

MARCH 2024

LOW AND NO EMISSION FACILITIES AND FLEET TRANSITION PLAN (FFTP) UPDATE

This FFTP update summarizes progress since project kickoff in late August 2023. The first section focuses on progress made over the past month, and the second section summarizes all other major progress since project kickoff.

February 2024 Progress Update

Facility Analysis and Site Visits

In early February 2024, the consultant team was on-site for the first round of facility site visits. These site visits focused on eight RTD-owned and contracted fixed route bus facilities. These site visits allowed the consultant team to collect data and observe the facilities' operations first-hand. A transition to a new fleet propulsion technology will likely require significant changes to how RTD's existing facilities operate, and understanding present-day operations is critical to accurately inform how operations might change with a different fleet. Additionally, the consultants also assessed RTD's bus facilities to identify areas for improving energy efficiency. Areas of focus included lighting, HVAC systems, building automation systems, among other systems. After this initial round of site visits, the project team returned in late February to conduct site visits at RTD rail, administrative, and public facilities to evaluate Scope 1 and Scope 2 emissions. A map of the facilities included as part of this study is on page 2.

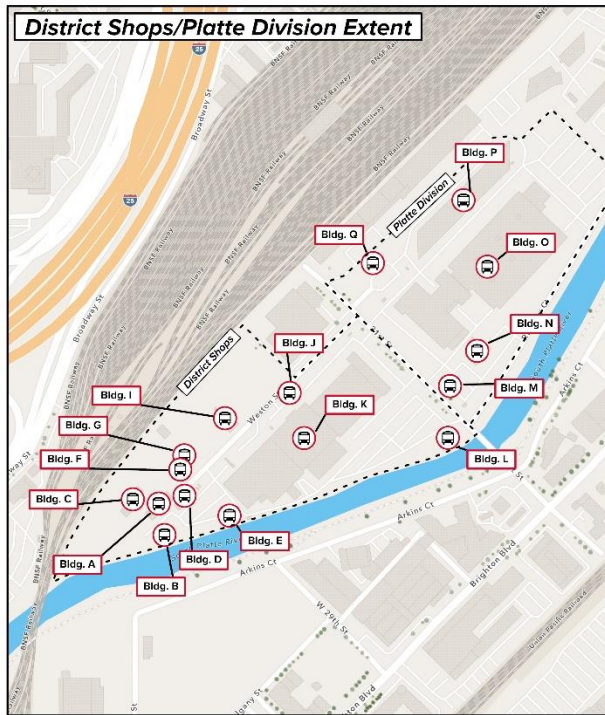
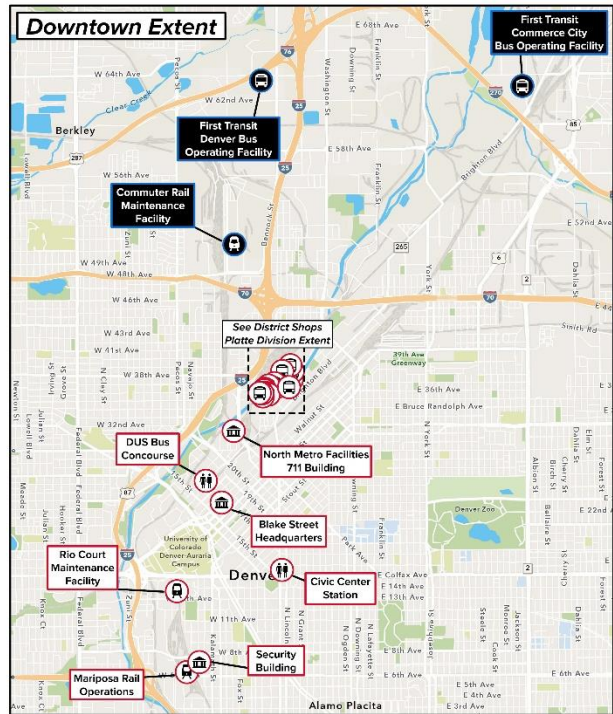
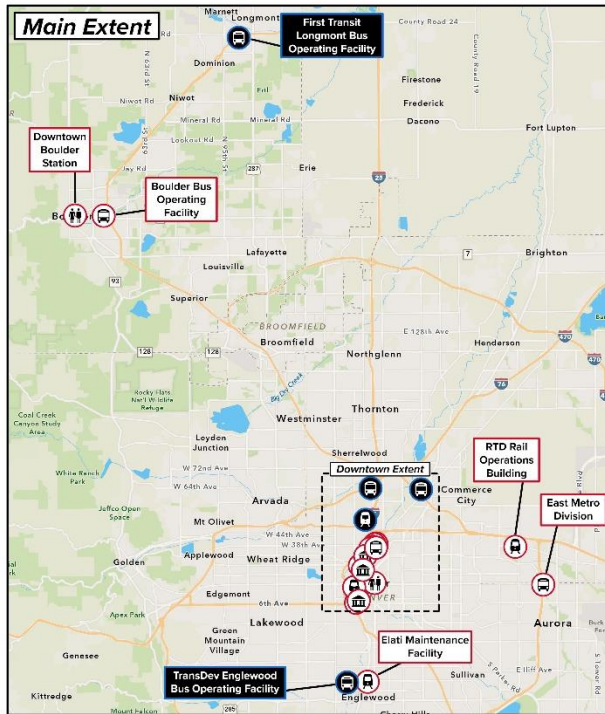
Fleet Technology Assessment

Throughout February, RTD and the project team also advanced the fleet and fuel technology assessment to understand the fleet mix needed to support the projected fixed-route services detailed in the System Optimization Plan (SOP). Transitioning to a new fleet propulsion technology will have significant impacts on RTD's fixed-route bus operations, so assessing the operational impacts of different proposed fuel technologies is a critical step in the FFTP. Previous battery electric bus modeling showed a large number of incomplete service blocks. Mitigation strategies, which could improve block completion rates, were explored. These strategies include mid-day charging, on-route charging, and fuel cell electric buses.

Next Steps

- Over the next month, the project team will begin work on Bus Facility Siting Report, which will assess potential sites for a new RTD bus facility.
- Work on the Fuels/Technologies Screening—Fleet Report will begin wrapping up in the next month as well.
- Workforce development interviews are being conducted with RTD staff in March to better understand how the agency approaches hiring and training, allowing the consultant team to provide detailed recommendations tailored to RTD's operations.

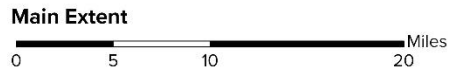
The project team is on track to complete the Facilities and Fleet Transition Plan by December 15, 2024.



RTD FFTP
RTD & Contractor Facility Maps

- | RTD Facilities | Contractor Facilities |
|----------------|-----------------------|
| Administrative | Bus |
| Bus | Rail |
| Public | |
| Rail | |

Scale Bars



Summary of Previous FFTP Progress (September 2023 through January 2024)

Working Group and Steering Committee

After contract execution, a cross functional Working Group composed of internal agency departments and consultants was convened to provide technical support and expertise for the project. There are currently over 50 Working Group members supporting the project. The project team also developed subgroups that align with specific tasks included in the project's scope of work. The five subgroup emphasis areas are:

- Fleet Technology
- Facility Planning
- Capital Planning & Financial Analysis
- Workforce Development
- Safety and Environmental Compliance

A Steering Committee was formed to guide the project and is composed of the following RTD staff members:

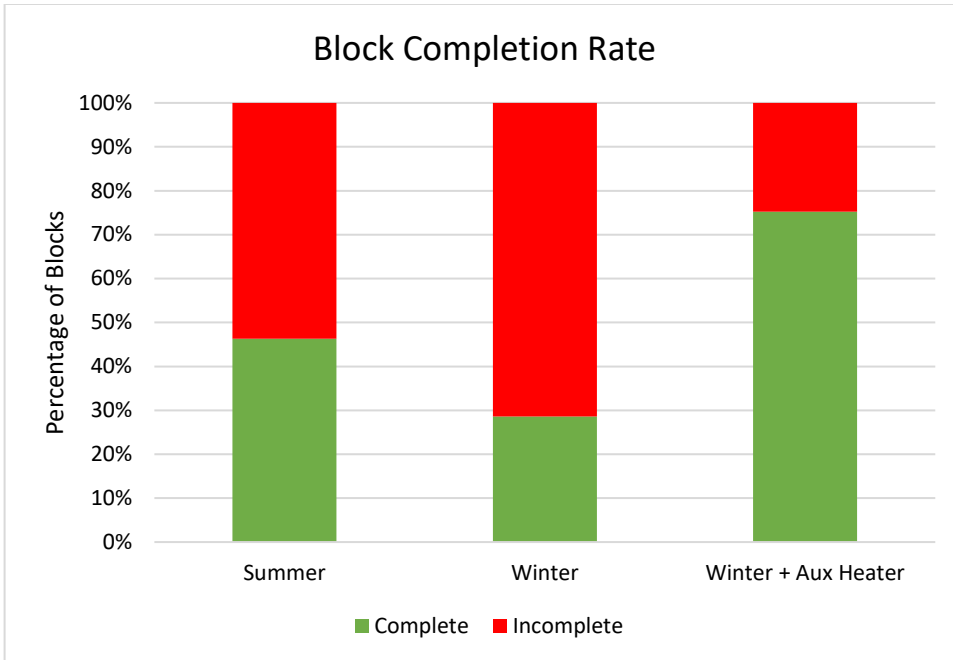
- Executive Sponsor: Assistant General Manager, Bus Operations
- Co-Sponsor: (Acting) Assistant General Manager, Facilities
- Project Manager: Project Manager, Planning
- Assistant Project Manager: NWR Deputy Project Manager

Project Vision Framework

In October 2023, a workshop was conducted with members of the Working Group to develop vision, goals, and parameters for the FFTP. During a follow-up workshop in November 2023, a cross functional team representing a broad cross section of agency departments supporting this project came to consensus on the FFTP's Vision Framework and helped establish project parameters, which highlight tradeoffs associated with the FFTP and will guide technical decisions that need to be made throughout the planning process.

Fleet Analysis

In December 2023, RTD received preliminary results from the project team's fleet modeling analysis. This modeling accounted for different scenarios related to the agency's operating environment, such as local weather, specific service and scheduling requirements, advertised and expected useful battery life of battery-electric buses, and other elements. The preliminary modeling was conducted based on RTD's September 2023 service changes and factored in ranges for summer (warm weather) and winter (cold weather) operations. The modeling showed that, with current technology, less than half of RTD's service blocks (i.e., blocking is the practice of dividing parts of a scheduled route among vehicles and operators) could be completed with a battery-electric bus during the summer scenario and less than a third of RTD's service blocks could be completed during the winter scenario. The results of the winter scenario improved significantly when a diesel auxiliary heater was used to power the HVAC system. Auxiliary heaters produce lower emissions than a diesel engine, but they significantly improve range and battery life during cold weather operations. In early 2024, RTD staff audited and finalized this initial round of fleet modeling results.



Existing Plans, Programs, and Policies Review

In early January, the project team finalized the Existing Plans, Programs, and Policies Review, which documents how existing plans, studies, policies, and legislation may impact RTD’s facility and fleet transition. The Existing Plans, Programs, and Policies Review includes previous RTD planning efforts, local, regional, and state plans, and national plans and programs.

Financial Analysis, Facility Analysis, Workforce Analysis

Work on the financial, facility, and workforce analysis tasks has been ongoing since the 4th quarter of 2023. Discussions regarding assumptions for each of these analyses have taken place with key RTD staff, and RTD has provided a significant amount of data which will be used for each of the tasks.