We make lives better through connections.

Bus Stop Infrastructure and Accessibility Assessment

Executive Summary

Regional Transportation District
1660 Blake Street, Denver CO 80202

Bus Stop Infrastructure and Accessibility Assessment

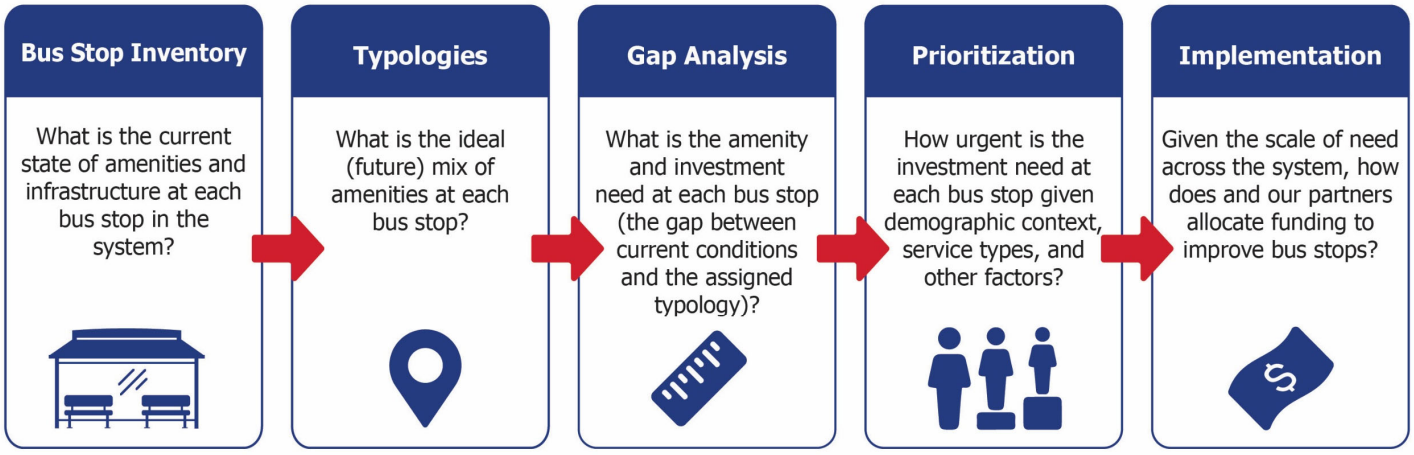
Introduction

Bus stops are the most visible and widely distributed elements of RTD's transit system. They serve as the primary point of connection between customers and service, shaping how people access, experience, and perceive transit in the Denver metro area. For many customers, the bus stop defines the quality of the overall trip as much as the service itself.

Recognizing the importance of bus stops to accessibility, customer experience, and system performance, RTD initiated the Bus Stop Infrastructure and Accessibility Assessment (BSIAA) following the agency's successful award of a Federal Transit Administration (FTA) Areas of Persistent Poverty Program grant in 2023. The study advances priorities established in RTD's 2021-2026 Strategic Plan, including Customer Excellence and Community Value, by supporting a more accessible, consistent, and customer-focused transit system.

The BSIAA establishes a comprehensive, systemwide understanding of bus stop conditions and provides a structured framework to guide future investment. The study evaluates accessibility, amenities, ownership, and maintenance across RTD's network and translates those findings into a scalable approach for prioritization and implementation. Rather than serving as a construction program, the BSIAA functions as a decision-support tool that enables coordinated, incremental investment over time.

Figure 1: Study Process



The BSIAA was developed to support a set of interrelated goals that reflect RTD's priorities around accessibility, equity, customer experience, and long-term stewardship of transit infrastructure. Together, these goals—shown in Figure 2—establish a framework for evaluating existing conditions, guiding future investment decisions, and supporting more consistent and coordinated bus stop improvements across RTD's service area.

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Figure 2: BSIAA Goals

Goal	Description
Advance Accessibility	Ensure that all bus stops meet ADA requirements and provide a safe environment for all customers
Improve Equity	Ensure Title VI compliance and promote equity by investing in historically underserved and transit-dependent communities
Enhance Transit Experience	Improve the customer experience through stop amenities that support comfort, information access, safety, and dignity
Grow Ridership	Align stop investments with existing and potential ridership demand to maximize impact on the network
Improve Coordination	Leverage jurisdictional partnerships and concurrent capital projects to reduce implementation costs and timeline
Promote Regional Consistency	Ensure that the stop inventory and classification system is standardized and maintainable across jurisdictions
Advance Strategic Priorities	Reinforce RTD's broader goals around customer excellence, community value, financial sustainability, and innovation

Figure 3 illustrates the approximately 7,500 bus stops included in the 2025 Bus Stop Infrastructure and Accessibility Assessment inventory across RTD's service area. RTD has also developed an interactive online webmap that allows users to explore inventory findings, review stop-level data and visualize conditions across the region. The webmap is available at the following link: 2025 Bus Stop Dashboard.

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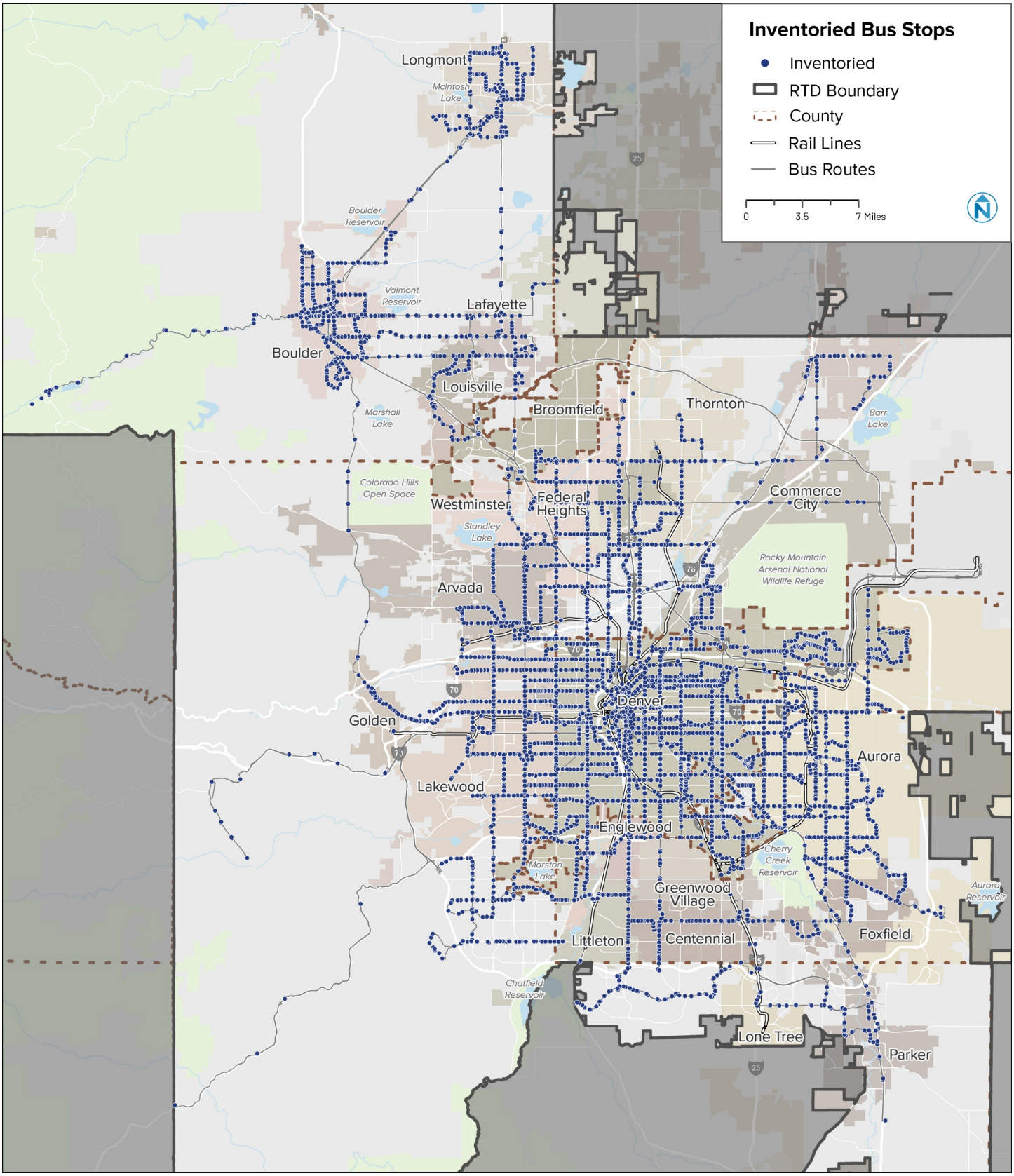
Figure 3: RTD Bus Stops Inventoried for the BSIAA



A Systemwide Assessment of Conditions

The 2025 inventory represents the first verified, systemwide assessment of RTD's bus stop network in more than fifteen years. The study evaluated approximately 7,500 active stops across the region using a combination of imagery review, targeted field verification, and structured quality control.

Accessibility Challenges

The findings show that accessibility challenges are both significant and widespread. Approximately 36 percent of stops meet current accessibility requirements, while 64 percent do not meet minimum standards. These deficiencies are not confined to any single geography or service type. They are present across urban, suburban, and lower-density contexts, reflecting a range of physical and operational constraints.

The most common issues include undersized or missing boarding areas, excessive cross slopes, obstructions within required clear space, and incomplete pedestrian connections. Among these, cross slope is one of the most persistent and complex challenges. It often requires reconstruction of the boarding area or adjacent roadway rather than minor adjustments.

Figure 4: Systemwide Accessibility Results

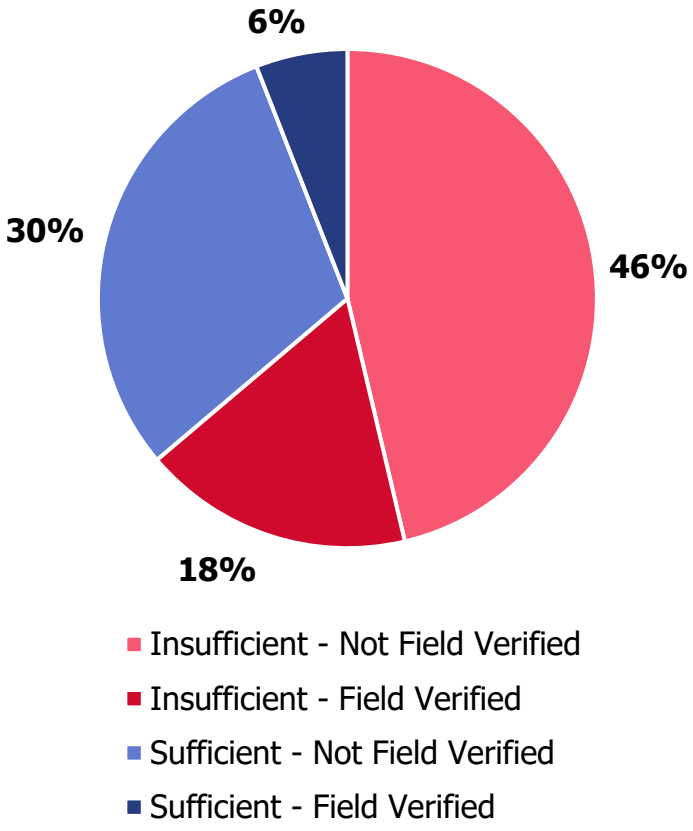


Figure 6: Example of an Accessible Stop

Figure 5: Example of an Inaccessible Stop

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What Makes a Stop "Accessible"?

An accessible bus stop provides a safe, stable, and usable boarding environment for all customers, including people who use mobility devices, older adults, and customers traveling with strollers or personal items. Accessibility should be the foundation of every stop. Before amenities such as shelters or seating are considered, the boarding area must meet minimum standards.

1. Boarding and Alighting Area

Every stop must include a defined boarding area directly adjacent to the bus stop sign. To be accessible, the boarding area must:

- Measure at least **8 feet deep** (perpendicular to the curb or roadway) and **5 feet wide** (parallel to the curb)[1]
- Maintain a cross slope of no more than 2 percent
- Be firm, stable, and free of obstructions

If any of these conditions are not met, the stop does not meet minimum accessibility standards.

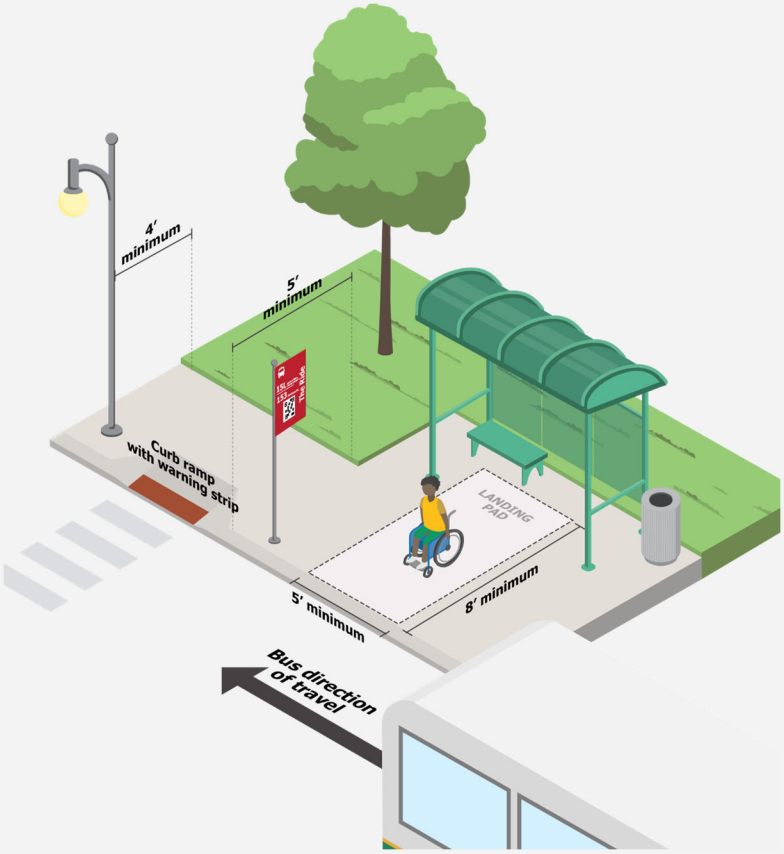

Figure 7: Stop Accessibility Dimensions

2. Pedestrian Connection

If a sidewalk or pedestrian access route is present, the boarding area must connect to it. The accessible path must:

- Provide at least 4 feet of clear width and remain free of barriers and excessive slope

Customers should not have to navigate unsafe or indirect routes to reach the stop.

3. Shelters and Benches

When shelters or benches are installed, they must not block the required boarding area. Shelters must maintain clear entry space and interior maneuvering space. Benches must allow circulation space for wheelchair users. A stop may include a shelter and still be inaccessible if the boarding area does not meet dimensional or slope requirements.

4. Why Slope Matters

Cross slope is one of the most common accessibility deficiencies. A boarding pad may appear compliant but exceed the 2 percent maximum slope when measured in the field. Excessive slopes can prevent safe and stable boarding. For this reason, field measurements were essential to confirm compliance at select locations.

[1] RTD Bus Infrastructure Design Guidelines and Criteria include an additional design requirement that the bus boarding and alighting area should be a minimum of 6 feet long and 8 feet wide (9 feet preferred). This reflects RTD's design criteria and is intended to supplement, not define, the minimum ADA compliance standard.

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Uneven Distribution of Amenities

At the same time, the distribution of amenities such as seating, shelters, and lighting is uneven across the system. While some higher-ridership corridors include enhanced infrastructure, many stops provide only the most basic elements.

- Approximately 43 percent of stops include seating
- Approximately 17 percent of stops include shelters
- Approximately 36 percent of stops include lighting
- Approximately 24 percent of stops include trash receptacles

These patterns reflect historical investment decisions rather than a consistent, systemwide framework.

Together, these findings establish a clear conclusion: accessibility improvements represent a systemwide need, while amenity investments require a more consistent and transparent approach aligned with how stops function within the network.

Figure 8: Systemwide Amenity Distribution

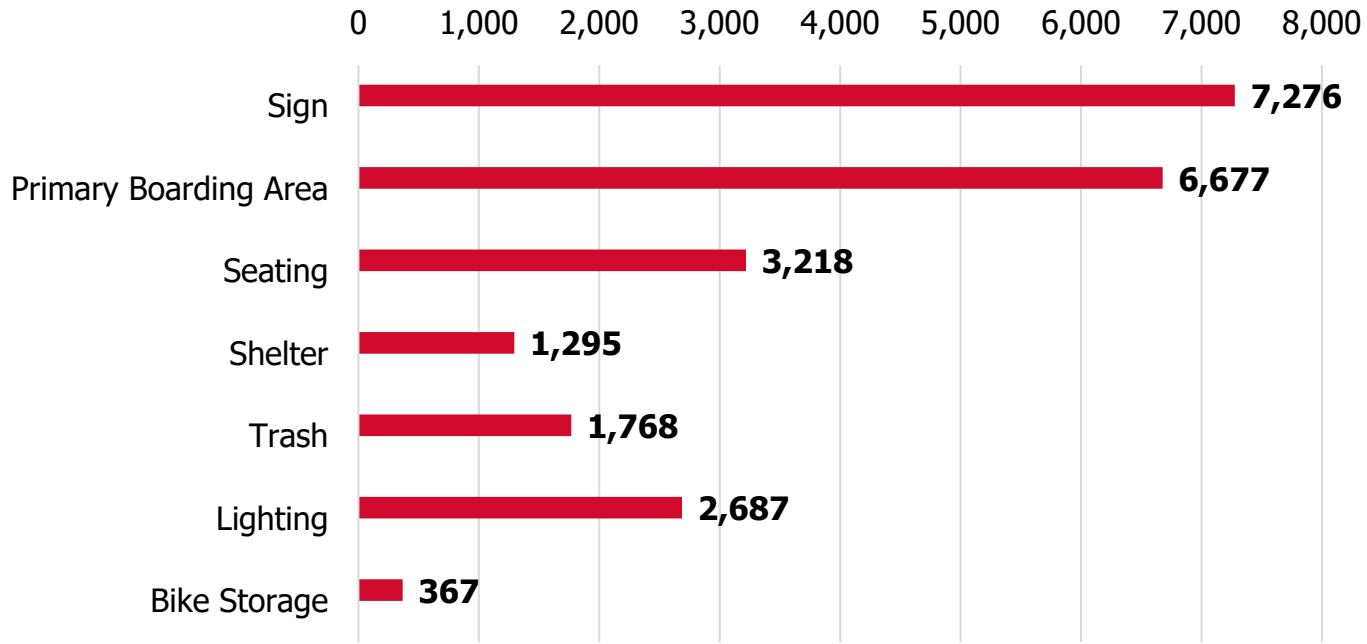

Figure 9: Select Bus Stops Across RTD Service Area

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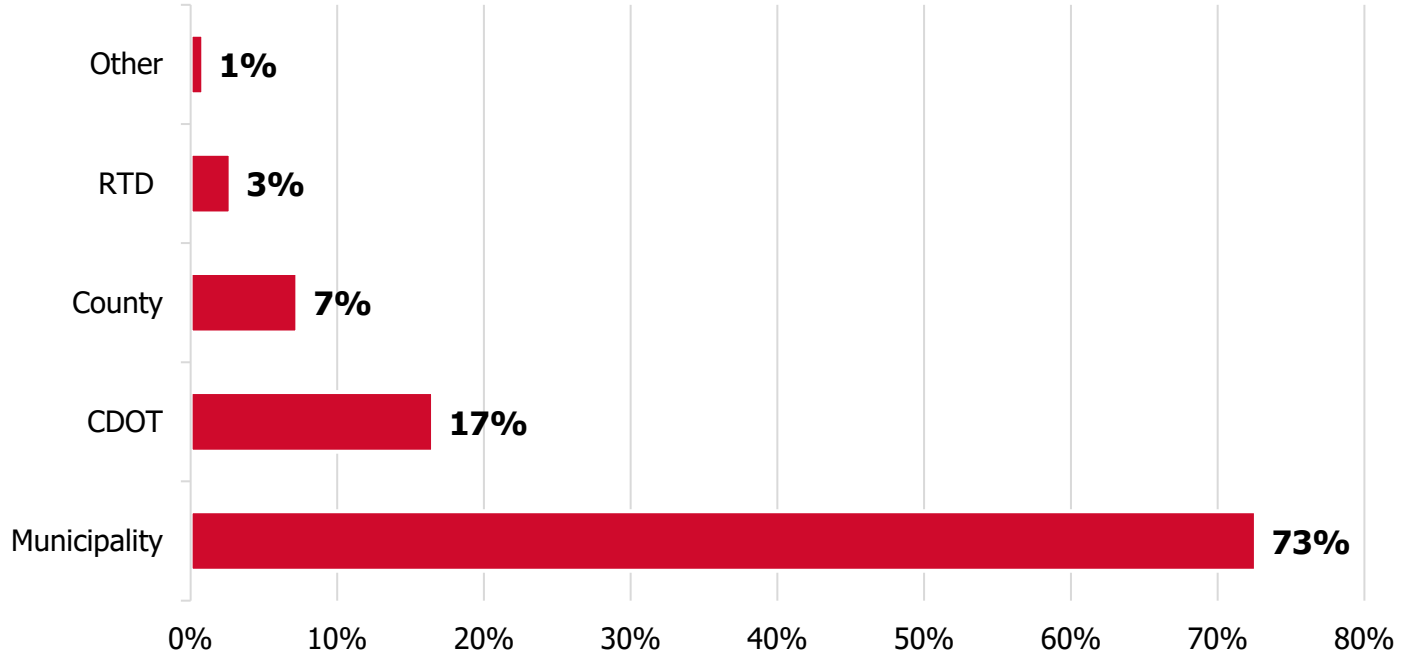
A Complex and Shared Governance Environment

Bus stops exist within a complex governance structure that directly shapes how improvements are delivered. Although RTD operates transit service, most stops are located within municipal or state right-of-way. Nearly three-quarters of stops are on local jurisdiction property, while a significant share are located on state-owned corridors.

This distribution means that improvements to accessibility and amenities often depend on coordination across multiple agencies. Responsibilities for sidewalks, drainage, lighting, and maintenance vary by location, and existing agreements are not always clearly defined or consistently documented.

The BSIAA confirms that improving bus stops is not solely a matter of funding or design. It requires a coordinated, regional approach that aligns priorities, responsibilities, and implementation processes across partners.

Figure 10: Roadway Ownership Associated with Bus Stop Locations



Establishing a Scalable Typology Framework

To address variation in stop conditions and create a consistent basis for investment, the BSIAA introduces a four-tier typology framework. This framework classifies stops as **Standard**, **Enhanced**, **Signature**, or **Premium** based on ridership, service frequency, and operational role. The inventory also included data collected at roughly 350 transit hubs that are typically RTD-owned facilities like park-n-rides, transit centers, or rail stations with bus bays that have their own unique amenity requirements that are excluded from this framework.

The typology establishes a clear relationship between stop function and infrastructure expectations. Accessibility is treated as a baseline requirement at every location, while amenities are scaled to reflect the level of activity and importance within the network.

Each stop type includes a defined set of required, preferred, and optional amenities. Required elements represent the minimum infrastructure envisioned for that category, while preferred and optional elements provide flexibility to respond to funding availability, right-of-way constraints, and partnership opportunities.

The framework is intentionally concise. Limiting the number of categories supports long-term consistency and makes the system easier to apply across jurisdictions. At the same time, the typology is not prescriptive. It is designed to guide decision-making rather than dictate specific outcomes at every location.

Figure 11: Amenities Required at Stop by Typology

Amenity	Standard Stop	Enhanced Stop	Signature Stop	Premium Stop
Sign Pole with Route Information	**Required**	**Required**	**Required**	**Required**
Accessible Boarding Area	**Required**	**Required**	**Required**	**Required**
Seating	Preferred	**Required**	**Required**	**Required**
Area Lighting	Preferred	**Required**	**Required**	N/A
Trash Receptacle	Optional	Preferred	**Required**	**Required**
Shelter	Optional	Preferred	**Required**	**Required**
Stop Lighting	Optional	Preferred	Preferred	**Required**
Detailed Route Information/Wayfinding	Optional	Optional	Preferred	**Required**
Bicycle Storage	Optional	Optional	Preferred	Preferred
Double Shelter	N/A	Optional	Optional	Preferred
Real-time Information	N/A	Optional	Optional	Preferred

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Figure 12: Proposed Bus Stop Typologies

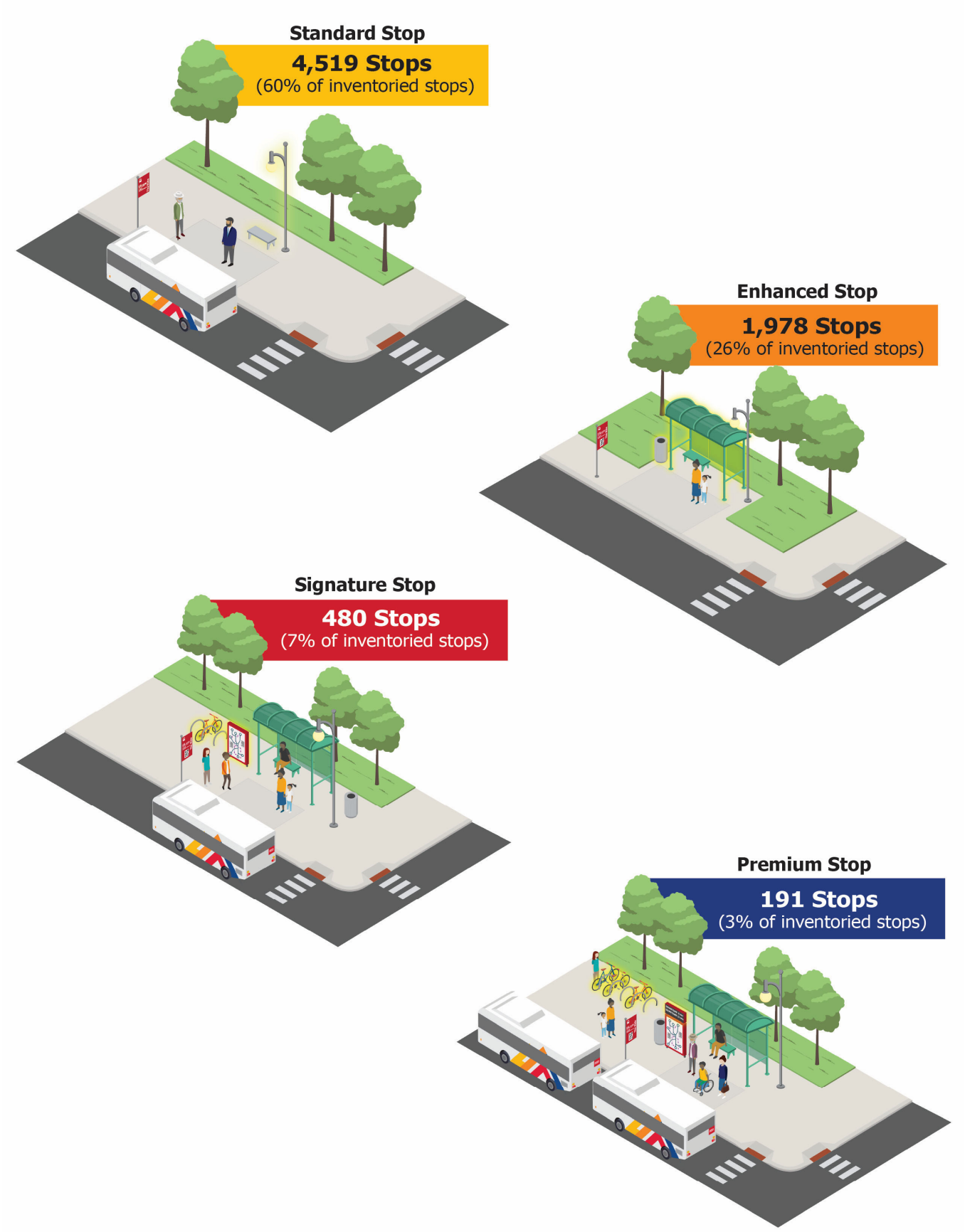

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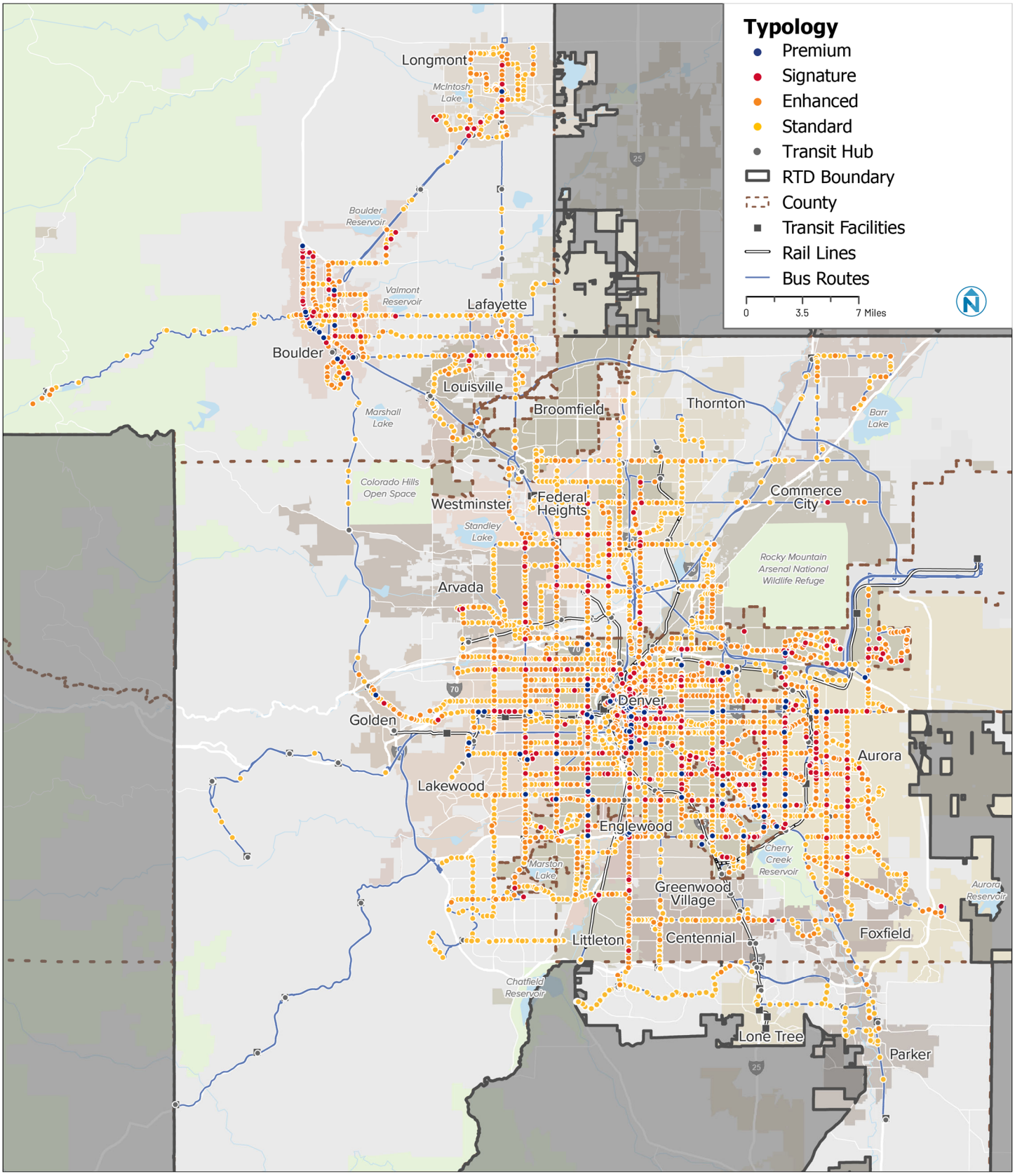
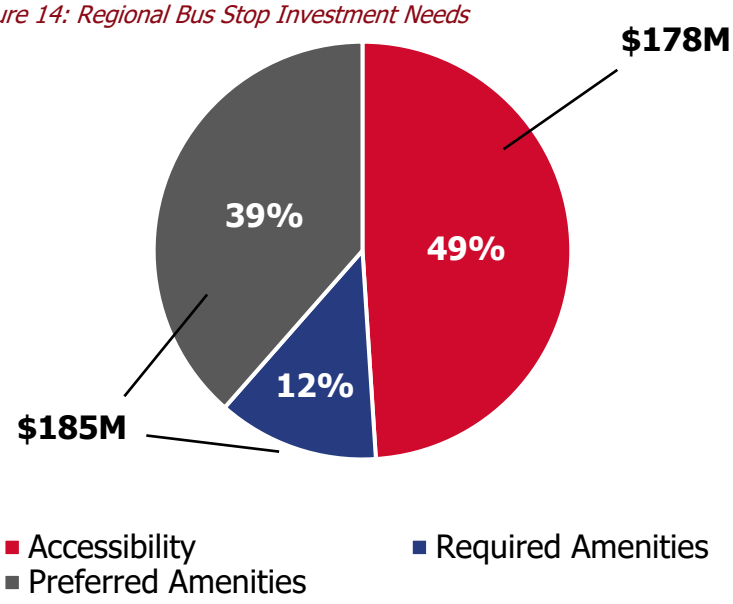
Figure 13: Bus Stop Typologies Across the System



Understanding the Scale of Need

Following the development of the typology framework, the study evaluated the gap between existing bus stop conditions and the infrastructure envisioned for each stop type. The gap analysis compares existing conditions to typology-based expectations to quantify the scale of investment needed across the system. Overall, the BSIAA identified **$363M in regional investment** between accessibility needs and amenity goals at regional bus stops. The results confirm that accessibility improvements are required at a majority of stops, while amenity gaps persist across all stop types, including those serving higher ridership corridors.

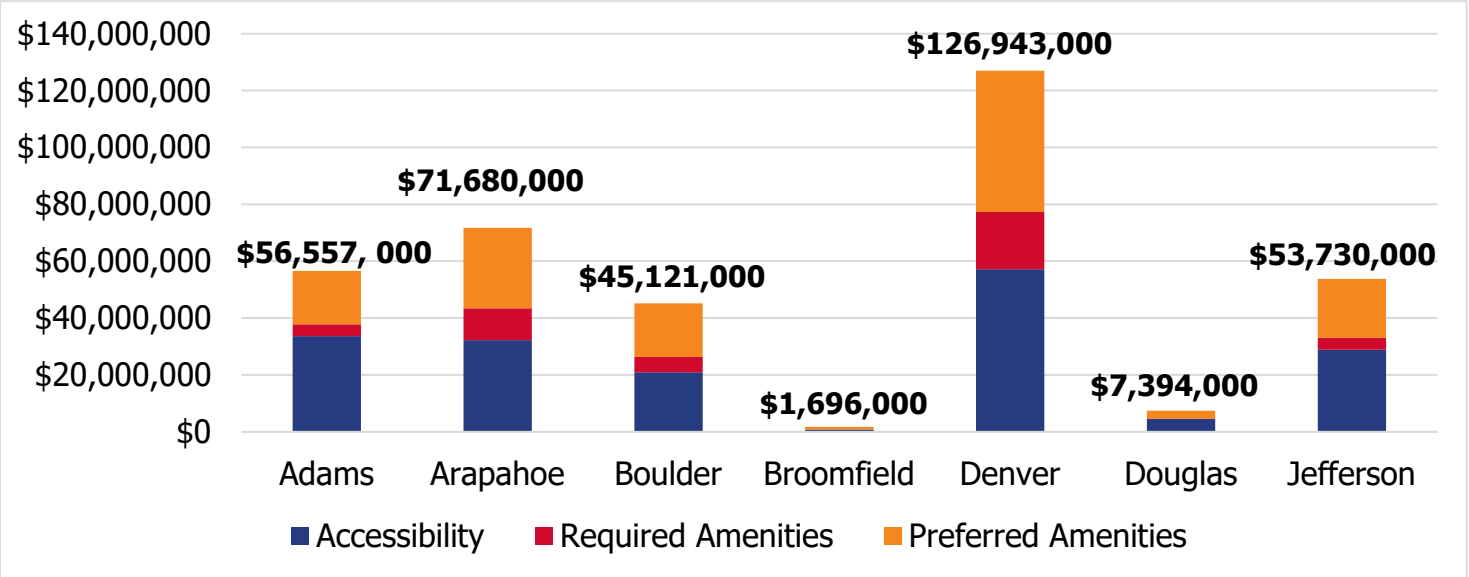
Figure 14: Regional Bus Stop Investment Needs



Investment needs are distributed across all counties and service environments. No single geography or corridor type accounts for the majority of deficiencies. This reinforces the need for a coordinated, systemwide approach rather than isolated projects.

Cost estimates developed through the study provide a planning-level understanding of the magnitude of investment required. These estimates are not intended to define a fixed program. Instead, they establish the scale of need and support future funding strategies, grant applications, and capital planning efforts.

Figure 15: Investment Needs by County

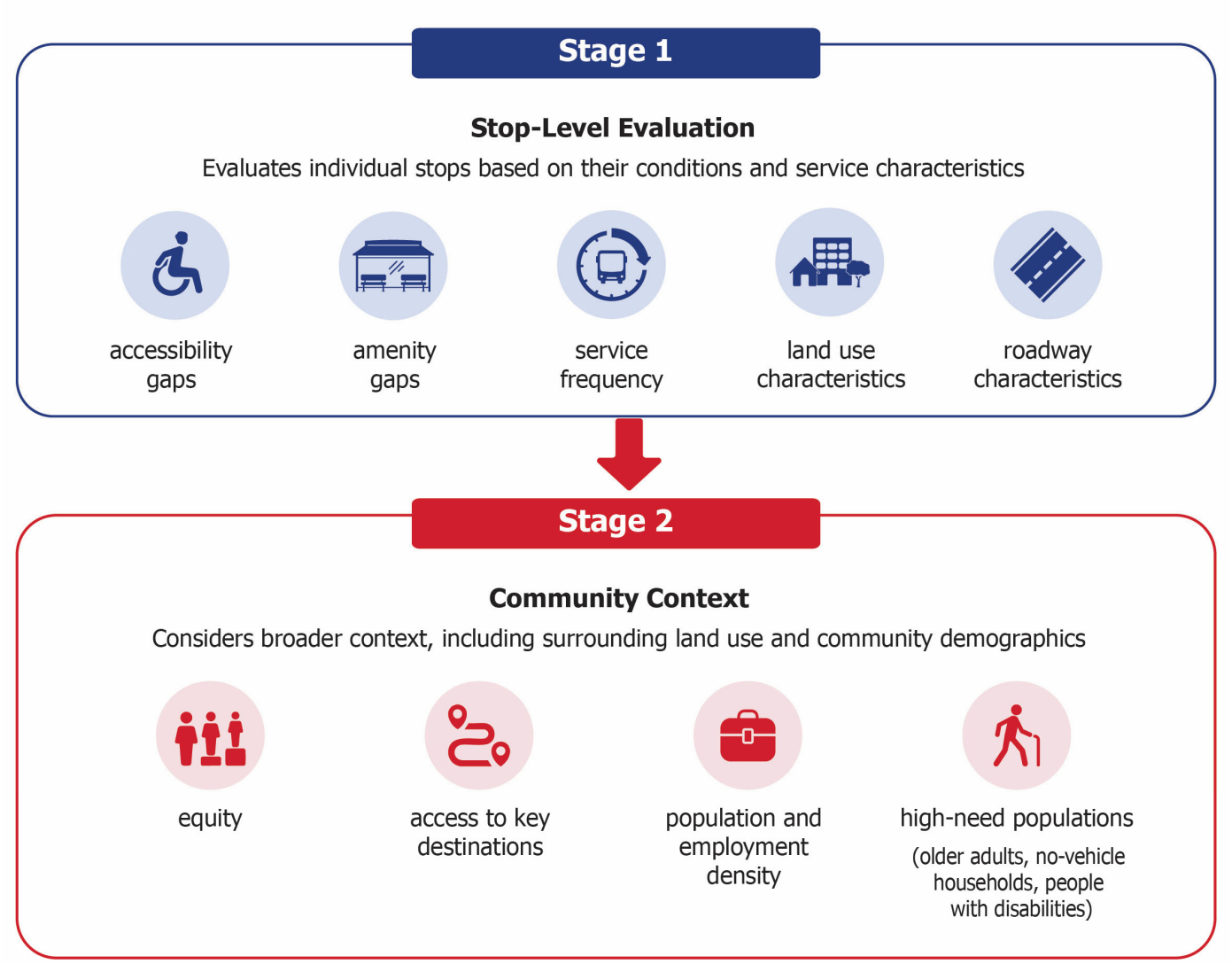


Prioritizing Improvements

Given the scale of need, the BSIAA introduces a structured prioritization framework to guide investment decisions. The framework balances multiple considerations, including accessibility, equity, ridership, service frequency, access to key destinations, and implementation readiness.

Prioritization occurs in two stages. The first stage evaluates individual stops based on their conditions and service characteristics. The second stage considers broader context, including surrounding land use and community demographics.

Figure 16: Prioritization Framework



This approach allows RTD to direct resources toward locations where improvements can deliver the greatest benefit while maintaining transparency and consistency. It also provides flexibility to adapt to different funding sources and project contexts.

The prioritization framework is designed to support a wide range of applications, from capital programming and corridor studies to grant funding and interagency coordination.

Stakeholder Engagement and Regional Alignment

The BSIAA was shaped through extensive engagement with RTD staff, municipalities, counties, and regional partners. This process included meeting with a Project Advisory Group at six key technical milestones of the study; six county-level workshops held in-person across the region with municipal, county, DRCOG, and state-level staff responsible for bus stop improvements and maintenance; and a virtual meeting with regional stakeholders to confirm recommendations.

Across these efforts, several consistent themes emerged. Stakeholders emphasized the importance of establishing accessibility as the baseline for all stops. They supported a flexible but consistent approach to amenity investment and highlighted the need for greater transparency in how funding decisions are made.

Participants also identified challenges related to maintenance responsibilities and data coordination. Many expressed interest in improved data sharing and clearer agreements between agencies.

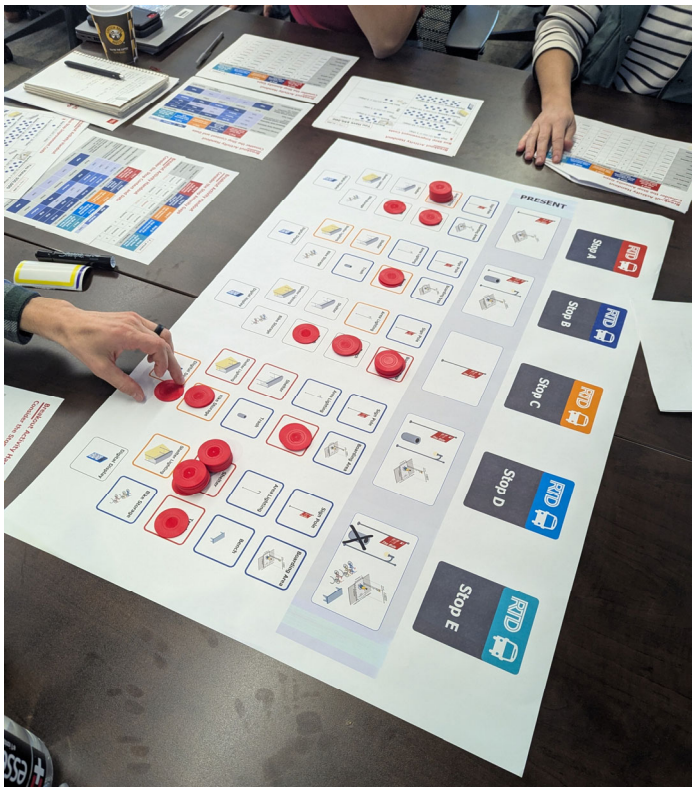


Figure 17: Prioritization Exercise at County-level Workshop

This feedback directly informed the development of the typology framework, prioritization criteria, and implementation approach. It also reinforced the importance of building a regional foundation for collaboration moving forward.

From Framework to Implementation

The BSIAA provides a practical roadmap for translating analysis into action. The implementation framework focuses on three interconnected areas: improving bus stops, maintaining infrastructure, and maintaining data.

Improving bus stops begins with advancing accessibility as the baseline condition across the network. The typology framework provides guidance for scaling amenity investments, while integration with corridor projects and capital programs creates opportunities for efficient delivery.

Maintaining bus stops requires clear definition of roles and responsibilities. Expanding and formalizing maintenance agreements will be critical to ensuring that infrastructure investments are sustained over time.

Maintaining data is equally important. The study establishes a standardized dataset that can serve as a single source of truth. Ongoing data management protocols, including regular updates and defined ownership, will support long-term decision-making and accountability.

Together, these elements position RTD to move from a reactive approach to a more proactive and programmatic model for managing bus stop infrastructure.

Moving Forward

The BSIAA outlines a phased path forward that begins with immediate actions and extends into long-term stewardship. In the near term, RTD can integrate prioritization into capital planning, advance accessibility improvements at high-need locations, and strengthen coordination with municipal partners.

Over time, the focus shifts toward expanding coordinated investment programs, advancing corridor-level improvements, and maintaining the underlying data and frameworks that support decision-making.

The study does not attempt to resolve all challenges at once. Instead, it establishes a clear and flexible structure that allows RTD and its partners to make steady, measurable progress.

Conclusion

The Bus Stop Infrastructure and Accessibility Assessment represents a significant step forward in how RTD plans and delivers bus stop improvements. The study confirms that accessibility deficiencies are widespread and require a coordinated, systemwide response. It demonstrates that amenity investments must be aligned with how stops function within the network. It highlights the importance of data, governance, and interagency coordination in delivering effective improvements.

Most importantly, it provides the tools needed to move forward. With a standardized inventory, a scalable typology framework, and a transparent prioritization process, RTD is positioned to make informed, equitable, and strategic investments in its bus stop network.

Improving bus stops is an ongoing effort that will require sustained commitment and collaboration. The BSIAA establishes a strong foundation for that work, supporting a future in which all customers can access transit safely, comfortably, and with confidence.