



DART Mobility+ Initiatives

SAME Infrastructure Conference
February 9, 2024

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Mobility+ Program Elements

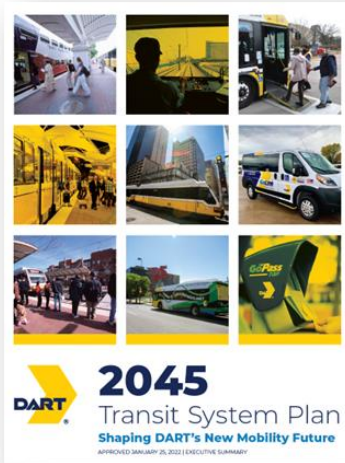


Today's Discussion

- Mobility Hub Guidelines
- Bus Corridor Improvement Program (CORE)
- Passenger Amenities
- Zero Fleet Transition Plan

Background

- 2045 Transit System Plan approved in January 2022 with five themes
- All themes relate to passenger facilities
- Mobility & Innovation action item to develop Mobility Hub Guidelines
- Opportunity to advance strategic vision and key goals at bus facilities and rail stations



RIDER EXPERIENCE

MOBILITY & INNOVATION

SERVICE & EXPANSION

LAND USE & ECONOMIC DEVELOPMENT

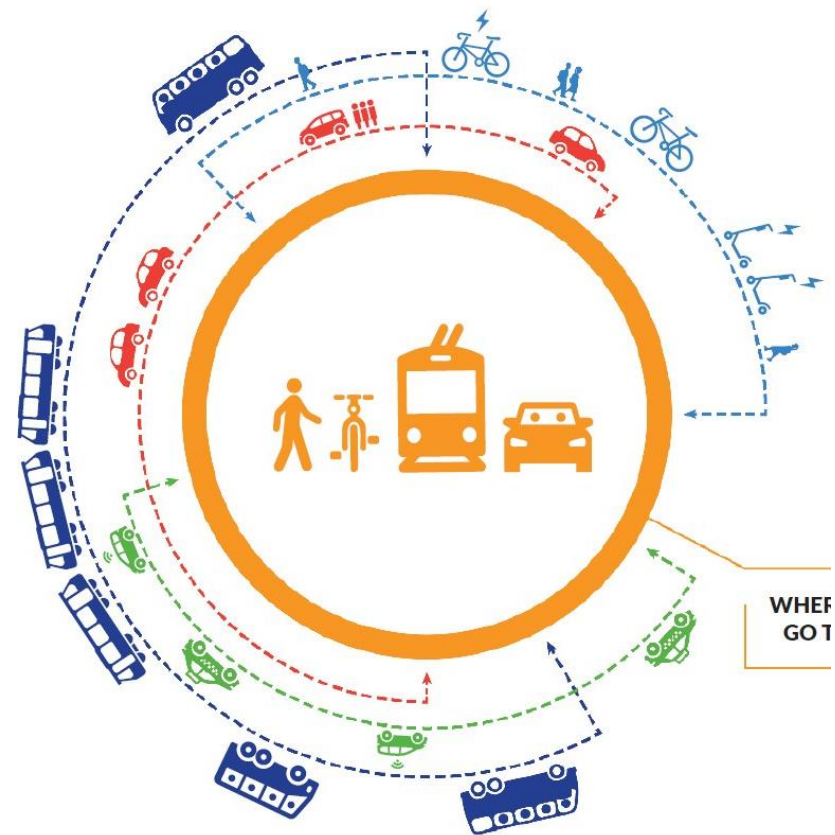
COLLABORATION

A yellow and white bus with the number 41041 is parked on a city street. The bus has a large advertisement on its side. In the background, there are several tall, modern buildings with glass facades. The sky is blue with some clouds. The entire image has a light blue tint.

Mobility Hub Guidelines

DART Facilities as Shared Use Mobility Hubs

- DART facilities serve as multi-modal hubs
- Opportunity to modernize and update existing and future transit facilities
- by integrating mobility hub amenities to add functionality and options that improve mobility and access



Mobility Hub Guidelines

- Develop Guidelines to document toolbox of Mobility Hub elements
- Identify Facility/Station Typologies and most appropriate types of Mobility Hub elements

Transit Facility Assessment

- Inventory existing transit facilities (bus and rail)
- Identify key evaluation categories and criteria
- Map evaluation data
- Define typology

Implementation Strategy

- Implementation approach and schedule
- Pilot locations
- Identify priorities, budget needs FY24 and FY25
- Leverage funding by identifying and applying for grant opportunities

Mobility Hub Guidelines



Mobility hubs integrate mobility options, amenities and uses to benefit communities and make using transit convenient and seamless.

- Guidelines include a menu of hub elements that can be incorporated at transit facilities and rail stations as we advance modernization efforts
- Mobility hub features can transform DART facilities into valued community assets
- Evaluation factors and key considerations included to guide prioritization and implementation

Categories



TRANSIT CONNECTIONS

Elements that directly support facility transit functions, which is assumed to already include bus and/or rail service.



PEDESTRIAN CONNECTIONS

Elements that enhance walkability by supporting easy access to, from, and within a facility for people walking or using mobility devices, such as wheelchairs or walkers.



BICYCLING CONNECTIONS

Elements that provide services supporting bicycling to and from a facility, or enhanced connections to or through a DART facility.



MICROMOBILITY

Elements that address emerging additional first- and last-mile options to access transit that are often provided by third party vendor agreements and subject to city specific regulations.



AUTO CONNECTIONS

Elements that support connections between transit and automobiles, including car share or EV charging options.



PLACEMAKING AND COMMUNITY

Elements that expand the value of a facility beyond its core transit functions through complementary uses that support the community, design features that elevate a space and engage people, or transit-oriented development to create social and economic activities.



CONVENIENCE AND SECURITY

Elements that enhance convenience and comfort, including wayfinding, seating, customer service support, as well as features to enhance security such as lighting and security systems or personnel.

Mobility Hub Concept



- | | | | |
|--|---|--|-----------------------------------|
| 1. DART rail/bus bays | 6. Safe and comfortable connections within the mobility hub | 10. Ride hailing pick up/drop off - combine with kiss and ride | 15. Mobile vendors |
| 2. Microtransit stop | 7. E-bike charging station | 11. Carshare parking | 16. TOD and joint-use development |
| 3. Bus shelter and train canopy | 8. Electric scooter hub | 12. EV parking/charging station | 17. Wayfinding and signage |
| 4. Transit passenger facility/ Transit center building | 9. Bikeshare hubs | 13. Outdoor public space/plaza | 18. Info kiosk |
| 5. Real-time transit information | | 14. Solar panels | 19. Package delivery lockers |

Evaluation Factors

- Key considerations to support type of elements, prioritization, and opportunity to leverage external funds



TRANSIT SERVICE INTENSITY AND RIDERSHIP



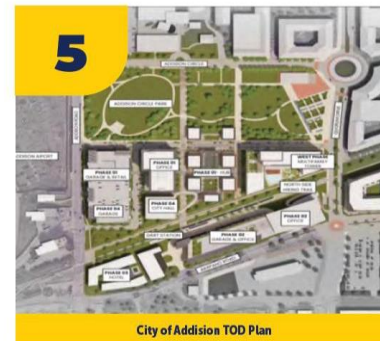
COMMUNITY CONNECTIONS



DENSITY

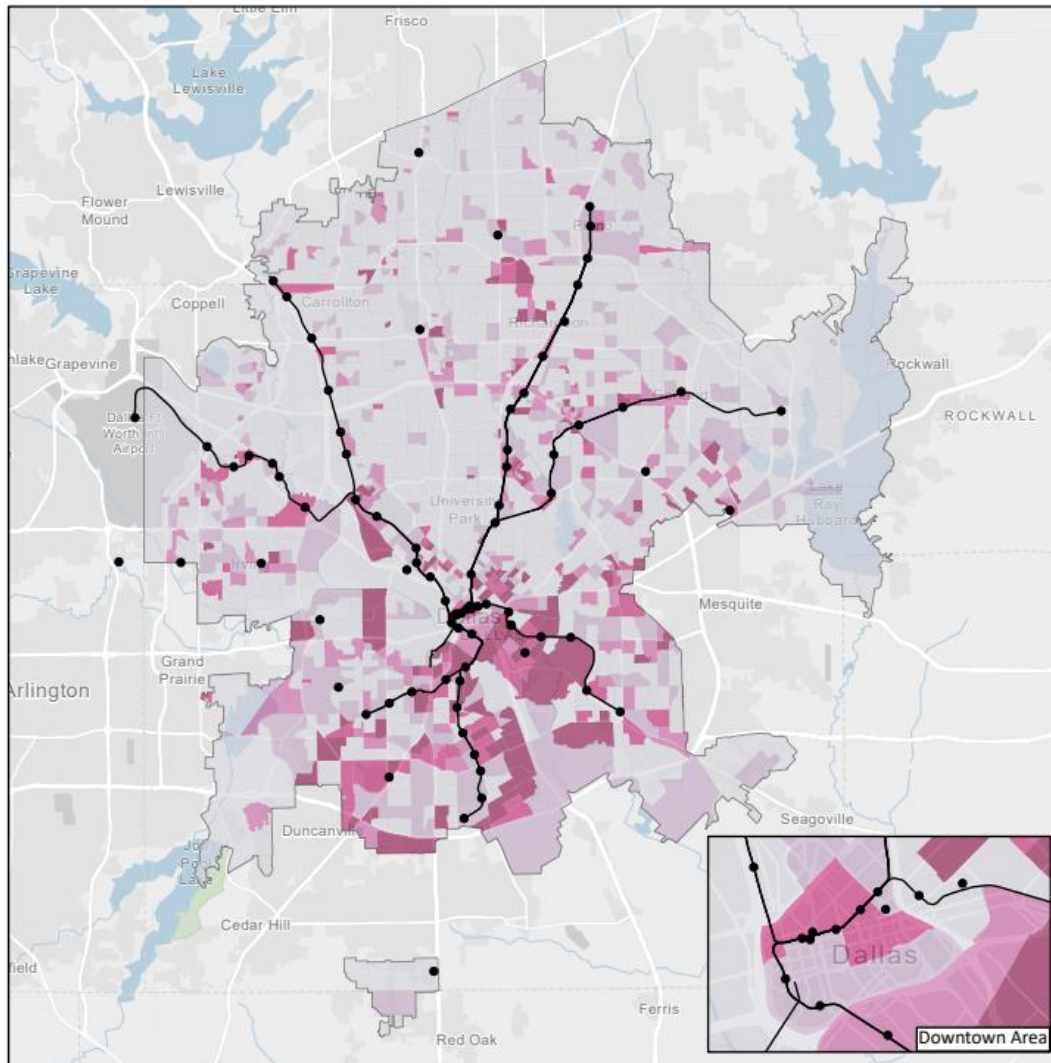


EQUITY



TRANSIT-ORIENTED DEVELOPMENT POTENTIAL

Equity Zero Car Households



Mobility Hub Guidelines Facility Needs and Opportunities Analysis Percentage of Zero-Car Households

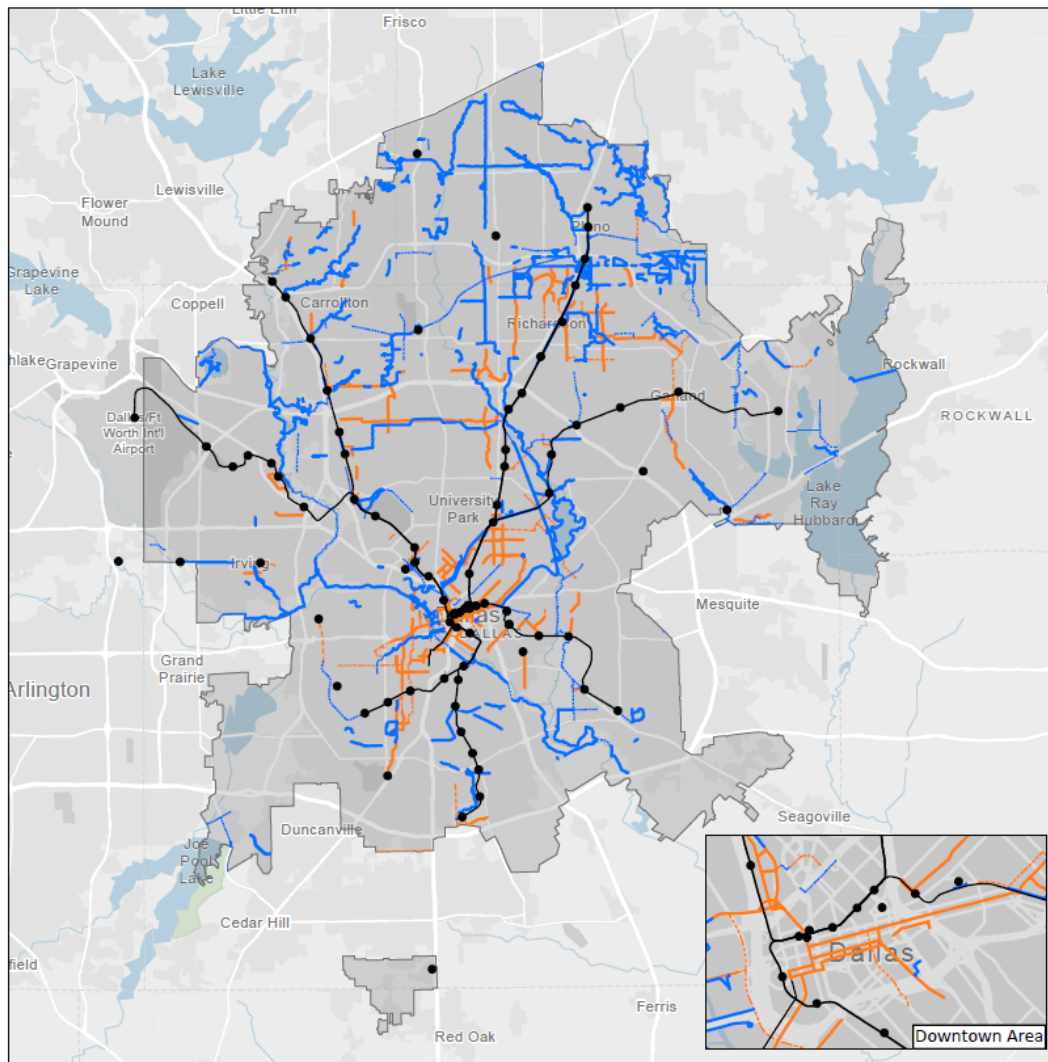
- Passenger Facility
 - DART Rail Line
 - DART Service Area
- Percent of Zero-Car Households
- 0-5%
 - 5-10%
 - 10-15%
 - 15-20%
 - > 20%



Data Source:
NCTCOG Transit Accessibility
Improvement Tool

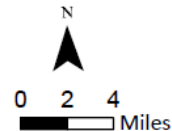


Community Connections Bikeway Network



Mobility Hub Guidelines Facility Needs and Opportunities Analysis Bikeway Network

- Passenger Facility
- DART Rail Line
- DART Service Area
- Bikeway Network**
- Off-Street, Existing
- Off-Street, Funded
- On-Street, Existing
- On-Street, Funded



Data Source:
NCTCOG, 2022



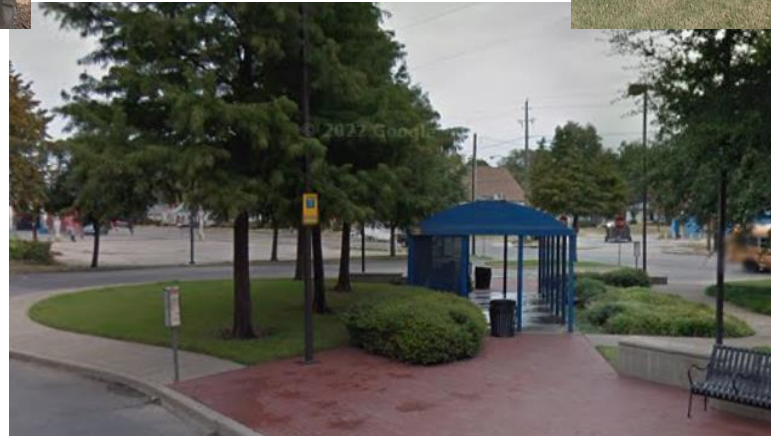
Existing Facilities Review

Passenger Transfer Locations



Cockrell Hill

Bernal/Singleton



Malcolm X

Existing Facilities Review

Park and Ride Facilities



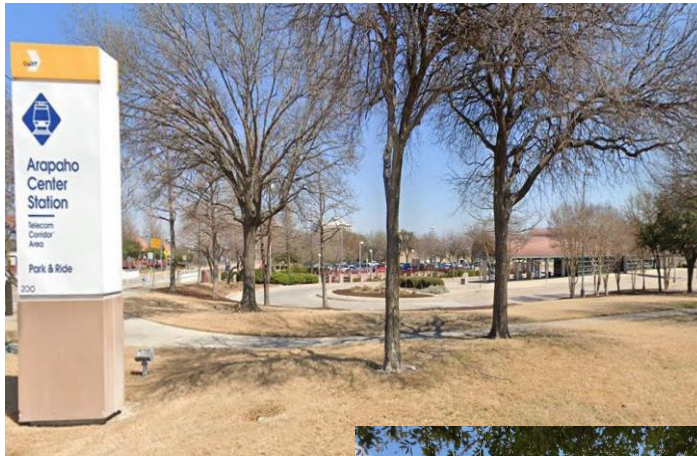
Northwest Plano



Glenn Heights

Existing Facilities Review

Transit Centers



Arapaho



Red Bird

CBD Transfer Centers

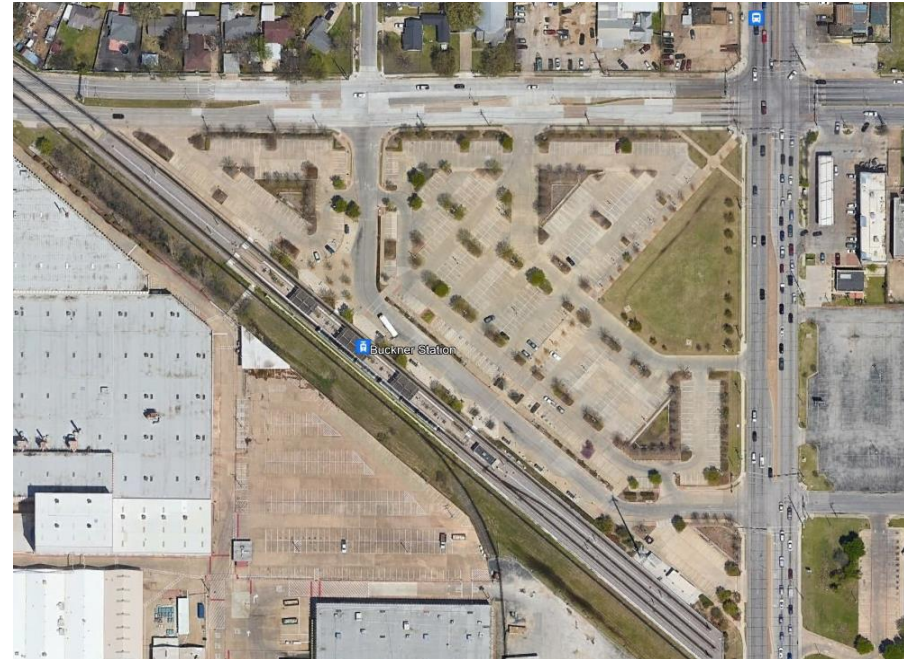
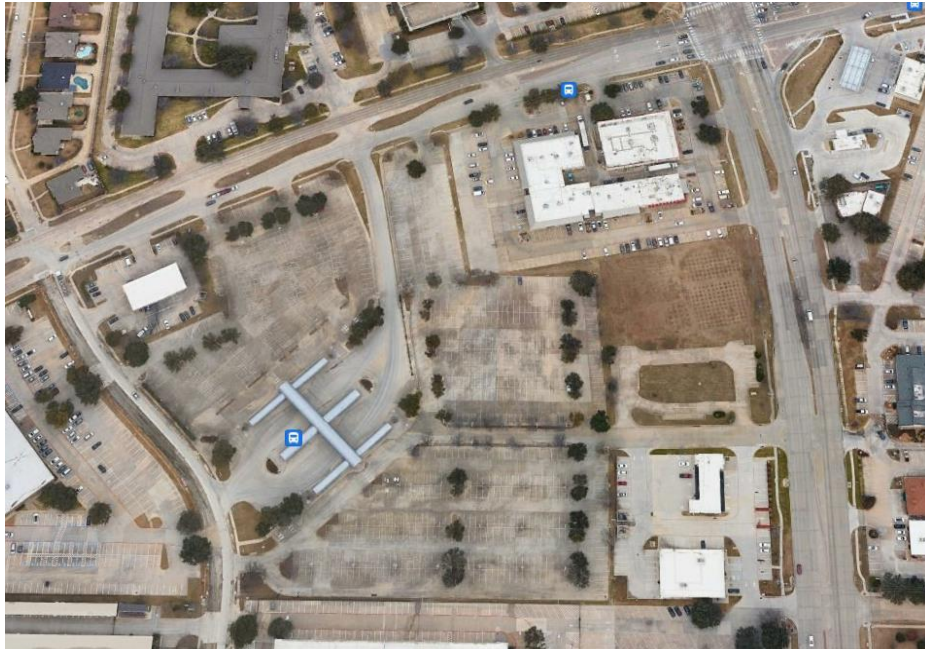


CBD West and CBD East

Existing Facilities Review

Park and Ride Facilities are underutilized at bus and rail stations

Jack Hatchell



Buckner

Transit Center Interior Example



South Garland TC



Concierge,
real time
information,
customer
information,
some seating
in one area



Another area is
separate from
concierge with more
customer seating and
no real time information

Transit Center Interior Example

Red Bird TC



Recent San Bernardino example



Near Term Opportunities

- Facilities to be modified or relocated as part of a TOD plan
 - Lake Ray Hubbard Transit Center
 - South Garland Transit Center
 - Addison Transit Center
 - Arapaho Transit Center
- Upcoming facility planning efforts (new FY24 projects)
 - Downtown Carrollton Historic Depot Adaptive Reuse
 - Red Bird and East Dallas Facility Site Assessment and Concept Design (80% - Areas of Persistent Poverty Grant award)
- Range of additional opportunities to be defined as part of the DART/City Area Plan effort

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Bus Corridor Improvement Program

Corridor Optimization + Rider Experience (CORE)

Policy and program for bus corridors focused on continuous improvement in collaboration with service area cities to:

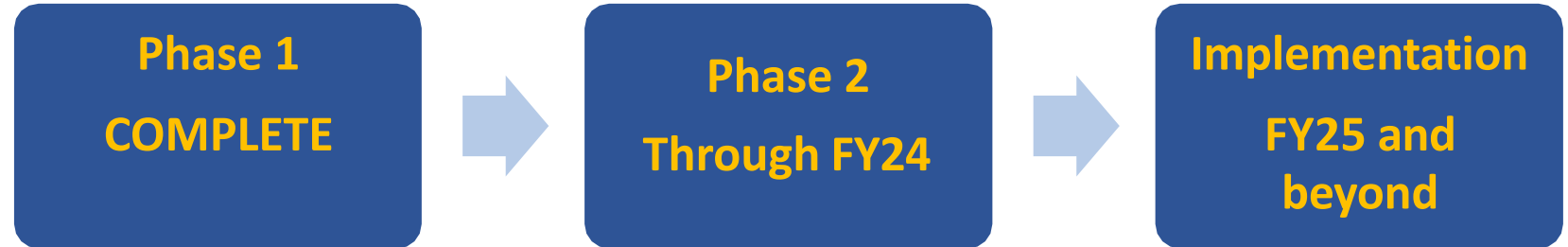
- Elevate role of DART bus service in mobility network
- Promote transit priority and consideration of bus in projects
- Grow ridership and move more people more efficiently
- Improve rider experience



GOALS



Phased Approach




- Education/collaboration with city staff
- Strategy toolbox
- Bus corridor assessment and key opportunities
- Identify priorities
- Set the stage for more detailed work

- Identification and categorization of projects and cost estimates for priority projects
- Implementation approach and schedule
- Design guidelines
- Refine budget needs for FY25 and grant opportunities

- Leverage funding opportunities
- Measure performance
- Expand program into more corridors

Best Practices Toolbo

Source: NYC DOT


STREET AND INTERSECTION DESIGN

Tools that improve speed, safety, access and reliability through the physical design of streets and intersections.



BUS STOPS AND ROUTING


Tools that improve speed and reliability through stop location and spacing.



Source: LA Metro

TRAFFIC REGULATIONS

Transit-beneficial operational modifications that require minimal capital investment, including, when necessary, enforcement.



TRAFFIC SIGNALS

Tools that modify signal timing, phasing, and indications to improve bus speed and reliability.

Best Practices Toolbox Overview

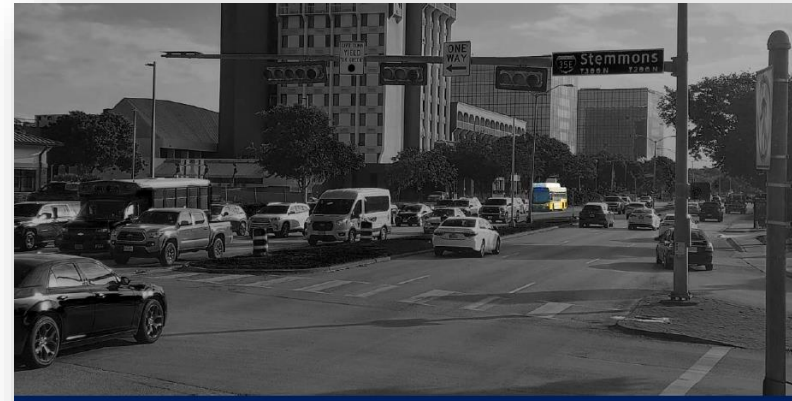
POTENTIAL TREATMENTS OVERVIEW

Low ◆	Medium ◆◆	High ◆◆◆
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	GOALS			CONSIDERATIONS		
	Enhance Speed & Reliability	Improve Safety	Improve Access & Connectivity	Coordination Level (estimated)	Cost Range (estimated)	Spot or Segment
STREET AND INTERSECTION DESIGN						
Dedicated Bus Lane	◆◆◆	◆◆	◆	◆◆	◆◆	Segment
Queue Bypass (Short Bus Lane)	◆◆◆	◆◆	◆	◆◆	◆◆	Segment
Roadway Channelization	◆	◆◆	◆	◆◆	◆◆	Segment
Turn Radius Improvements	◆	◆		◆◆	◆	Spot
Speed Hump Modifications	◆			◆	◆	Segment

Phase 1 Summary Report

- Methodology
- Corridor Assessment
- Next Steps
- Appendix
 - A. Best Practices Toolbox
 - B. Route Heat Maps
 - C. Front Line Staff Input
 - D. Route Profiles and Recommendations



Bus Corridor Improvement Program Phase 1 Summary Report

NOVEMBER 2023

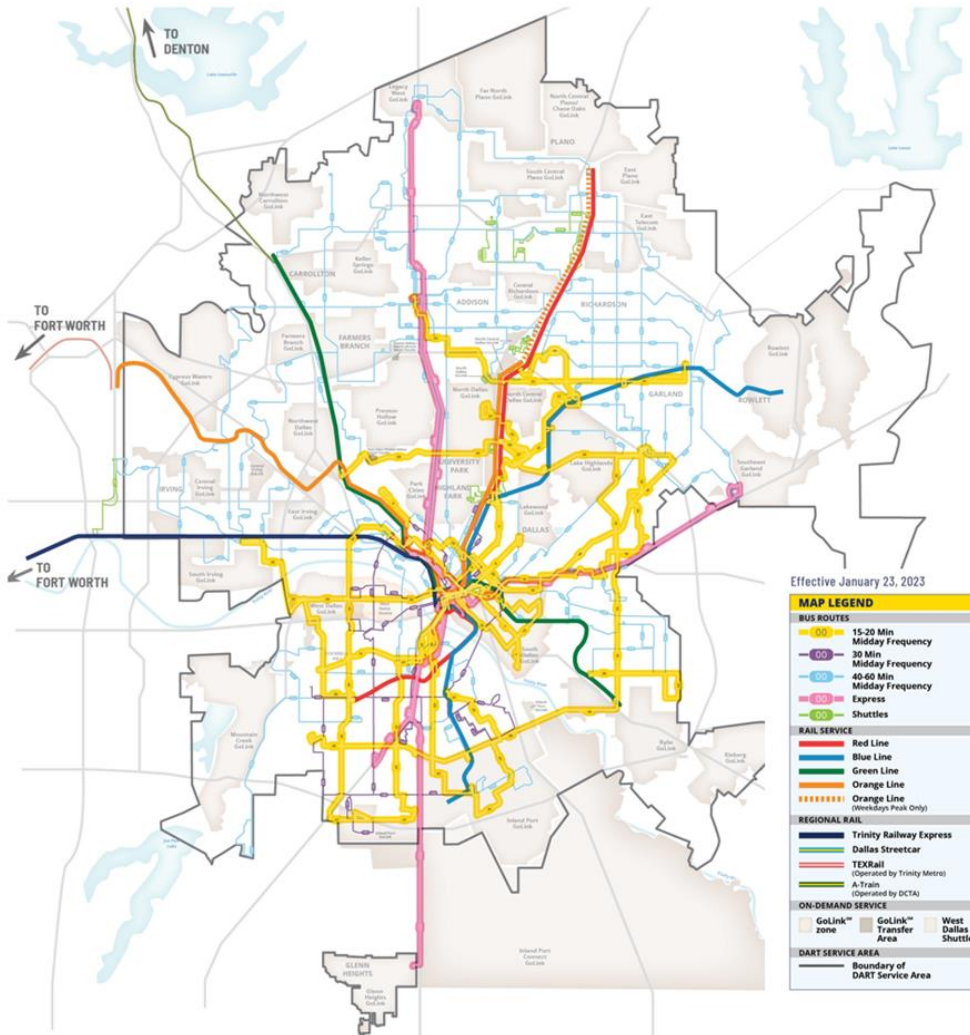
PREPARED BY GPC7
Prepared for Dallas Area Rapid Transit
General Planning Consultant Managed by HDR, Inc.



BEST PRACTICES TOOLBOX

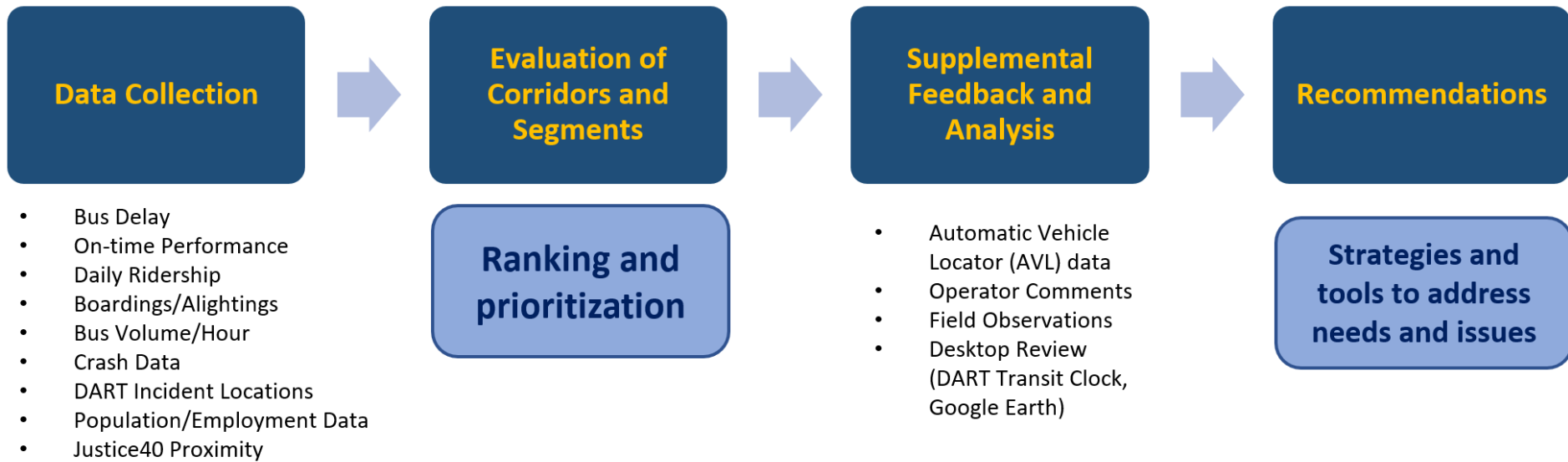
JUNE 2023

Study Corridors



Route No.	Route Name	Route Length (Miles)	Weekday Service Frequency (Peak/Midday/Off Peak)
1	Malcolm X-Maple	8.7	15/15/30
3	Ross	6.5	15/15/30
5	Love Field Shuttle	2.1	15/15/30
9	Jefferson-Gaston	12.2	15/15/30
13	Ervay	8.7	15/20/20-30
15	Buckner	12.4	15/20/20-30
16	Ferguson	14.0	15/20/20-30
17	Skillman	14.6	15/20/20-30
18	Samuell	17.0	15/20/20-30
20	Northwest Highway	17.0	15/20/20-30
22	Forest Lane	15.4	15/20/20-30
23	Haskell	7.1	15/20/20
25	Cockrell Hill North	11.0	15/20/30
27	Ridgecrest	5.2	15/20/30
28	Singleton	8.2	15/20/30
30	Lake June	5.3	15/20/30
38	Ledbetter	15.4	15/20/20-30
41	Bonnie View	9.9	15/20/30
45	Marsalis	13.1	15/20/30
47	Polk	15.1	15/20/30
57	Westmoreland	17.5	15/20/20-30

Evaluation Process



Criteria and Metrics

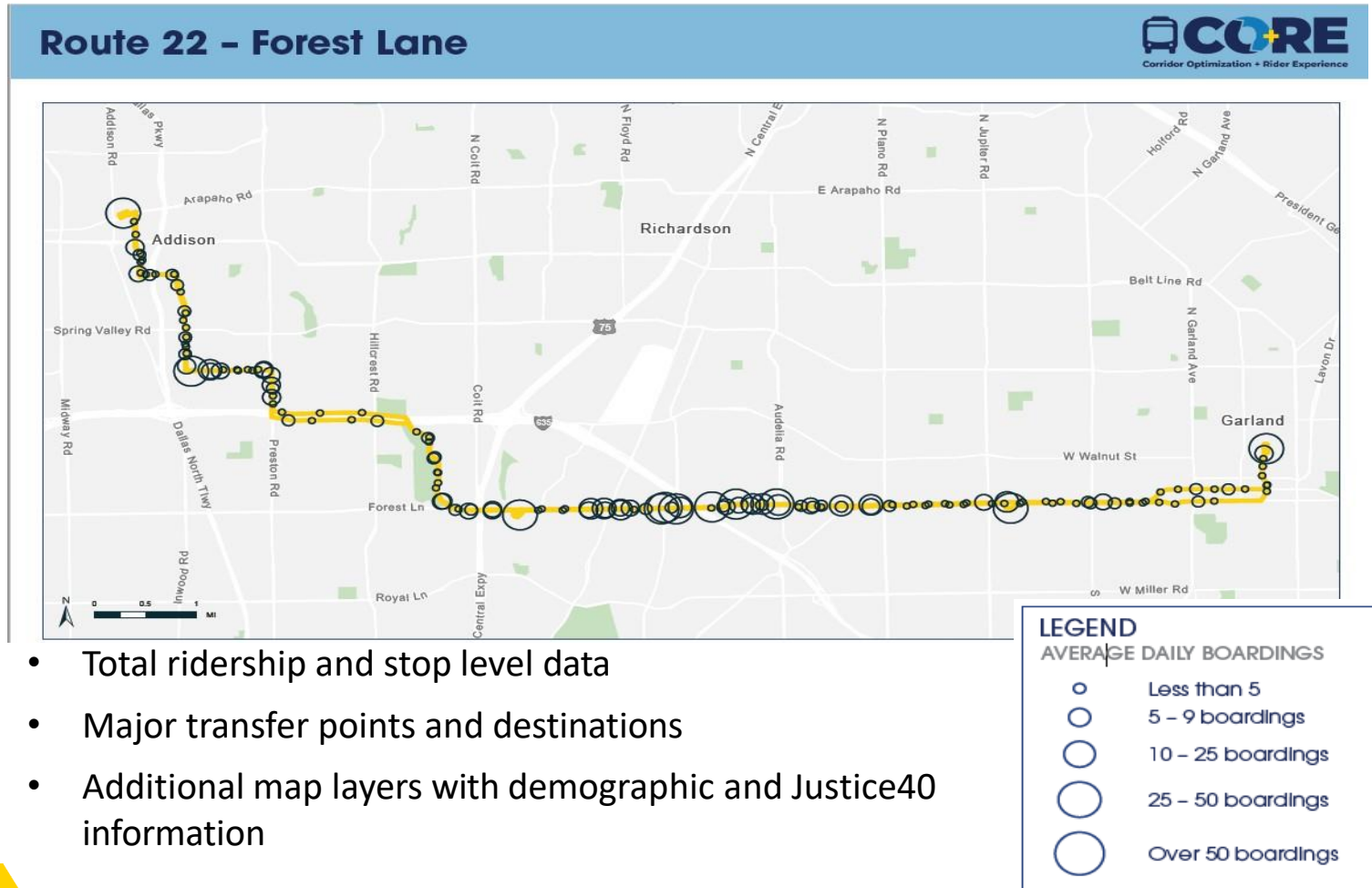
Criteria	Proposed Metrics	Goal
Transit Performance (50%)	<ul style="list-style-type: none"> • Bus delay based on bus speed to speed limit in segment 	Enhance Speed & Reliability
Transit Intensity & Ridership (30%)	<ul style="list-style-type: none"> • Average Daily Ridership • Boardings & Alightings by stop • Bus volume/hour • Passenger loads 	Enhance Speed & Reliability
Safety (5%)	<ul style="list-style-type: none"> • Crash data (pedestrian and vehicle) • DART incident locations 	Improve Safety
Pop/Emp Density (10%)	<ul style="list-style-type: none"> • Existing Population & Employment through NCTCOG traffic area zones (TAZ) w/in ¼ mile buffer of segment 	Access & Connectivity
Equity (5%)	<ul style="list-style-type: none"> • Justice40 Census Tract Proximity 	Access & Connectivity

Internal Stakeholder Engagement

- June 2023 - Bus Operator Surveys conducted at Operating Division Facilities
 - Feedback on locations (segments, intersections)
- October 2023 - Internal department review of Phase 1 recommendations
 - Service planning
 - Operations



Sample Corridor Overview



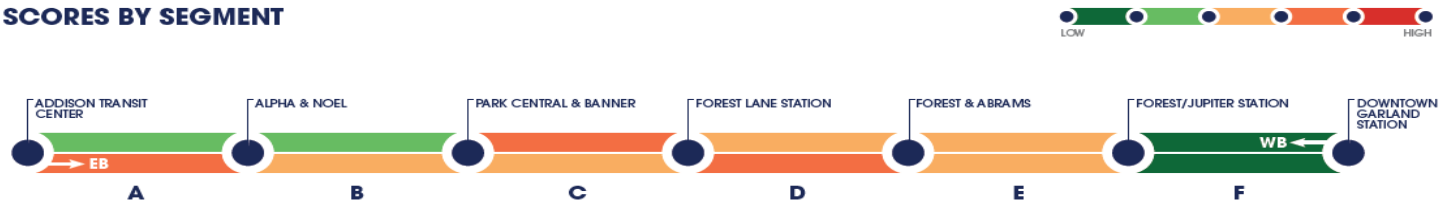
Sample Performance Evaluation

Summary of route performance and key observations in table and visual format (chart or map)

Route 22 – Forest Lane

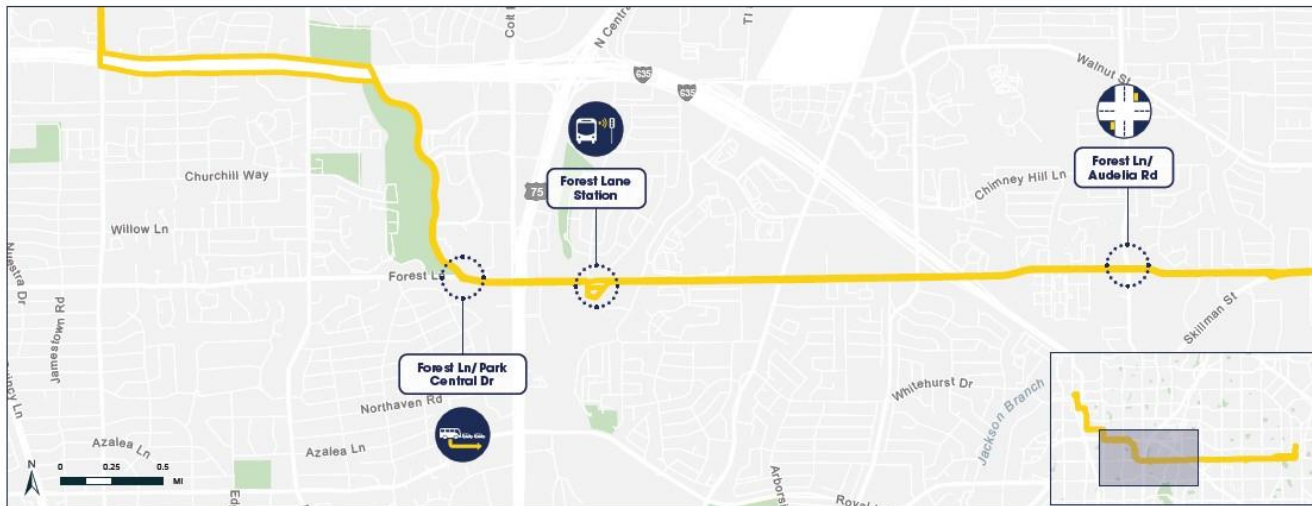
Performance Measure	Data	Key Findings
Transit Performance		
Transit Intensity and Ridership		
Safety		
Land Use		
Equity		

SCORES BY SEGMENT



Sample Recommendation

Route 22 - Forest Lane



SEGMENT DESCRIPTION

From Preston, Route 22 travels along the I-635 frontage road to Park Central Dr., where the route continues southeast to Forest Lane and then remains on Forest Lane as it continues east. The approach from both directions to the Forest Lane Station sees recurring slow speeds and is a focal point for potential CORE enhancements.

CORE RECOMMENDATIONS



QUEUE JUMP



TRANSIT SIGNAL PRIORITY



BUS STOP LOCATIONS

Corridor Level Evaluation Results

Top 10

- Route 5 Love Field Shuttle (2.1 miles) - 61.3
- Route 23 Haskell (7.1 miles) - 58.7
- Route 20 Northwest Highway (17 miles) - 57.4
- Route 9 Jefferson-Gaston (12.2 miles via downtown Dallas) - 57.2
- Route 57 Westmoreland (17.5 miles) - 56.3
- Route 38 Ledbetter (15.4 miles) - 54.7
- Route 1 Malcolm X – Maple (8.7 miles) - 54.3
- Route 15 Buckner (12.4 miles) - 52.6
- Route 16 Ferguson (14 miles; 4.5 miles via freeway) - 51.6
- Route 27 Ridgcrest (5.2 miles) - 50.9

Bus Rapid Transit (BRT) Opportunities

- Phase 2 will focus on identifying and developing most competitive BRT opportunities
- FTA defines two categories:
 - Fixed guideway BRT – at least 50% of corridor needs to be in dedicated right-of-way
 - Corridor-based BRT – no dedicated right-of-way but must have:
 - Defined stations
 - Faster travel times via signal priority, queue jump lanes, etc.
 - 15-minute all day service (14 hours) or better, or 10/20-minute service
 - Brand identify (corridor and vehicles)
- DART Service Standards include “Rapid Ride”

Top Candidates for BRT

- Route 23 Haskell
- Route 20 Northwest Highway
- Route 9 Jefferson-Gaston
- Route 57 Westmoreland
- Route 38 Ledbetter
- Route 15 Buckner
- Route 16 Ferguson
- Route 22 Forest Lane

Next Steps

- Complete analysis and document Phase I CORE improvement recommendations
- Continue meeting with DART cities throughout effort
 - Build support for CORE program initiative
 - Coordinate with existing city policies, plans, projects
 - Advance projects and implementation strategy (quick wins)
 - Explore opportunities to leverage external funds
- Initiate Phase II including Design Guidelines



Passenger Amenities



On-Street Passenger Amenities

- DART is developing a new bus shelter and related amenities
- Design concept completed in
- Fall 2022 with UTA and AIA
- Public survey just completed for feedback on shelter (4,000+ responses)
- Refined shelter concept will be developed for rider input prior to finalizing the design



Zero Emission Fleet Transition Plan

- DART already operates a clean fleet:
 - 7 battery electric buses (2019)
 - 1 long-range next generation battery electric bus (2022)
 - Rest of fleet is Compressed Natural Gas (CNG) using 100% renewable natural gas
- A fleet transition plan is in development to recommend future fleet and facilities investments to further support clean air goals





DART

let's go.



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