D2 Subway Project Development

Stakeholder Committee

October 24, 2018
Agenda

- Welcome and Introductions
- D2 Subway Overview
- Status of Project Development (PD) Efforts
- Focus Area Workshop Results
- Potential Alignment/Station Refinement in CBD East Area
- Next Steps
Purpose of Today’s Meeting

• To update stakeholders on key observations related to Focus Area workshops and progress
• To get feedback on:
  – Overall urban design vision
  – Potential subway station portal locations
  – Potential CBD East alignment refinement
  – Potential issues related to engineering, environmental
Project Overview
Locally Preferred Alternative
Commerce via Victory/Swiss
Project Purpose

- Add **Core Capacity** to and through downtown
  - Some trains will be at capacity within a few years
- Provide **Operational Flexibility** for the system
  - Continuity of service during incidents
  - System expansion/added service
- Enhance **Mobility and Access** for existing and future riders
  - Get our riders where they need to go
- Enhance **Economic Development**
  - Add value through context sensitive design

CORE CAPACITY

OPERATIONAL FLEXIBILITY

MOBILITY & ACCESS

LAND USE / URBAN DESIGN
Status of Project Development Efforts
Project Development Engineering Activities

• Reached level of 5% conceptual design
• Completed 34 geotechnical borings since 2016 with 25 borings focused along alignment
• Utility and building foundation research
• Engineering Surveys
• Current focus is on evaluating above data to develop preferred tunnel construction approach
• Station space planning and design
Preliminary Engineering
Subway Station Space Planning

• Station Sizing Considerations:
  – Functions to be accommodated and space needed such as vertical circulation, restrooms, service rooms (mechanical, electrical), police office, etc.
  – Maximum train capacity x 2.5
  – Design level of service (LOS) for passengers
  – Where fare enforcement begins (street level vs. mezzanine)
  – Physical constraints:
    o Building foundations
    o Geology (rock depth, thickness)
    o Right-of-way
    o Utilities
Preliminary Engineering
Subway Station Space Planning
## Preliminary Engineering

Subway Station Space Planning

### Waiting Area LOS

<table>
<thead>
<tr>
<th>LOS</th>
<th>Description</th>
<th>Area per Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS A</td>
<td>&gt;= 13 ft² per person</td>
<td></td>
</tr>
<tr>
<td>LOS B</td>
<td>10-13 ft² per person</td>
<td></td>
</tr>
<tr>
<td>LOS C</td>
<td>7-10 ft² per person</td>
<td></td>
</tr>
<tr>
<td>LOS D</td>
<td>3-7 ft² per person</td>
<td></td>
</tr>
<tr>
<td>LOS E</td>
<td>2-3 ft² per person</td>
<td></td>
</tr>
<tr>
<td>LOS F</td>
<td>&lt; 2 ft² per person</td>
<td></td>
</tr>
</tbody>
</table>

Planning for **LOS C** for maximum crowd conditions
Project Development
Environmental Activities

• Existing conditions documentation is in progress to support Supplemental Draft Environmental Impact Statement (SDEIS)
• Key topics:
  – Traffic and transportation (auto, bike/pedestrian, parking, transit)
  – Noise/vibration
  – Displacement/acquisition
  – Historic resources and Parklands
  – Visual/aesthetics
  – Hazardous materials
  – Safety and security
  – Construction impacts
Cultural and Historic Resources

- Area of Potential Effects (APE) of 300 feet from either side of alignment
- 600-foot radius around the three subway stations
- Resource age of 45 years from the anticipated revenue service date of 2024 (1979 or prior)
- Field survey work is complete
Noise & Vibration

Noise Measurement Locations

Site ID  Location
LT-1  Arpeggio Victory Park Apartments
LT-2  The Vista Apartments
LT-3  Northend Apartments
LT-4  Dallas World Aquarium
ST-1  W Hotel
ST-2  Uplift Luna Prep School
ST-3  Lizard Lounge
ST-4  Marquis on Gaston (Residences)

Vibration Measurement Locations

Site ID  Location
VT-1  Victory Ave and High Market Street
VT-2  Commerce Street and Browder Street

- Noise Measurement Site
- Vibration Propagation Testing Site
Focus Areas
Small Group Workshops

FOCUS AREAS

1. At-Grade Segment from Victory Station to Museum Way Station
2. Museum Way Station
3. North Portal
4. Metro Center Station
5. Commerce Station
6. CBD East Station
7. East Portal

FOCUS AREAS

- Station & Station Portals
- Tunnel Portal & At-Grade Alignment
Victory-Perot Museum Focus Area
Victory-Perot Station Area Plan
# Station Portal Feedback

## Metro Center

<table>
<thead>
<tr>
<th>Map #</th>
<th>Station/Portal Location</th>
<th>Primary (P) or Secondary (S) Access Point?</th>
<th>Notes/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>West Transfer Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Surface parking lot (East of Griffin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ross Parks Plaza</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Griffin (East Hotel) zonian plaza</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Surface parking lot (South of E of A)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Commerce

<table>
<thead>
<tr>
<th>Map #</th>
<th>Station/Portal Location</th>
<th>Primary (P) or Secondary (S) Access Point?</th>
<th>Notes/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Pegasus Plaza (Magnolia park through)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Pegasus Plaza (Behind Magnolia)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Bivonder Street Mall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Surface parking lot (Yes/ Jackson)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>DartPark Garage first floor space</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## CBD East

<table>
<thead>
<tr>
<th>Map #</th>
<th>Station/Portal Location</th>
<th>Primary (P) or Secondary (S) Access Point?</th>
<th>Notes/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main Street Garden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Elm Street courtyard area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Elm/Harwood corner plaza</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>East Transfer Center</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Metro Center Station Focus Area

Examples

Example 3 - Dubai, United Emirates

Example 4 - Chicago, Illinois
Commerce Station Focus Area

Examples

2
Hollywood, California

5
New York, New York

6
Lisbon, Portugal

LEGEND
- Park/Plaza
- Potential Access to Subway
- Potential Streetcar
- D2 Subway Route
- Pedestrian Connection

NOT TO SCALE
CBD East Station
Focus Area
Deep Ellum Focus Area
Potential CBD East Alignment Refinement
Current LPA Alignment – Key Issues

1. Potential impacts to **Elm Street Garage**
2. Subway station design **constraints**
3. **Carpenter Park** impacts
4. Potential impacts to **Cesar Chavez**
CBD East Station Constructability
CBD East Station Constructability

Garage Expansion
Potential Alignment Refinement
Potential Alignment Refinement
Potential Alignment Refinement
Property Needs/Potential Displacements

108 N Pearl
The Lounge
(potentially historic)

2107 Main
Southwest Blueprint
CBD East/Deep Ellum Area Plan
# Summary of Trade-Offs

<table>
<thead>
<tr>
<th>LPA</th>
<th>FACTORS</th>
<th>Refinement</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.45 mile</td>
<td>Length</td>
<td>0.50 mile</td>
</tr>
<tr>
<td>$382M</td>
<td>Cost Estimate</td>
<td>$334M</td>
</tr>
<tr>
<td></td>
<td>Surface parking lots needed for cut-and-cover construction (easement or acquisition TBD)</td>
<td>Surface parking lots needed for cut-and-cover construction (easement or acquisition TBD) Two building displacements (Lounge @ 108 N Pearl; Small business @2107 Main)</td>
</tr>
<tr>
<td></td>
<td>Property Needs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parking</td>
<td>Temporary surface lot disruptions</td>
</tr>
<tr>
<td></td>
<td>Parks</td>
<td>Avoids Main Street Garden and Carpenter Park</td>
</tr>
<tr>
<td></td>
<td>Roadway</td>
<td>Minimal changes to Cesar Chavez Requires TxDOT coordination for innovative design around columns</td>
</tr>
</tbody>
</table>

Surface parking lots needed for cut-and-cover construction (easement or acquisition TBD) Two building displacements (Lounge @ 108 N Pearl; Small business @2107 Main)
Potential Alignment Refinement
Stakeholder Feedback
Next Steps
Next Steps

• Complete SDEIS Existing Conditions to begin impact assessments concurrent with 10% design
• Complete subway station concept plans (size, functions, fare enforcement areas)
• Refine Area Plans for Victory/Perot and Deep Ellum
• Subway station portal feasibility evaluation and concepts
• Finalize alignment through CBD East and Deep Ellum area in cooperation with TxDOT and area stakeholders
• Continue to evaluate tunnel construction methods

Next Stakeholder Committee meeting in early 2019
## Schedule

### PUBLIC & AGENCY INVOLVEMENT

1. **2018**
2. **2019**
3. **2020**
4. **2024**

<table>
<thead>
<tr>
<th>Phase</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROJECT DEVELOPMENT PHASE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preliminary Engineering (PE)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-20% Preliminary Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30% Preliminary Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplemental DEIS (SDEIS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitigation Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Document Development &amp; Review</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final EIS (FEIS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitigation Commitments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTA Record of Decision (ROD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitigation Monitoring Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ENGINEERING PHASE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design-Build</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Schedule is preliminary and subject to change.

### ANTICIPATED KEY MILESTONE MEETINGS

1. Kickoff Meetings
2. Existing Conditions/Issue Identification/10% PE
3. Impact Assessment Findings/Mitigation Options/10-20% PE
4. Public Hearing for SDEIS

Revenue Service - End of 2024
How to Stay Involved

- Visit www.DART.org/D2
- Email D2@DART.org
- Attend meetings regularly
- Sign up for project alerts at www.DART.org/D2
- Request a briefing or meeting with your organization
- Mail the Project Manager