

FrontRunner Forward Technical Memorandum

To: Utah Transit Authority
From: Heidi Rous, Kimley-Horn
Date: April 14, 2025
Subject: FrontRunner Forward Corridor Level Air Quality Analysis Addendum

Introduction

The *FrontRunner Corridor Level Air Quality Analysis Technical Memorandum (FRFTM)*, dated June 12, 2023 was prepared by Parametrix for the Utah Transit Authority (UTA) FrontRunner Forward program (also known as the FrontRunner 2X project), which proposes to increase FrontRunner service from 30-minute headways to 15-minute headways during peak periods between Provo and Ogden. The 2023 FRFTM concluded that the project would not result in air quality concerns and is therefore exempt from requiring a quantitative hot-spot analyses for PM_{2.5}, PM₁₀, and CO. This determination is based on the definition of a project of air quality concern, per 40 CFR Part 93.123(b)(1).

Since the memo was completed in 2023, the following corridor-level changes have been made to the program:

- Purchase of 10 diesel multiple units (DMUs)
- Addition of a new maintenance facility for DMUs, located on the border of Davis and Salt Lake Counties
- Addition of a new station in Bluffdale, located in Salt Lake County
- Addition of 2 new double track sections in Orem and Provo, located in Utah County
- Extension of double track sections in Woods Cross, located in Davis County
- Extension of double track sections in Lehi and American Fork, located in Utah County

The purpose of this memo is to update the findings in the 2023 FRFTM.

Regional Air Quality Update

As discussed in detail in the FRFTM, implementation of the Frontrunner Forward project will result in increased operational activity in the counties of Weber, Davis, Salt Lake, and Utah. Davis County remains nonattainment for ozone (O₃) and fine particulate matter (PM_{2.5}). Salt Lake County remains nonattainment for O₃, PM_{2.5}, and sulfur dioxide (SO₂), and coarse particulate matter (PM₁₀). Utah County remains nonattainment for O₃ and PM_{2.5}, and maintenance for CO and PM₁₀. Weber County remains nonattainment for PM_{2.5} and O₃, and maintenance for PM₁₀. Thus, as of April 7, 2025¹, the attainment

¹ United States Environmental Protection Agency (U.S. EPA) Green Book; Accessed April 7, 2025, https://www3.epa.gov/airquality/greenbook/anayo_ut.html

status for each of these counties remains unchanged compared to what was discussed in the FRFTM, and no additional quantitative analyses are required for the elements of the FrontRunner Forward project that remain unchanged.

Inclusion in the Conforming Metropolitan Transportation Plan

The EPA requires project-level conformity in areas of nonattainment or maintenance of the NAAQSs through project inclusion in the MPO's conforming Metropolitan Transportation Plan (40 CFR § 93.114 and § 93.115). The project area spans two MPO boundaries along the Wasatch Front: the Wasatch Front Regional Council (WFRC) and the Mountainland Association of Governments (MAG). MAG has amended their 2019-2050 Regional Transportation Plan (RTP) to include increased FrontRunner service consistent with the defined project. The amended MAG Conformity Determination Report (July 2022) found the amended RTP conforms to the SIP requirements, and it was adopted in September 2022. Additionally, increased FrontRunner service is included in WFRC's 2023-2050 RTP and the Air Quality Memorandum #41 found the 2023-2050 RTP conforms to the SIP requirements. The 2023-2050 RTP was adopted May 25, 2023. The *TransPlan 50, 2050 MAG Regional Transportation Plan*, which includes the FrontRunner Forward Project, was amended on June 6, 2024, and approved on June 12, 2024.

The maintenance facility will be located mostly in Davis County, with some trackwork in Salt Lake County. It was not specifically included as a part of the FrontRunner Forward project in the WFRC RTP. However, operation of a maintenance facility is not expected to result in substantive regional emissions nor would it result in increased regional traffic or altered regional traffic patterns. Refer to discussion below regarding the low potential for localized impacts. As such, the operation of the maintenance facility will result in a minimal increase in non-attainment or maintenance pollutants and is not expected to jeopardize attainment of the NAAQS in the region.

Localized Impacts (PM_{2.5}, PM₁₀, and CO)

Consistent with the analysis presented in the FRFTM, potential impacts are addressed qualitatively.

Additional Double Tracking – The potential impact of additional train crossings along the FrontRunner system due to double tracking was thoroughly discussed in the FRFTM under 40 CFR 93.123(b)(1)(ii) criteria. Since the program objective of 15-minute headways during peak periods was not changed, adding more double tracking sections do not change the finding. These projects would not contribute a significant number of diesel vehicles to intersections, and therefore, are not projects of local air quality concern.

New Station – The new station would not result in a significant number of diesel trainsets congregating at a single location. In accordance with FTA's Description of Projects Requiring Hot-spot Analysis [40 CFR 93.123(b)(1)(iii)], new bus and rail terminals and transfer points that will have a significant number of diesel vehicles congregating at a single location would be required to perform hot-spot analyses. The project includes a new infilled rail station, not a terminal. It is anticipated that no more than eight trainsets per hour, four each direction at 15-minute headways, would pass through and stop at the station. The new DMU trainset is expected to have lower emissions of NO_x, PM, and CO than the current UTA

locomotive haul trainset². For these reasons, the proposed station is not a project of local air quality concern. Local buses could potentially be rerouted to this station in the future, but that is not part of the FrontRunner Forward project.

New Maintenance Facility – The new maintenance facility could involve a maximum of 10 DMUs operating simultaneously. Similar to the above discussion regarding the definition of a project requiring hot-spot analysis, the proposed maintenance facility is not a new rail terminal and does not involve a significant number of diesel trainsets congregating. Operation of the maintenance facility is not expected to result in additional at-grade crossings or additional delay times. Given UTA's commitment to overhaul existing trainsets and purchase new trainsets, the overall train emissions would decrease over time as intended by the year-based tiered national engine emission standards, the potential for maintenance activities to create ambient concentrations in excess of applicable NAAQS is minimized, and impacts are not expected to result in new violations or delay timely attainment of the NAAQs. Therefore, the maintenance facility is not a project of local air quality concern.

Summary

The construction and operation of the proposed station and maintenance facility may result in increased air pollutant emissions, as trains decelerate and accelerate in and out of a station, or idle at a maintenance facility, but is not expected to result in "hot spots" of substantially elevated localized ambient air pollutant concentrations. Based on programmatic analyses performed previously for the FrontRunner Forward program, an additional station and maintenance facility are not anticipated to collectively result in significant impacts to air quality. In accordance with 40 CFR Section 93.123(b)(1), the overall project, with additional changes, is not a project of local air quality concern, and a quantitative hot-spot analysis is not warranted.

² Air emissions based on DMU quad car trainset with 520 kW engine meeting Tier 4 emission standards compared to locomotive with 3600 HP engine meeting Tier 1 emission standards.