Meeting Objectives

• Review Proposed Refinements to the Reasonable Set of Alternatives being advanced into Screening Evaluation:
  – East Junction
  – West Junction
  – Alignment (Arts District, Commerce)

• Agree on the conceptual definition of the alternatives to allow for evaluation to proceed
  – Alignment, Station Locations, East Junction option(s)

• Discuss data needs for screening evaluation
Reminders

• Conceptual design only at this time:
  – Are alternatives feasible?
  – What are potential impacts to be addressed further in DEIS?
  – What are key opportunities as project is refined?

• Once a refined LPA is selected:
  – Preliminary engineering for alignment, tunnel portals, stations and access points
  – DEIS, mitigation for identified impacts (property, parks, historic, traffic, etc.)
Streetcar Considerations

• Local Share of Dallas Streetcar Central Link project is in DART FY17 Financial Plan
  – Connection from Union Station to Arts District area
  – Opportunity to provide short trips between downtown districts
  – Circulation to/from LRT

• Assumes FTA grant – developing schedule and strategy this spring

• Proposed Streetcar Workshop in March to develop options with D2 short list
High Speed Rail (HSR) Considerations

• Service to potential HSR Station – options:
  • LRT/TRE Extension to HSR station complex
  • Pedestrian/bus/shuttle linkages to existing LRT stations (Cedars, Convention Center)
  • Double track the west junction to allow LRT from north to the HSR area
Objectives to Identify Reasonable Set of Subway Alternatives

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within $1.3 Billion Budget (YOE)</td>
<td>DART</td>
</tr>
<tr>
<td>Constructability/Favorable geology conditions</td>
<td>DART</td>
</tr>
<tr>
<td>Subway between Woodall Rodgers and IH 345</td>
<td>City Council</td>
</tr>
<tr>
<td>Ability to shift Green/Orange Line operations to D2</td>
<td>FTA (Core Capacity)</td>
</tr>
<tr>
<td>Ease of transfers (Proximity to Existing Bus/Rail)</td>
<td>City Council/DART</td>
</tr>
<tr>
<td>Access to Jobs (Employment density)</td>
<td>City Council/DART</td>
</tr>
<tr>
<td>Interoperability between both downtown LRT lines</td>
<td>DART</td>
</tr>
<tr>
<td>Minimize curves (travel time, O&amp;M, construction)</td>
<td>DART</td>
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</table>
## Reasonable Alternatives Assessment

### Summary of Technical and Stakeholder Committee Recommendations

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>TECHNICAL COMMITTEE RECOMMENDATION</th>
<th>STAKEHOLDER COMMITTEE RECOMMENDATION</th>
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<tbody>
<tr>
<td>PACIFIC RR ROW</td>
<td>YES</td>
<td>YES * Common Recommendation</td>
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<tr>
<td>PACIFIC VICTORY ROW</td>
<td>YES</td>
<td>YES * Common Recommendation</td>
</tr>
<tr>
<td>ELM RR ROW</td>
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<td>YES * Refine Alignment</td>
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<tr>
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<tr>
<td>COMMERCE RR ROW</td>
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<tr>
<td>COMMERCE GOOD LATIMER</td>
<td>NO * Unless There is Feasible Below-Grade Option</td>
<td>NO * Unless There is Feasible Below-Grade Option</td>
</tr>
<tr>
<td>COMMERCE SWISS</td>
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<td>YES * Common Recommendation</td>
</tr>
<tr>
<td>WOOD GOOD LATIMER</td>
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<td>NO</td>
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<tr>
<td>WOOD SWISS</td>
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<tr>
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<td>CANTON GOOD LATIMER</td>
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<td>UPTOWN ROUTH</td>
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<tr>
<td>ARTS DISTRICT</td>
<td>YES * Work With City on East Junction Options</td>
<td>YES * Work With City on East Junction Options</td>
</tr>
</tbody>
</table>
LPA Refinement Evaluation Process

Key Objectives

- Range of Reasonable Subway Alternatives

Screening Evaluation

- Need to agree on the concepts:
  - Alignments, stations, junctions with existing system

Short List of Subway Alternatives

Detailed Evaluation

Refined D2 LPA Recommendation

Dec-Jan | Jan-Feb | Mar-May | May-June
Reasonable Set of Alternatives

• Focusing on four primary corridors for Screening Evaluation
  – Pacific
  – Elm
  – Commerce
  – Arts District

• All have some level of refinement suggested
• We need to recommend which refinements should be advanced
New Information on TBM Capabilities
Affects RR ROW options on the west

• Two types of Tunnel Boring Machine (TBM):
  – Hard Rock TBM
    • Minimum 300-400’ radius
  – Soft Ground TBM
    • Desirable 700-800’ radius
    • Special cases 450’ minimum radius

• Implications:
  – Original curves from RR ROW into Pacific or Elm require cut and cover construction.
  – Soft ground TBM curves impact other properties.
Pacific - Options and Refinements

- West Junction
  - Victory ROW
  - RR ROW
- East Junction
  - Swiss Avenue only
  - Advance portal east of I-345

- No other options are refinements suggested for this alternative
Discussion of Subway Alternatives

Primary Corridors

PACIFIC CORRIDOR

Original Concept

DART Victory ROW Option

Rail Corridor Option

Green Line track reconstruction (embedded track) and Deep Ellum Station removal/relocation

Swiss Option
Prefer Portal east of IH 345
PACIFIC CORRIDOR
RR ROW Original Option
and 700’ radius curve

Key Issues:
- Poor geology requires cut and cover for tighter curve radius
- Takes LRT out of service
- Design standards
- Larger curve under proposed Holocaust Museum

Recommendation: ___
PACIFIC CORRIDOR
Swiss Option

Key Issues:
- Coordination with park improvement including mitigation
- Property impacts east of IH 345
- Reconstruct Good Latimer/remove Deep Ellum Station (gain back street ROW)

Recommendation: ____
Carpenter Park Overlay

- Goal is to minimize impacts to proposed park
- Potential impacts will be better known once PE/EIS work begins
- Any impacts would be mitigated to keep plan whole
- Look for opportunities to enhance the park plan
Elm - Options and Refinements

• West Junction
  – Victory ROW
  – RR ROW (original)
  – RR ROW (stakeholder refinement)
• East Junction
  – Swiss Avenue
  – Monument Street (stakeholder proposal)
**ELM CORRIDOR**

**Original Idea**

- **DART Victory ROW Option**

- **Rail Corridor Option**

- **Swiss Option**
  - Portal east of IH 345

- **Green Line track reconstruction (embedded track) and Deep Ellum Station removal/relocation**
ELM CORRIDOR
RR ROW Portal to Elm – Original Concept

Key Issues:
- Poor geology requires cut and cover for curve radius
- Under Dealey Plaza/ 6th floor museum

Recommendation: ___
ELM CORRIDOR
RR ROW Portal to Elm –Stakeholder Refinement

Key Issues:
- Takes LRT and TRE out of service
- Engineering flaws
- Curve requires cut and cover through Dealey Plaza

Recommendation: ___
ELM CORRIDOR
RR ROW Portal to Elm – Larger Curve Radius for TBM (700’ desirable)

Key Issues:
- Impacts to additional buildings
- Potential impacts to Dealey Plaza

Recommendation: ___
ELM CORRIDOR
Original Swiss Concept

Key Issues:
- Coordination with park improvement including mitigation
- Property impacts east of IH 345
- Reconstruct Good Latimer/remove Deep Ellum Station (gain back street ROW)

Recommendation: _____
ELM CORRIDOR
Monument Street #1
Stakeholder Proposal

Key Issues:
- No DFW-NC corridor movement – requires new track siding for turnback near IH 30
- Deep Ellum Station remains for special event service only
- Permanent closure of Elm/Good Latimer
- Property impacts along Elm

Recommendation: ___
ELM CORRIDOR
Monument Street #2
Stakeholder Proposal

Key Issues:
- No DFW-NC corridor movement – requires new track siding for turnback near IH 30
- Deep Ellum Station remains for special event service only
- Potential Knights of Pythias impacts
- Good Latimer temporary construction impacts
- Property impacts along Elm

Recommendation: _____
ELM CORRIDOR
Monument Street #3
Stakeholder Proposal

Key Issues:
- No DFW-NC corridor movement – requires new track siding for turnback near IH 30
- Property impacts along Elm
- Deep Ellum Station remains for special event service only

Recommendation: ___
Key Issues:
- No Baylor Station service (replaced by portal, Baylor Station on non-revenue track)
- No direct DFW-NC corridor movement
- Limited interoperability – requires new track siding for turnback near IH 30
- Property impacts

Recommendation: _____________
ELM CORRIDOR
Monument Street #5
Stakeholder Proposal

Key Issues:
- New, additional Baylor Station (current Baylor Station on non-revenue track)
- No direct DFW-NC corridor movement
- Limited interoperability – requires new track siding for turnback near IH 30
- Property impacts

Recommendation: ____
ELM CORRIDOR
Monument Street #6
Stakeholder Proposal
(After 2/2 Deep Ellum Foundation Meeting)

Key Issues:
- Takes LRT out of service for about 4 years
- No direct DFW-NC corridor movement
- No interoperability – removes Green Line segment
- Potential property impacts

Recommendation: ___
Commerce - Options and Refinements

• Need to refine alignment east of Main Street Garden
  – DDI and City both had suggestions to minimize curves
• West Junction
  – Victory ROW only
• East Junction
  – Swiss Avenue
  – Good Latimer/ Monument St
  – 2-portal concept
Discussion of Subway Alternatives

Primary Corridors

**COMMERCE CORRIDOR**

Original Concept

- **DART Victory ROW Option**
- **Swiss Option**
  - Portal west of IH 345
- **Good Latimer Option**
  - Portal west of IH 345

- **Rail Corridor Option**

- **Green Line track reconstruction** (embedded track) and Deep Ellum Station removal/relocation
Key Issues:
- Traffic impact analysis for at-grade sections
- Full junction at existing rail may not be feasible (would use pocket track north of Victory)

Recommendation: ___
COMMERCE CORRIDOR
City/DDI Realignment Concept

Key Issues:
• Impacts parking garages/surface lots
• Cut and cover construction

Recommendation: ___
COMMERCE CORRIDOR
City Option - Good Latimer
2-portal concept

Key Issues:
- Gaston Yard Apartments acquisition
- Existing Baylor Station becomes unused on non-revenue track
- Significant cut-and-cover at east junction
  - Portal on Epic property, Knights of Pythius
  - Street/rail closures

Recommendation: ___
Arts District - Options and Refinements

• Need to refine alignment concept on the east
  – Olive/Pearl
  – Leonard

• East Junction
  – Swiss
  – Monument Street
  – 2-portal concept
ARTS DISTRICT CORRIDOR

Original Idea

DART Victory ROW Option

Complex Junction Configuration
May require LRT system out of service
CITY OF DALLAS D2 ALIGNMENT COMMENTS - PROPOSED MODIFICATIONS FOR CONSIDERATION

LEGEND
- Red Line
- Blue Line
- Green Line
- Orange Line

1. Commerce St. A: Swiss Ave. Option
   - Potential Station/ Pedestrian Portal Location
   - Approx. 9,900’ long (7,200’ underground)

2. Commerce St. B: Below-Grade Junction Option
   - Potential Station/ Pedestrian Portal Location
   - Approx. 11,600’ long (9,300’ underground)

3. Ross Avenue
   - Potential Station/ Pedestrian Portal Location
   - Approx. 11,200’ long (8,200’ underground)

- Proposed Spur to High Speed Rail
- Non-Revenue Track
- Existing Streetcar/ Trolley
- Potential Streetcar Route
- Train Portal
- Potential At-Grade Station for All Alignments
Key Issues:
- Passenger transfer loads at Pearl/Arts District Station
- Conflicts with IH 345 structure
- Gaston Yard Apartments acquisition
- Existing Baylor Station unused on non-revenue track
- Significant cut-and-cover at east junction
  - Portal on Epic property, Knights of Pythius
  - Street/rail closures

Recommendation: ___
ARTS DISTRICT CORRIDOR
Olive/Pearl/Swiss Option

Key Issues:
- No station opportunity on east
- No passenger transfer options with existing mall

Recommendation: ___
ARTS DISTRICT CORRIDOR
Olive/Pearl/Monument Street Option

Key Issues:
- Passenger transfer loads at Pearl (center platform)
- Monument connection eliminates DFW-NC corridor movement

Recommendation: ___
ARTS DISTRICT CORRIDOR
Olive/Monument Street Option

Key Issues:
- Passenger transfer loads at Pearl (center platform)
- Olive Street too narrow for twin bore
- Monument connection eliminates DFW-NC corridor movement

Recommendation: ___
ARTS DISTRICT CORRIDOR
Olive/Modified Swiss Option

Key Issues:
- No station opportunity on east
- No passenger transfer options with existing mall

Recommendation: ___
Summary of Refinement Recommendations

• Should RR ROW options continue to be carried forward for Elm and Pacific with larger curve radii for soft ground TBM?

• Which if any of the Monument Street options should be advanced in addition to Swiss?

• Which refined Commerce alignment should be advanced?

• Which if any of the Arts District options should be advanced?
Next Steps

• February
  – Technical Committee late February to review screening evaluation and proposed short list
  – Stakeholder Committee early March
    • Short List Recommendations

• March-May
  – Define Short Listed Options in more detail
  – Detailed Evaluation of Short List
  – Streetcar Workshop