The Irving to Frisco Corridor Project Advisory Committee meeting will begin shortly.

Please mute your microphones and enter your name and organization in the chat box.

Thank you.
Meeting Protocols

• Please keep your microphone muted unless speaking
• Please enter your name and organization into the Chat Box
• Please utilize the Raise your hand feature to ask a question or make a comment; you may also use the Chat Box for questions and comments
• If joining by phone, please hold your questions and comments until feedback is requested at specified times during presentation
Agenda

• Study Milestones Schedule
• Land Use Analysis Report (Draft)
• Corridor Cost Estimates
  ▪ Capital Costs
  ▪ Operations & Maintenance Costs
• People Mover Feasibility Analysis Results
• Collin County Transit Study Update
• Questions & Discussion
• Next Steps
Meeting Context
Study Milestones Schedule

January
- Alternatives Analysis Results

April
- Land Use Analysis Report, Part 1 (Draft)
- Corridor Cost Estimates
- People Mover Feasibility Analysis Results

May
- Funding Sources (Revenue)
Land Use Analysis Report Update

- **Objective:** Provide recommendations that facilitate structured and systematic growth of transit supportive land uses at station locations

- **Progress:**
  - In development alongside “Best practices for transit-supportive economic development” report
  - Leveraging prior *Station Area Alternative Demographics* analysis
  - Draft document to PAC for review/comment

Capital Cost Estimates

- Grading, Drainage, Bridge Structures, Retaining Walls
- Double Track Guideway
- Passenger Station Platforms w/ Amenities
- Parking Facilities (where appropriate)
- Systems Elements including Positive Train Control (PTC), Communications, Signaling, & Street Crossing Protection
- Vehicles (Modern DMU Regional Standard)
- Maintenance Facility
# Capital Cost Estimates

<table>
<thead>
<tr>
<th>Alt.</th>
<th>Limits</th>
<th>Length (Miles)</th>
<th>No. of Station Stops</th>
<th>No. of Vehicles</th>
<th>Total Project Implementation Cost (Year 2021 $M)</th>
<th>Cost/Mile ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Downtown Irving to Downtown Celina</td>
<td>37.4</td>
<td>12</td>
<td>10</td>
<td>$1,553.0</td>
<td>$41.52</td>
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<tr>
<td>2</td>
<td>Downtown Irving to Downtown Prosper</td>
<td>31.0</td>
<td>11</td>
<td>8</td>
<td>$1,324.4</td>
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<tr>
<td>3</td>
<td>Downtown Irving to Panther Creek Parkway in Frisco</td>
<td>27.9</td>
<td>10</td>
<td>7</td>
<td>$1,206.0</td>
<td>$43.26</td>
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</table>

April 15, 2021
## Capital Cost Allocation by City

<table>
<thead>
<tr>
<th>City Name</th>
<th>Alternative #1</th>
<th>Alternative #2</th>
<th>Alternative #3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percentage of Trip Origins</td>
<td>Capital Cost Allocation by City</td>
<td>Percentage of Trip Origins</td>
</tr>
<tr>
<td>Carrollton</td>
<td>7.8%</td>
<td>$121,091,000</td>
<td>7.9%</td>
</tr>
<tr>
<td>Celina</td>
<td>5.0%</td>
<td>$76,977,000</td>
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<tr>
<td>Dallas</td>
<td>6.0%</td>
<td>$92,638,000</td>
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<tr>
<td>Farmers Branch</td>
<td>0.7%</td>
<td>$11,247,000</td>
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<tr>
<td>Frisco</td>
<td>36.4%</td>
<td>$564,890,000</td>
<td>36.7%</td>
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<tr>
<td>Irving</td>
<td>14.3%</td>
<td>$221,679,000</td>
<td>14.4%</td>
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<tr>
<td>Plano</td>
<td>12.5%</td>
<td>$194,173,000</td>
<td>12.6%</td>
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<tr>
<td>The Colony</td>
<td>10.8%</td>
<td>$168,078,000</td>
<td>10.9%</td>
</tr>
<tr>
<td>Prosper</td>
<td>6.6%</td>
<td>$102,197,000</td>
<td>6.6%</td>
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<tr>
<td><strong>Totals</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>$1,552,970,000</strong></td>
<td><strong>100.0%</strong></td>
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*Alt 2 & 3 Trip Origin Percentages determined through station activity and interpolation. Further analysis required.
Operations & Maintenance Cost Estimates

- Labor – Train Operations Manager, Dispatcher, Engineer, Conductor
- Maintenance of Way – PTC Manager & Supervisor, Signals & Comms Manager, ROW Manager & Supervisor, Track & Structures Inspector, Vegetation, Equipment Operator
- Vehicle Maintenance – Mechanical Manager and Supervisor, Vehicle Cleaner, Parts Clerk
- Propulsion Fuel & Utilities – Diesel Fuel, Station Utilities, Shop Utilities
- General & Administrative – General Manager, Environmental Compliance Manager, Safety Manager
### Annual Operating & Maintenance Cost Estimates

<table>
<thead>
<tr>
<th>Alt.</th>
<th>Limits</th>
<th>Length (Miles)</th>
<th>No. of Station Stops</th>
<th>No. of Vehicles</th>
<th>Total Annual Operating &amp; Maintenance Cost</th>
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<tr>
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<td>Downtown Irving to Downtown Celina</td>
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<td>$24,251,000</td>
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<tr>
<td>2</td>
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<td>31.0</td>
<td>11</td>
<td>8</td>
<td>$20,101,100</td>
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<td>3</td>
<td>Downtown Irving to Panther Creek Parkway in Frisco</td>
<td>27.9</td>
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<td>$18,090,900</td>
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# O&M Cost Allocation by City

<table>
<thead>
<tr>
<th>City Name</th>
<th>Alternative #1</th>
<th></th>
<th>Alternative #2</th>
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<td>Percentage of Trip Origins</td>
<td>O&amp;M Cost Allocation by City</td>
<td>Percentage of Trip Origins</td>
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<td>Percentage of Trip Origins</td>
<td>O&amp;M Cost Allocation by City</td>
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<tr>
<td>Carrollton</td>
<td>7.8%</td>
<td>$1,890,900</td>
<td>7.9%</td>
<td>$1,582,500</td>
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<td>Celina</td>
<td>5.0%</td>
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<td>4.0%</td>
<td>$812,000</td>
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<td>Dallas</td>
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<tr>
<td>Farmers Branch</td>
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<td>$175,600</td>
<td>0.7%</td>
<td>$147,000</td>
<td>0.8%</td>
<td>$137,100</td>
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<tr>
<td>Frisco</td>
<td>36.4%</td>
<td>$8,821,300</td>
<td>36.7%</td>
<td>$7,382,300</td>
<td>38.1%</td>
<td>$6,887,000</td>
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<td>Irving</td>
<td>14.3%</td>
<td>$3,461,700</td>
<td>14.4%</td>
<td>$2,897,000</td>
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<td>$2,702,700</td>
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<tr>
<td>Plano</td>
<td>12.5%</td>
<td>$3,032,200</td>
<td>12.6%</td>
<td>$2,537,600</td>
<td>13.1%</td>
<td>$2,367,300</td>
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<tr>
<td>The Colony</td>
<td>10.8%</td>
<td>$2,624,700</td>
<td>10.9%</td>
<td>$2,196,500</td>
<td>11.3%</td>
<td>$2,049,200</td>
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<tr>
<td>Prosper</td>
<td>6.6%</td>
<td>$1,595,900</td>
<td>6.6%</td>
<td>$1,335,600</td>
<td>4.2%</td>
<td>$765,400</td>
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<tr>
<td><strong>Totals</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>$24,251,000</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>$20,101,100</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>$18,090,900</strong></td>
</tr>
</tbody>
</table>

*Alt 2 & 3 Trip Origin Percentages determined through station activity and interpolation. Further analysis required.
People Mover Components

Automated Transportation System (ATS)

• Smart Vehicle (Group-Rapid Transit)
  ▪ Autonomous
  ▪ Rubber-Tire’d

• “Dumb” Guideway
  ▪ Paved
  ▪ Grade-Separated
People Mover Considerations

- Retrofit
- Greenfield
- ATS System
- Existing Development
- Minimal/Consolidated Parking
- Individual Site - ITE Parking Code
- Privately Funded
- Publicly Funded or Partnership?
- Grade-Separated System
- At-Grade System w/ Signal Priority
- Development Circulator
- Regional Connections

Each site may have combination of many of these considerations
Concurrent Efforts

**Previous Efforts** (2016-Mid 2020)
- Regional demand mapping
- General site feasibility/site capture
- Potential system use
- Other high-level planning elements

**Current Efforts** (Mid 2020-2022)
- Infrastructure engineering process
- Vehicle technology identification process

**Future Efforts** (2023-)
- Availability of funding (public/private)
- Implementation considerations
- Institutional Structure/Governance

**Demand & Feasibility Process Standards**

**Design Process Standards & Pilot Projects**

**Implementation Process Standards**

April 15, 2021
Collin County Transit Planning Study

People Mover – Planning Process

Step 1
Identification of Potential Locations
GIS Regional Mapping Tool
- Population & Employment Density
- Employment Mix
- Land Uses
- Short Trip Density
- Proximity to Regional Transit Stations

Step 2
Initial Feasibility of Potential Locations
Feasibility Analysis Tool
- Size of Development/Area Served
- Population & Employment Density (by type)
- Parking Strategy
- Proximity to Transit Stations

Step 3
Operations Analysis & Ridership Estimation
Ridership Estimation Tool
- Site Layout w/ Preferred People Mover Alignment
- Detailed Land Use Breakdown by ITE Code for Zonal Analysis
Modified Areas of Potential Demand for People Movers

People Mover Demand

- More Demand

Counties

Mobility 2045 Rail Network

ROADS

- PRIMARY HIGHWAY

DFW Airport Skylink
Las Colinas APT System
People Mover Feasibility Analysis Summary

<table>
<thead>
<tr>
<th>HIGHER FEASIBILITY LOCATIONS</th>
<th>LOWER FEASIBILITY LOCATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Las Colinas</td>
<td>Downtown Frisco</td>
</tr>
<tr>
<td>Legacy West</td>
<td>Legacy East</td>
</tr>
<tr>
<td>The Star/Stonebriar Center</td>
<td>Grandscape</td>
</tr>
</tbody>
</table>

- Development-based analysis
- Capital/operating costs not considered
- Grade-separated ATS focused analysis
- System phasing/ridership generation
- Variability in analysis results based on input assumptions
Collin County Transit Study Update

- Transit Service Needs and Market Analysis
- Transit Service Development Opportunities
- Transit Scenario Costs
  - Development of Annual Operating & Maintenance Costs for each Service Scenario
- People Mover Connections Evaluations
- Initiated Development of Investment/Governance Options
Questions & Open Discussion

- Study Milestones Schedule
- Land Uses Analysis Report
- Corridor Cost Estimates
- People Mover Feasibility Analysis Results
Next Steps

• Draft Land Use Analysis Report (Part 2) to Committee
• Summarize Funding/Implementation/Governance Considerations
• Prepare Draft Final Report

Next scheduled meeting is **May 20**
## NCTCOG Team Contacts

<table>
<thead>
<tr>
<th>Project Management</th>
<th>Stakeholder Engagement</th>
<th>Travel Demand</th>
</tr>
</thead>
</table>
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ycheng@nctcog.org |

<table>
<thead>
<tr>
<th><strong>Travel Demand</strong></th>
</tr>
</thead>
</table>
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