



Briefing on Denver Bus Stop Infrastructure

LUTI, March 2024

Agenda

- Intro/Overview – David Krutsinger, DOTI Transit Director
- Number of Denver Stops & Maintenance Responsibility – My La, DOTI Senior Planner
- DOTI's Transit Amenity Program – Michael Holm, DOTI Engineering Manager
- New Stops & Siting in Development Review– Chris Gleissner, CPD Director Site Design & Neighborhood Development & Justin Begley, DOTI Planning Supervisor
- RTD Perspective
- Conclusion

Introduction

- Transit service key to both Affordable Denver & Vibrant Denver
- Bus stop ownership and maintenance is complex
- Goal: serve the resident / the customer well, regardless

Overview



Sheridan



Federal



Broadway



Colfax



Colorado

Bus Stop Amenities Desired by Bus Riders

Lighting ● Shade ● Waste Receptacle ● Seating ● Schedule & Route Info ● Next Bus Arrival ● Sidewalk ● Weather Protection

Themes

- Residents want clean stops with amenities. The more amenities, the better if transit use is to be incentivized.
- Many City Departments are working on the social service issues that are characterized as “problems” at bus stops

DOTI - Led Study: Passenger Amenity Analysis Report (2022)

Analyzed existing conditions and created a bus stop typology to determine what level of investment is appropriate for each stop.

Provides:

- DOTI staff the framework to plan for the future of every stop
- Assessment what amenities are missing
- Prioritization of which stops to improve first
- Exploration of implementation and maintenance possibilities



Passenger Amenities
Analysis
Bus Stop Improvements and Prioritization
City and County of Denver - Department of
Transportation and Infrastructure

FINAL - REPORT
November
2022



Passenger Amenity Analysis Report Findings

STOPS IN THE CITY LIMITS...



2,675 are located within the Denver city limits

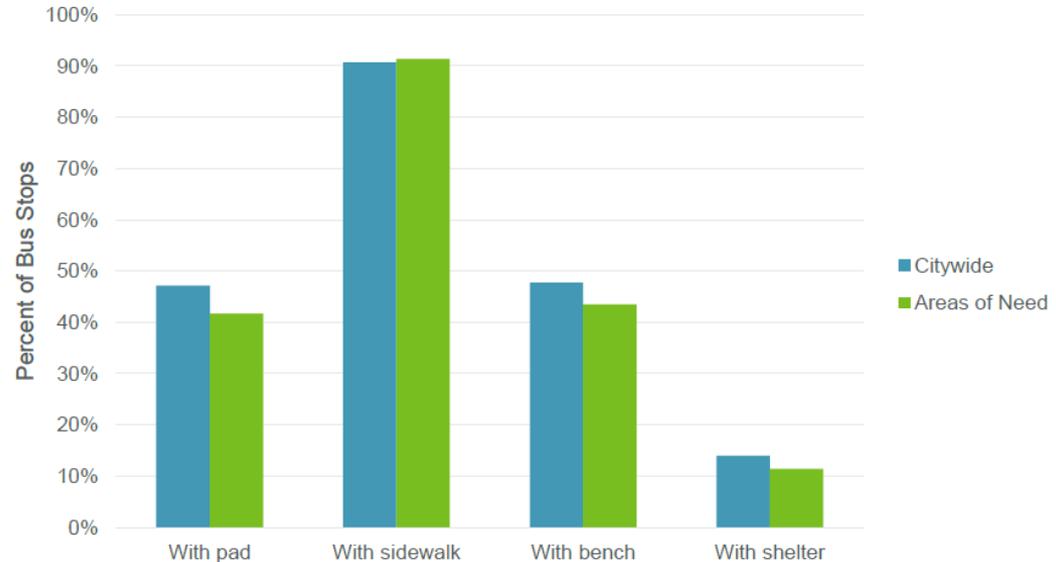


~250,000 riders got on and off the bus each day in Denver in 2019



48% have a bench or other seating

Figure 2-3: Availability of Bus Stop Amenities Citywide and in Areas of Need

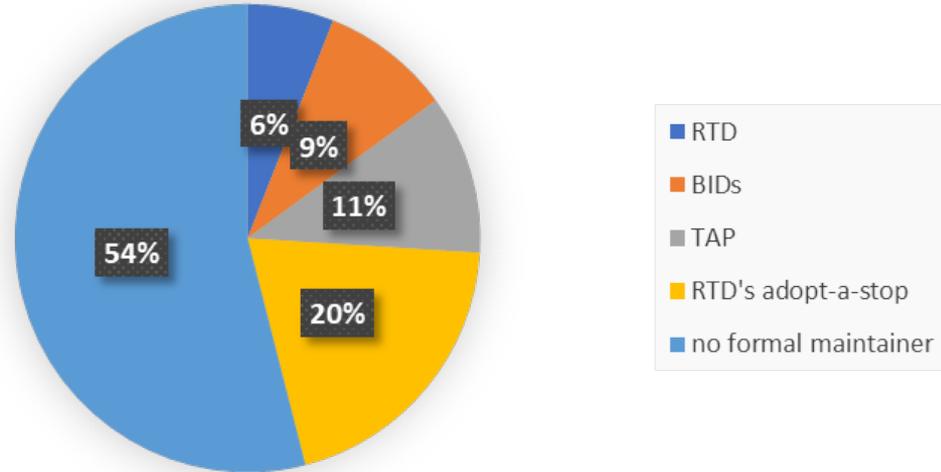


Passenger Amenity Analysis Report Findings

Maintainer information for Denver's bus stops:

- 148 (6%) of bus stops maintained by RTD
- 242 (9%) of bus stops maintained by BIDs
- 308 (11%) of bus stops for which a permit for a shelter or kiosk was granted through the TAP
- 541 (20%) of bus stops adopted by third parties through RTD's Adopt-a-Stop program
- 1,435 (54%), no formal maintainer has been identified. These stops are maintained by adjacent property owners

Bus Stop Maintenance



Passenger Amenity Analysis Report Findings

Table 6-1: Current Stop Maintenance Protocols

Program	Frequency	Maintenance
TAP	Once per week.	Clean stop.
RTD's Adopt-a-Stop	Unspecified frequency over 1-year commitment.	Pick up litter. Empty trash receptacles.
RTD	Typical stops with shelters 3x/week. Busy stops with shelters 6x/week. Pressure wash 1x/month.	Empty trash receptacles. Remove stains and gum. Clean glass. Snow and ice removal.
Districts – Special, Business Improvement, Maintenance, etc.	Varies, based on agreed-upon schedules.	Varies, based on agreed-upon schedules.

DOTI's Transit Amenity Program (TAP)

1st Rule/Regulation in 2001, updated in 2012

- Permit-based program, currently 7 participating vendors
 - most are small & local-only, a few are "regional", one is national but is a small player in our market
- In a nutshell, TAP allows vendors to advertise in the ROW in exchange for:
 - permit fees (\$400/year per ad-bearing amenity)
 - trash service (once weekly, some stops 2x weekly)
 - benches at other stops (request-based, depends on site)
- 11% of bus stops are in the TAP program
 - most stops have "issues" (access, ADA, space, ownership, zoning)

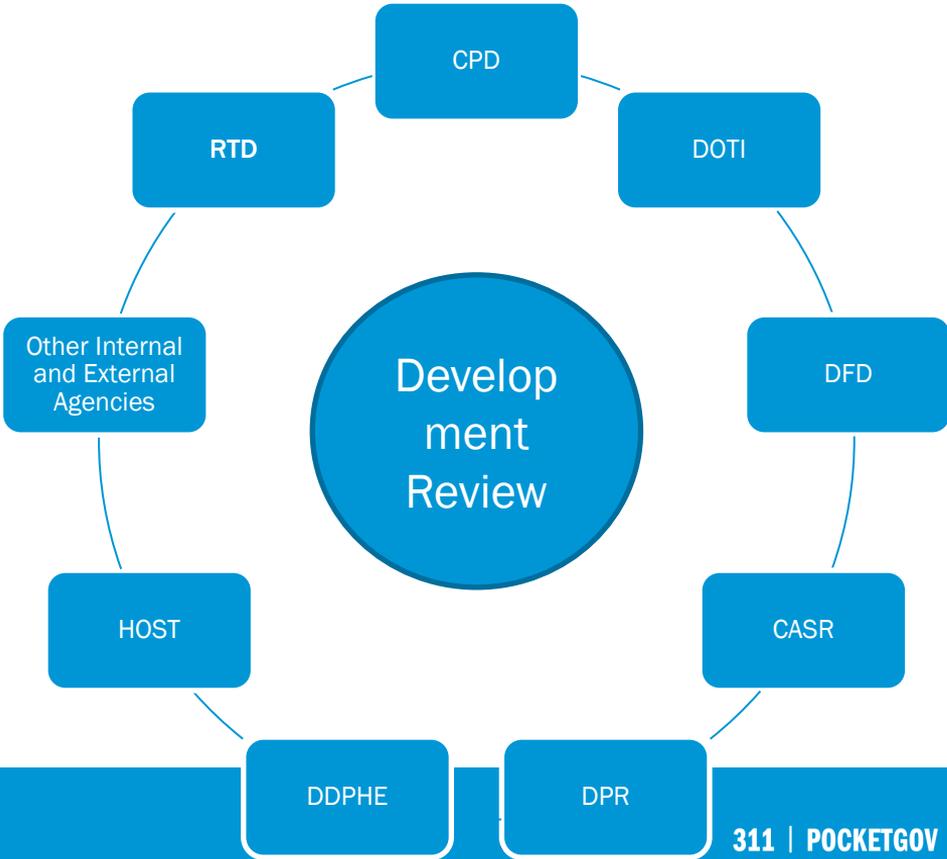
Increased Maintenance Need in Recent Years Has Led to Both Unkept Bus Stops and Loss of Amenities

- Lincoln at 1st Avenue
- Resident tried cleaning it themselves
- Then asked for help and filed complaints
- Advertiser: costs of cleaning exceeded advertising revenue
- Bus shelter withdrawn



Source: Denverite, July 7, 2023

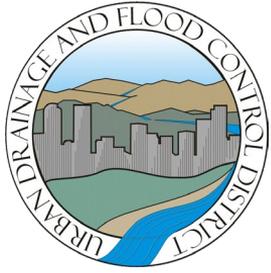
Development Review System



Development Review Disciplines

1. Project Coordinators
2. Customer Service Intake/Log-In
3. Residential Review
4. Zoning Administration
5. Commercial Zoning Review
6. Commercial – Architecture/Structural
7. Mechanical/Plumbing Review
8. Electrical Review
9. Landmark
10. Construction Inspections
11. Electrical Inspections
12. Mechanical/Plumbing Inspections
13. Zoning/Neighborhood Inspections
14. Inspections Support
15. Contractor Licensing
16. Cashiering
17. Records
18. Fire Protection Engineers
19. Testing/Certificate of Occupancy/Assembly
20. High Rise/Institutions/Evacuations Inspections
21. Hazmat/Flammables/Warehouses Inspections
22. Marijuana Grow Facility Inspections
23. Conveyance Inspections
24. Sewer Use and Drainage (SUDP)
25. Site Engineering Wastewater
26. Site Engineering Transportation
27. Survey
28. Engineering, Review, Analytics
29. DOTI Permit Operations
30. Right of Way Inspections
31. Excavation Bonding
32. Erosion Control Inspections
33. Solid Waste
34. Parks Planning
35. Forestry Plan Review
36. Forestry Inspections
37. Environmental Health
38. Excise & Licenses
39. Office of Disability Resources
40. Office of Economic Development
41. Asset Management (Finance)
42. Special districts review
43. City Attorney's Office
44. Emergency Management
45. Affordable Housing Review
46. Energy Review

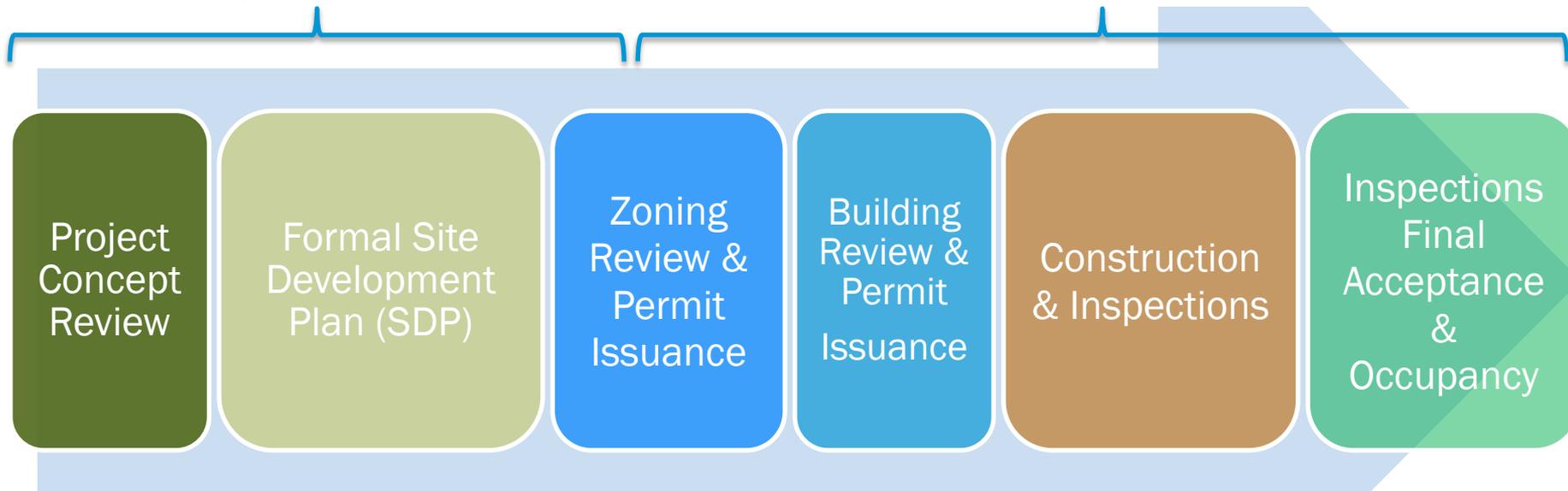
7 External Referral Agencies



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Concept & Site Development Plan (SDP) Phase*

Plan Review, Permitting & Inspection Services



What is the Typical Review Process for Bus Stops in Development?

Step 1: Transit Adjacency

- Is the project on an existing or proposed bus route
- Is there an existing adjacent bus stop?

Step 2: Stop Balancing

- Are the existing stops well spaced along the route? (typical $\frac{1}{4}$ mile spacing)

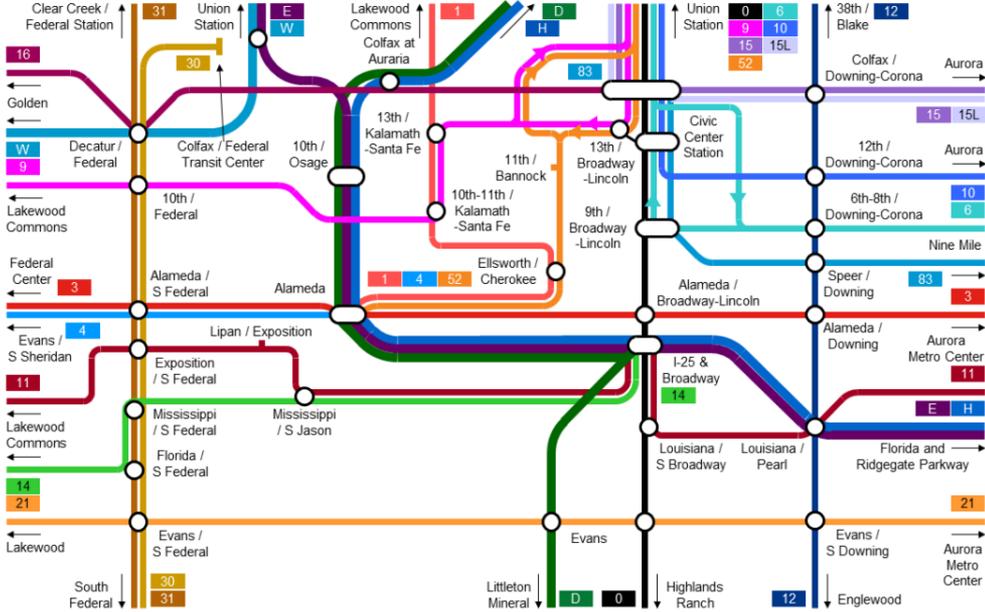
Step 3: Stop Placement

- Is the placement of the existing stop safe, comfortable and operationally efficient?

Step 1: Transit Adjacency

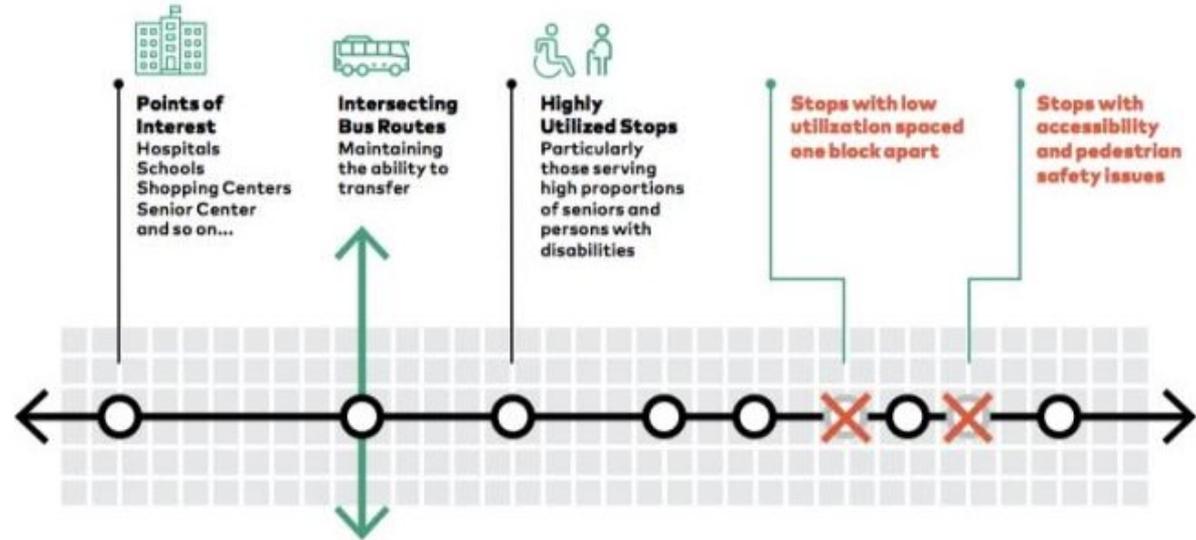
Compared against:

- Existing RTD Routes
- RTD SOP Routes
- Denver Moves Transit



Step 2: Stop Balancing

Even though bus stop balancing is focused on removing stops, sometimes stops are relocated when others are removed to create better overall spacing.



Step 3: Stop Placement

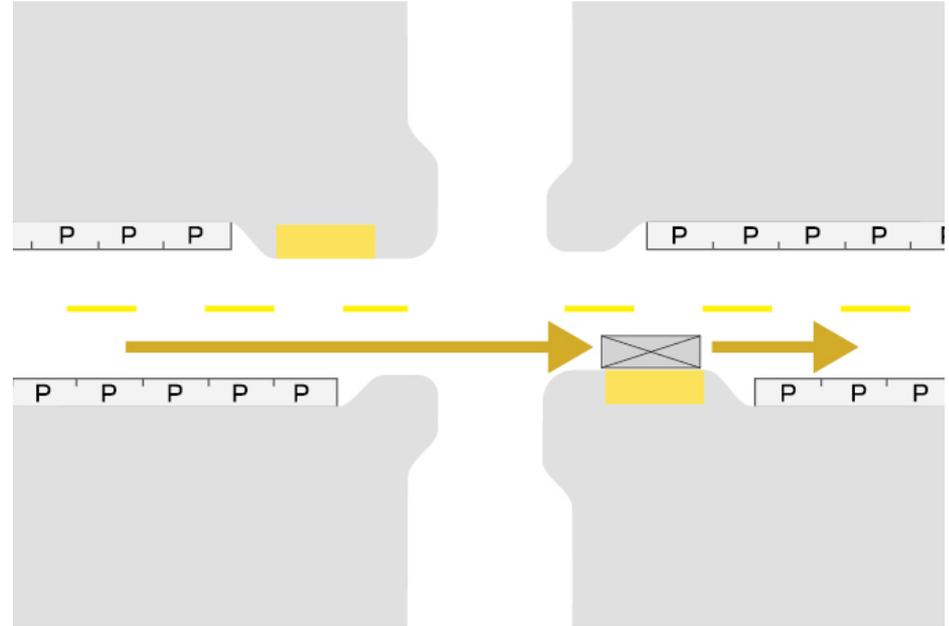
Far-side bus stops are typically preferred for both safety and operations

NACTO:

- “Stops at the far side of an intersection confer the highest priority to transit operations at most signalized intersections.”

FHWA

- “Relocating the bus stop to the far side of the intersection can improve pedestrian safety since it eliminates the sight distance restriction caused by the bus.”



Bus Stop Accessibility

Bus Stops must be accessible otherwise RTD cannot serve them

- *RTD follows the guidance of the FTA ADA Circular and the Code of Federal Regulations, specifically section 35.151, which states that transportation facilities that are newly constructed or altered must comply with the standards and requirements set out by the 2010 ADA Standards for Accessible Design - specifically Section 810 for Transportation Facilities*

FTA C 4710.1
Chapter 3 – Transportation Facilities Attachment Page 3A-4

3 Bus Boarding and Alighting Areas (DOT Standards 209, 218.4, 810)

Identify bus boarding and alighting facilities within the scope of review and complete the following sheet for each of them. Where the transit entity does not control the facility and connections to and from it, coordination with the municipality or other controlling entity is recommended.

Control	Note: OK, No, or N/A. Note dimensions if No
Does transit entity control the bus boarding/alighting facility? (209.2.2) (810.2)	
Connections	
Accessible route between all bus stops within site and accessible entrance (206.2.1)	
Accessible route to streets, sidewalks, and pedestrian paths (810.2.3)	
Boarding and Alighting Area (810.2.2)	
≥ 96" perpendicular to the roadway, from curb or road edge	
≥ 60" long parallel to the roadway	
Slope (810.2.4)	
Parallel to the roadway the slope is the same as the roadway, to the maximum extent practicable	
Perpendicular to the roadway the slope is ≤ 1:48 (2.1%)	
Bus Route Signs (810.4)	
Non-glare finish (703.5.1)	
Contrast between characters and background (703.5.1)	
Width of uppercase "O" is between ≥ 56% and ≤ 110% of the height of uppercase "I" (703.5.4)	
Character height meets 703.5.5 to maximum extent practicable (See Circular Facilities Checklist Section 14 – Ticketing and Automatic Fare Vending.) Note: Bus schedules, timetables, and maps not required to comply	
Characters upper or lower case (703.5.2)	
Characters "conventional" in form: no italic, oblique, script, or highly decorative (703.5.2)	
Width of uppercase "I" ≥ 10% to ≤ 30% of the height (703.5.7)	
Closest characters spaced between ≥ 10% and ≤ 35% of the character height (703.5.8)	
Bus Shelters (218.4)	
Connected by an accessible route to bus boarding and alighting area (810.3)	
Clear floor space of ≥ 30" by ≥ 48" entirely within shelter (305.3) (810.3)	
One side of the clear floor space adjoins accessible route (305.6)	
If the clear floor space is confined on any of three sides, width ≥ 36" for front approach or length ≥ 60" for parallel approach (305.7)	
Clear floor space: Surface stable, firm, and slip resistant and no changes in level > ¼" (305.2) (302.1)	

What are the Typical Outcomes for Bus Stops With Development Review Comments?

1. Maintain In-Place
2. Stop Upgrade
3. Relocation Into Optimal Placement
4. Green Field Development

*Any Recommendations from DOTI Staff Goto or Are Otherwise Reconciled with RTD Comments

RTD Police Approach

- 20 Officers in 2023 → 165 Officers in 2025
- Visible presence
- Dedicated policing zones / districts
- Data-driven decisions
- Welcoming Transit Environment outcome



Bus Stop Infrastructure Accessibility Assessment

- Summer 2024 – Summer 2025
- Engage stakeholders & collaborate
- Establish bus stop database
- Establish aspirational standards & types
- Inform future investment decisions
- Structure priorities & responsibilities



Recap of Bus Stop Maintenance Responsibility Distribution

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Questions & Contacts

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