

APPENDIX B
*AIRPORT INFORMATION AND
BACKGROUND*

B. Airport Information and Background

B.1 Introduction

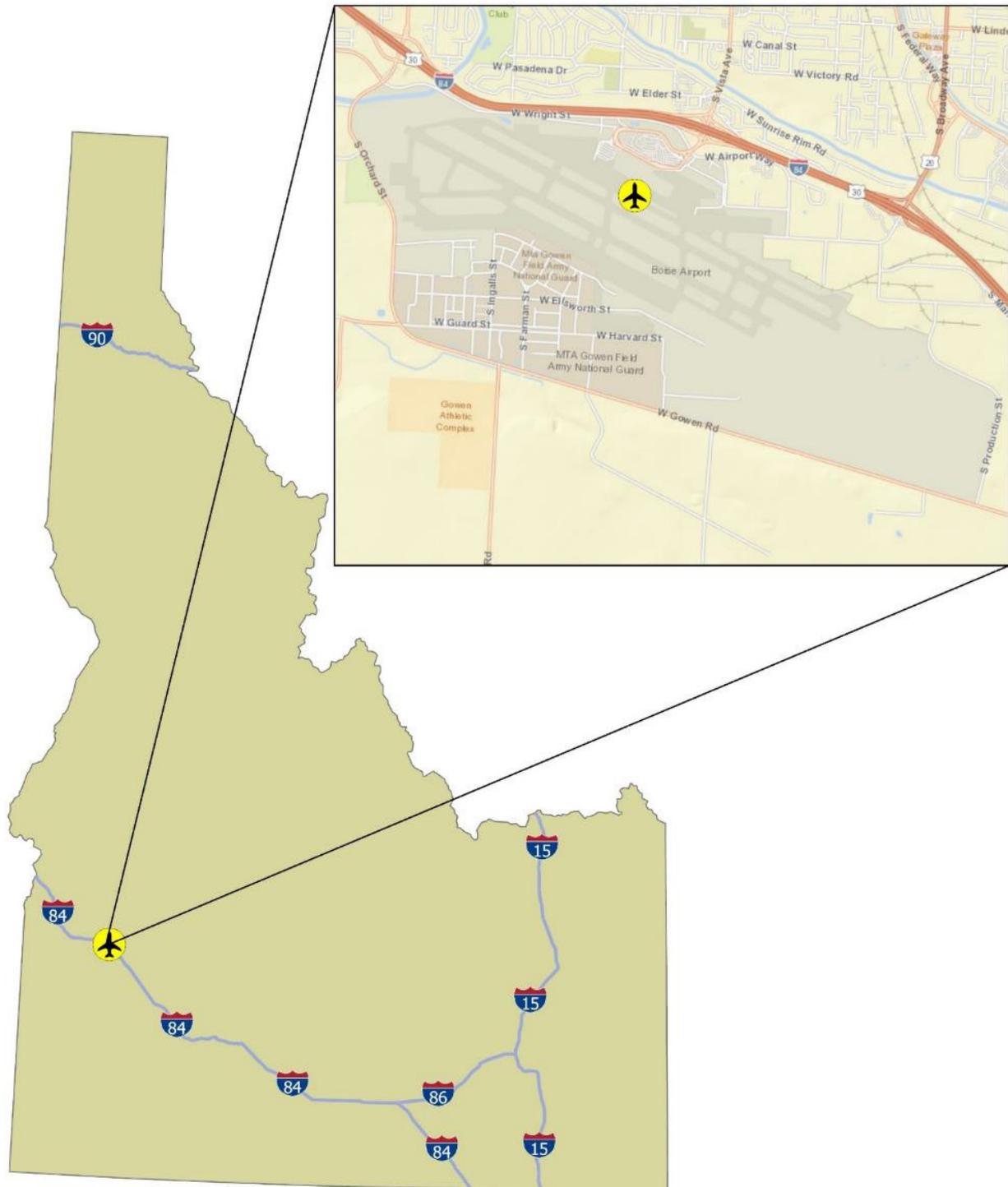
The City of Boise (Airport Sponsor) owns the Boise Airport (Airport) under the supervision of the Boise Airport Commission, and the Airport Director operates and manages the Airport. The Mayor, with the consent of the Boise City Council, appoints the Airport Commission. The Airport is in the City of Boise (City), which is in Ada County (County) in the State of Idaho. The Airport is the largest commercial service airport in Idaho and serves residents of the Boise City—Nampa, Idaho metropolitan area (see **Figure B-1**). Additionally, there are two runways at the Airport, parallel to each other and differentiated from each other by Right “R” and Left “L” designations (see **Figure B-2**).

There are navigational aids (NAVAIDs) at the Airport, which are “physical devices on the ground that aircraft can detect and fly to”¹ and are designed to “assist the pilot to land safely and efficiently.”² The Federal Aviation Administration (FAA) establishes specific criteria to allow each NAVAID to function properly, including the location of the NAVAID in relation to a runway or taxiway. NAVAIDs at the Airport include: the Visual Approach Slope Indicator (VASI), Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR), Precision Approach Path Indicator (PAPI), Global Positioning System (GPS), Approach Lighting System with Sequenced Flashing Lights (ALSF-2), Runway Visual Range (RVR), and the Instrument Landing System (ILS), which includes the localizer (LOC) and glideslope (GS), Distance Measuring Equipment (DME), Non-Directional Beacon (NDB), and the Very High Frequency Omni-Directional Range (VOR). **Table B-1** and **Figure B-3** identifies the NAVAIDs and visual approach aids associated with each runway at the Airport.

¹ FAA. (2021). NAVAIDs, NAS Animated Storyboard. Retrieved October 2021, from FAA: https://www.faa.gov/about/office_org/headquarters_offices/ang/offices/tc/library/storyboard/detailedwebpages/navaid.html

² Ibid.

Figure B-1
Airport Location



Sources: ESRI, 2024; RS&H, 2024.

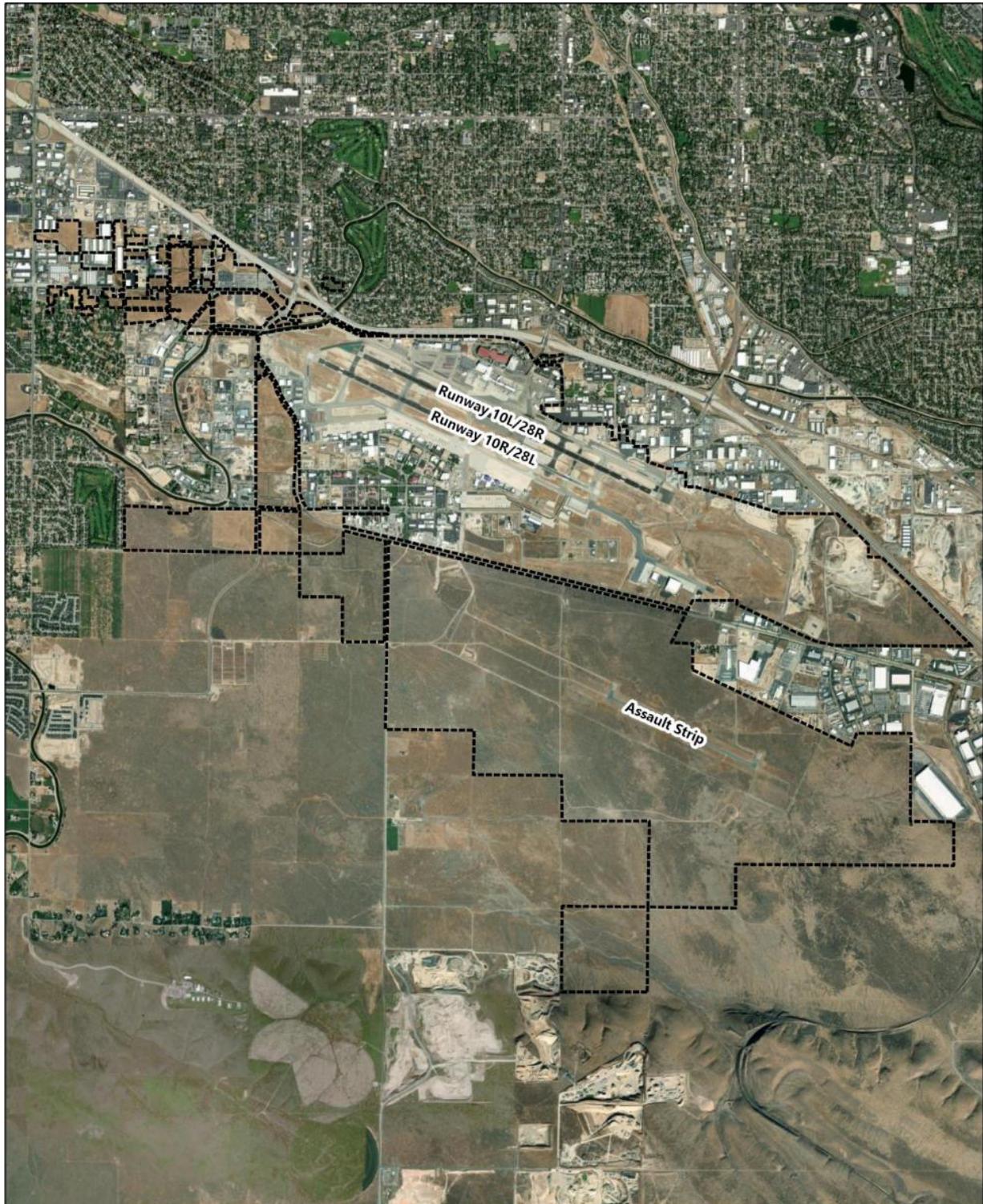
Legend

 Airport Location

Note: This figure is for graphic purposes only and is not to scale.



Figure B-2
Airport Runways



Source: Esri, 2024; RS&H, 2022.

Legend

 Airport Property

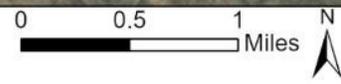


Figure B-3
 Airport Airside Facilities



Sources: ESRI, 2024; RS&H, 2025.

Legend

- NAVAIDs
- Localizer (LOC)
- Automated Surface Observing Systems (ASOS)
- Runway Visual Range (RVR)
- Precision Approach Path Indicator (PAPI)
- Glideslope (GS)
- Medium Intensity Approach Lighting
- System with Runway Alignment Indicator Lights (MALSR)
- Distance Measuring Equipment (DME)
- Approach Lighting System With Sequenced Flashing Lights (ALSF-2)
- Visual Approach Slope Indicator (VASI)
- Very High Frequency Omni-Directional Range (VOR)
- Airport Property



Table B-1
NAVAIDs and Visual Approach Aids at the Airport

Runway	GPS	DME	ILS	LOC	GS	NDB	PAPI	VASI
Runway 10L end	X	X	X				X	
Runway 28R end	X		X	X	X		X	
Runway 10R end	X	X	X	X	X	X		X
Runway 28L end	X	X	X					X

Note: GPS = Global Positioning System; VOR= Very High Frequency Omni-Directional Range; DME = Distance Measuring Equipment; ILS = the Instrument Landing System; LOC = localizer; GS = glideslope; NDB = Non-Directional Beacon; PAPI = Precision Approach Path Indicator; VASI = Visual Approach Slope Indicator.

Sources: Ricondo, 2019.

B.2 Airport Planning

Airport master plans are 20-year planning documents “prepared to provide the framework needed to guide future airport development that will cost-effectively satisfy aviation demand, while considering potential environmental and socioeconomic impacts.”³ Additionally, an airport master plan should identify problems or issues at an airport to address and correct during the 20-year planning period.

The Airport Sponsor completed an Airport Master Plan Update in December 2019 (2019 MPU). The 2019 MPU identified a “hot spot” and areas of taxiway geometry, which do not meet current FAA standards and, therefore, should be corrected to improve safety at the Airport. The 2019 MPU also identified alternatives to align the thresholds of the parallel runways. Following the preparation of the 2019 MPU discussions between the FAA, Airport Sponsor, and other stakeholders further identified the increased risk for wrong surface landings due to the Airport’s staggered runway thresholds. The FAA has identified staggered runway thresholds as a possible contributing factor to wrong runway operations (WRO), which are an operational hazard due to the potential for aircraft to inadvertently line up to the incorrect runway while on final approach.

³ FAA. (2015, January 27). Advisory Circular (AC) 150/5070-6B, Change 2, *Airport Master Plans*.

B.2.1 Hot Spot

The FAA defines a “hot spot” as “a location on an airport movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary.”⁴ Hot spots generally lead to increased risk for runway incursions. FAA defines runway incursions as “any occurrence at an airport involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and takeoff of aircraft.” These areas are of specific interest to correct as they contribute to safety at an airport.

A hot spot was identified at the Airport at the intersection of Taxiways A, J, and W leading to Runway 10L (see **Figure B-4**), likely as a result of nonstandard taxiway geometry at this taxiway intersection. Since 2018, there have been four peak annual runway incursions and thirteen cumulative runway incursions at the Airport from 2010 through 2019.⁵ These runway incursions have been classified as pilot and vehicle/pedestrian deviations, meaning either pilots, vehicles, and/or pedestrians have entered the runway and/or taxiway area without first gaining air traffic control permission. For example, as stated in the 2019 MPU, aircraft taxiing to Runway 10L on Taxiway A have mistakenly entered onto Taxiway J without air traffic control permission (see **Figure B-4**). As part of the discussions on how to mitigate runway incursions during the 2019 MPU, the Airport Sponsor, the FAA, and other stakeholders determined physically removing the pavement at Taxiway J between Runway 10R and Taxiway A is the best way to mitigate the hot spot,⁶ thereby mitigating the risk for runway incursions.

⁴ FAA. (2021). Runway Safety, Hot Spot List. Retrieved October 2021, from FAA: https://www.faa.gov/airports/runway_safety/hotspots/hotspots_list/.

⁵ FAA. (2021, January). Runway Incursion Mitigation (RIM) Program Inventory of Airport Locations. Retrieved October 2021, from FAA: https://www.faa.gov/airports/runway_safety/resources/runway_incursions/.

⁶ Ricondo. (2019, December). Boise Airport Master Plan Update.

Figure B-4
Hot Spot at the Airport



B.2.2 Nonstandard Taxiway Geometry

The geometry of some taxiways at the Airport were identified in the 2019 MPU as not meeting current FAA standards (see **Figure B-5**). For example, Taxiway J, is an end around taxiway (EAT) which is located within the Runway 10L/28R Runway Safety Area (RSA) and Runway Protection Zone (RPZ) , which is defined as an FAA nonstandard condition.⁷ Additionally, Taxiway J, as an EAT, does not allow for ninety-degree angles to either Runway 10L/28R or Runway 10R/28L as required by current FAA design standards.⁸ According to the FAA, non-ninety degree intersection angles (i.e., Taxiway J and Runway 10L/28R and Taxiway J and Runway 10R/28L) do not provide the best view of the actual runway or for approach for a pilot at the holding position and can contribute to runway incursions. The nonstandard taxiway geometry for this area, Taxiway J, Taxiway A, and Runway 10R/28L was officially included as part of the FAA's Runway Incursion Mitigation (RIM) program in 2018.⁹ These types of taxiway geometry issues have contributed to the increased risk of runway incursions.

- To address the issue of runway incursions nationwide, the FAA initiated a RIM program in 2018. The program identifies, prioritizes, and assists airport sponsors on how to mitigate runway incursion risks. Airports are included in the program when one of the following occurs: when three or more peak annual runway incursions occurred in one calendar year; or where cumulative runway incursions average one or more per year since fiscal year 2008 to 2020.¹⁰

⁷ FAA. (2022, March 31). Advisory Circular (AC) 150/5300-13B, *Airport Design, Change 1*, Section 4.12.

⁸ FAA. (2022, March 31). Advisory Circular (AC) 150/5300-13B, *Airport Design, Change 1*, Section 4.81.

⁹ FAA. (2024, September 30). Runway Incursion Mitigation (RIM) Program, Inventory of Airport Locations. Retrieved December 2024, from FAA: <https://www.faa.gov/sites/faa.gov/files/RIM-Inventory-2024-09-30.pdf>.

¹⁰ FAA. (2021, January). Runway Incursion Mitigation (RIM) Program Inventory of Airport Locations. Retrieved October 2021, from FAA: https://www.faa.gov/airports/runway_safety/resources/runway_incursions/.

Figure B-5
 Nonstandard Taxiway Geometry at the Airport



The FAA formally included the Boise Airport in the FAA's RIM program in 2018 due to the Airport's hot spot and nonstandard taxiway geometry, which led to incursions at the Airport. Also in 2018 (during the development of the 2019 MPU), the Airport Sponsor commissioned a Safety Assessment (SA)¹¹ for the proposed 2019 MPU Airport Layout Plan (ALP), the future development plan for the Airport, and a Safety Risk Management (SRM) Panel in accordance with FAA Order 5200.11.¹² The SA and SRM Panel identified potential hazards at the Airport, analyzed the risks of those potential hazards, and identified ways to mitigate those risks for the proposed ALP, particularly the potential for runway incursions and how to correct runway incursion hazards.

B.2.3 Wrong Surface Landings

According to the FAA, a threshold is “the beginning of that portion of the runway available for landing. In some instances, the threshold may be displaced. “Threshold” always refers to landing, not the start of takeoff.”¹³ Additionally, parallel runways with staggered thresholds, like at the Airport, “are a leading causal factor that increases the risk of pilots landing on the wrong surface. This situation has occurred even after the pilot has correctly read back the runway they've been cleared to land on.”¹⁴ Since 2016, there have been 18 documented wrong surface landings at the Airport due to the staggered runway thresholds (see **Figure B-6**), meaning an inbound aircraft was cleared to land on one runway, but mistakenly landed on the other runway. The Air Traffic Control Tower (ATCT) corrected an additional two wrong surface alignments. A wrong surface alignment is when an aircraft was cleared to land on one runway but was lining up to land on the other runway. The ATCT was able to correct the aircraft in the air before the aircraft could land on the wrong runway.¹⁵

¹¹ Boise Airport. (2018, July). Master Plan Update Airport Layout Plan Safety Assessment Documentation.

¹² FAA. (2010, August 30). FAA Airports (ARP) Safety Management System (SMS).

¹³ FAA. (2022, March 31). Advisory Circular (AC) 150/5300-13B, *Airport Design, Change 1*.

¹⁴ FAA. (2022). Runway Safety, Wrong Surface Landings. Retrieved February 2022, from FAA: https://www.faa.gov/airports/runway_safety/videos/ga_safety_challenges/.

¹⁵ FAA. (2022). Data provided by the FAA Northwest Mountain Region Airport Safety Office regarding wrong runway landings at the Boise Airport.

Figure B-6
Staggered Runway Thresholds at the Airport



Since the publication of the 2019 MPU, a Runway Safety Action Team was developed to discuss runway safety issues at the Airport. The FAA signed a formal Runway Safety Action Plan (RSAP) for the Airport on June 3, 2021.¹⁶ One of the open Action Items in the RSAP is to determine if identifying the staggered runway thresholds as a hot spot would enhance pilot awareness.¹⁷ The FAA is analyzing the capability to designate a runway (and its staggered runway threshold) as a “wrong surface landing hot spot”¹⁸ to identify locations with wrong surface landing potential. However, the new hot spot for the runway at the Airport has not been formally designated to date. Even if FAA designates the runway thresholds as a new hot spot at the Airport, it does not correct the safety issue created by staggered runway thresholds. To correct the occurrence of wrong surface landings and wrong surface alignments due to the staggered runway thresholds at the Airport, the Airport Sponsor would need to align the two parallel runway thresholds, which would result in increased safety, pilot situational awareness, and significantly reduce the potential for wrong surface landings.

B.3 Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the Proposed Action would occur in area shown on FIRMs 16001C0280G, 16001C0286H, 16001C0259H, and 16001C0287H, all of which are effective since February 19, 2003, and FIRM 16001C0291J, effective since June 19, 2020.¹⁹ However, construction associated with the Proposed Action will not occur in the floodplain as shown in **Figure B-7**.

¹⁶ FAA. (2021, June 3). *Runway Safety Action Plan* for Boise Air Terminal/Gowen Field (BOI), Boise, Idaho.

¹⁷ FAA. (2021, June 3). *Runway Safety Action Plan* for Boise Air Terminal/Gowen Field (BOI), Boise, Idaho.

¹⁸ FAA. (2021, June 3). *Runway Safety Action Plan* for Boise Air Terminal/Gowen Field (BOI), Boise, Idaho.

¹⁹ FEMA. (2021, September). Flood Map Service Center, FIRM 16001C0280G, effective date 2/19/2003; FIRM 16001C0286H, effective date 2/19/2003; FIRM 16001C0259H, effective 2/19/2003; FIRM 16001C0287H, effective date 2/19/2003; FIRM 16001C0291J, effective 6/19/2020. Accessed September 2021, from FEMA: <https://msc.fema.gov/portal/search#searchresultsanchor>.

Figure B-7
Floodplain Near Project Construction Area

