

Memorandum



CITY OF DALLAS

DATE May 1, 2017

TO Honorable Mayor and Members of the City Council

SUBJECT DART Briefing
D2, Streetcar, Comprehensive Operations Analysis (COA) and Cotton Belt

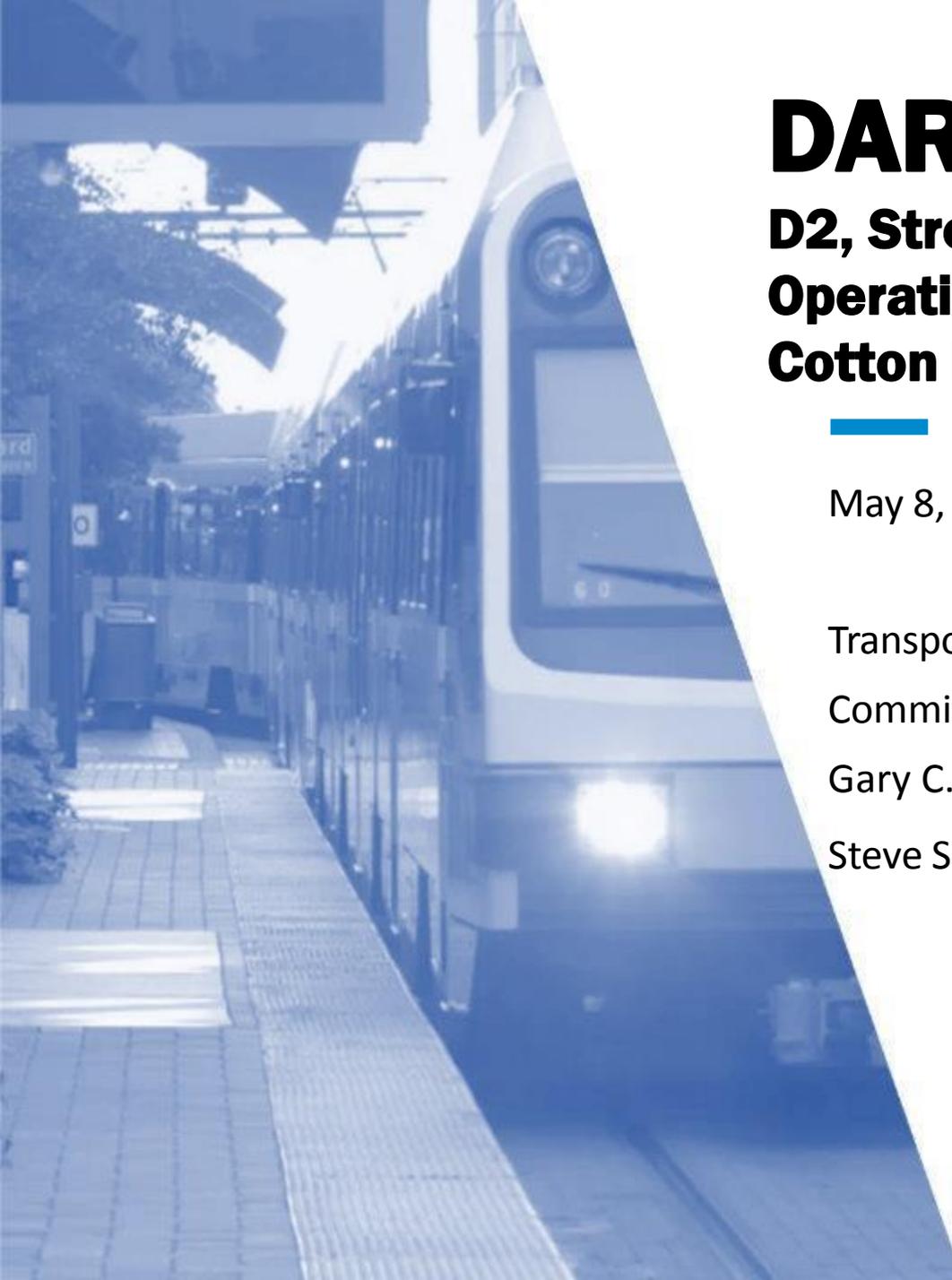
On Monday, May 8, 2017, the Transportation and Trinity River Project Committee will hold a joint discussion of the Transportation and Trinity River Project Committee and the Dallas Area Rapid Transit (DART) Board of Directors. At that meeting, DART will present a briefing on D2, Streetcar, Comprehensive Operations Analysis (COA) and Cotton Belt. Attached are materials for the presentation

Please feel free to contact me if you have any questions or need additional information.

A handwritten signature in blue ink, appearing to read 'Majed A. Al-Ghafry'.

Majed A. Al-Ghafry, P.E.
Assistant City Manager

- c: T.C. Broadnax, City Manager
Larry Casto, City Attorney
Craig D. Kinton, City Auditor
Rosa A. Rios, City Secretary
Daniel F. Solis, Administrative Judge
Kimberly Bizar Tolbert, Chief of Staff to the City Manager
Majed A. Al-Ghafry, Assistant City Manager
Raquel Favela, Chief of Economic Development & Neighborhood Services
- Jo M. (Jody) Puckett, P.E., Assistant City Manager (Interim)
Eric D. Campbell, Assistant City Manager
Jill A. Jordan, P.E., Assistant City Manager
Joey Zapata, Assistant City Manager
M. Elizabeth Reich, Chief Financial Officer
Alan E. Sims, Interim Chief of Community Services
Theresa O'Donnell, Chief of Resilience
Directors and Assistant Directors



DART Briefing – D2, Streetcar, Comprehensive Operations Analysis (COA) and Cotton Belt

May 8, 2017

Transportation & Trinity River Project
Committee

Gary C. Thomas, DART

Steve Salin, DART Capital Planning



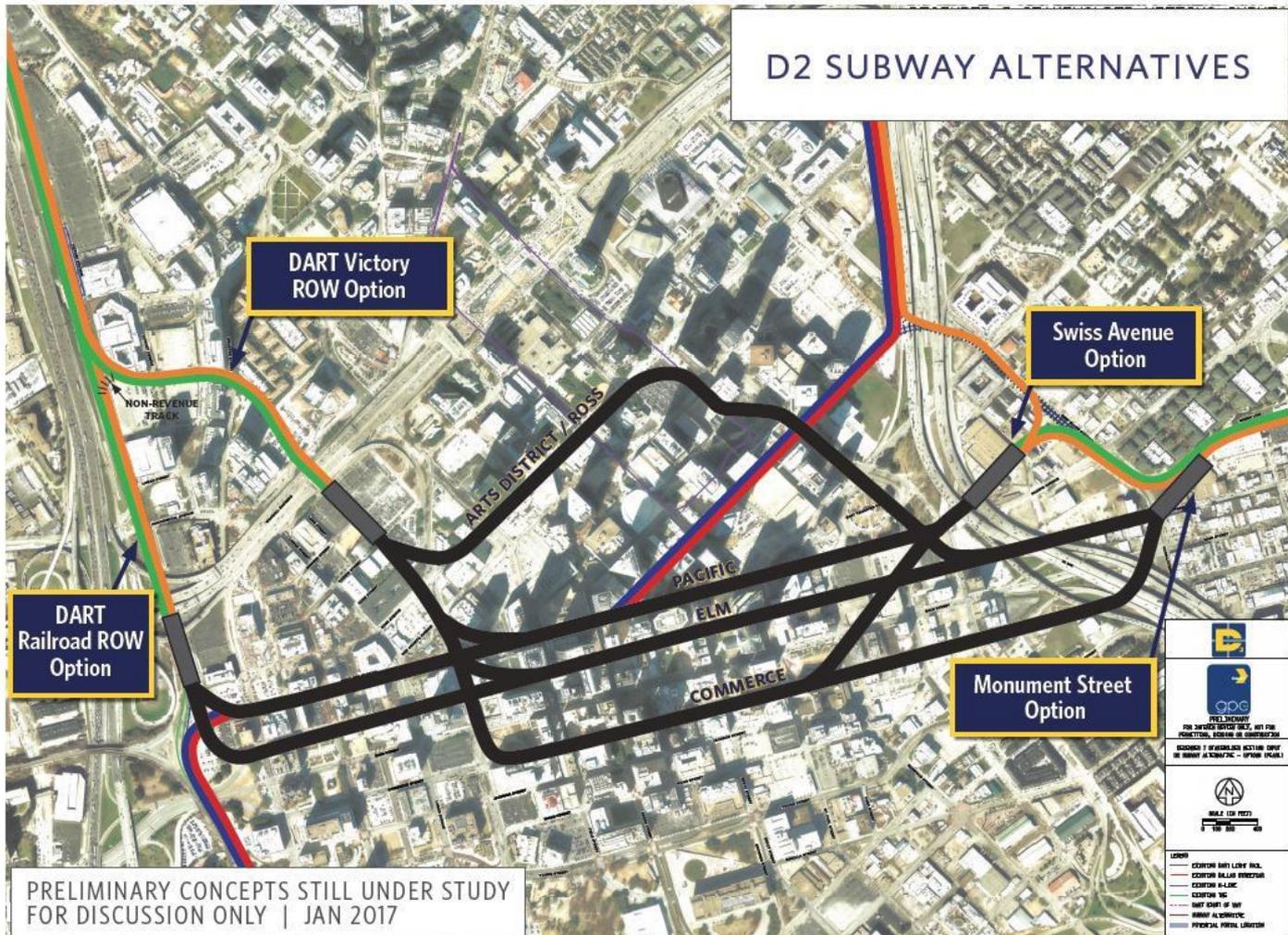
Outline

- Dallas CBD Second Light Rail Alignment (D2)
 - Status
 - Schedule
 - Alignments
- Dallas Streetcar Central Link
 - Alignments for Study
- Comprehensive Operations Analysis (COA)
- Cotton Belt
 - Status
 - Schedule
 - Alignments

D2 Project Status

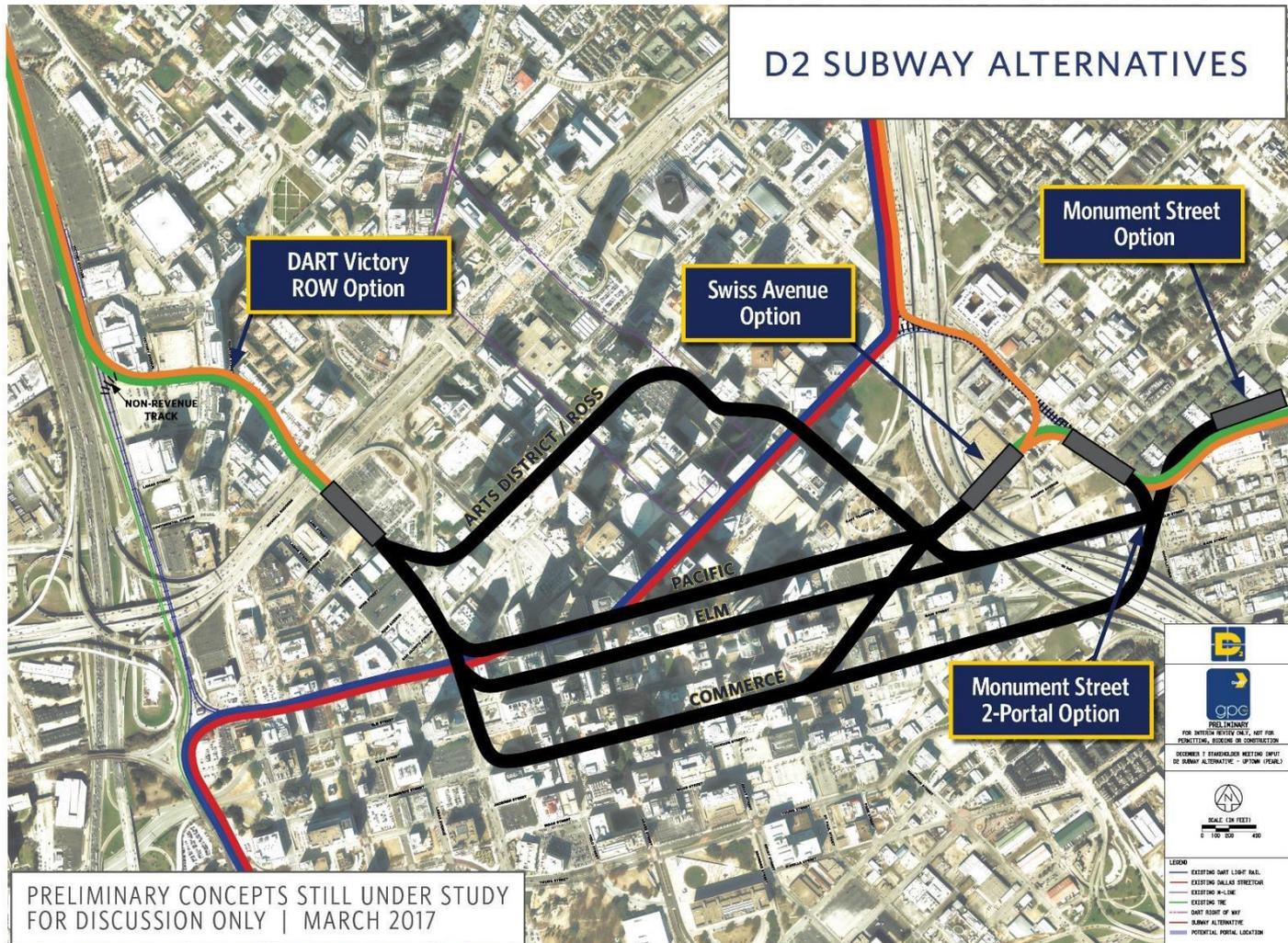
- Currently in FTA Project Development (PD)
 - FTA Capital Investment Grant (CIG) Core Capacity program
- Project refinement as subway
 - see newsletter update
- Refined Locally Preferred Alternative decision by June 2017
- 30% Preliminary Engineering (PE) and Supplemental Draft EIS in summer 2017

Primary Corridors Review (January)

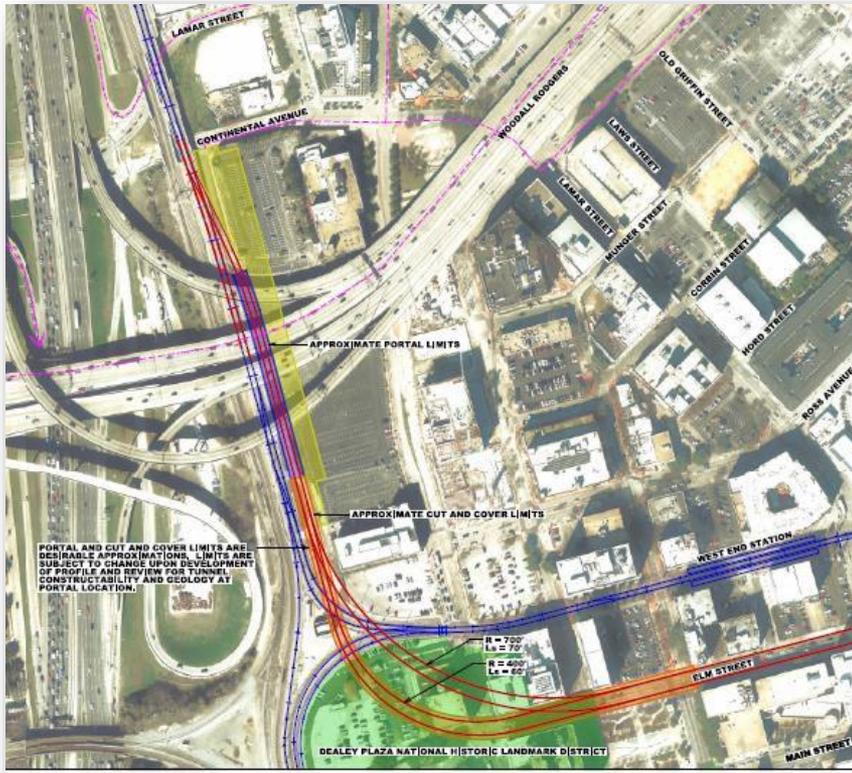


Primary Corridors Review (March)

Advanced to Screening Evaluation



West Junction: RR ROW Eliminated



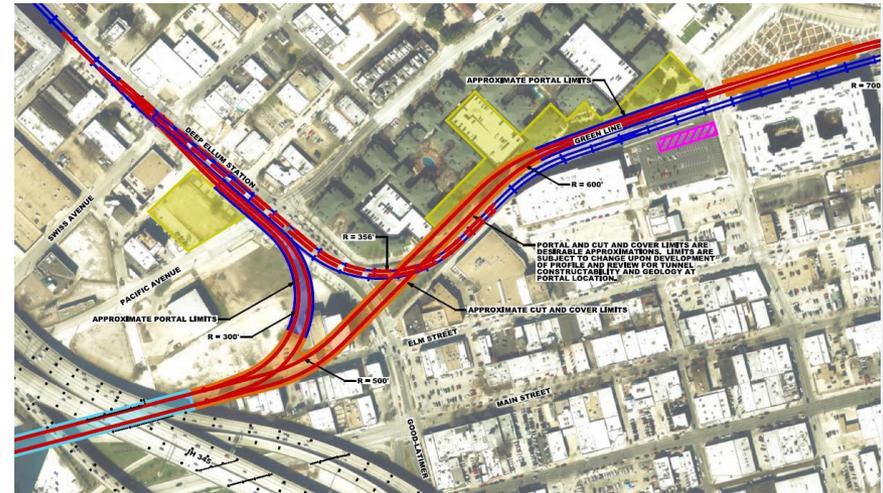
- Poor geology requires special soft ground tunnel boring machine (TBM)
- Small radius Option requires cut-and-cover through Dealey Plaza area
- Larger radius Option impacts more buildings
- Historic resource groups and property owner opposition
- High risk; other more prudent and feasible alternatives available (Section 4(f) consideration)
- Property owner support for Victory ROW option
- Lack of new market area station

East Junction: Monument Options

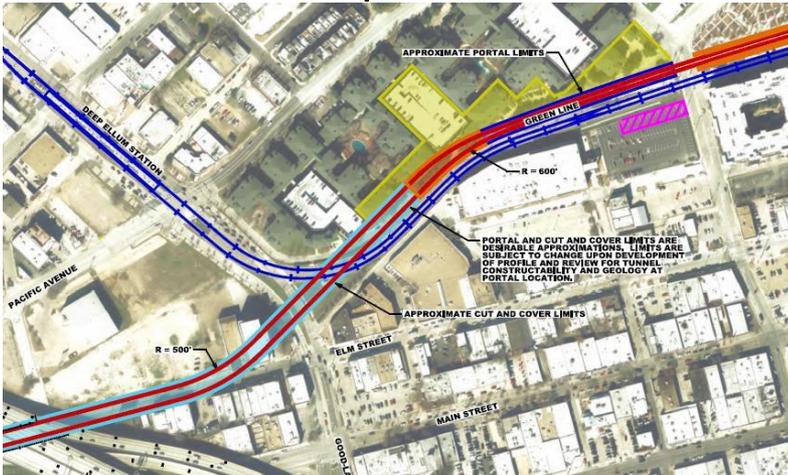
Key Issues:

- Deep Ellum historic resources
- Knights of Pythias (NRHP)

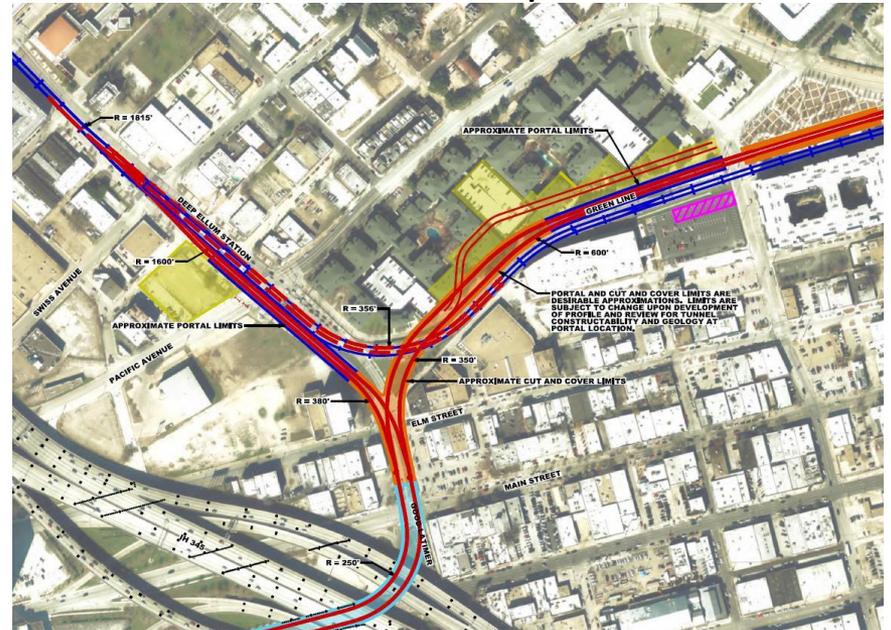
Elm - 2-Portal Option



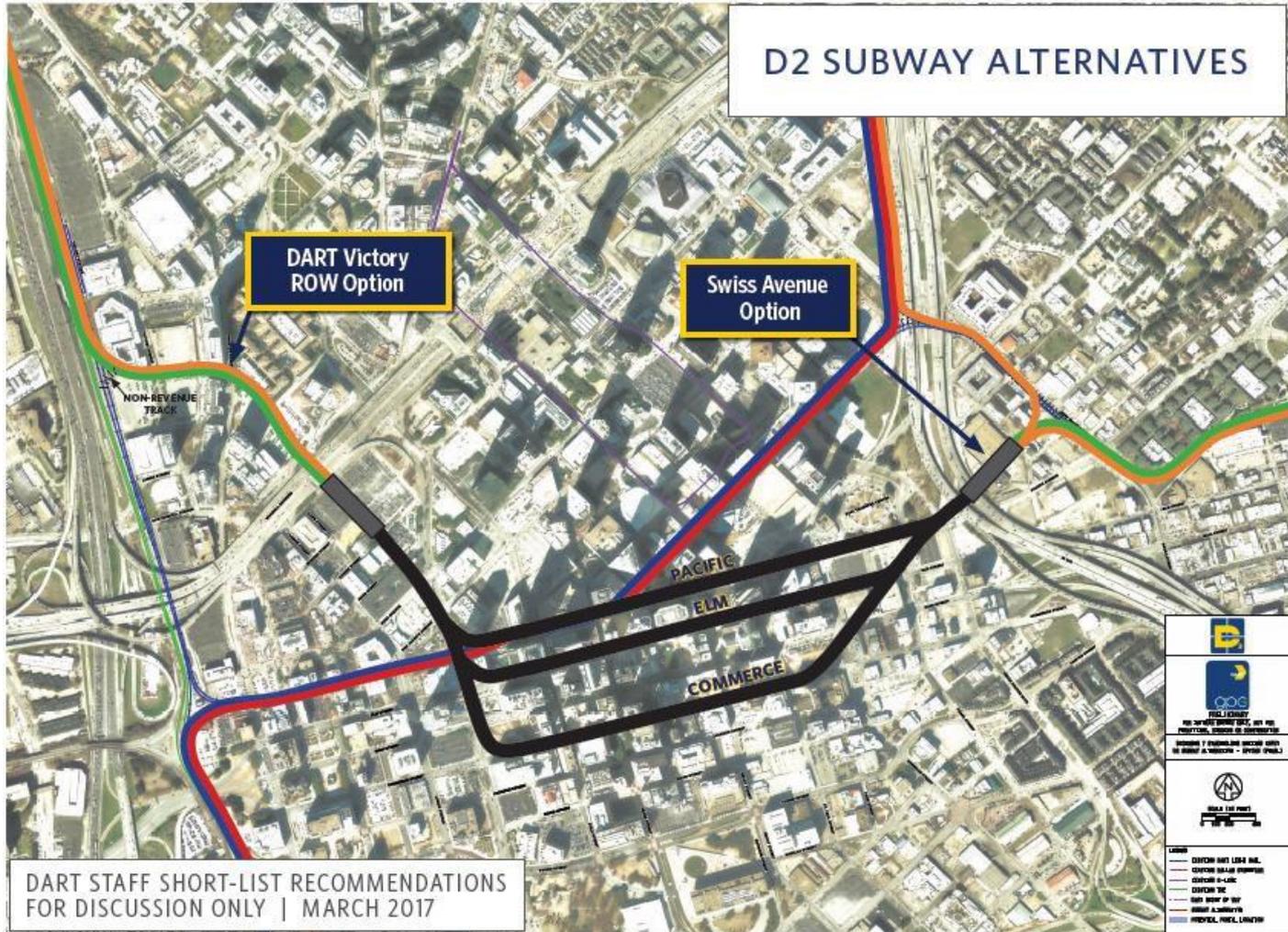
Elm - 1-Portal Option



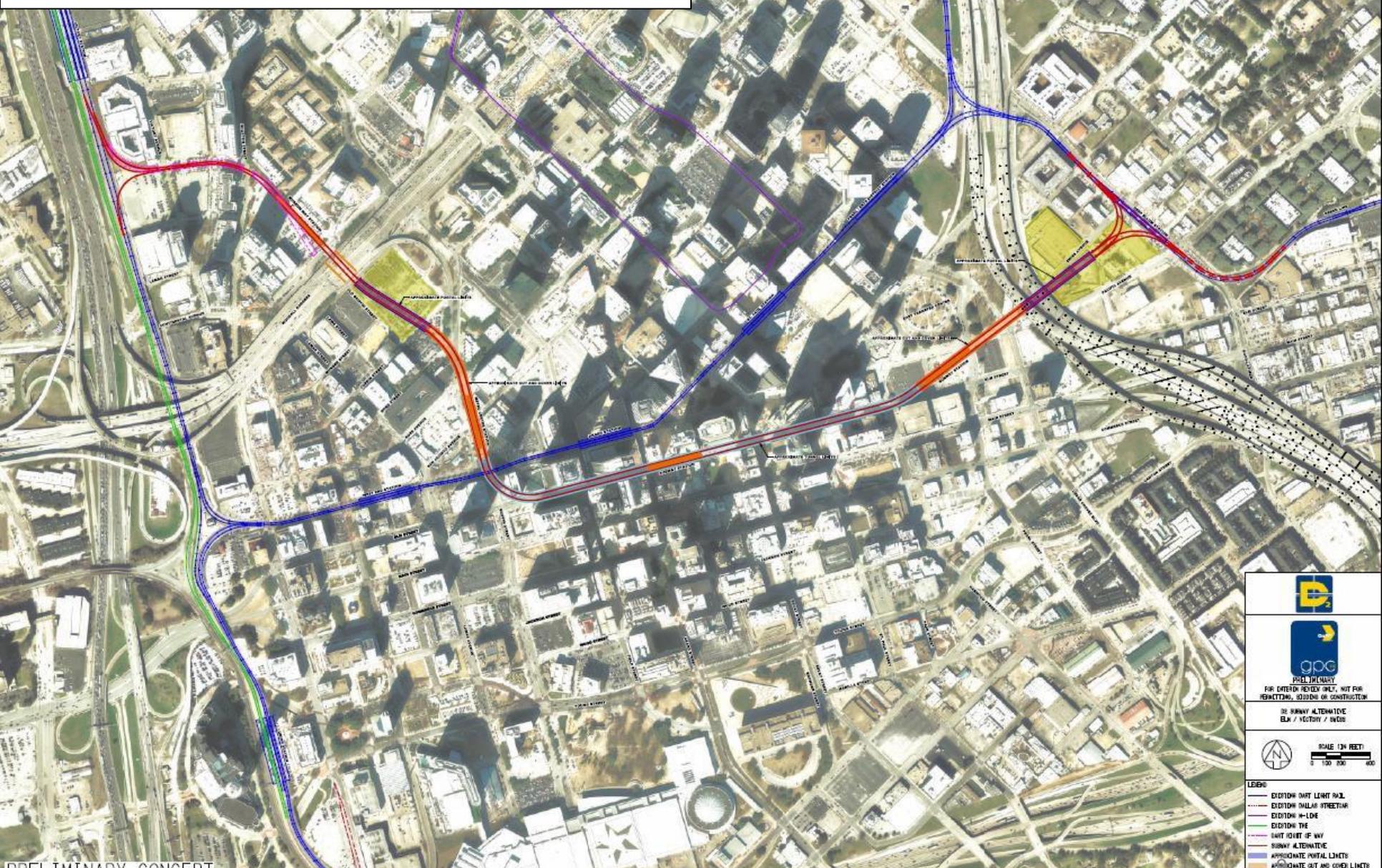
Commerce - 2-Portal Option



Short-List of Alternatives



Elm Alternative via Victory-Swiss



PRELIMINARY CONCEPT
FOR DISCUSSION ONLY
FEBRUARY 2017

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

PRELIMINARY
FOR DESIGN REVIEW ONLY, NOT FOR
PERMITTING, BIDDING OR CONSTRUCTION

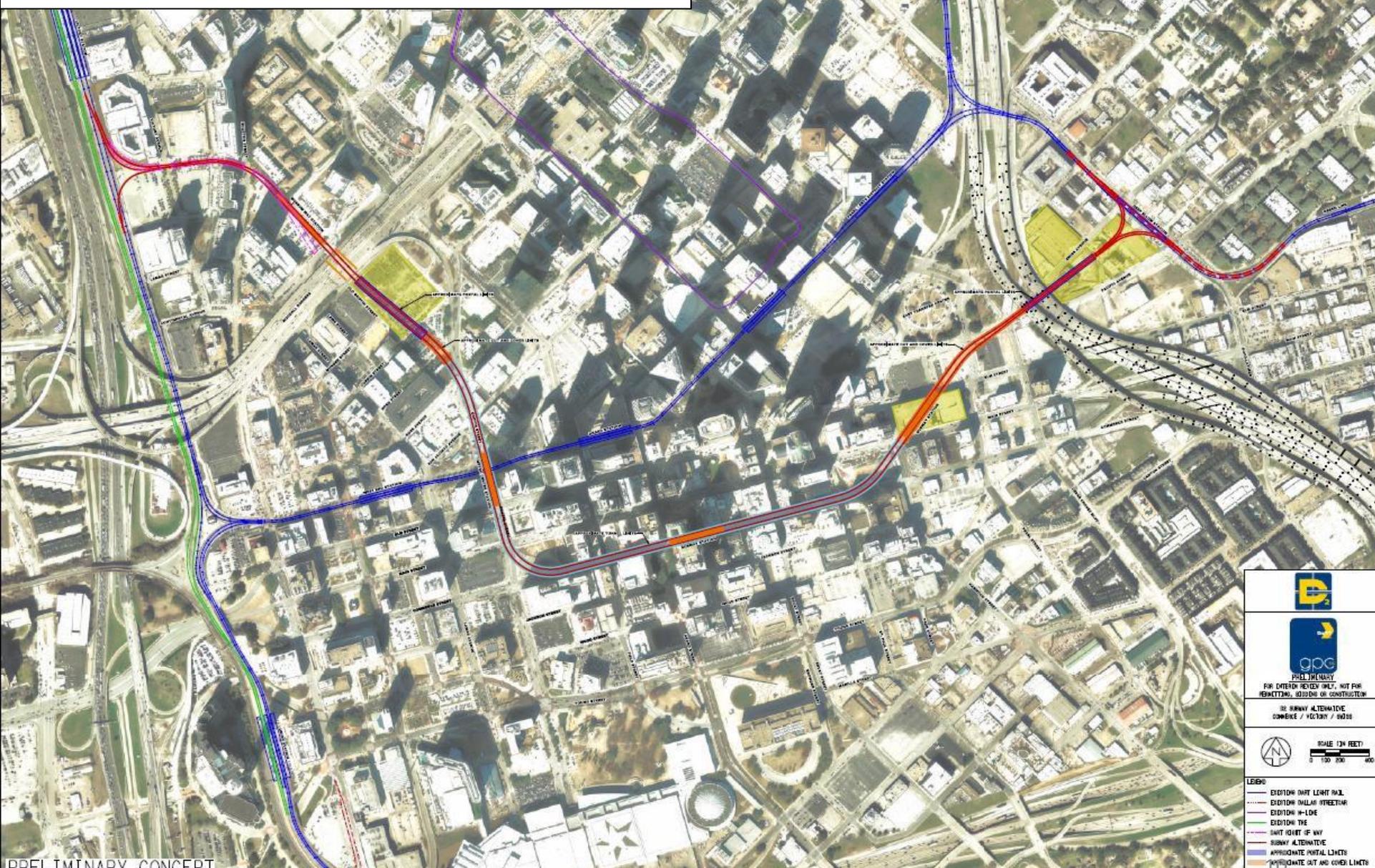
D2 SUBWAY ALTERNATIVE
ELM / VICTORY / SWISS

SCALE 1"=100'
0 100 200 400

LEGEND

- EXISTING DIRT LEAST PAUL
- EXISTING DOLLAR STREET
- EXISTING H-LINE
- EXISTING TIE
- DIRT ADJUT IF WY
- SUBWAY ALTERNATIVE
- APPROXIMATE PORTAL LIMITS
- APPROXIMATE CUT AND COVER LIMITS
- APPROXIMATE TUNNEL LIMITS
- STATION / CONSTRUCTION AREA
- APPROXIMATE PARK BOUNDARIES
- POTENTIAL PEDESTRIAN ACCESS TO SUBWAY STATION

Commerce Alternative via Victory-Swiss



PRELIMINARY CONCEPT
FOR DISCUSSION ONLY
FEBRUARY 2017

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

Legend

- EXISTING METRO LIGHT RAIL
- EXISTING METRO INTERCITY
- EXISTING M-LOVE
- EXISTING THE
- SMART HOV-3 IF WAY
- SUBWAY ALTERNATIVE
- APPROXIMATE PORTAL LINES
- APPROXIMATE CUT AND COVER LINES
- APPROXIMATE TUNNEL LINES
- STATION / CONSTRUCTION AREA
- APPROXIMATE PARK BOULEVARD
- POTENTIAL PEDESTRIAN ACCESS TO SUBWAY STATION

Scale: 1" = 100 FEET
0 100 200 400

Logos: D2, GPC
PRELIMINARY
 FOR INTERIM REVIEW ONLY, NOT FOR
 PERMITTING, BIDDING OR CONSTRUCTION
 RE: RAILWAY ALTERNATIVE
 COMMERCE / VICTORY / SWISS

Public Meetings

- Two Meetings on April 18 at DART Headquarters
- Total attendees: 90+
- Newspapers:
 - Dallas Morning News
 - Dallas Weekly
 - Dallas Chinese News
 - Al Dia
 - Dallas Voice
- Other Notifications:
 - Rider Alert brochures
 - Facebook
 - Facebook advertisements
 - Twitter
 - DART.org
 - Chambers of Commerce
 - Service Area Cities
 - email text notifications

Public Meetings: Comments

- Accommodate future design options for IH 345
- Design LRT to LRT transfer centers with mobility-impaired/wheel chair-bound riders (ADA considerations) and transfers in general
- Support for Commerce Street Alignment
 - serves southern end of Downtown better than other options, new residential market, proximity to AT&T and hotels
- Concern that Young St alignment at-grade may still be considered
- Explanation of Orange Line operations with D2
- Concerned about eliminating the Deep Ellum Station
- Good Latimer and Baylor Station areas need pedestrian improvements
- Consider tying into the pedestrian tunnel network wherever possible

Deep Ellum Charrette

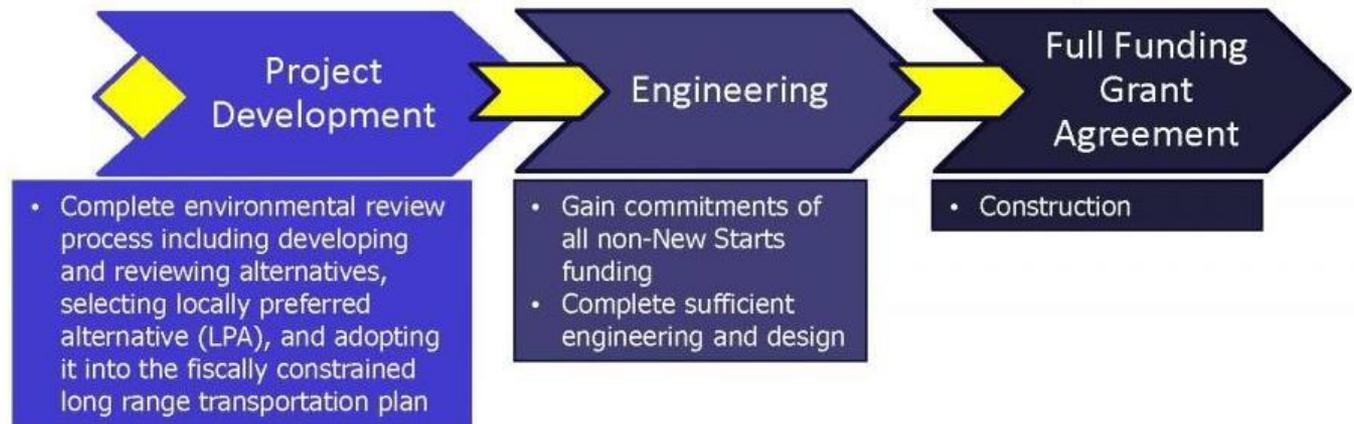
- Purpose of the Charrette
 - A focused discussion on design ideas
 - To address specifically the connection of D2 to the existing Green Line in Deep Ellum
- Table Topics:
 - IH 345
 - Modal Linkages; Connections to bus, streetcar system and LRT
 - Real Estate Impacts, Park and Open Space Interface
 - Urban Design and Pedestrian Pathways
- Participating Groups: (27 people)
 - Baylor Scott & White Hospital
 - Coalition for a New Dallas
 - Deep Ellum Foundation
 - Downtown Dallas Inc. (DDI)
 - The Real Estate Council (TREC)
 - The Marquis on Gaston Apartments
 - City of Dallas
 - TxDOT
- Event and comments are being documented in a summary report

Deep Ellum Charrette: Wrap-up

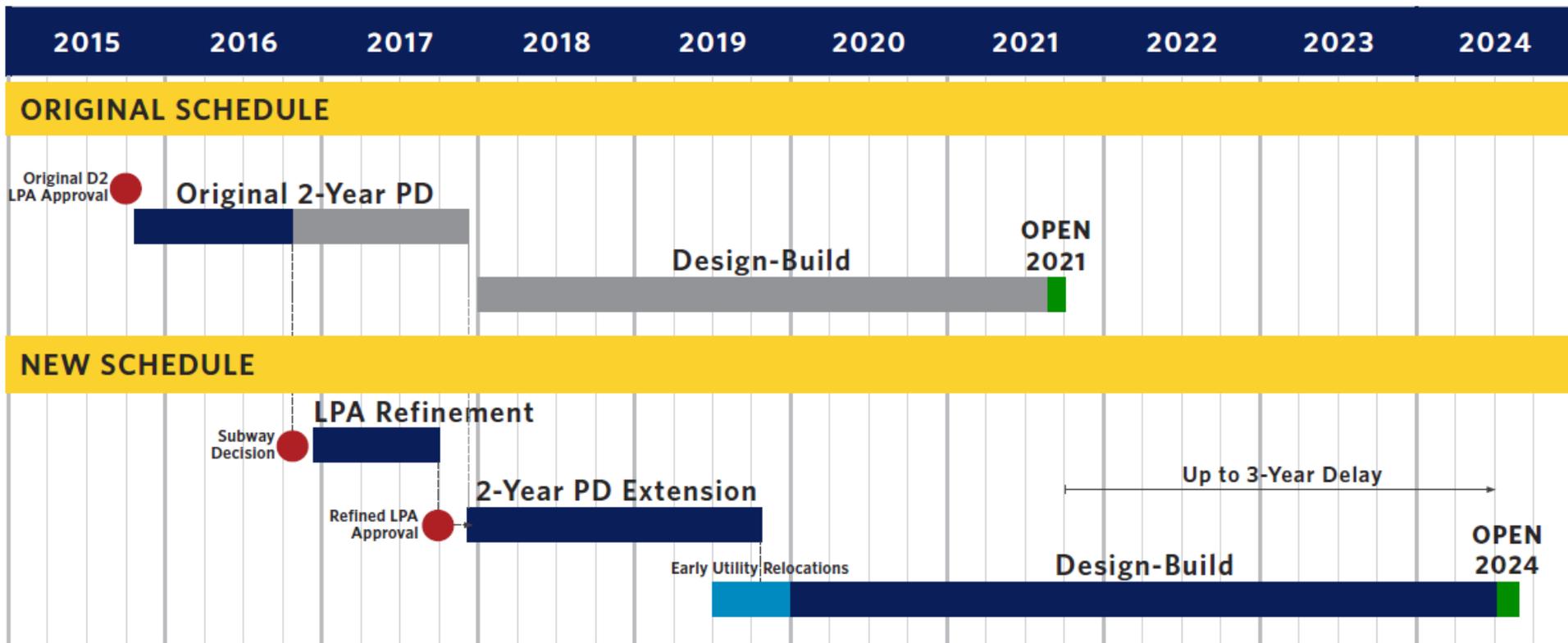
- D2 Subway design should accommodate future IH 345
- DART, City of Dallas, others should work to provide a more walkable, safer environment surrounding Baylor Station, Good Latimer
- Options that required shutting down major roadways (Pacific/Gaston, Elm, Good Latimer) were considered to be fatally flawed
- DART, City of Dallas and TxDOT should coordinate on an overall design scheme
- Consider establishing a station on the east side of IH 345
- Consider portal on west side of IH 345 taking traffic impacts into consideration
- Redesign East Transfer Center to:
 - make more efficient for operations and users
 - incorporate new development
 - Take advantage of proximity to Carpenter Park

Capital Funding for D2 Subway

- DART Financial Plan
 - \$1.3B in YOE dollars
 - Assumes a 50% FTA Core Capacity Capital Investment Grant



D2 Schedule



Preliminary Schedule subject to determination of subway alignment and construction methods

Key Upcoming Events

- April 26 – Dallas Council - Transit Design Guidelines
- May 8 – Joint DART Board/Dallas TTRPC Meeting
- May 9 – DART Planning Committee/COTW
- Early/Mid May – D2 Technical/Stakeholder Meeting
- May 23 – DART Committee of the Whole (COTW)
 - Refined LPA Recommendation (preliminary)
- June – Public Meetings
- Summer – DART Board and City Council approvals
- September – Submittal to FTA



let's go.

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Dallas Streetcar and the Central Link

May 8, 2017

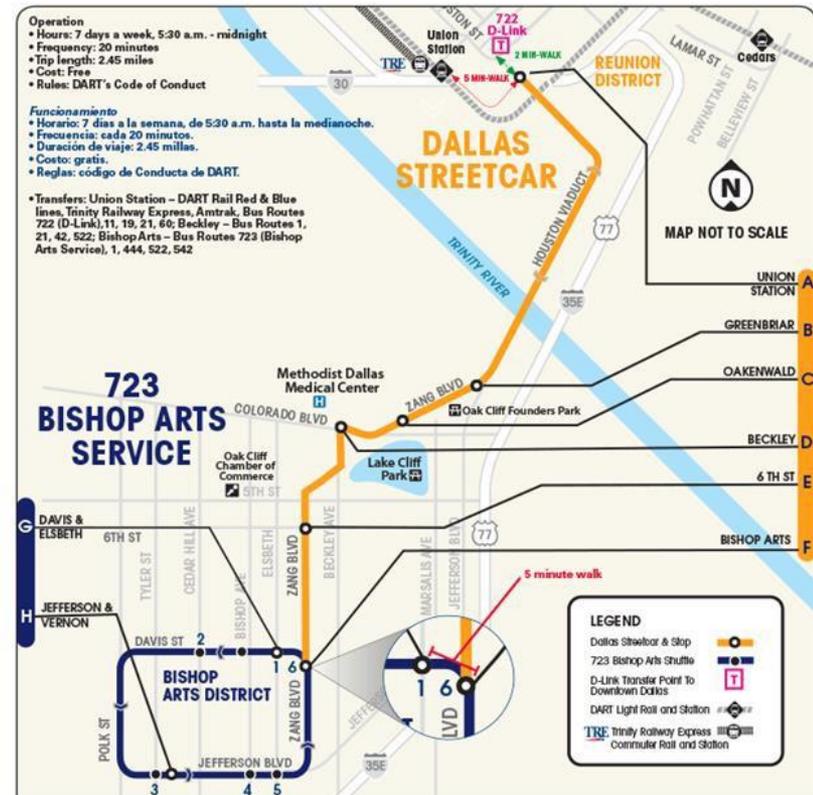
Gary C Thomas, DART

Steve Salin, DART Capital Planning



Dallas Streetcar

- **First Phase – Union Station to Methodist Dallas Medical Center**
 - In April 2015, service began on the first phase of the city-owned Dallas Streetcar line, which was partly funded by \$26 million in Federal Transit Administration TIGER grants. Dallas contracted with DART to design, build, operate and maintain the vehicles and system.
- **Second Phase - Methodist Dallas Medical Center to Bishop Arts District**
 - On Aug. 27, 2016, the second phase of the Dallas Streetcar, extending the line to the Bishop Arts District

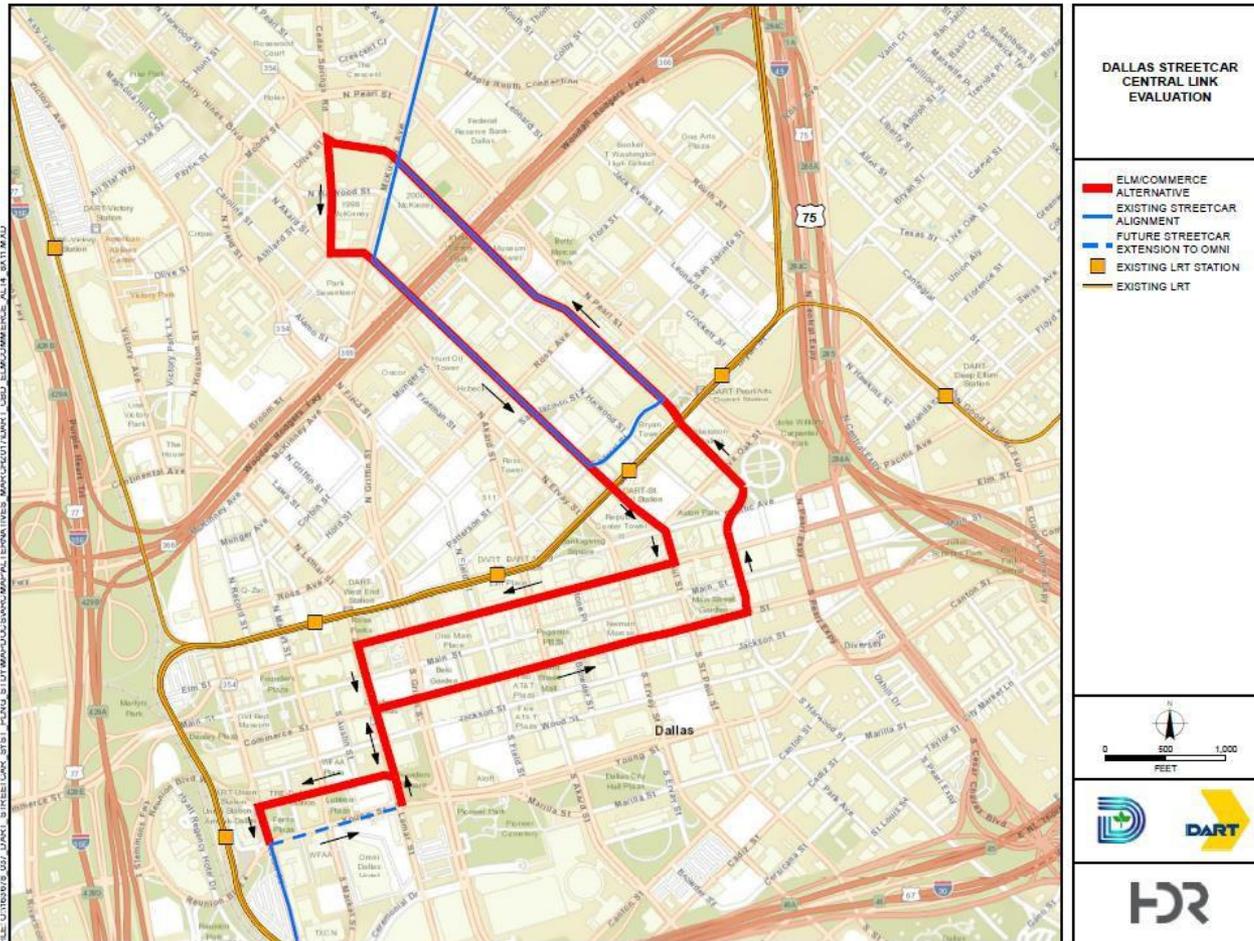


Dallas Streetcar Central Link - Overview

- Four corridor alternatives under evaluation
- Planning is concurrent with D2 Project LPA
- Funding:
 - DART Capital Funds – Portion of the Local Share
 - Anticipate FTA Small Starts grant
- Project Development
 - Streetcar LPA in 2017
 - 30% PE in 2019

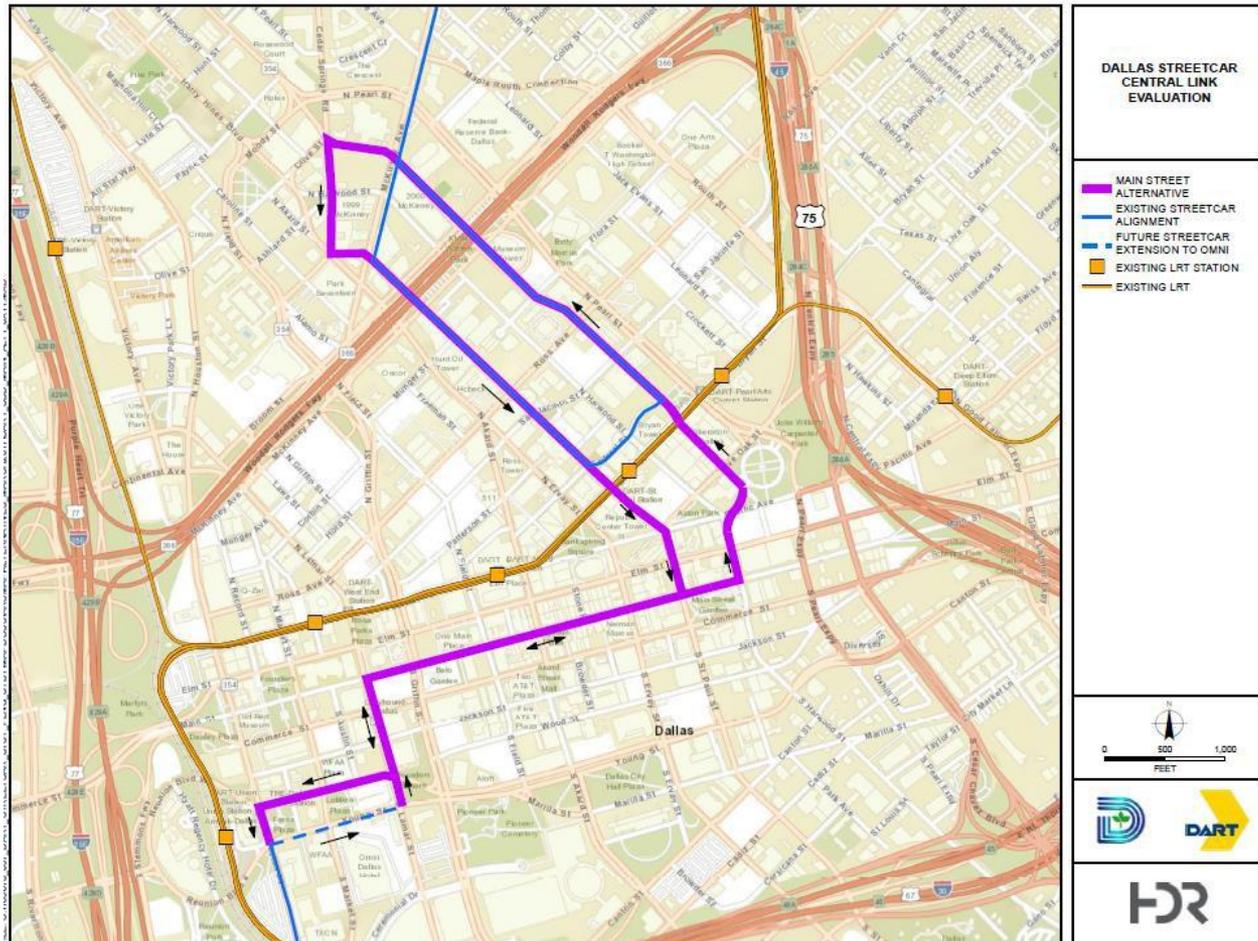
Dallas Streetcar Central Link Alternatives

ELM-COMMERCE ALTERNATIVE



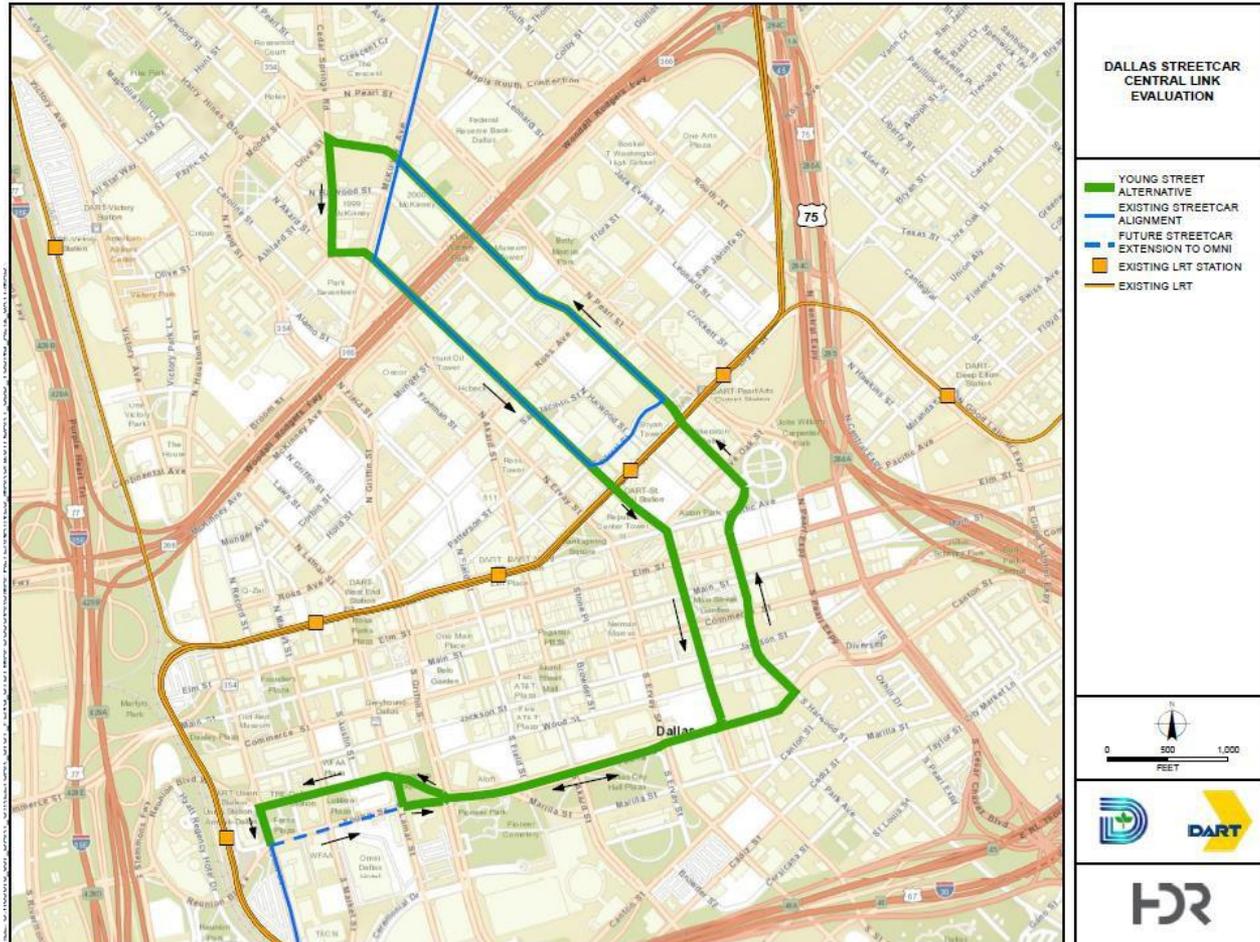
Dallas Streetcar Central Link Alternatives

MAIN STREET ALTERNATIVE



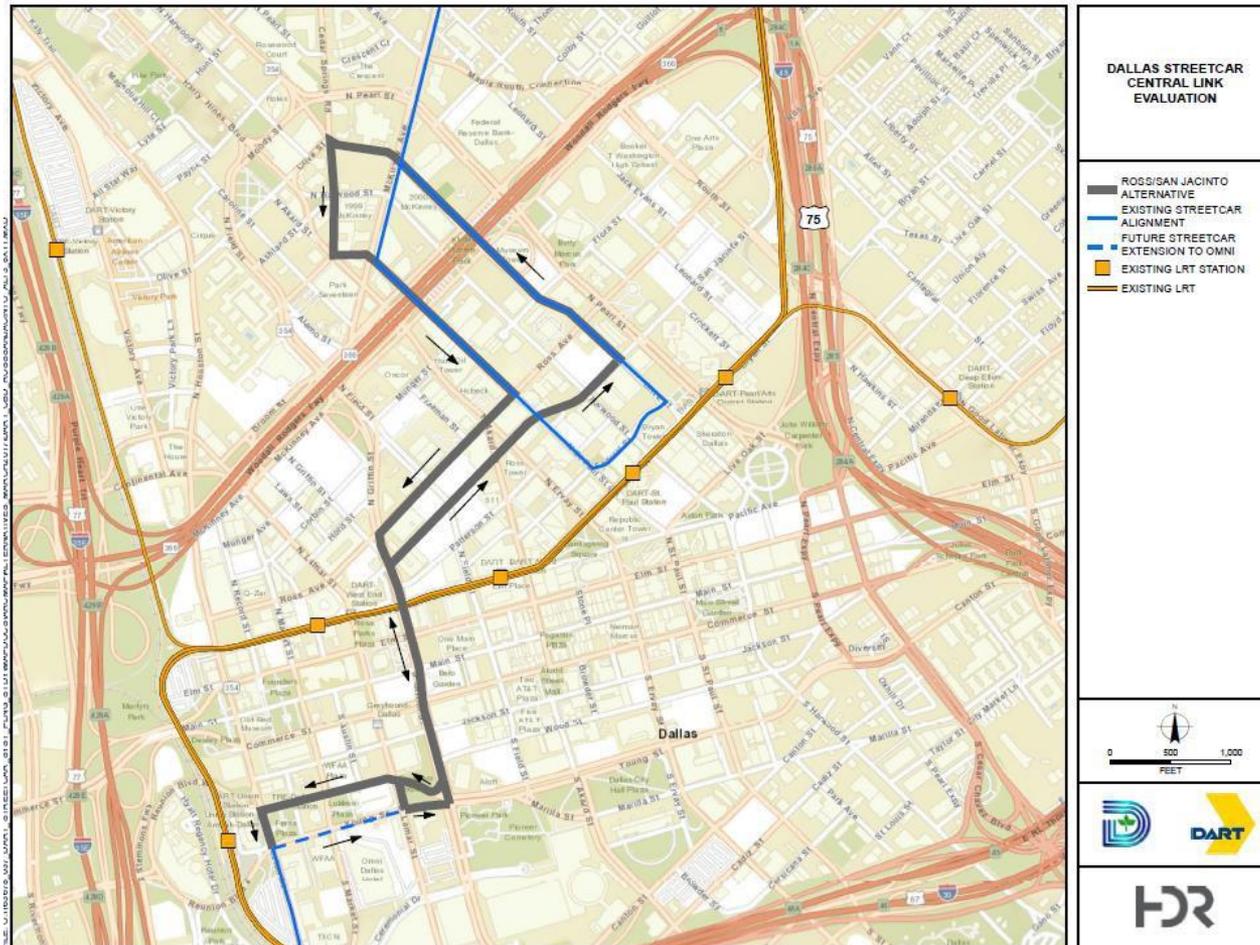
Dallas Streetcar Central Link Alternatives

YOUNG STREET ALTERNATIVE



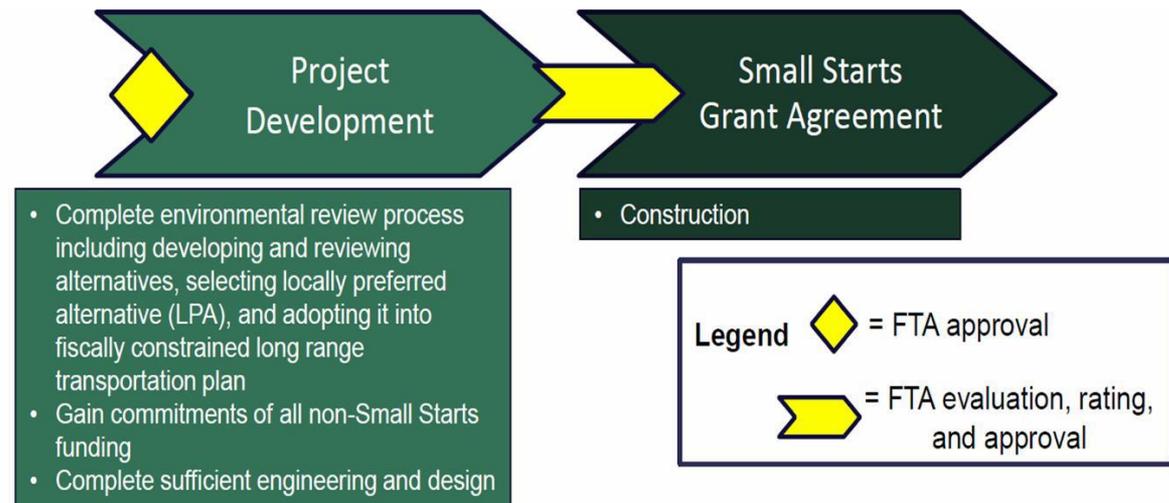
Dallas Streetcar Central Link Alternatives

ROSS/SAN JACINTO ALTERNATIVE

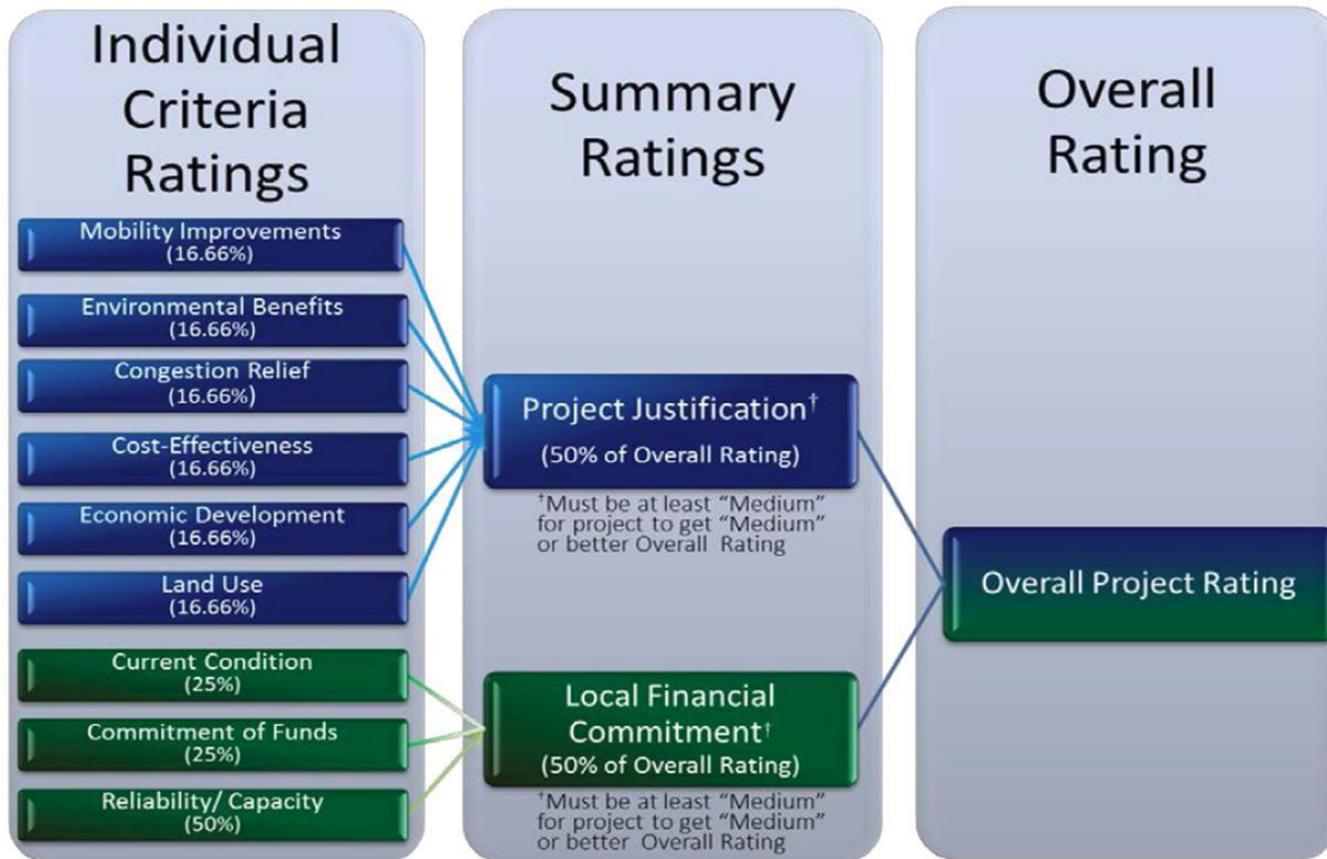


Capital Funding for Central Link

- DART Financial Plan
 - \$92M in YOE dollars
 - Assumes \$40M FTA Small Starts Capital Investment Grant



FTA Small Starts Evaluation



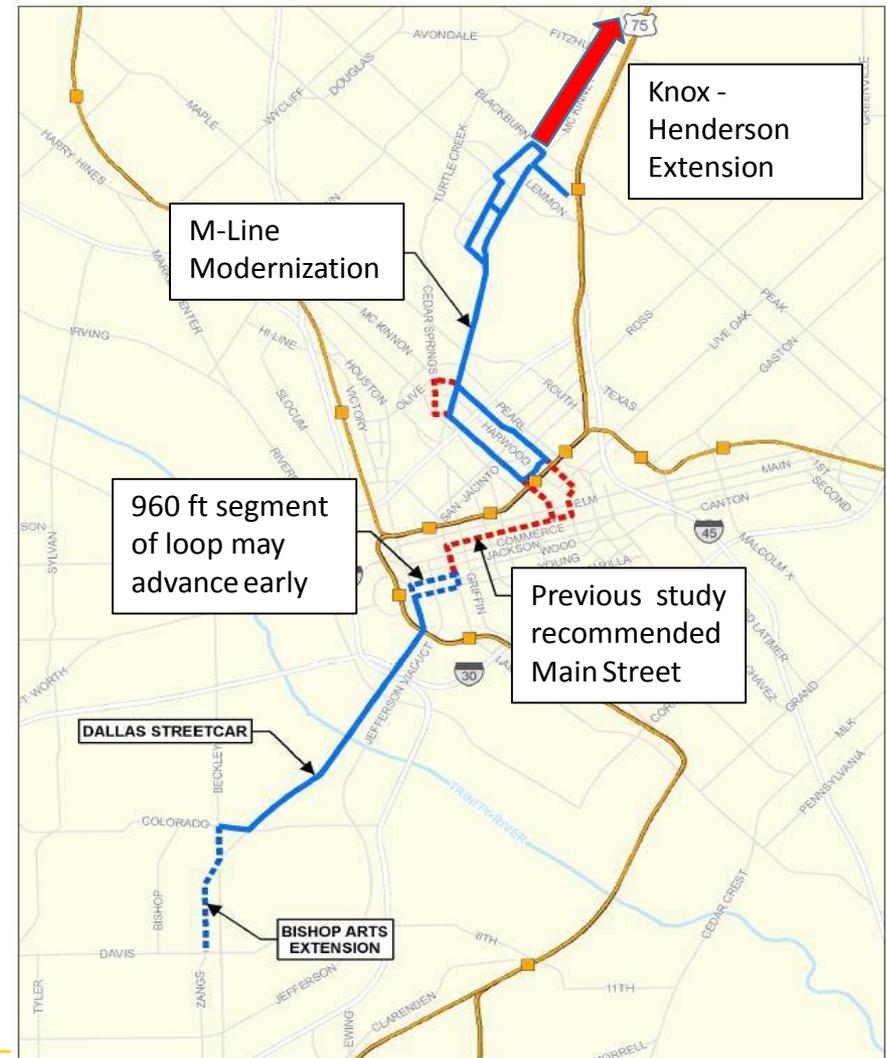
FTA Project Ratings



- Project must be rated at least “Medium” in BOTH Project Justification and Local Financial Commitment
- FTA applies project ratings in following decisions:
 - Approve or deny advancement into Engineering
 - Support annual funding recommendations to Congress
 - Approve or deny execution of Grant Agreement

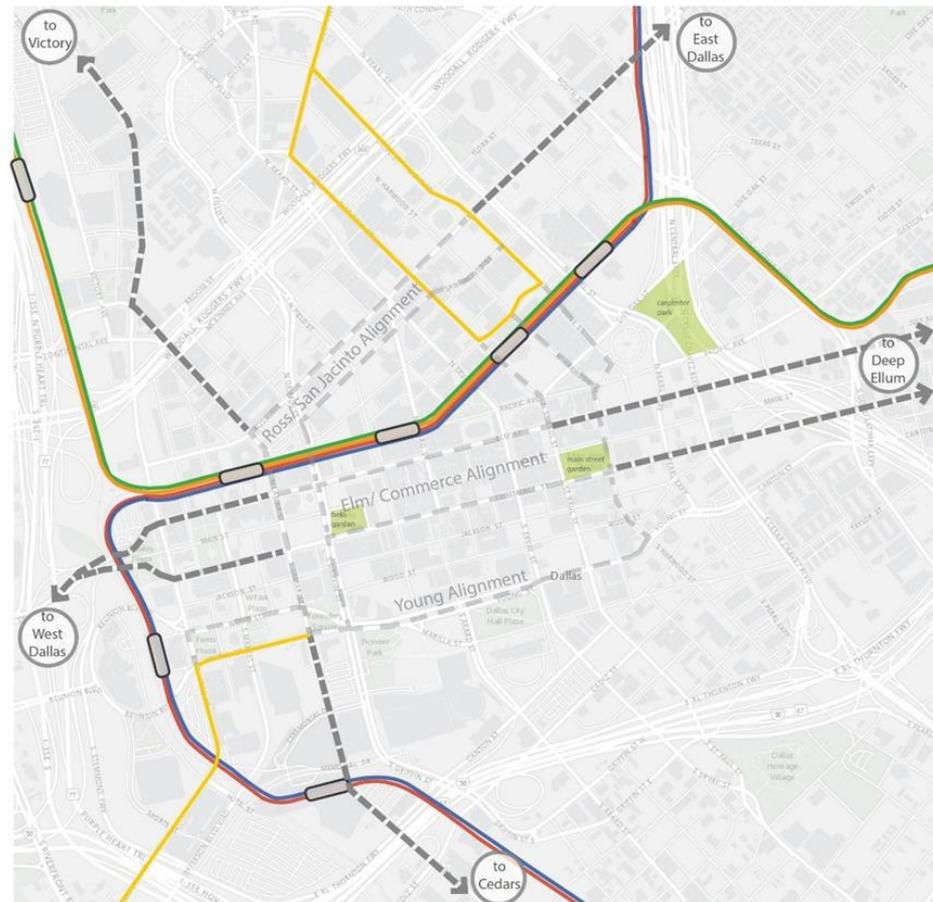
Dallas Streetcar Expansion

- Dallas Streetcar Central Link planning underway concurrent with D2
- M-Line Olive-St. Paul Loop built to modern streetcar standards
- Extension of Streetcar to Knox Henderson



Dallas Streetcar System Planning

FUTURE STREETCAR "DESIRE LINES"



LEGEND

- Red Line
- Blue Line
- Green Line
- Orange Line
- Existing Streetcar/Trolley
- Existing DART Station
- - - Proposed Streetcar Alignments
- - -> Potential Streetcar Expansion



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Comprehensive Operations Analysis

May 8, 2017

Gary C Thomas, DART

Todd Plesko, DART Service
Planning



Overview

- The Comprehensive Operations Analysis (COA) was initiated in 2014 as Phase 1 of the 2040 Transit System Plan
- A draft Service Plan was developed as a part of the COA work, and DART started implementation in FY15
- Additional analyses are underway based upon feedback on the draft Service Plan

COA Public Feedback

- COA work started with an extensive outreach process through social media (6,000 unique visitors), rider outreach events (1,261 rider comments), public meetings, stakeholder interviews, and participation via advisory and technical committees
- Most of the feedback was about the bus network:
 - Make routes more direct
 - Improve service frequency
 - Extend the span of service (e.g. weekends)
 - Improve on time performance and connectivity
 - The City of Dallas adopted a resolution in October 2016 recommending priorities for improved transit services

Original Draft Service Plan

- The draft Service Plan developed during the COA effort builds upon customer and public feedback received in several ways:
 - Significant improvements in service frequency through creation of a core frequent route network (routes operating every 15 minutes or better peak, every 20 minutes or better midday, and every 30 minutes or better weekends)
 - Offering more direct route alignments in a number of key local and crosstown corridors (e.g. Greenville Avenue)
 - Expanding availability of weekend service, with more frequency, wider hours, and additional routes
 - Addition of recovery time to improve on time performance
 - New faster, more direct limited-stop services such as Rapid Ride (7 routes) and airport express service (4 routes)

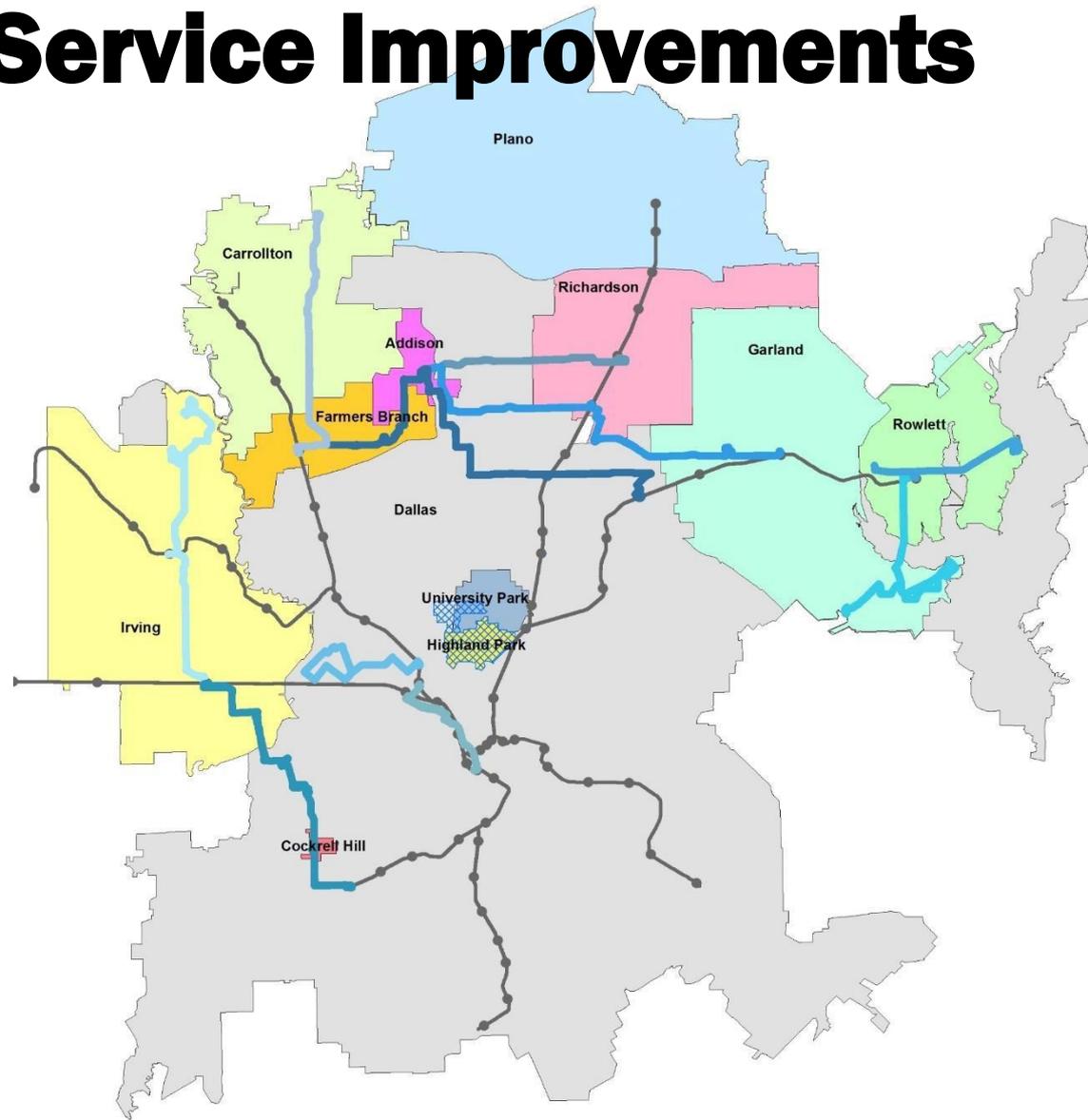
Service Improvements FY15-19

- Implementation of service changes started in FY15 before much of the COA work was completed
- The following slides highlight key changes implemented or programmed through FY19 based upon the draft Service plan and subsequent comments

FY15-16 Bus Service Improvements

Focus of improvements:

- Off peak frequency improvements
- Bus connections to Rowlett station



FY 15-16 Bus Service Improvements

Improvement

Route 361: Sunday service added

Route 385: Extended to Rowlett Station

Route 401: Weekend service added on entire route

Route 463: Midday frequency improvements, Sunday service extended to entire route

Route 488: Sunday service added

Route 527: More frequent off-peak service

Route 531: Sunday service added

Route 549: More frequent midday service

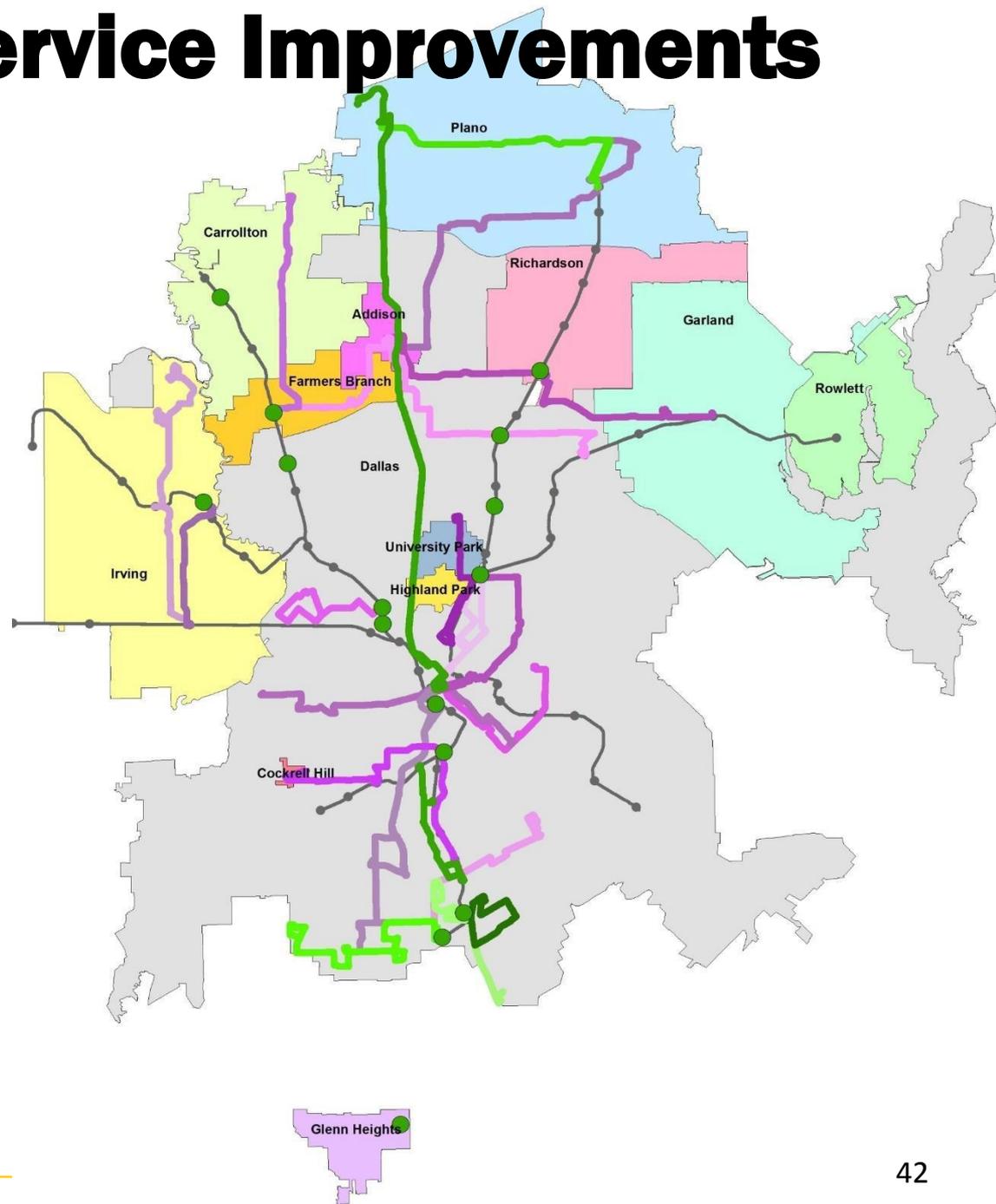
Route 749: More frequent service

Route 887: Extended to Lake Pointe Hospital

FY17 Bus Service Improvements

Focus of improvements:

- Bus feeders for SOC3 extension
- Dallas Streetcar extension to Bishop Arts
- D-Link changes
- Service to Legacy and Cypress Waters
- Schedule adjustments
- New crew rooms



FY17 Bus Service Improvements

Improvement

Route 415: New route alignment with SOC3 extension

Route 515: Route modified with SOC3 extension

Route 516: New route created with SOC3 extension

Route 553: New route alignment with SOC3 extension

Route 555: New route created with SOC3 extension

Dallas Streetcar extended to Bishop Arts with expanded operating hours

Route 208: Service extended to major Legacy employers

Route 211: New express service from Parker Road Station to Legacy area

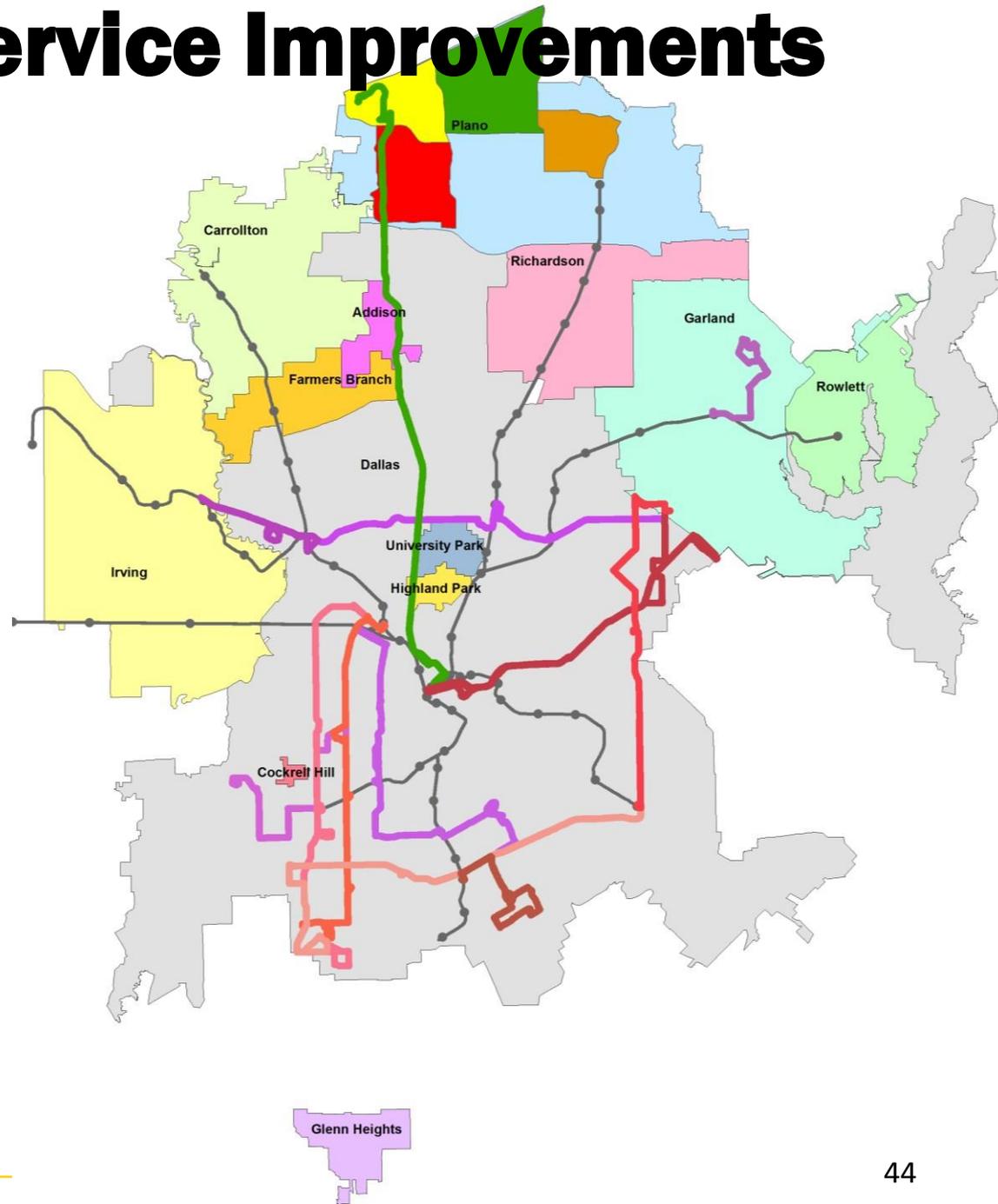
New crew rooms at key bus/rail facilities throughout Service Area

On-time performance schedule improvements (off-peak and weekend) on Routes 2, 24, 35, 76, 161, 350, 401, 415, 444, 463, 488, 507, 521, 527, and 531

FY18 Bus Service Improvements

Focus of improvements, which build upon draft Service Plan comments:

- **NEW:** Off-peak frequency improvements on six routes (164, 404, 453, 466, 467, 554)
- Implementation of Mobility on Demand pilot project
- Schedule adjustments to improve on time performance for five routes (405, 428, 513, 528, 568)



FY18 Bus Service Improvements

Improvement

On time performance schedule improvements on Routes 405, 428, 513, 528, 568

Route 466/467 frequency improvements midday, evening, Saturday, Sunday

Route 164 frequency improvements midday

Route 404 frequency improvements Saturday

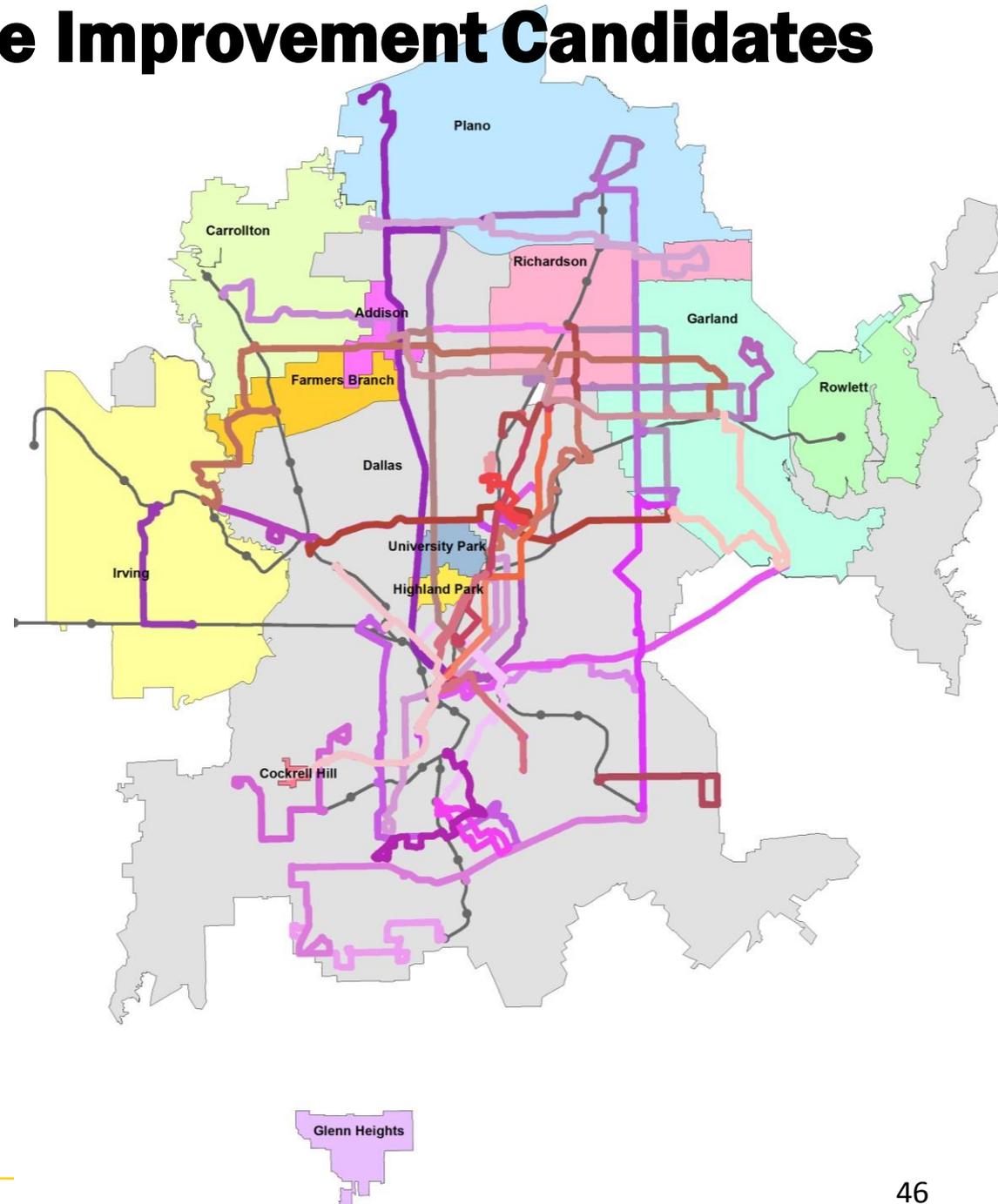
Route 453 frequency improvements midday, evening, Saturday

Route 554 frequency improvements midday, evening

FY19 Bus Service Improvement Candidates

Focus of improvements using new bus fleet that will be available in 2019:

- Schedule adjustments to improve on time performance
- Changes targeting ridership improvements, including more frequent service on a number of routes – especially where buses run infrequently
- Service restructuring that adds coverage and improves service to key transit generators



FY19 Bus Service Improvement Candidates

Improvement

On time performance schedule improvements on Routes 1, 11, 76, 111, 208, 283, 350, 361, 372, 400, 405, 409, 410, 415, 466, 467, 504, 513, 528, 536, 538, 541, 568, 571, 582, and 841

Route 400 realignment with more frequent service between Carrollton, Spring Valley Station

Route 378 frequency improvements midday, evening

Route 463 frequency improvements Weekday, Saturday

Route 592 frequency improvements midday, Saturday, Sunday

Route 10/11 restructure and improvements: Jefferson, Malcolm X, and Maple corridors

NE Dallas restructure, first phase: frequency and route changes in Vickery Meadow, Village, and other areas, affecting Routes 428, 502, 506, 582, and 583

NE Dallas restructure, second phase: frequency and route changes, new routes on Greenville and Abrams, affecting Routes 24, 36, 582, and 583

Additional COA Work

- Since the draft Service Plan was prepared, DART has received considerable feedback about other bus service improvements – specifically:
 - Service frequency
 - Travel times
 - Route orientation
- We are exploring ways to introduce off-peak service frequency changes in FY18
- Additional work to develop a revised Bus Service Plan for inclusion in DART 2040 System Plan, based upon feedback received from the draft Service Plan

Key Steps for Completing the Bus Service Plan

- Evaluate draft Service Plan recommendations and the priorities for improved transit service as adopted by the City of Dallas in October 2016
- Examine integration of more crosstown grid service elements to the current draft Service Plan
 - North-south, east-west routes and how they coordinate with the rest of the service network
- Develop a proposed Bus Service Plan incorporating updates and changes to the draft Service Plan

City of Dallas, DART Service Metrics

- The City of Dallas Council adopted a resolution recommending several service goals related to DART bus and rail service
- DART has an existing Service Standards policy that governs planning and evaluation of fixed-route services in all DART cities
- DART Standards cover many aspects of service beyond the City resolution
- The following slides compare key metrics from both

City of Dallas, DART Service Metrics

Dallas Resolution	Existing DART Service Standards
Sustainable high frequency grid network	Does not specify the type of route structure; guidelines for area coverage, route spacing, and duplication Headway maximums based upon type of service and time of day, ranging from 30-60 minutes
On time performance 90% peak, 95% other times	Long-term goal 90% bus, 95% rail Shorter-term goals during work to improve schedules
Transit travel time should not exceed 2x auto travel time	Bus travel time ratios should not exceed 1.4x-2x auto travel time on an individual route, depending upon type of service
Special focus on work centers, health care centers, education centers, food and general merchandise stores	Special provisions for “baseline” service within ¼-mile of subsidized housing, social services, medical facilities, and low income areas, with minimum service requirements

City of Dallas, DART Service Metrics

Dallas Resolution	Existing DART Service Standards
Shelters should be placed at all bus stops where warranted	Facilities placed where daily boardings exceed 25 (bench) or 50 (shelter) Provisions to reduce requirements for schools, hospitals, Senior centers, rehabilitation centers, social service agencies, and medical facilities
Wait time should be reduced during transfers by coordinating schedules, reducing number of transfers	Bus headways should match or be a multiple of connecting rail frequencies, with buses connecting within five minutes before or after the train depending upon predominant passenger flows Bus to bus connections optimized at key transfer points (to the extent possible)
Rail stations should be within 3 miles of all areas within the City of Dallas	Rail service design guidelines cover service period and frequency Alignments and station locations are based upon a comprehensive planning process and compliance with FTA guidelines

City of Dallas, DART Service Metrics

Dallas Resolution	Existing DART Service Standards
Enhanced public safety and quality of life plans in and around DART facilities should be public and cite collaborations and responsibilities to ensure coverage and enforcement at all times DART is operating	Not directly addressed in current DART Service Standards

First and Last Mile Connections

- The segment of a transit trip between a transit stop and one's destination



Types of First and Last Mile Connections

- Walking
- Bicycling/Bikeshare
- Shuttles/Circulators
- On Call/FLEX services
- Streetcar
- People Movers
- Private Auto/Carpooling
- Rolling (Wheelchair, scooter)
- Private Rideshare (Uber, Lyft, etc)
- Car Share (Zipcar, Car2Go, etc)

Las Colinas APT System



Shuttle Routes



Zipcar

First and Last Mile Connections

- Goals for 2040 Transit System Plan
 - Expand the reach of transit through infrastructure improvements, wayfinding, innovative services, and connections with other providers.
 - Provide a safe, accessible, comfortable and convenient first-last mile connection for riders accessing the DART system.
- Opportunity to increase ridership by improving accessibility to and from the system

Key Recommendations

- Update and revise the existing DART Bike & Ride Policy to reflect current practice and best practices
- Conduct a First/Last Mile Connection study:
 - Analysis of existing conditions
 - Build upon NCTCOG study for bicycle/pedestrian element
 - Prioritization of stations or high volume bus stops for enhancements
- Consider a Station Access Policy:
 - Bike & Pedestrian Connectivity including potential cost-sharing program to fund implementation based on criteria tied to ridership
 - Accommodating and integrating other mobility providers at DART facilities (carshare, private transportation providers, bikeshare, people movers, etc.)



DART

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Cotton Belt Corridor

May 8, 2017

Gary C Thomas, DART

Steve Salin, DART Capital Planning



Public Outreach

- Public Involvement Plan
- Public Meetings Scheduled (details next slide)
- Cities to identify Area Focus Groups Representatives
 - Complete: Coppell, Richardson, Carrollton, Plano
 - Pending:
 - Dallas
 - Addison (Council Action April 25, 2017)
- AFG Meetings Scheduled
 - Richardson/Plano: April 27, 2017
 - Others pending coordination of dates/availability

Public Meetings

Monday, May 15, @ 7:00 p.m.

Parkhill Junior High School Cafeteria

16500 Shadybank Drive, Dallas, TX 75248

Wednesday, May 17 @ 6:30 p.m.

Richardson Civic Center

411 West Arapaho Road, Richardson, TX 75080

Monday, May 22 @ 6:30 p.m.

DeWitt Perry Middle School

1709 E Belt Line Rd, Carrollton, TX 75006

RRIF Loan Status

- Pre-Application submitted on February 27, 2017
- April 5, 2017 Email from Build America Bureau
 - All comments have been addressed to date
 - No significant issues

Funding Sources

Cotton Belt Potential Funding Sources

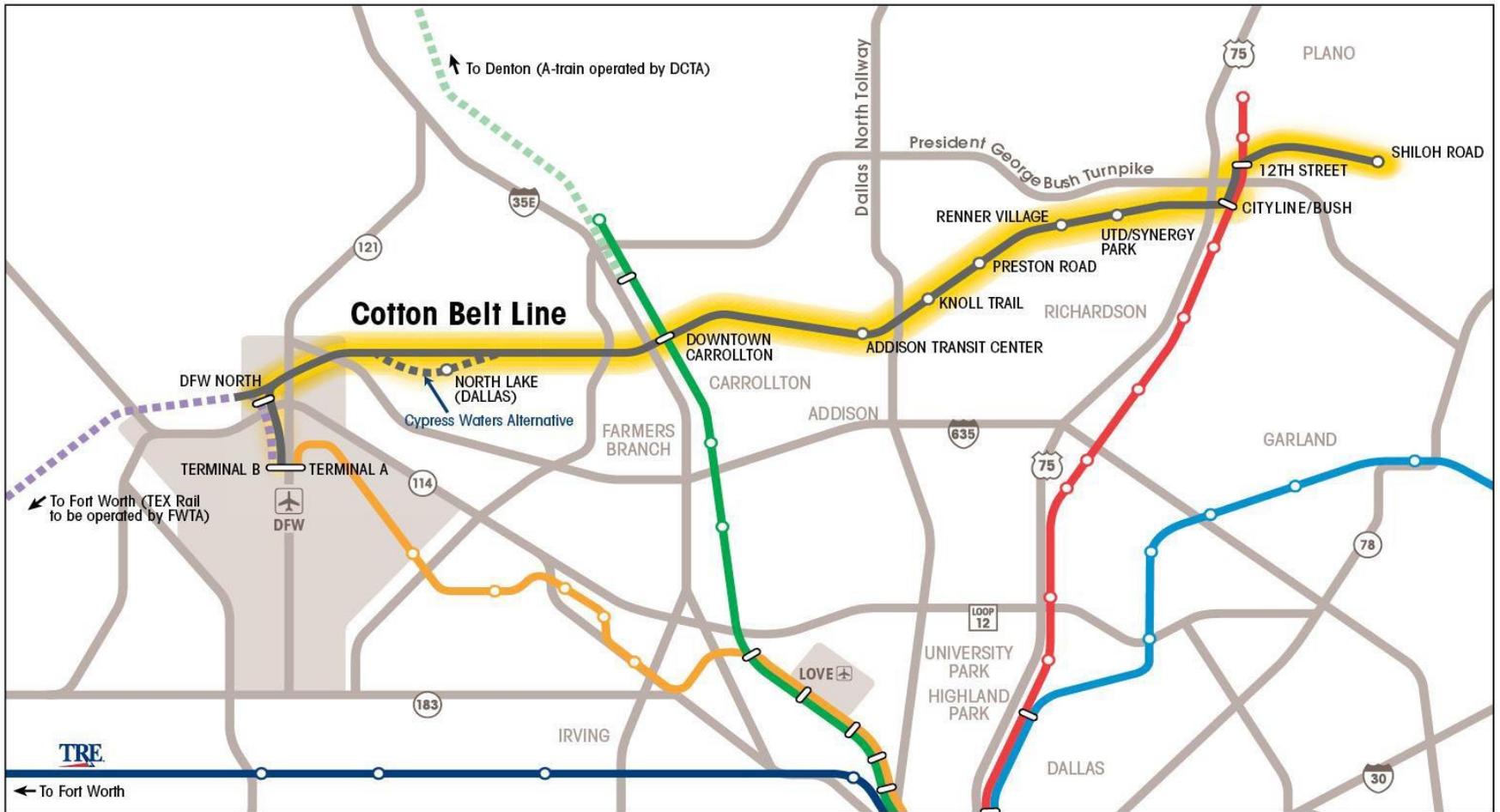
Source	Funding (000s)
RRIF Loan	\$908,000
FTA (CMAQ or STPMM)	100,000
FTA (Formula)	3,300
FTA (CMAQ)	36,000
Local *	<u>87,700</u>
Total	<u>\$1,135,000</u>

* 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

Environmental Activities

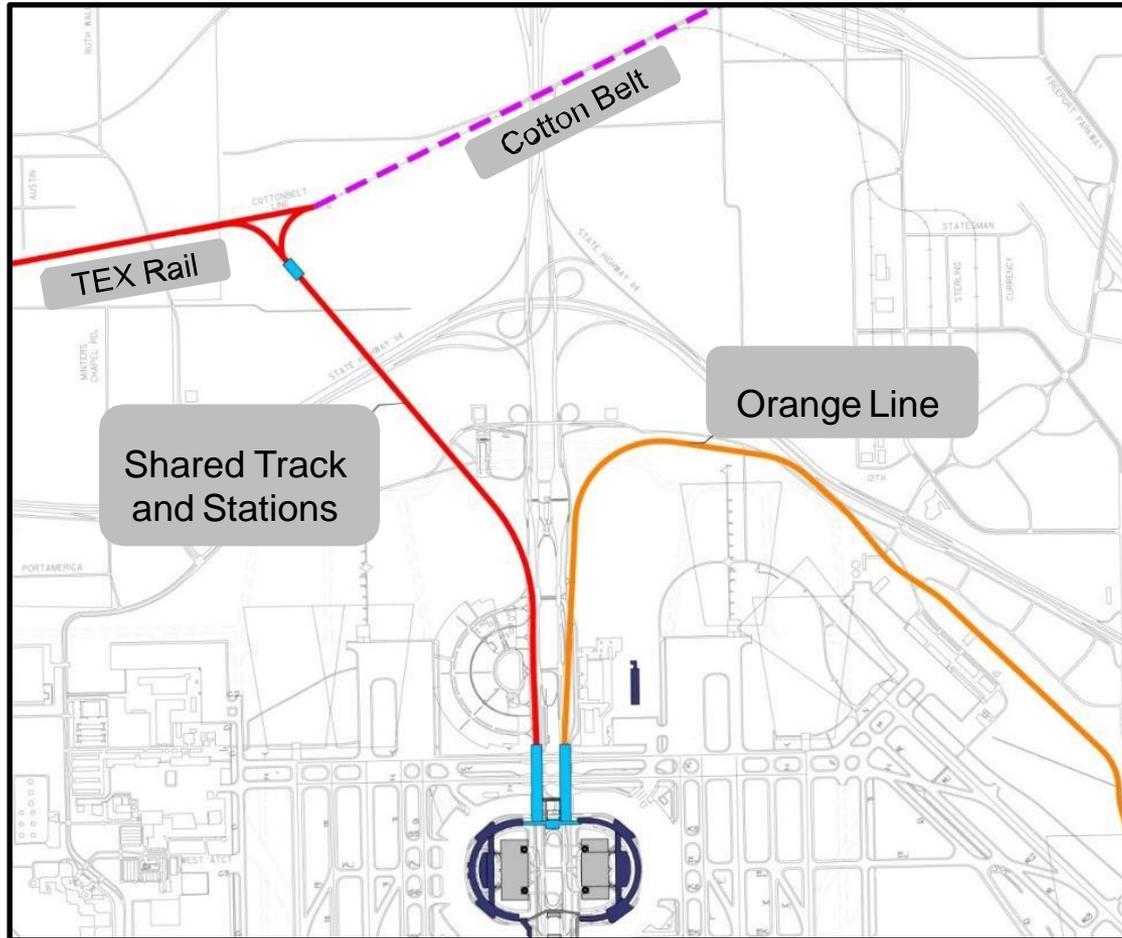
- **Data collection update: Ongoing**
 - Information requests (Community Facilities, Schools, Parks, etc.) sent to all cities
 - Cities preparing response
- **Field Recognizance/Testing**
 - Noise/Vibration Data Collection: Complete
 - Surveying: Ongoing
 - Utilities: Ongoing
 - Historic Resources: Ongoing
 - Environmental Resources: Ongoing



- | | | |
|---------------------------|--------------------|----------------------------------|
| — Cotton Belt | — DART Orange Line | --- DCTA A-train |
| --- Alternative Alignment | — DART Green Line | — Trinity Rail Express |
| --- TEX Rail | — DART Red Line | ◻ Interface Station |
| | — DART Blue Line | ○ Potential Cotton Belt Stations |

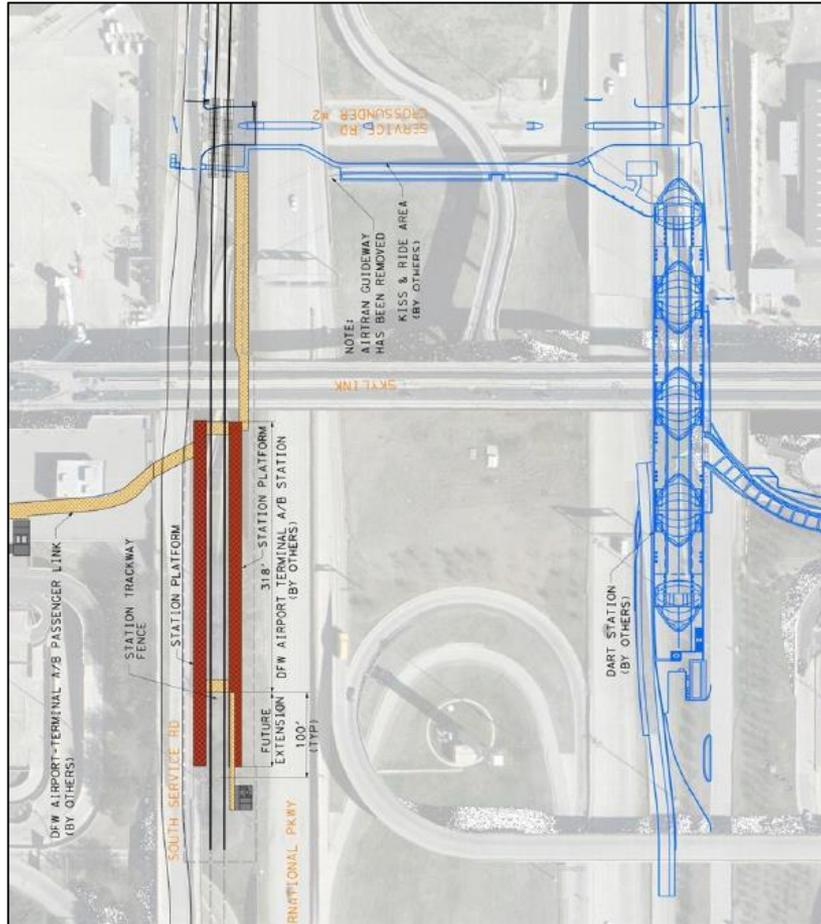


DFW Terminal Stations



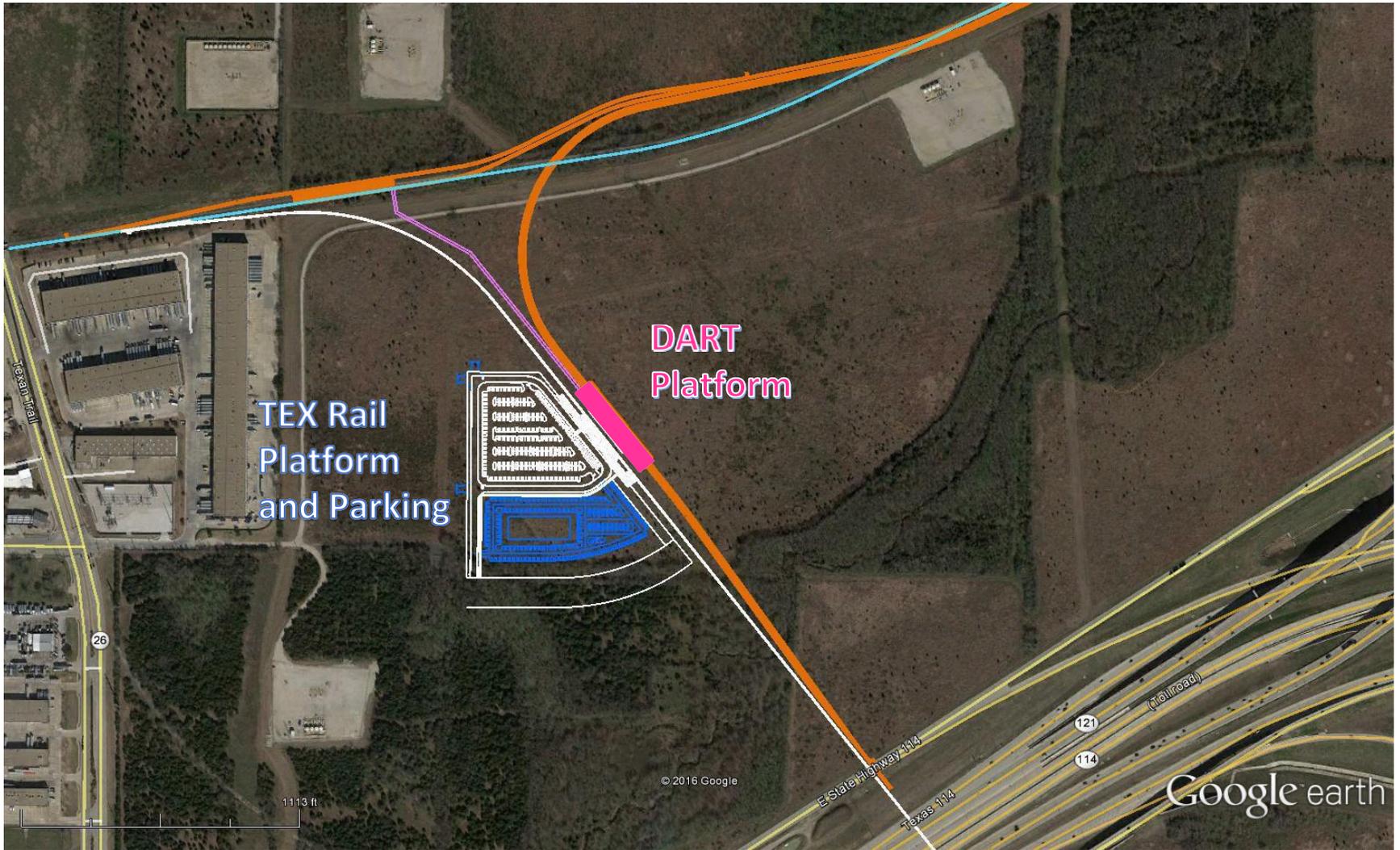
DFW Terminal Stations

Terminal B
Regional Rail
Station



Terminal A
Orange Line
LRT Station

DFW North



Regional Rail Vehicle

- Compatible with TEX Rail (FLIRT)
- Tier 4 EPA Emissions Standards



Project Schedule

- May 2017: Public Meetings
- November 2017: Publish DEIS
- January 2018: Public Hearing
- March 2018: FEIS/ROD



DART

let's go.



DART.org