Agenda

• Transit System Plan Background
• Comprehensive Operations Analysis
• Priority Capital Expansion Program
• Long Range Opportunities
• Highlights of Draft 2040 Transit System Plan
Transit System Plan
Background
What is the Transit System Plan?

- Long-range element of DART Service Plan
- Guide for future capital and operating programs
- Programming tool that feeds into 20-Year Financial Plan
- Policy guidance
- Vision for future – our message to the region
2030 Transit System Plan (2006)
Changes after 2030 Plan Approval

- The recession led to deferral of all new 2030 bus/rail corridors, including D2 and Cotton Belt
- By FY15, some added to Financial Plan
  - Core Capacity Program of Projects (D2, Red/Blue Platforms, Streetcar Central Link)
  - Cotton Belt Corridor for year 2035
- FY17 included two major changes:
  - Redefine D2 as a subway
  - Move Cotton Belt from 2035 to 2022
- 2040 Plan reflects these changes and reassessed remaining 2030 corridors
Current System

- 93 miles Light Rail
- 64 Stations
- 34 mile TRE
- 150+ Bus Routes
Overview of Planning Process

PHASE 1

- Phase 1 COA is complete
- Draft Bus Service Plan
- Implementation initiated
- Bus Service Plan is “living process”

PHASE 2

- Longer range capital projects
- Regional opportunities
- Policy/Program areas
- Draft 2040 Transit System Plan
Overview of COA
Phase 1 – COA Overview

- The Comprehensive Operations Analysis was initiated in FY15 as Phase 1 of the 2040 Transit System Plan
- The process included extensive customer outreach to identify common themes to support COA Service Plan development

COA GOALS
- Increase route and system efficiency
- Better serve existing and emerging transit markets
- Improve ridership and productivity
- Ensure services are equitable
- Develop support through public and stakeholder input
Common Themes during COA

- Bus Network Design (simplify routes)
- Increase Frequency
- Late Night / Weekend Service
- Express Service (Bus and Rail)
- Crosstown Service (Bus, Cotton Belt)
- Specific Bus Route Ideas
- Service Area Expansion
COA Bus Service Plan Key Elements

• Core Frequent Route network
  – To strengthen local and crosstown routes
• High-frequency Rapid Ride network
• Crosstown / Airport Express network
• Other bus service improvements:
  – More consistent service headways (bus-rail connections)
  – Improved weekend service
  – More direct routing
  – Improved Uptown service
  – Expansion of On-Call Zones

**COA Draft Bus Service Plan Executive Summary** is on www.DART.org/2040
Priority Capital Expansion Program
2040 Transit System Plan
Key Priorities through 2025

• Key priorities identified in FY18 20-Year Financial Plan
  – Red and Blue Line Platform Extensions
  – Cotton Belt
  – D2 Subway
  – Dallas Streetcar Central Link
Platform Extensions

- 28 Red & Blue stations can only accommodate 2-car trains
- Newer stations can accommodate 3-car trains
- CBD stations modified in 2008 - 2009
- $120 M Project Estimate
  - $60 M Texas Mobility Funds
  - $58 M FTA Grant budgeted
Cotton Belt Corridor
Regional Rail Vehicle

- Regional Rail Vehicle
- Environmentally and Community Friendly
  - Tier 4 EPA Emissions Standards
- Meets FRA Standards
- Compatible with TEX Rail (FLIRT)
- Self-propelled
### Funding Sources

#### Cotton Belt Potential Funding Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Funding (000s)</th>
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<tr>
<td>RRIF Loan</td>
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<td>FTA (CMAQ or STPMM)</td>
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<td>FTA (Formula)</td>
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<td>FTA (CMAQ)</td>
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<tr>
<td>Local *</td>
<td>87,700</td>
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<td><strong>Total</strong></td>
<td><strong>$1,135,000</strong></td>
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*Anticipated local sources may include a combination of the following:*
- DART cash contribution
- City of Plano (tax increment financing)
- City of Richardson (tax increment financing)
- City of Addison (cash contribution)
- City of Coppell (equivalent of 3/8 cent sales tax)
- Fare revenue
- Naming rights, advertising
- Other value capture sources
# Project Schedule

## COTTON BELT CORRIDOR
Project Implementation Schedule

<table>
<thead>
<tr>
<th>Activity</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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<td>ENVIRONMENTAL IMPACT STATEMENT</td>
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<td>DESIGN/BUILD: FINAL DESIGN &amp; CONSTRUCTION</td>
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<td>TESTING</td>
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<td>REVENUE SERVICE</td>
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[Diagram showing the project schedule with timelines for different stages from 2017 to 2022.]
D2 Locally Preferred Alternative
Commerce via Victory-Swiss

Station locations for evaluation purposes only and subject to change based on subsurface and surface conditions.
Proposed D2 Schedule

ORIGINAL SCHEDULE

NEW SCHEDULE

Preliminary Schedule subject to determination of subway alignment and construction methods
D2 Subway Funding

- Project budget $1.3 Billion
- Will request approximately 50% FTA Core Capacity grant
- FY18 Financial Plan assumes a more conservative funding approach given uncertainty of Federal Capital Investment Grant program
  - Ensure ability to fund both Cotton Belt and D2 Subway if no grant available
Dallas Streetcar Central Link

- City-owned system
- DART operates and maintain through Interlocal Agreement
- Streetcar Central Link
  - DART, City of Dallas, DDI conducted supplemental Alternatives Analysis on 4 route alternatives
Dallas Streetcar Central Link
Locally Preferred Alternative

- Dallas City Council approved preferred alternative on September 13, 2017
Dallas Streetcar Central Link Funding

- Project budget $92 Million
- DART local funding included in FY18 Financial Plan as part of core capacity program of projects
- Will request FTA Small Starts grant
- FY18 Financial Plan assumes approximately 50% grant share
- Next steps include interlocal agreement(s) and then request to enter FTA Project Development
Long Range Opportunities
2040 Transit System Plan
Longer Term Opportunities

• Additional long-term opportunities were evaluated as part of 2040 Transit System Plan process:
  – Potential transit corridors
  – Regional opportunities
  – Policy/Program areas such as:
    o First/Last Mile connections
    o Transit Oriented Development
    o ITS/TSM/TDM
    o Paratransit
Long Range Opportunities

• Several opportunities evaluated
• Most identified in DART and NCTCOG Plans
  – DART 2030 Transit System Plan
  – DART 2030 Vision Element
  – NCTCOG Mobility 2040 Recommendations
Initial Corridor Alternatives

- Deferred 2030 Transit System Plan corridors
- 2030 Vision corridors
- New corridors
Corridor Fact Sheets
(available on www.DART.org/2040)
## Screening Evaluation

<table>
<thead>
<tr>
<th>Evaluation Category</th>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tier 3</th>
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<td>LBJ/inwood</td>
<td>West Dallas</td>
<td>West Oak Cliff Line Extension</td>
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<td>Station Ridership</td>
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<td>7,000</td>
<td>3,500</td>
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<td>Capital Cost (Million $)</td>
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<td>Transit Competitiveness (Number of Competitive Destinations)</td>
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<td>9</td>
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<td>2040 Population Density (per acre)</td>
<td>9.3</td>
<td>8.2</td>
<td>8.3</td>
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<td>2040 Employment Density (per acre)</td>
<td>25.2</td>
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<td>6.1</td>
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<td>Right-of-Way</td>
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<td>Engineering Complexity</td>
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<td>Land Use/TOD Potential</td>
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<td>Environment/Community</td>
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<td>Public Agency Support*</td>
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<td>Summary Rating</td>
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Ratings: High 🟢🟢🟢🟢🟢 Low 🟡🟡🟡🟡🟡
## Regional Analysis

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Length (Miles)</th>
<th>Cities on/near Corridor</th>
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</thead>
<tbody>
<tr>
<td>Irving-Frisco</td>
<td>29</td>
<td>Irving, Dallas, Farmers Branch, Carrollton, Plano, The Colony, Frisco, Prosper</td>
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<tr>
<td>McKinney</td>
<td>18</td>
<td>Allen, Fairview, McKinney</td>
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<tr>
<td>East-Mesquite (from Lawnview)</td>
<td>7.5</td>
<td>Mesquite, Sunnyvale</td>
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<tr>
<td>Waxahachie</td>
<td>31</td>
<td>Dallas, Lancaster, Red Oak, Waxahachie, Hutchins, Wilmer</td>
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<tr>
<td>Midlothian</td>
<td>14</td>
<td>Duncanville, Cedar Hill, Midlothian, DeSoto</td>
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</tbody>
</table>
Midlothian Corridor Observations

- Corridor has about 5,000 daily riders
  - Most activity in north Cedar Hill
  - Strong feeder bus ridership
- Transit Competitiveness Index (TCI) high to downtown Dallas
- 2,000 rail transfers to Red Line at Red Bird Station
- Southernmost Red Line stations have strong drive access
  - Most riders at these stations are retained even with a regional rail connection to Midlothian
    - Continue to drive to Red Bird rather than transfer
Ridership and Travel Patterns

• Where do Red Line riders come from if Red Line ends at...

Westmoreland

Red Bird

Red Bird with Regional Rail
Ridership and Rail Transfer Activity

- Red Line extension to Red Bird adds ridership so that we exceed 3-car train capacity by 2040
Ridership and Rail Transfer Activity

- Regional rail increases the loads even more

![Graph showing ridership and rail transfer activity with specific data points for Red Bird and West End stations, comparing 3-car capacity with 2040 Red Line Load and 2040 Load with Midlothian Corridor.]
Policy Considerations

- Policy III.07 – DART Services Outside the DART Service Area Boundary
- Policy IV.14 – Access by Non-DART Shuttle Services from Outside of the Service Area
- Consider right-of-way preservation opportunities
- Funding/Operations of new projects
Bus Element

- Reflects COA Bus Service Plan recommendations
- Bus Plan subject to refinement as “living” process
- Focus on frequency and crosstown routing enhancements in near term
- Pilot programs
  - On-Call/Mobility on Demand
  - Regional Airport Express route
  - Transit center innovation
- Two new transfer locations
- Rapid Ride network
Rail Element

- Focus on committed program
  - Core Capacity (platform extensions, D2 Subway)
  - Cotton Belt
  - TRE Program
  - Dallas Streetcar Central Link
  - Infill stations

- Future projects to enhance and sustain system:
  - Fleet/facility expansion
  - Cotton Belt corridor improvements
  - TRE corridor improvements
  - Streetcar system plan
Future Potential Corridors

- Range of future corridors with transit potential
- Tiered recommendations
- Recommend Alternatives Analysis in FY2020-22 for Tier 1 corridors
  - Select LPA
  - Refine cost
  - Amend System Plan and Financial Plan to reflect LPA
- Monitor and focus on regional discussion for Tier 2 corridors
Mobility Management/Paratransit

• Continue to enhance accessibility for all customers, including sidewalk connectivity and other initiatives that make it easier for riders with disabilities to use and navigate the system

• Support customer independence through travel training and continued coordination with transportation resources agencies

• Continue to use technology to improve performance and increase customer satisfaction

• Explore partnerships, pilot programs and new funding sources to supplement existing service or provide more cost-effective service delivery solutions
Systemwide Programs

• First and Last Mile Connections
• Intelligent Transportation Systems/Transportation System Management (ITS/TSM)
• Travel Demand Management (TDM)
• Emerging Technologies
• State of Good Repair/System Enhancements
• Safety and Security
Regional Opportunities

1. The Irving-Frisco regional rail corridor and bus service could connect Frisco and surrounding communities to the regional network and major employment.

2. Use of the DART-owned rail corridor for regional rail or bus rapid transit could connect Collin County communities to a potential new transfer hub in north Plano linking to east-west bus service.

3. The Cotton Belt Corridor will present opportunities for linkages into areas such as Coppell.

4. The study for the West Dallas Corridor should consider the long-term opportunities associated with service to Grand Prairie and Arlington.

5. The DART-owned Cotton Belt corridor extends east into Wylie and could be explored for future service expansion.

6. An extension to the east could be part of a long-term strategy to integrate Mesquite into the region’s rail network with supporting bus service.

7. The Best Southwest communities has potential for bus and rail in the future. Potential rail expansion to the south will need to assess capacity impacts to the system given strong transit demand in this area.

8. The Waxahachie Corridor would serve growing communities to the south as well as the Inland Port employment area.
Land Use/
TOD

• 2040 Plan includes TOD Opportunities map

• Highlights successes and key opportunities:
  – Committed projects
  – Infill stations
  – New bus/rail corridors
  – Station area plans

Every DART facility has potential for transit-oriented development. At many facilities, TOD is in place and continues to be a catalyst for further redevelopment, strengthening the local economy and enhancing quality of life. Several planning efforts and studies have been done to work toward implementation of TOD at additional locations. DART will continue to collaborate with public and private partners to advance TOD throughout the region.
Financial Plan and Timing of Recommendations
Financial Plan Relationship

- The 2040 Transit System Plan is financially constrained
- The Transit System Plan documents opportunities beyond financial constraints since conditions can change
- The Draft 2040 Plan takes into account the more conservative FY18 Financial Plan
- The FY18 20-Year Financial Plan influences timing of recommendations
How the Financial Plan influences the Transit System Plan

FY17 Financial Plan Capacity
How the Financial Plan influences the Transit System Plan

FY18 Financial Plan Capacity

- Total Available with Debt
- Total Available w/out Debt

- Operating Expense
- State of Good Repair/Other Capital
- Planning & Dev/Non-Operating
- Debt Service
- Rail Expansion Projects
- Total Available (w/out Debt)

Let's go.
How the Financial Plan influences the Transit System Plan

Capital expansion adds debt service and operating expense

No Bus Service improvements in Financial Plan past FY19

Financial capacity is lowest through early 2030’s:
- Operations/service improvements need to focus on strategic additions and reallocation of resources
- Capital program needs to focus on lower-cost system capacity/enhancement projects

Net available cash and debt capacity begins to increase in late 2030’s for major capital projects
Proposed Timing of Recommendations
In context of FY 18 Financial Plan

- Platform Level-Boarding
- Cotton Belt/TRE Improvements
- Increase LRV Fleet/Facility
- Future corridors pending study

Future Corridor Studies

Capital Funds for System Enhancements

- Reallocation/Targeted New Bus Service
- Added Operating Funds for Bus Service

Increase Bus Fleet/Facility (Minor)

Increase Bus Fleet/Facility (Major)

2 New Bus Transfer Facilities

Operating Expense
State of Good Repair/Other Capital
Planning & Dev/Non-Operating
Rail Expansion Projects
Total Available (w/out Debt)
Debt Service
Total Available (w/ Debt)
Summary
Summary

• Significant capital expansion program underway
• Bus Service Plan undergoing additional refinement
• Approval to distribute 2040 Draft Transit System Plan to public is pending additional DART Board discussion
• Rapidly changing conditions will likely involve more frequent system plan updates
Financial Opportunities and Risks

• Capital Costs
  – Higher than anticipated costs could reduce future financial capacity to fund current or new projects

• Operating Expense Growth
  – Largest use of funds in Financial Plan so presents largest risk for future financial capacity

• Sales Tax
  – Small shifts in the sales tax rate can have significant long-term effects on the plan

20-Year Impact of $1 Million

<table>
<thead>
<tr>
<th>Capital Expenditure</th>
<th>Operating Expense</th>
<th>Sales Tax</th>
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<tbody>
<tr>
<td>$1.0</td>
<td>$24.3</td>
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<tr>
<td>$(2.1)</td>
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$1.0, $24.3, $28.9, $(2.1), $(38.0)

20-Year Direct Impact
20-Year Net Cash Impact
Population & Employment Growth

**Population Growth | 2014-2040**
- North Central Texas: 6,860,993 to 10,676,844, up 56%
- DART Service Area: 2,449,829 to 3,138,398, up 28%

**Employment Growth | 2014-2040**
- North Central Texas: 4,288,163 to 6,691,449, up 56%
- DART Service Area: 2,174,737 to 3,299,250, up 52%
Trip Density
Home Based Work Origins (AM Peak)
Trip Density Home Based Work Destinations (AM Peak)
2010-2040 Growth Animation

Before 1955
1956-1965
1966-1975
1976-1985
1986-1995
1996-Present
2040 Forecast

2010
2010-2040 Growth Animation