGH	Increase accessibility for all travelers	Better/more convenient accessibility for all travelers	
		Increase accessibility for lower income travelers and airport users	Better/more convenient accessibility for lower income/nonbusiness travelers and employees	
		Reduce damages resulting from emergencies	Secure Timely Emergency Response	

Better Accessibility for All Travelers

People who are going to the airport have heightened anxiety in meeting a set schedule to board a flight on-time or pick-up a passenger who landed. Residents, visitors, and business travelers alike have high expectations for a reliable and efficient transportation system at DFWIA providing convenient access the terminals and their various parking options, establishing confidence they may conduct necessary business at the airport with little to no delay. The new bridge design allows all airport users to better access terminals A and B, without delays, safety concerns and reliability challenges.

Better Accessibility for Lower Income Travelers and Airport Users/ Employees

The Project improves accessibility to terminals A and B for people parking on the airport satellite parking lots and that need to take the bus or the shuttle from the parking lots to the terminals. Rates at the satellite parking lots are less than the prime parking locations next to the terminals; therefore, the people using the satellite parking lots are in average people of lower income than those people parking next to the terminals or are non-business travelers. Buses and shuttles under the No Build scenario are driving through the ice roads, taking longer trips than the people parking next to the terminals.

Additionally, DFWIA employees parking on the employee's satellite parking lots have to arrive to the airport by bus or

shuttle driving through the ice roads under the No Build scenario. Under the Build scenario, employees will benefit from the new bridge design that allows buses and shuttles to drive through the new bridges instead of using the ice roads, saving them time.

Secure Timely Emergency Response

As one of the busiest airports in the nation, security is a top priority for DFWIA. The flyovers are the fastest way for first responders and emergency services to reach terminals in the event of any incident, including threats to national security. If the flyover has a weight limit, it would be impossible for emergency responders to access the terminals to address the security concern in a timely manner with the available detour routes. Under the No Build scenario, DFWIA will be left more vulnerable to security problems because the response times would be hindered by the inefficient detour routes and traffic congestion. Implementing the project is an investment in ensuring the long-term security of our nation.

Mobility and Community Connectivity

Under the Build scenario, the Project better accommodates the growing accessibility needs for all vehicles. Trips provided for airport employees, passengers from remote long-term parking lots, rental car center users, and hotel shuttle riders will have much greater accommodations. Better reliability and congestion reduction support DFWIA users and the community overall.

Table 17: Mobility and Community Connectivity Summary

Selection Criteria	Ranking	Language from the NOFO	Project Benefit	Quantitative
Mobility and community connectivity	MEDIUM	Increase mobility for all users of a project, particularly non-motorized travelers (those using buses)	Reliability improvements	Y
			Congestion avoided from detours and from speed reduction	

Reliability Improvements

Under the Build scenario, trips will be more reliable when accessing terminal A than under the No Build scenario. Since AADT to terminal B is less than 15,000 vehicles, the SHRP2 model does not estimate reliability savings when comparing No Build and Build conditions.

Table 18: Reliability Savings along Terminal A access under the Build Scenario (2025-2044) (2020\$)

Year	Build	No Build	No Build - Build	Discounted Benefits (7%)
2025	\$731,109	\$1,481,756	\$750,647	\$535,201
2026	\$770,386	\$1,561,311	\$790,925	\$527,027
2027	\$809,663	\$1,640,866	\$831,203	\$517,631
2028	\$848,940	\$1,720,421	\$871,481	\$507,210
2029	\$888,217	\$1,799,975	\$911,759	\$495,936
2030	\$927,493	\$1,879,530	\$952,037	\$483,967
2031	\$966,770	\$1,959,085	\$992,315	\$471,442
2032	\$1,006,047	\$2,038,640	\$1,032,593	\$458,484
2033	\$1,045,324	\$2,118,195	\$1,072,871	\$445,203
2034	\$1,084,600	\$2,197,749	\$1,113,149	\$431,698
2035	\$1,123,877	\$2,277,304	\$1,153,427	\$418,055
2036	\$1,163,154	\$2,356,859	\$1,193,705	\$404,349
2037	\$1,202,431	\$2,436,414	\$1,233,983	\$390,647
2038	\$1,241,708	\$2,515,968	\$1,274,261	\$377,008

Year	Build	No Build	No Build - Build	Discounted Benefits (7%)
2039	\$1,280,984	\$2,595,523	\$1,314,539	\$363,481
2040	\$1,320,261	\$2,675,078	\$1,354,817	\$350,110
2041	\$1,359,538	\$2,754,633	\$1,395,095	\$336,934
2042	\$1,398,815	\$2,834,188	\$1,435,373	\$323,983
2043	\$1,438,091	\$2,913,742	\$1,475,651	\$311,284
2044	\$1,477,368	\$2,993,297	\$1,515,929	\$298,860
		Total	\$22,665,759	\$8,448,511

Congestion Reduction

Under the No Build scenario, vehicles must drive slower (i.e., 10 miles per hour slower) than under the Build scenario, generating congestion, not only when acceding the terminals, but also on IP.

Additionally, buses and shuttles under the No Build Scenario are using the ice roads instead of IP and the bridges to access the terminals, these movements along the ice roads also generate congestion that will be prevented under the Build scenario.

Economic Competitiveness and Opportunity

Supporting over a quarter million regional jobs and contributing approximately \$37 billion to the economy each year, DFW is an important economic driver for the region, state, and nation. For DFWIA to maintain and increase its economic competitiveness, the airport needs to ensure that its transportation system allows passengers and other users to access its terminals in a timely manner.

Table 19: Economic Competitiveness and Opportunity Summary

Selection Criteria	Ranking	Language from the NOFO	Project Benefit	Quantitative
Economic competitiveness and opportunity	HIGH	Improve system operations to increase travel time, reliability, speed	Travel time savings (TTS) on the bridges	Y
			TTS from IP speed increase	
			Airport competitiveness	

Travel Time Savings (TTS) on the Flyovers

Travel time savings estimations were derived from the 2022 Shenoy Analytics' traffic model. Travel times were estimated for both north- and south-bound traffic entering and exiting each terminal at DFWIA from/to the IP Plaza. The 2034 travel time savings, which considers the MAP90 figure, was applied to the remaining years of the analysis period: 2035 to 2044. For the analysis period, the changes in travel time for the Build scenario as compared with the No Build scenario have been summarized in Table 20 as the difference between the two scenarios. These figures were distributed by autos, buses, and shuttles, accounting the occupancy rate for each individual mode.

Table 20: Difference in Travel Times, No Build versus Build Scenario per Terminal (Seconds)

Year	Terminal A			Terminal B		
	Auto	Bus	Shuttle	Auto	Bus	Shuttle
2025	-127626333	-8288824	-28182000	422621898	29772589	208408122
2026	-89452582	-5809590	-19752606	435914298	30709003	214963021
2027	-49123724	-3190391	-10847329	449155530	31641813	221492688
2028	-6639760	-431226	-1466169	462345593	32571017	227997122
2029	37999311	2467904	8390875	475484487	33496618	234476323
2030	84793489	5507000	18723802	488572213	34418613	240930292

Year	Terminal A			Terminal B		
	Auto	Bus	Shuttle	Auto	Bus	Shuttle
2031	133742773	8686062	29532611	501608770	35337004	247359027
2032	184847164	12005089	40817304	514594158	36251790	253762530
2033	238106662	15464082	52577880	527528378	37162971	260140799
...						
2044	293521266	19063041	64814339	527528378	37162971	260140799

Source: 2022 Shenoy Analytics, Landrum & Brown

Travel time savings for autos, buses, and shuttles were calculated by applying the blended rate by each mode to the reduction and addition in travel time for the Build scenario compared to the No Build under each terminal. An overview of the travel time reduction savings, resulting from the implementation of the Project, is shown in Table 21.

Table 21: Travel Time Savings (2020\$)

Year	Total Time Savings (2020\$)	Total		Terminal A		Terminal B
		Discounted Time Savings (7%)	Annual Time Savings (2020\$)	Discounted Time Savings (7%)	Annual Time Savings (2020\$)	Discounted Time Savings (7%)
2025	\$2,798,005	\$1,994,939	-\$890,004	-\$634,561	\$3,688,009	\$2,629,499
2026	\$3,180,206	\$2,119,106	-\$623,799	-\$415,663	\$3,804,005	\$2,534,769
2027	\$3,576,990	\$2,227,569	-\$342,565	-\$213,332	\$3,919,554	\$2,440,902
2028	\$3,988,355	\$2,321,259	-\$46,302	-\$26,948	\$4,034,658	\$2,348,207
2029	\$4,414,303	\$2,401,088	\$264,989	\$144,136	\$4,149,314	\$2,256,952
2030	\$4,854,833	\$2,467,951	\$591,309	\$300,591	\$4,263,524	\$2,167,359
2031	\$5,309,945	\$2,522,716	\$932,657	\$443,099	\$4,377,288	\$2,079,618
2032	\$5,779,639	\$2,566,229	\$1,289,034	\$572,347	\$4,490,604	\$1,993,882
2033	\$6,263,915	\$2,599,302	\$1,660,440	\$689,024	\$4,603,475	\$1,910,278
2034	\$6,650,349	\$2,579,120	\$2,046,875	\$793,813	\$4,603,475	\$1,785,307
...						
2044	\$6,650,349	\$1,311,094	\$2,046,875	\$403,534	\$4,603,475	\$907,560

Source: STV INC.

Travel Time Savings from IP Speed Increase

The IP speed limit is currently set to allow for vehicle merges to the left-hand flyover exit ramps, a movement which requires a lower-than-average speed limit on the parkway. In the Build scenario, the safer right-hand exit configuration will allow drivers to drive faster on the IP which will improve efficiency for vehicles accessing the terminals, as the merge from right to left will be eliminated at Terminals A and B.

Airport Competitiveness

Supporting over a quarter million regional jobs and contributing approximately \$37 billion to the economy each year, DFWIA is an important economic driver for the region, state, and nation. For DFWIA to maintain and increase its economic competitiveness, the airport needs to ensure that its transportation system allows passengers and other users to access its terminals in a safe and timely manner. The implementation of the Project will improve these safe, efficient, and reliable trips to Terminals A and B.

State of Good Repair

The existing flyovers were constructed in 1974 and have served DFWIA for nearly 50 years. As the only efficient way for passengers to access terminals A and B, the flyovers are a critical piece of infrastructure for the airport's operations. The flyovers are reaching the end of their useful life and recent condition reports are indicative of their rapidly deteriorating state of repair.

Table 22: State of Good Repair Summary

Selection Criteria	Ranking	Language from the NOFO	Project Benefit	Quantitative
State of new repair	HIGH	Modernize core infrastructure assets	Address current or projected O&M cost avoided on the bridges	Y
			Residual value	Y
			Pavement cost avoided due to ice roads detour	

O&M Costs Avoided

The implementation of the Project will realize significant O&M cost savings for DFWIA while also bringing crucial landside infrastructure to a state of good repair. Under the No Build scenario, the existing infrastructure is in a poor structural condition and will require significant maintenance. The current recommendation as per Texas DOT structure condition reports is that ongoing maintenance of the existing left lane flyovers to the terminals from IP is not a viable medium- or long-term option. Under the No Build scenario, costs associated with the ongoing O&M of the infrastructure to ensure a suitable state of good repair include costs associated with inspections and maintenance of the infrastructure during the 20-year period of analysis. Operations and maintenance costs avoided are estimated at \$13.5 million in 2020 dollars over the first 20 years of operations. The annual cost of O&M of all components of the assessment is summarized in Table 23.

Table 23: Annual Operations and Maintenance Costs – No Build Scenario (2025-2044) (2020\$)

Year	Total O&M Costs	Per Terminal O&M Costs	Discounted O&M Costs (7%)
2025	\$2,906,326	\$1,453,163	\$2,072,170
2026	\$405,534	\$202,767	\$270,224
2027	\$405,534	\$202,767	\$252,546
2028	\$405,534	\$202,767	\$236,024
2029	\$405,534	\$202,767	\$220,584
2030	\$1,351,780	\$675,890	\$687,176
2031	\$405,534	\$202,767	\$192,666
2032	\$405,534	\$202,767	\$180,062
2033	\$405,534	\$202,767	\$168,282
2034	\$405,534	\$202,767	\$157,273
2035	\$1,351,780	\$675,890	\$489,947
2036	\$405,534	\$202,767	\$137,368
2037	\$405,534	\$202,767	\$128,382
2038	\$405,534	\$202,767	\$119,983
2039	\$405,534	\$202,767	\$112,133
2040	\$1,351,780	\$675,890	\$349,326
2041	\$405,534	\$202,767	\$97,942

Year	Total O&M Costs	Per Terminal O&M Costs	Discounted O&M Costs (7%)
2042	\$405,534	\$202,767	\$91,534
2043	\$405,534	\$202,767	\$85,546
2044	\$405,534	\$202,767	\$79,950

Source: STV INC.

Residual Value

The roadways, utilities, and bridges of the Project will have a useful life beyond 20 years; therefore, a residual value at the end of the assessment period. Specifically, direct construction costs on the new infrastructure components of the Project have a capital cost of \$37.8 million. With a residual value of \$16.4 million at the end of 2044, the discounted value of this amount at 7 percent is \$3.2 million.

An overview of the residual value of the Project by terminal at the conclusion of the assessment period is shown in Table 24

Table 24: Residual Value of New Infrastructure

Terminal	Component	Select Construction Components and Utility Relocation (2020\$)	Useful Life (Years)	Percent Remaining	Residual Value (2020\$)	Residual Value Discounted (7%)
Terminal A	Roadway	\$2,097,076	60	66.7%	\$1,398,051	\$275,621
	Utility	\$726,184	60	66.7%	\$484,122	\$95,443
	Bridge	\$7,916,490	100	80.0%	\$6,333,192	\$1,248,567
Terminal B	Roadway	\$2,097,076	60	66.7%	\$1,398,051	\$275,621
	Utility	\$726,184	60	66.7%	\$484,122	\$95,443
	Bridge	\$7,916,490	100	80.0%	\$6,333,192	\$1,248,567
Total		\$21,479,500			\$16,430,731	\$3,239,263

Source: STV INC.

The new infrastructure built under the Project will have a lifespan longer than the assessment period—40 to 80 years longer, depending on the component. This infrastructure is expected to retain 66.7 percent of their value for roadways and utilities and 80 percent of their value for bridges at the end of 2044, which translates in a residual value benefit for the Build scenario of \$3.2 million discounted to 2020.

Pavement Cost Avoided Due to Ice Roads Detour

Buses and shuttlers under the No Build scenario need to use the ice roads at the airport to access terminals A and B since the current flyover bridge designs cannot accommodate big vehicles. The ice roads were not designed for vehicles such as buses and shuttles; their primary role was to serve the airport maintenance fleet. Under the Build scenario, the buses and shuttles will access the terminals by the new right hand bridges. Therefore, DFWIA will benefit from facing annual pavement cost on the ice roads under the Build scenario comparing with the No Build scenario.

Partnership and Collaboration

DFWIA understand the importance of partnership, collaboration, workforce development and providing opportunity to DBEs. The Project is defined taken into consideration alliance principles.

Table 25: Partnership and Collaboration Summary

Selection Criteria	Ranking	Language from the NOFO	Project Benefit	Quantitative
Partnership and collaboration	MEDIUM-HIGH	Collaborate with other public and private entities	North Central Texas Council of Governments (NCTGOG) Texas DOT (TxDOT) Regional Transportation Council (RTC) American Airlines (AA)	
		Incorporate private sector entities, particularly DBEs, in transportation planning, design or building	High DBE percentage	

Private and Public Entities Support

As a critical element for one of the largest economic drivers in the region and state, the Project has received support from the DFW Board, airlines and public agencies, including the North Central Texas Council of Governments (NCTCOG), Regional Transportation Council (i.e., the regional transportation planning agency), and Texas DOT (TxDOT).

High DBE Percentage

DFWIA's Title VI program ensures non-discrimination in all solicitations and contracts. Each year since 2012, DFWIA has awarded more than 30 percent of its business contracts to diverse firms. During FY2021, \$227 million or 37 percent went to D/M/WBEs and over 33 percent were paid to DBEs alone under the federal program. The DBE goals advertised under the Project design-build contract are 28 percent for design and 33 percent for construction

Innovation and Technology

DFWIA has a history of successfully evaluating and deploying innovative and technology solutions.

Table 26: Innovation and Technology Summary

Selection Criteria	Ranking	Language from the NOFO	Project Benefit	Quantitative
Innovation and technology	HIGH	Deploy innovative technologies	Maintenance sensors	
			Real-time incident management	
		Use innovative practices	Autonomous vehicle adaptation design	
		Incorporate innovating funding and financing	Design Build Approach	

Maintenance Sensors

DFWIA will install temperature sensors on the proposed bridges to detect icing and automatically send messages to maintenance crews to remove icing in specific locations.

Real-Time Incident Management System

Leveraging the digital twin developed for DFWIA by the EPA's ATHENA project directed by National Renewable Energy Laboratory and Oak Ridge National Laboratory, the Project includes installing sensors on the proposed bridges to provide real-time incident management.

Autonomous Vehicle Adaptation Design

The Project includes provisions in the flyover designs for autonomous vehicles. The Project is built for the future to accommodate upcoming technologies.

Design-Build Delivery Method

DFW evaluated multiple delivery options for this project, including traditional design-bid-build, design-build (DB), construction manager at-risk (CMAR) and construction manager/ general contractor (CM/GC). After evaluating each of these options in detail, DFWIA selected the Design-Build method as the preferred method.

4. Cost Analysis

The costs assessed in this analysis comprise capital costs and those associated with the O&M of the Project. Capital costs are those associated with the design and construction of the Project right turn exits to access each terminal at the DFWIA as well as the demolition of the existing left turn exits and flyover bridges.

Capital Cost

The capital costs include the decommissioning of the existing bridges and the design, utility relocation, and construction of the new right turn exits to connect the IP with Terminal A and B. This total initial capital outlay is estimated at approximately \$50.9 million in 2022 dollars. Converted to 2020 dollars using the GDP deflator, resulted in \$37.8 million and is estimated by terminal as shown in Table 27.

Table 27: Capital Cost for Project by Terminal (2020\$)

	Professional Services Costs	Utility Costs	Construction Costs	Contingency	Total Costs	Total Costs Discounted (7%)
Terminal A	\$5,026,291	\$726,184	\$15,487,487	\$2,124,013	\$23,363,974	\$18,877,076
Terminal B	\$5,026,291	\$726,184	\$15,487,487	\$2,124,013	\$23,363,974	\$18,877,076
Total	\$10,052,581	\$1,452,367	\$30,974,973	\$4,248,026	\$46,727,948	\$37,754,151

Note: Contingency is approximately 9 percent of total project cost.

The capital cost is expected to be spent according to the project schedule described in Figure 3. Professional services will cover expenses for the entire duration of the project, and utility relocation and direct construction spending will occur between 2022 and 2024 for the Build scenario. Utility relocations spending is assumed to be scheduled earlier in the construction phase, but direct construction activities are assumed to be spent at a higher rate in the two final years of construction as the terminals will have simultaneous work and the decommissioning of the existing facility will happen to minimize public disruption.

The total cost associated with the construction of the Project is shown in 2020 dollars in Table 28, which was then discounted using a 7 percent discount rate.

Table 28: Project Capital Costs (2020\$)

Year	Total Capital Costs	Capital Cost Discounted (7%)
2021	\$2,876,237	\$2,688,072
2022	\$5,258,927	\$4,593,351
2023	\$19,296,392	\$15,751,604
2024	\$19,296,392	\$14,721,125
Total Costs	\$46,727,948	\$37,754,151

Source: STV INC.

Operating and Maintenance Cost

As previously discussed in the State of Good Repair section, once the Project is complete, operation and maintenance (O&M) cost will be minimal. The new flyover bridges are prestressed concrete and are not fracture critical. The deck replacement for new TxDOT bridges are not required for 30-40 years.

5. Benefit-Cost Analysis Results

Over the 20-year assessment period, the Project generates \$37.8 million in benefits at a 7 percent discount rate and has a **Benefit-Cost Ratio (BCR) of 2.0:1, meaning, that for every \$1 the project costs, the region benefits \$2.** Additionally, the Project has a **Net Present Value (NPV) of \$37.7 million** discounted at 7 percent in 2020 dollars.

The largest components of the benefits generated by the Project are concentrated in travel time savings and state of good repair benefits. The travel time savings are driven by an overall decrease in VHT reflective of greater efficiency in travel. State of good repair benefits are dominated by O&M costs avoided for the costly maintenance of the existing infrastructure and supplemented by the residual value of the new infrastructure in the Build scenario. A significant decrease in the occurrence of accidents is also observed across terminals A and B, generating a substantial safety benefit, which is aligned to the RAISE program criteria. Table 29 compares the Project costs and benefits in detailed.

Table 29: Summary of Benefits Delivered by Long Term Outcomes (2025-2044)

Values stated in 2020\$ Million, Discounted at 7%	Terminals A and B	Terminal A	Terminal B
Costs			
Capital Costs	\$37.8	\$18.9	\$18.9
Benefits			
Safety Benefits			
Reduced Roadway Fatalities and Crashes	\$8.2	\$2.7	\$5.5
Accidents Avoided from Potential Detours	Qualitative		
Dynamic Signage	Qualitative		
Sub-Total Safety Benefits	\$8.2	\$2.7	\$5.5
Environmental Sustainability			
Idling Emissions Avoided*	\$0.3	\$0.1	\$0.2
Carbon Removal Concrete	Qualitative		
Sub-Total Environmental Sustainability	\$0.3	\$0.1	\$0.2
Quality of Life			
Better Accessibility for All Travelers	Qualitative		
Better Accessibility for Lower Income Travelers and Airport Users/Employees	Qualitative		
Secure Timely Emergency Response	Qualitative		
Mobility and Community Connectivity			
Reliability Improvements	\$8.4	\$8.4	Qualitative
Congestion Reduction	Qualitative		
Sub-Total Mobility and Community Connectivity	\$8.4	\$8.4	Qualitative
Economic Competitiveness and Opportunity			
Travel Time Savings (TTS) on the Flyovers	\$41.9	\$7.2	\$34.7
TTS from IP Speed Increase	Qualitative		
Airport Competitiveness	Qualitative		
Sub-Total Economic Competitiveness	\$41.9	\$7.2	\$34.7
State of Good Repair			
O&M Costs Avoided	\$13.5	\$6.7	\$6.7
Residual Value	\$3.2	\$1.6	\$1.6
Pavement Cost Avoided Due to Ice Roads Detour	Qualitative		
Sub-Total State of Good Repair	\$16.7	\$8.3	\$8.3
Partnership and Collaboration			
NCTCOG and DFWIA Partnership	Qualitative		
Partnership with Private Sector (e.g., AA)	Qualitative		
High DBE Percentage	Qualitative		
Innovation and Technology			
Maintenance Sensors	Qualitative		
Real-Time Incident Management System	Qualitative		
O&M Costs	~\$0.0	~\$0.0	~\$0.0
Total Benefits	\$75.5	\$26.8	\$48.7
Benefit-Cost Ratio	2.0	1.4	2.6
Net Present Value	\$37.7	\$7.9	\$29.8

Source: STV INC. Inc. Note: *CO2 is discounted at 3%.

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April 11, 2022

Office of the Secretary of Transportation, DOT
1200 New Jersey Ave, SE
Washington, DC 20590
United States

Subject: Funding Commitment Letter

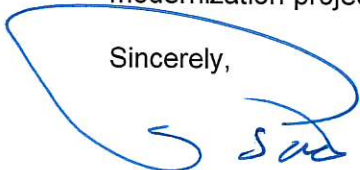
On behalf of Dallas Fort Worth International Airport (DFW), I am pleased to provide this letter expressing our organization's financial commitment to the International Parkway Advanced Mobility Program - Infrastructure Modernization. As described in our 2022 RAISE grant application, we are confident this project will help ensure more efficient movement of travelers, and commercial goods, while mitigating systemic safety issues.

Through close collaboration with our signatory airline partners, we have obtained approval to use Joint Capital Account funds to meet the local funding component of this project. In addition, our Board supports this project and approved use of the innovative design-build delivery method on September 2, 2021.

I can assure you DFW is committed and will provide the necessary resources to facilitate this project. We are steadfast in investing in capital projects that keep our airport and our region ahead of growing demand for travel, while improving safety and capacity. DFW Airport plays a key role in transportation for the North Central Texas region, as such the International Parkway Advanced Mobility Program - Infrastructure Modernization is vital to the transportation system.

Thank you for your consideration of our grant application for this important infrastructure modernization project.

Sincerely,



Christopher Poinette
Executive Vice President
Finance & ITS

SUBCOMMITTEES

AVIATION
HIGHWAYS AND TRANSIT
ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS, AND
EMERGENCY MANAGEMENT

COMMITTEE ON SMALL BUSINESS

SUBCOMMITTEES

OVERSIGHT, INVESTIGATIONS, AND REGULATIONS,
RANKING MEMBER
ECONOMIC GROWTH, TAX, AND CAPITAL ACCESS

SELECT COMMITTEE ON THE
MODERNIZATION OF CONGRESS

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House of Representatives
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The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

April 13, 2022

Dear Secretary Buttigieg,

As you know from your recent visit to Dallas Fort Worth International Airport (DFW) serves as the major economic generator of North Texas. As the airport approaches its semicentennial anniversary, we are encouraged by the gateway to possibilities investing in DFW can bring as it continues to provide world-class service to our constituents.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the department considers awarding grants this year.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere. DFW has been recognized internationally for its efforts to reduce the environmental impact and forwarding looking efforts reducing carbon footprint and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging steam pipe heating distribution system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, natural gas consumption, and lead the way for DFW to achieve Net Zero Carbon by 2030.

International Parkway Bridges and High Mast Lighting Replacement

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW terminals. IP's six lane highway also provides regional connectivity to the state highway system and is part of both the National Highway Network and the Texas Highway Freight Network. Core pieces of IP's infrastructure have reached or are nearing the end of their design life and need to be replaced. To address this need for asset renewal and replacement, existing left-hand exit flyover bridges which provide access to the terminals from IP will be replaced with more intuitive and

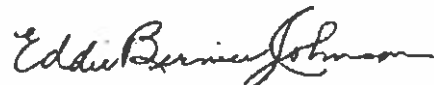
efficient right-hand exits. The North Airport Drive Bridge, a key facet of east-west connectivity, will also be replaced and have a more efficient design. IP's existing high mast light system will be replaced with new and more energy efficient infrastructure.

We believe these two projects align with the intent of the Bipartisan Infrastructure Law (Infrastructure Investment and Jobs Act) and encourage their thoughtful review during the application process.

Sincerely,



Beth Van Duyne
Member of Congress



Eddie Bernice Johnson
Member of Congress



Collin Allred
Member of Congress

April 13, 2022

The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

The Dallas-Fort Worth Metroplex is the fourth largest metropolitan area,¹ and among the fastest growing regions, in the country. Dallas Fort Worth International Airport (DFW) is now the second busiest airport in the world,² and it serves as the major economic engine of North Texas. As the region and the airport continue to grow, it will obviously be necessary to continue to invest in DFW's infrastructure.

As the department prepares to award grants this year pursuant to the recently enacted Bipartisan Infrastructure Law (BIL), I want to highlight two projects for you at DFW that advance your environmental goals and promote aviation safety.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere. DFW has been recognized internationally for its efforts to reduce the environmental impact and forward-looking efforts reducing carbon footprint and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, natural gas consumption, and lead the way for DFW to achieve Net Zero Carbon by 2030.

International Parkway Bridges Replacement

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW terminals. IP's six lane highway also provides regional connectivity to the state highway system and is part of both the National Highway Network and the Texas Highway Freight Network. Core pieces of IP's infrastructure have reached or are nearing the end of their design life and need to be replaced. To address this need for asset renewal and replacement, existing left-hand exit flyover bridges which provide access to the terminals from IP will be replaced with more intuitive and efficient right-hand exits. The standardization of traffic patterns along IP will further promote the integration of connected and autonomous vehicles (CAV).

¹ https://www.census.gov/data/tables/time-series/demo/popest/2020s-total-metro-and-micro-statistical-areas.html#par_textimage_1139876276 (last visited April 12, 2022).

² <https://aci.aero/2022/04/11/the-top-10-busiest-airports-in-the-world-revealed/> (last visited April 12, 2022).

These two projects seem to align closely with the intent of the BIL, and with your and the Department of Transportation's infrastructure priorities; please afford them thoughtful review during the application process.

Sincerely,

A handwritten signature in blue ink, appearing to read "N. J. Gatten", with a long horizontal flourish extending to the right.

Nathan J. Gatten
Senior Vice President, Corporate Affairs
Chief Government Affairs Officer

cc: Hon. Billy Nolen, Acting Administrator, Federal Aviation Administration



NATHAN JOHNSON
STATE SENATOR • DISTRICT 16

12 April 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation (USDOT)
1200 New Jersey Avenue, SE
Washington, DC 20590

Secretary Buttigieg:

I write in support of Dallas Fort Worth International Airport's (DFW) grant applications for two projects that will benefit the environment and improve mobility: a Zero Carbon Electric Utility Plant, and the International Parkway Bridges Replacement.

As one of the world's busiest airports, DFW is an integral component of both the regional and national economy and transportation network. The airport is approaching its 50th anniversary. Its aging infrastructure must be updated in order to maintain safety and its vital leadership role in air transportation.

In particular, DFW is the first and largest Carbon Neutral Airport in the western hemisphere. In order to further reduce its environmental impact, DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption, leading the way for DFW to achieve Net-Zero Carbon by 2030.

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW terminals. Its six lane highway also provides regional connectivity to the State Highway System and is part of the National Highway Network. Core pieces of IP's infrastructure have reached or are nearing the end of their design life and need to be replaced. As a result, existing left-hand exit flyover bridges, which provide access to the terminals from IP, will be replaced with more intuitive and efficient right-hand exits.

For these reasons, I strongly support DFW's grant applications for the Zero Carbon Electric Utility Plant and International Parkway improvements. Thank you for your time and consideration. If you have any questions, please contact me at 512-463-0116.

A handwritten signature in blue ink, reading "Nathan Johnson".

Nathan Johnson
Texas State Senator, District 16



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The Senate of the State of Texas

Jane Nelson
Senate District 12

Committees:

FINANCE, CHAIR
TEXAS CYBERSECURITY COUNCIL
STATE AFFAIRS
LEGISLATIVE BUDGET BOARD
PORTS, SELECT COMMITTEE

April 6, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year:

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere. DFW has been recognized internationally for its efforts to reduce its environmental impact, carbon footprint and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption and lead the way for DFW to achieve Net Zero Carbon by 2030.

International Parkway Bridges Replacement

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW terminals. IP's six lane highway also provides regional connectivity to the State Highway System and is part of both the National Highway Network and the Texas Highway Freight Network. Core pieces of IP's infrastructure have reached or are nearing the end of their design life and need to be replaced. To address this need for asset renewal and replacement, existing left-hand exit flyover bridges, which provide access to the terminals from IP, will be replaced with more intuitive and efficient right-hand exits. The standardization of traffic patterns along IP will further promote the integration of connected and autonomous vehicles (CAV).

I believe these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Very truly yours,

A handwritten signature in cursive script that reads "Jane Nelson".

Senator Jane Nelson



GIOVANNI CAPRIGLIONE
TEXAS HOUSE OF REPRESENTATIVES
DISTRICT 98
April 6, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere. DFW has been recognized internationally for its efforts to reduce its environmental impact, carbon footprint and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption and lead the way for DFW to achieve Net Zero Carbon by 2030.

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I believe these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

A handwritten signature in dark ink, appearing to read "G. Capriglione".

Giovanni Capriglione
Texas State Representative

GIOVANNI.CAPRIGLIONE@HOUSE.TEXAS.GOV

CAPITOL OFFICE: P.O. Box 2910 • AUSTIN, TEXAS 78768-2910 • (512) 463-0690
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TEXAS HOUSE OF REPRESENTATIVES JULIE JOHNSON

DISTRICT 115

April 11, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers. There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere. DFW has been recognized internationally for its efforts to reduce its environmental impact, carbon footprint and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption and lead the way for DFW to achieve Net Zero Carbon by 2030.

International Parkway Bridges Replacement

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW terminals. IP's six lane highway also provides regional connectivity to the State Highway System and is part of both the National Highway Network and the Texas Highway Freight Network. Core pieces of IP's infrastructure have reached or are nearing the end of their design life and need to be replaced. To address this need for asset renewal and replacement, existing left-hand exit flyover bridges, which provide access to the terminals from IP, will be replaced with more intuitive and efficient right-hand exits. The standardization of traffic patterns along IP will further promote the integration of connected and autonomous vehicles (CAV).

I believe these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

A handwritten signature in black ink, appearing to read "Julie Johnson", with a long horizontal flourish extending to the right.

*Representative Julie Johnson
Texas House District 115*

ERIC JOHNSON
Mayor of Dallas



April 11, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of our most important assets. And with its 50th anniversary approaching, DFW shows no signs of slowing down. DFW continues to fuel economic growth in the fourth-largest metropolitan area in the United States while also providing world-class service to airport customers.

As we build upon the successes that we have experienced at DFW, we want to draw your attention to two new projects for grant consideration from the United States Department of Transportation.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere and has been recognized internationally for its efforts to reduce its environmental impact, carbon footprint, and energy usage. DFW has now developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption and allow DFW to achieve Net Zero Carbon status by 2030.

International Parkway Bridges Replacement

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW terminals. IP's six-lane highway also provides regional connectivity to the State Highway System and is part of both the National Highway Network and the Texas Highway Freight Network. Core pieces of IP's infrastructure have reached or are nearing the end of their design life and need to be replaced. To address this need for asset renewal and replacement, existing left-hand exit flyover bridges, which provide access to the terminals from IP, will be replaced with more intuitive and efficient right-hand exits. The standardization of traffic patterns along IP will further promote the integration of connected and autonomous vehicles.

The City of Dallas believes these two projects align with the intent of the Biden administration's infrastructure priorities. We encourage a thoughtful review of these projects during the application process, and we thank you for your continued partnership and for your time and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Johnson", with a long horizontal stroke extending to the right.

Eric Johnson
Mayor



Linda Martin
MAYOR

April 6, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere. DFW has been recognized internationally for its efforts to reduce its environmental impact, carbon footprint and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption and lead the way for DFW to achieve Net Zero Carbon by 2030.

International Parkway Bridges Replacement

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW terminals. IP's six lane highway also provides regional connectivity to the State Highway System and is part of both the National Highway Network and the Texas Highway Freight Network. Core pieces of IP's infrastructure have reached or are nearing the end of their design life and need to be replaced. To address this need for asset renewal and replacement, existing left-hand exit flyover bridges, which provide access to the terminals from IP, will be replaced with more intuitive and efficient right-hand exits. The standardization of traffic patterns along IP will further promote the integration of connected and autonomous vehicles (CAV).

City of Euless believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

Linda Martin
Mayor



April 11, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Dear Secretary Buttigieg,

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the myriad of possibilities through investment in DFW as the airport continues to provide world-class service to its customers.

There are two projects to which we want to draw particular attention for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere, and has been recognized internationally for its efforts to reduce its environmental impact, carbon footprint, and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption, and lead the way for DFW to achieve Net Zero Carbon by 2030.

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The City of Fort Worth believes these two projects align with the intent of the Administration's infrastructure priorities and encourages their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

Mattie Parker
Mayor

MATTIE PARKER, MAYOR

CITY OF FORT WORTH ★ 200 TEXAS STREET ★ FORT WORTH, TEXAS 76102
(817) 392-6118 ★ FAX (817) 392-2409



April 12, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable, as the airport continues to provide world-class service to its customers.

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The City of Grapevine believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

William D. Tate
Mayor





April 11, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers.

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The City of Irving believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

A handwritten signature in blue ink, appearing to read "Richard H. Stopfer".

Richard H. Stopfer
Mayor
City of Irving

CC: Chris Hillman, City Manager, City of Irving
Orlando Sanchez, Assistant City Manager, City of Irving
Dan Vedral, P.E., Traffic and Transportation Director, City of Irving



DALLAS COUNTY JUDGE CLAY LEWIS JENKINS

April 12, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

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traffic patterns along IP will further promote the integration of connected and autonomous vehicles (CAV).

Dallas County believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

A handwritten signature in blue ink that reads "Clay Lewis Jenkins". The signature is written in a cursive, flowing style.

Clay Lewis Jenkins
Dallas County Judge



B. GLEN WHITLEY
COUNTY JUDGE
of
TARRANT COUNTY

April 11, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

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Tarrant County believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

A handwritten signature in blue ink, reading "B. Glen Whitley".

B. Glen Whitley
Tarrant County Judge

April 11, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

Zero Carbon Electric Utility Plant

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International Parkway Bridges Replacement

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The Greater Arlington Chamber of Commerce believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,



Michael Jacobson

President & CEO
mjacobson@arlingtontx.com | 817-543-4280

Greater Arlington Chamber of Commerce
505 E. Border Street, Arlington, TX 76010
Learn more at ArlingtonTX.com



April 8, 2022

The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg,

On behalf of the Dallas Region, the Dallas Regional Chamber (DRC) and its 800 member companies, we write in support of the Dallas/Fort Worth International Airport's (DFW) competitive grant application for their International Parkway Bridges Replacement project. As you know from your recent visit, DFW serves as the major economic generator of North Texas. As the airport approaches its semicentennial anniversary, we are encouraged by the gateway of possibilities investing in DFW can bring as it continues to provide world-class service to our constituents.

We want to draw particular attention to their commitment to aviation safety as the department considers awarding grants this year.

International Parkway Bridges Replacement

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW terminals. IP's six lane highway also provides regional connectivity to the state highway system and is part of both the National Highway Network and the Texas Highway Freight Network. Core pieces of IP's infrastructure have reached or are nearing the end of their design life and need to be replaced. To address this need for asset renewal and replacement, existing left-hand exit flyover bridges which provide access to the terminals from IP will be replaced with more intuitive and efficient right-hand exits. The standardization of traffic patterns along IP will further promote the integration of connected and autonomous vehicles (CAV).

We believe this project aligns with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. If you have any questions, please feel free to contact Matt Garcia, SVP of Public Policy at mgarcia@dallaschamber.org or 214-746-6721.

Sincerely,

A handwritten signature in black ink, appearing to read "MGarcia", with a stylized flourish at the end.

Matt Garcia
Senior Vice President, Public Policy
Dallas Regional Chamber

cc: Bradley Mims, Acting Administrator, Federal Aviation Administration

The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

April 4, 2022

Dear Secretary Buttigieg,

As you know from your recent visit, Dallas Fort Worth International Airport (DFW) serves as the major economic generator of North Texas. As the airport approaches its semicentennial anniversary, we are encouraged by the gateway of possibilities investing in DFW can bring as it continues to provide world-class service to our constituents.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the department considers awarding grants this year.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere. DFW has been recognized internationally for its efforts to reduce the environmental impact and forward-looking efforts reducing carbon footprint and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, natural gas consumption, and lead the way for DFW to achieve Net Zero Carbon by 2030.

International Parkway Bridges Replacement

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We believe these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process.

Sincerely,



Brandom Gengelbach

Fort Worth Chamber CEO & President

cc: Bradley Mims, Acting Administrator, Federal Aviation Administration



CHAMBER OF COMMERCE

April 5, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW) serves as one of the region's major economic generators. As the airport approaches its 50th anniversary, we are encouraged by the gateway to possibilities investing in DFW will enable as the airport continues to provide world-class service to its customers.

There are two projects we want to draw particular attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

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International Parkway Bridges Replacement

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The 1,100 businesses and over 3,000 members who make up the Grapevine Chamber of Commerce believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

RaDonna Hessel, CEO

THE GRAPEVINE CHAMBER OF COMMERCE

200 Vine Street Grapevine, Texas 76051 Phone 817-481-1522 Fax 817-424-5208

www.grapevinechamber.org info@grapevinechamber.org



April 11, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

Hurst Euleless Bedford, Texas is located right on the west side of Dallas Fort Worth International Airport which encompasses a portion of the City of Euleless.

DFW International Airport is the economic engine of the Dallas Fort Worth area, and certainly of HEB. As the airport approaches its 50th anniversary, we are excited that there are funds available that could be invested in DFW that will enable the airport to continue to provide world-class service to its customers and our region.

There are two projects we want to draw your attention to for their commitment to environmental stewardship and aviation safety as the United States Department of Transportation considers awarding grants this year.

Zero Carbon Electric Utility Plant

DFW is the first and largest Carbon Neutral Airport in the western hemisphere. DFW has been recognized internationally for its efforts to reduce its environmental impact, carbon footprint and energy usage. DFW has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption and lead the way for DFW to achieve Net Zero Carbon by 2030.

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The Hurst Euleless Bedford Chamber is a big supporter of DFW International Airport and believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Respectfully,

Mary Martin Frazier, IOM, CCE
President & CEO





IRVING - LAS COLINAS
CHAMBER OF COMMERCE

April 12, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United State Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

As you are aware from your recent visit to North Texas, Dallas-Fort Worth International Airport (DFW Airport) serves as one of the region's major economic generators. For the airport to continue to provide world-class service to its customers, investments must be made. **Two projects highlighted below, are tied to environmental stewardship and aviation safety that we respectfully request the United States Department of Transportation considers when selecting RAISE grants, this year.**

Zero Carbon Electric Utility Plant

DFW Airport is the first and largest Carbon Neutral Airport in the western hemisphere and has been recognized for its efforts to reduce its environmental impact, carbon footprint and energy usage. DFW Airport has developed an innovative Zero Carbon Electric Utility Plant to replace its aging natural gas heating system. The transition to zero-emission electricity for heating will significantly reduce emissions, water use, and natural gas consumption and lead the way for DFW Airport to achieve **Net Zero Carbon by 2030**.

International Parkway Bridges Replacement

International Parkway (IP) is the backbone of DFW's landside transportation network, providing access to and from all DFW Airport terminals and provides regional connectivity to the State and National Highway Network and the Texas Highway Freight Network. Core pieces of IP's infrastructure are nearing the end of their design life and need to be replaced. To address this need, existing left-hand exit flyover bridges, which provide access to the terminals from IP, will be replaced with more intuitive and efficient right-hand exits. The standardization of traffic patterns along IP will further promote the integration of connected and autonomous vehicles (CAV).

The Greater Irving-Las Colinas Chamber of Commerce believes these two projects align with the intent of the Administration's infrastructure priorities and encourage their thoughtful review during the application process. Thank you for your time and consideration of applications related to these projects.

Sincerely,

Beth A. Bowman, IOM, CCE
President & CEO
Greater Irving-Las Colinas Chamber of Commerce
Irving Economic Development Partnership



The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

April 6, 2022

Dear Secretary Buttigieg,

Dallas Fort Worth International Airport (DFW) serves as the economic catalyst for the North Texas Region. The North Texas Commission (NTC) was established over 50 years ago to market the Metroplex and support the creation of DFW Airport. Today, the NTC manages the unified advocacy effort of one of the fastest-growing regions in the U.S. The NTC convenes regional leaders to address challenges to improve the sustainability and inclusivity of our growing economy. The success of DFW Airport and the overall vitality of the North Texas economy are inextricably linked.

We want to draw particular attention and support two projects for their commitment to environmental stewardship and aviation safety as the department considers awarding grants this year.

Zero Carbon Electric Utility Plant

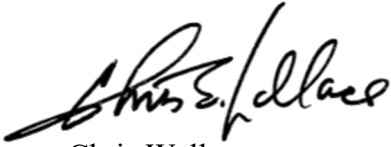
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The NTC believes these projects will enhance the quality of DFW, improve the environmental health of North Texas, and contribute to a sustainable economy. We respectfully request their thoughtful review during the application process.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Wallace". The signature is fluid and cursive, with the first name "Chris" and last name "Wallace" clearly distinguishable.

Chris Wallace
President & CEO

Add to bottom after signatures:

cc: Bradley Mims, Acting Administrator, Federal Aviation Administration



The Transportation Policy Body for the North Central Texas Council of Governments
(Metropolitan Planning Organization for the Dallas-Fort Worth Region)

April 12, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

On behalf of the Regional Transportation Council (RTC), which serves as the Metropolitan Planning Organization (MPO) for the Dallas-Fort Worth (DFW) area, I am pleased to support the United States Department of Transportation 2022 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Discretionary Grant application submitted by the North Central Texas Council of Governments (NCTCOG) and Dallas Fort Worth International Airport for the **International Parkway Bridges Replacement**.

As you know from your recent visit to North Texas, Dallas Fort Worth International Airport (DFW Airport) serves as one of the region's major economic generators. International Parkway is the backbone of DFW Airport's landside transportation network, providing access to and from all airport terminals. The six-lane highway also provides regional connectivity to the State Highway System and is part of both the National Highway Network and the Texas Highway Freight Network. Core pieces of International Parkway's infrastructure have reached or are nearing the end of their design life and need to be replaced. To address this need for asset renewal and replacement, existing left-hand exit flyover bridges, which provide terminal access, will be replaced with more intuitive and efficient right-hand exits. The standardization of traffic patterns along International Parkway will further promote the integration of connected and autonomous vehicles.

The project is consistent with the plans and policies of Mobility 2045: The Metropolitan Transportation Plan for North Central Texas. All federally funded surface transportation projects must also be included in the Transportation Improvement Program. If the project is successful in receiving funds, the RTC will support its inclusion and modification, as needed, in the 2023-2026 Transportation Improvement Program for North Central Texas.

Again, the RTC fully supports the 2022 RAISE application submitted by NCTCOG and DFW Airport for the International Parkway Bridges Replacement. Thank you for your time and consideration of this project. If you have any questions, feel free to contact me at (214) 653-6668 or Michael Morris, P.E., Director of Transportation for NCTCOG at (817) 695-9241 or mmorris@nctcog.org.

Sincerely,

A handwritten signature in black ink that reads "Dr. Theresa M. Daniel". The signature is written in a cursive, flowing style.

Dr. Theresa M. Daniel, Chair
Regional Transportation Council
County Commissioner, Dallas County

KR:kw

cc: Michael Morris, P.E., Director of Transportation, NCTCOG

DESIGN, CODE & CONSTRUCTION Project Controls Group



IP Flyover Bridge Replace-70% CIP BUDGET ESTIMATE SUMMARY

				Owner's Soft Cost as a % of Construction Cost										
	Construction			Design/Study /Planning	Staff /Consultant	CM /Inspection	Testing /Surveying	Commissioning	Miscellaneous	Total SoftCost	CIP Budget			
Description	Qty	Unit	Unit Cost	Total	9.00%	5.00%	4.00%	2.00%	1.00%	10.00%	31.00%	Subtotal	Contingency	Total
IP Rt. 70% Design	1.00	LS		82,279,050	7,405,114	4,113,952	3,291,162	1,645,581	822,790	8,227,905	25,506,505	107,785,555	10,778,555	118,564,110
Terminals A & B	1.00	LS		35,334.083	3,180.067	1,766.704	1,413.363	706.682	353.341	3,533.408	10,953.566	46,287.649	4,628.765	50,916.413
Demolition/Removals	1.00	LS		1,506.689	135.602	75.334	60.268	30.134	15.067	150.669	467.074	1,973.763	197.376	2,171.139
Excavation & Fill -compacted	29,906.00	SY	12.44	371.978	33.478	18.599	14.879	7.440	3.720	37.198	115.313	487.291	48.729	536.020
Roadways	29,906.00	SY	145.25	4,343.766	390.939	217.188	173.751	86.875	43.438	434.377	1,346.568	5,690.334	569.033	6,259.368
Retaining Walls	44,447.00	SF	73.87	3,283.445	295.510	164.172	131.338	65.669	32.834	328.345	1,017.868	4,301.313	430.131	4,731.445
Drainage/Utilities	1.00	LS		1,504.176	135.376	75.209	60.167	30.084	15.042	150.418	466.295	1,970.471	197.047	2,167.519
Term A- IP Right Bridge Replace-RA 1	35,985.00	SF	165.03	5,938.776	534.490	296.939	237.551	118.776	59.388	593.878	1,841.020	7,779.796	777.980	8,557.775
Term A- IP Right Bridge Replace- RA 2	11,703.00	SF	159.14	1,862.421	167.618	93.121	74.497	37.248	18.624	186.242	577.350	2,439.771	243.977	2,683.748
Term B- IP Right Bridge Replace- RB 1	23,159.00	SF	161.13	3,731.602	335.844	186.580	149.264	74.632	37.316	373.160	1,156.797	4,888.399	488.840	5,377.239
Term B- IP Right Bridge Replace - RB 2	5,605.00	SF	167.55	939.104	84.519	46.955	37.564	18.782	9.391	93.910	291.122	1,230.226	123.023	1,353.248
Service Rd. Crossunder #3 - RM-1	1,536.00	SF	289.98	445.409	40.087	22.270	17.816	8.908	4.454	44.541	138.077	583.486	58.349	641.834
Utility Tunnel Bridge- RM-3	780.00	SF	252.58	197.014	17.731	9.851	7.881	3.940	1.970	19.701	61.074	258.088	25.809	283.897
Business Ctr Bridge Removal	1.00	LS		49.853	4.487	2.493	1.994	997	499	4.985	15.455	65.308	6.531	71.839
Partial Bridge Removal	1.00	LS		37.390	3.365	1.870	1.496	748	374	3.739	11.591	48.981	4.898	53.879
ITS	1.00	LS		414.481	37.303	20.724	16.579	8.290	4.145	41.448	128.489	542.970	54.297	597.267
Signs	14.00	EA	129,768.20	1,816.755	163.508	90.838	72.670	36.335	18.168	181.675	563.194	2,379.949	237.995	2,617.944
Pavement Markings	37,295.00	LF	2.01	75.120	6.761	3.756	3.005	1.502	751	7.512	23.287	98.407	9.841	108.247
Landscape	1.00	LS		66.104	5.949	3.305	2.644	1.322	661	6.610	20.492	86.596	8.660	95.256
Mob/Demob,Traffic Ctrl, Phasing,Erosion Ctrl	1.00	LS		4,500.000	405.000	225.000	180.000	90.000	45.000	450.000	1,395.000	5,895.000	589.500	6,484.500
Other Direct Costs	1.00	LS		4,250.000	382.500	212.500	170.000	85.000	42.500	425.000	1,317.500	5,567.500	556.750	6,124.250
Direct Cost Development	1.00	LS		2,500.000	225.000	125.000	100.000	50.000	25.000	250.000	775.000	3,275.000	327.500	3,602.500
Escalation	1.00	LS		1,750.000	157.500	87.500	70.000	35.000	17.500	175.000	542.500	2,292.500	229.250	2,521.750
Terminal C	1.00	LS		19,963.501	1,796.715	998.175	798.540	399.270	199.635	1,996.350	6,188.685	26,152.186	2,615.219	28,767.404
Demolition/Removals xx	1.00	LS		826.988	74.429	41.349	33.080	16.540	8.270	82.699	256.366	1,083.354	108.335	1,191.689
Excavation & Fill -compacted	14,499.00	SY	11.09	160.756	14.468	8.038	6.430	3.215	1.608	16.076	49.834	210.590	21.059	231.649
Roadways	14,499.00	SY	124.56	1,806.059	162.545	90.303	72.242	36.121	18.061	180.606	559.878	2,365.937	236.594	2,602.531
Retaining Walls xx	30,000.00	SF	78.93	2,367.951	213.116	118.398	94.718	47.359	23.680	236.795	734.065	3,102.016	310.202	3,412.217
Drainage/Utilities xx	1.00	LS		2,182.953	196.466	109.148	87.318	43.659	21.830	218.295	676.715	2,859.668	285.967	3,145.635
Term C- IP Right Bridge Repl - RC 1-OPT 4 xx	37,921.00	SF	158.52	6,011.101	540.999	300.555	240.444	120.222	60.111	601.110	1,863.441	7,874.542	787.454	8,661.996
ITS xx	1.00	LS		317.025	28.532	15.851	12.681	6.340	3.170	31.702	98.278	415.303	41.530	456.833
Signs xx	4.00	EA	98,893.70	395.575	35.602	19.779	15.823	7.911	3.956	39.557	122.628	518.203	51.820	570.023
Pavement Markings xx	23,327.00	LF	0.60	14.088	1.268	704	564	282	141	1.409	4.367	18.455	1.845	20.300
Landscape	1.00	LS		31.006	2.791	1.550	1.240	620	310	3.101	9.612	40.618	4.062	44.680
Mob/Demob,Traffic Ctrl, Phasing,Erosion Ctrl	1.00	LS		2,340.000	210.600	117.000	93.600	46.800	23.400	234.000	725.400	3,065.400	306.540	3,371.940
Other Direct Costs	1.00	LS		3,510.000	315.900	175.500	140.400	70.200	35.100	351.000	1,088.100	4,598.100	459.810	5,057.910
Direct Cost Development	1.00	LS		1,300.000	117.000	65.000	52.000	26.000	13.000	130.000	403.000	1,703.000	170.300	1,873.300
Escalation	1.00	LS		2,210.000	198.900	110.500	88.400	44.200	22.100	221.000	685.100	2,895.100	289.510	3,184.610
Terminal E / S. Express Parking	1.00	LS		26,981.466	2,428.332	1,349.073	1,079.259	539.629	269.815	2,698.147	8,364.254	35,345.720	3,534.572	38,880.292
Demolition/Removals	1.00	LS		732.456	65.921	36.623	29.298	14.649	7.325	73.246	227.061	959.517	95.952	1,055.469
Excavation & Fill -compacted	28,289.00	SY	11.09	313.651	28.229	15.683	12.546	6.273	3.137	31.365	97.232	410.883	41.088	451.971
Roadways	28,289.00	SY	152.12	4,303.248	387.292	215.162	172.130	86.065	43.032	430.325	1,334.007	5,637.255	563.726	6,200.981
Retaining Walls	31,599.00	SF	70.31	2,221.633	199.947	111.082	88.865	44.433	22.216	222.163	688.706	2,910.339	291.034	3,201.373
Drainage/Utilities	1.00	LS		3,292.004	296.280	164.600	131.680	65.840	32.920	329.200	1,020.521	4,312.525	431.253	4,743.778
Term E-IP Right Bridge Replace-RE 1	34,455.00	SF	165.31	5,695.680	512.611	284.784	227.827	113.914	56.957	569.568	1,765.661	7,461.341	746.134	8,207.475
Term E-IP Right Bridge Replace - RF 1	5,032.00	SF	166.12	835.898	75.231	41.795	33.436	16.718	8.359	83.590	259.128	1,095.026	109.503	1,204.528
Service Rd. Crossunder #5 - RM-2	2,248.00	SF	239.41	538.190	48.437	26.909	21.528	10.764	5.382	53.819	166.839	705.029	70.503	775.531
Ramp Bridge over Tunnel Access	2,247.00	SF	169.44	380.742	34.267	19.037	15.230	7.615	3.807	38.074	118.030	498.772	49.877	548.650
Partial Bridge Removal	1.00	LS		37.390	3.365	1.870	1.496	748	374	3.739	11.591	48.981	4.898	53.879
ITS	1.00	LS		442.721	39.845	22.136	17.709	8.854	4.427	44.272	137.244	579.965	57.997	637.962
Signs	5.00	EA	220,360.77	1,101.804	99.162	55.090	44.072	22.036	11.018	110.180	341.559	1,443.363	144.336	1,587.699
Pavement Markings	29,313.00	LF	1.15	33.699	3.033	1.685	1.348	674	337	3.370	10.447	44.146	4.415	48.560

RDS-067 / C367i / 2318-0000

rfe 005 / Estimator LHky

SuccessEstimator

PROGRAM SUMMARY LVL 2

DESIGN, CODE & CONSTRUCTION
Project Controls Group



IP Flyover Bridge Replace-70%
CIP BUDGET ESTIMATE SUMMARY

				Owner's Soft Cost as a % of Construction Cost										
	Construction			Design/Study /Planning	Staff /Consultant	CM /Inspection	Testing /Surveying	Commissioning	Miscellaneous	Total SoftCost	CIP Budget			
Description	Qty	Unit	Unit Cost	Total	9.00%	5.00%	4.00%	2.00%	1.00%	10.00%	31.00%	Subtotal	Contingency	Total
Landscape	1.00	LS		52,350	4,711	2,617	2,094	1,047	523	5,235	16,228	68,578	6,858	75,436
Mob/Demob,Traffic Ctrl, Phasing,Erosion Ctrl	1.00	LS		3,600,000	324,000	180,000	144,000	72,000	36,000	360,000	1,116,000	4,716,000	471,600	5,187,600
Other Direct Costs	1.00	LS		3,400,000	306,000	170,000	136,000	68,000	34,000	340,000	1,054,000	4,454,000	445,400	4,899,400
Direct Cost Development	1.00	LS		2,000,000	180,000	100,000	80,000	40,000	20,000	200,000	620,000	2,620,000	262,000	2,882,000
Escalation	1.00	LS		1,400,000	126,000	70,000	56,000	28,000	14,000	140,000	434,000	1,834,000	183,400	2,017,400
TOTAL: IP Flyover Bridge Replacement				\$82,279,050	7,405,114	4,113,952	3,291,162	1,645,581	822,790	8,227,905	25,506,505	107,785,555	10,778,555	\$118,564,110

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TO:	Patricia Macchi, STV
FROM:	Kevin St. Jacques, FNI
SUBJECT:	RAISE Grant Application for IP-Right, Crash Data Summary
PROJECT:	DO#1, Capital Project Funding Support
DATE:	February 22, 2022
CC:	Eric Nelson, STV, Jorge Suarez, STV

Crash Data Summary International Parkway between the two Control Plazas

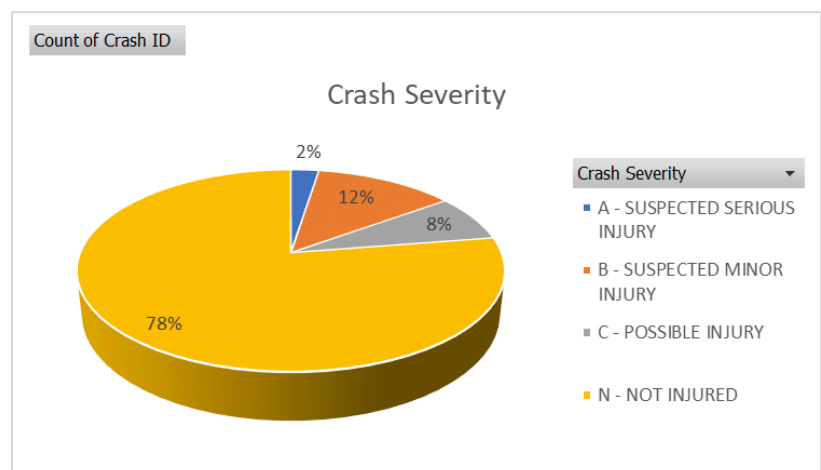
A compilation and
summary observation of

the crash data available on the Crash Record Information System (CRIS), maintained by the Texas Department of Safety. Crash data compilation was for the expanse of the International Parkway between the north and south Control Plazas but did not include the influence area (approximately 1,000 feet) near the control plazas. The crash data was limited to just the data on the International Parkway and its immediate on-ramps and off-ramps and did not include crashes along the service roads or the terminal roadways.

The most recent 5 years of CRIS data were compiled, including the complete years of 2017 through 2021. The 5-years of data reflected the downturn in air travel during 2020 and a good part of 2021. Therefore, the 3-year crash data from 2017, 2018 and 2019 was used for the crash summary. There were 80 reported crashes in these three years; 28, 29 and 23 crashes, respectively, for an average of 27 crashes per year. The characteristics of the contributing factors are as follows.

Crash Severity

Of the 80 crashes in the three years, 2017 – 2019, there were crashes that resulted in 2 Severe Bodily Injuries. There were an additional 16 minor injuries and possible injuries reported. The remainder of the crashes reported only vehicular damage and no injuries.



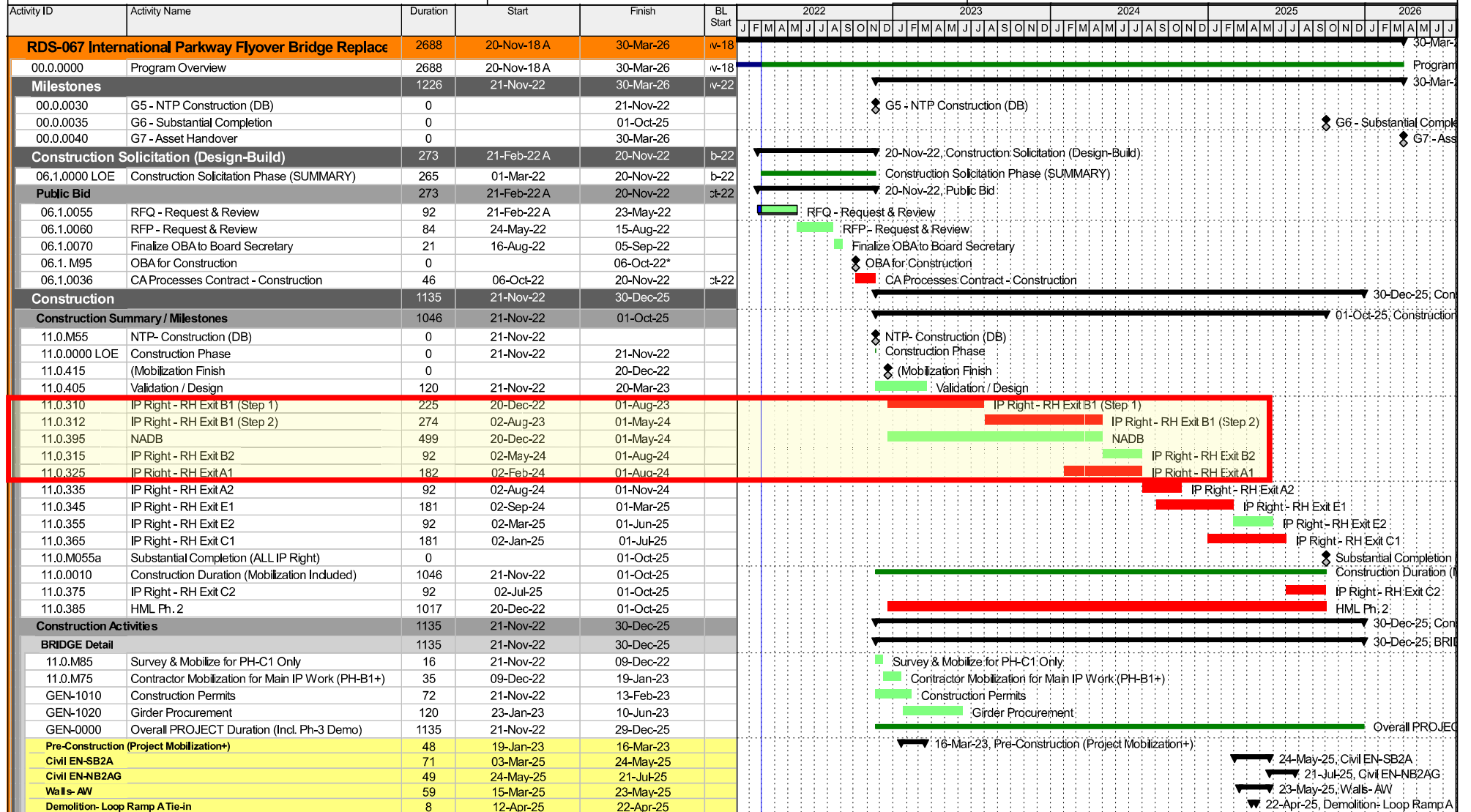
Contributing Factors

The exits to terminal being on the left side of the International Parkway is not the usual placement for exits on highways in Texas. Drivers tend to make driving errors that do not position themselves to take the left-hand exit to their intended terminal. The crash reports indicate contributing factors for the crashes to allow evaluations of the data to assess the causal elements to the crashes. There are numerous contributing factors in the crash reporting system; a grouping of these contributing factors for the 80 reported crashes in the 2017-2019 period are summarized below. Of the 80 crashes, 55% can be attributed to driver inexperience with use of the left-hand exits, including:

- Drivers changing lanes at the last minute to enter the left-hand exits
- Drivers being inattentive to the fact that their exit would be on the left-hand side
- Driver speed differentials between those familiar with the left hand-exist and those that are not

Contributing Factor	Percent of Crashes
Changed Lane when unsafe	30%
Changed Lane when unsafe, driver inattention	9%
Driver inattention	8%
Changed Lane when unsafe, failure to control speed	4%
Failed to drive in single lane	4%
Subtotal attributable to Left Hand Exits	55%
Other contributing factors (30 with 1 to 3% each)	45%

Project ID: 03.20.18110003

RDS-067 International Parkway Flyover Bridge Replacement
PLM- 272

Remaining Level of Effort Primary Baseline Remaining Work Baseline Milestone Sum...
Actual Level of Effort Actual Work Critical Remaining Work Milestone