Sun Metro BRT Rapid Transit Service (RTS) Program
City of El Paso, Texas

by

Michael A. Feeney, PE, FITE

September 16, 2011
Outline

• History of Transit in El Paso
• Existing Sun Metro System & Facilities
• Proposed RTS System
• RTS Projects Currently in Design
• Two-Fold Project Design / Development
  • “Soft” Issues
  • “Hard” Issues
• Future of RTS
• Questions
Disclaimers

• Design at Approximately 30%

• Most Images by LAN
• Some Images Provided by:
  • City of El Paso
  • Carl Daniel Architects
  • Concussion LLP (Branding)
  • fd2s (Wayfinding)
  • Jacobs Engineering Group Inc. (AA)
  • LTK Engineering Services
  • Widgery Works (Public Art)
History of Public Transportation in El Paso

- 1881 - Horse and Mule-Drawn Trolley Service
- 1902 - Electric Streetcars
- 1905 – Union Depot Constructed
  - Serves 6 Rail Lines
  - First Facility for International Rail
- Buses Displace Streetcars - Three privately Owned Bus Lines
- Service to Juarez Until 1973
- 1977 - Sun City Area Transit (SCAT)
- 1987 - ½-Cent Sales Tax Dedicated to Transit
- 1987 - Name Changed from SCAT to Sun Metro
- 2011 – APTA Most Outstanding Public Transportation System Award
- 2013 – Alameda Avenue RTS
- 2013 – Mesa Street RTS
- 2015 – Dyer Street RTS
- 2016 – Montana Avenue RTS
Sun Metro Existing System Map & Notes

- City Department
- 250 Square Miles
- 650,000 people
- Managed by First Transit
- 21% Ridership Increase
- Regular Service
  - 166 Vehicles
  - 58 Fixed Routes
  - 15 Million Annual Trips
- Paratransit:
  - 65 LIFT Vehicles
  - 200,000 Annual Trips
Sun Metro Facilities

- Nine Transfer Centers / Terminal
  - Al Jefferson Westside
  - Bert Williams Downtown Santa Fe
  - Eastside
  - Five Points
  - Glory Road
  - Mission Valley
  - Northgate
  - Union Plaza
  - Westside

- LIFT Facility

- Union Depot
Sun Metro Facilities

- Terminals & Transit Centers In Place
- RTS to Follow
- Facility Amenities
  - Real Time Arrival Information
  - Air Conditioned Waiting Areas
  - Ticket Vending Machines
  - ATM and Change Machine
  - Televisions
  - WiFi
  - Restrooms
  - Drink / Snack Vending Machines
  - Food Service at Select Locations
- Green to the Extent Feasible Design
Opening Years
• 2013 – Alameda
• 2013 – Mesa
• 2015 – Dyer
• 2016 – Montana
RTS to Provide

- 10-Minute Peak and 15-Minute Off Peak Headways
- Mixed Use Lane Operations
- 65’ Branded Articulated Buses
- Branded Stations
- Real-Time Arrival Information
- Off-Vehicle Fare Prepayment
- Level / Low Boarding
- Fully ADA Compliant Stations / Vehicles
- Landscaping & Illumination
- Local Feeder Bus Network
- Transit Signal Priority (TSP)
- WiFi Service at Stations and Onboard
Alameda Avenue RTS
- 15.25 miles
- 18 proposed stations
- Begin @ DTC
- End @ MVTC

Mesa Street RTS
- 8.4 miles
- 13 proposed stations
- Begin @ DTC
- End @ WTC

RTS Currently Under Design

OVERALL BRT SYSTEM

City of El Paso – Alameda Corridor Bus Rapid Transit

Services
- Architecture
- Branding
- Context Sensitive Design
- Drainage
- Landscape Architecture
- Public Art
- Public Involvement
- Roadway
- Sidewalk
- Station Design
- Traffic Engineering
- Vehicle Procurement
Two-Fold Project Design / Development

“Hard” Design

• Survey / ROW
• Utilities
• Drainage
• TxDOT Coordination
• FTA (Mesa Street)
• Station Locations
  • Sight Distance
  • Cross Slopes
  • Horizontal & Vertical Curvature
  • Driveways
  • Sidewalks
  • ADA
• Architecture & Public Art - Schedule Impacts

“Soft” Design

• Branding
  • Stations & Vehicles
  • Color, Name & Logo
• Architecture
  • Design to Budget
  • Unique & Identifiable
  • “Wow” Factor Vs. “Too Futuristic”
  • Shade, Shade & More Shade
  • Wind Protection
  • Public Art
  • Coordinate with Branding & Public Artists
  • Managing Preferences
Challenges

- ROW Tight - CE / FTA Issues
- ROW Inaccurate
- MUA’s in Short Time Frame
- Platform Areas Limited - 8’ x 80’ Area
  - Architecture / Canopy
  - Protection from Wind and Sun
  - TVM, Cameras & Cabinets
  - Real Time Arrival Information
  - Pedestrian Lighting
- Sight Distance Issues
- Number of Driveways
- Relocation of Existing Bus Stops
- ADA Requirements
- Horizontal & Vertical Curvature
Evolution of Architecture - Design Charrette
Evolution of Architecture - Design Charrette

- Evolution of Architecture
- Design Charrette

- Identity
- Shade
- Wind

- Identity
- Points / Focal Point
- Themes
- Brand Name
- Higher Points

- Names / Stations
- Signs / Symbols
- Simplicity
- Lights
- Day vs. Night
- Distance / Identity
- On Ground
- TyDIT / Requirements
- Landscape
- Color / Coding
Evolution of Architecture
Evolution of Architecture
Evolution of Architecture
Evolution of Architecture -- But I saw some stations in Phoenix I liked......
### Evolution of Architecture – But I Saw Some Stations in Phoenix I Liked

#### Schedule

<table>
<thead>
<tr>
<th>Location</th>
<th>Phase</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesa Street RTS</td>
<td>Preliminary Engineering</td>
<td>105 days</td>
</tr>
<tr>
<td></td>
<td>Pre-Final Engineering</td>
<td>80 days</td>
</tr>
<tr>
<td></td>
<td>Final Engineering</td>
<td>40 days</td>
</tr>
<tr>
<td>Alameda Avenue RTS</td>
<td>Preliminary Engineering</td>
<td>180 days</td>
</tr>
<tr>
<td></td>
<td>Pre-Final Engineering</td>
<td>90 days</td>
</tr>
<tr>
<td></td>
<td>Final Engineering</td>
<td>60 days</td>
</tr>
</tbody>
</table>
Evolution of Architecture - Mission & Bhutanese Themes
Evolution of Architecture – Artist Input
Evolution of Architecture - Artist Input
Evolution of Architecture
Evolution of Architecture
Branding

- Not Mere Advertising
- Survey of “Insiders”, “Outsiders” and Users
  - Slogan
  - Naming
  - Logo
  - Color Scheme
- More Research & Thought

next steps/timeline

Provide brand essence and strategy to design team for possible influence of stations and public art *(immediately upon approval)*

Develop name and brand identity for RTS *(complete by September 16)*

Develop creative concepts for initial/ongoing marketing *(timing TBD)*

insider insights

If Sun Metro were an animal, what would it be? Why?

Beasts of Burden (14 votes): Donkey/Burro (4), Ox (3), Horse (3), Elephant (4)

Strong, hard working, carries a lot of weight, slow and steady, dependable, reliable

Dogs (5 votes): Loyal, reliable

Almost all were domesticated: Indicates trust
Almost all were working animals: Serving others above self
Traits: Loyalty, consistency, strength (but not speed)
Results of All That

Process

- Design Charrette
  - Architect
  - Branding Consultant
  - City of El Paso
  - Design Consultants
  - Public Artists
  - Sun Metro
  - TxDOT
- Public Meetings
- City Manager / Deputy City Managers
- City Council / Transit Board

Considerations

- Matter of Preference
- Design Costs & Issues
- Design Schedule
- Construction Costs
- Maintenance / Repair Costs
- Ideally – One Kit of Parts
Typical Issue - Sight Distance Vs. ROW

- Adjust Station Slightly
- Deeper Station if Existing ROW Allows
- Move Station and Impact CE Document & Schedule
- Close Driveways
- Acquire ROW / Easement
Typical Issue - Final Station Location

Argonaut - Option 1 Inbound

- Moving Further South Not Feasible
- Moving Further North Not Feasible
- Requires ROW
- Requires Amended CE Document
Typical Issue - Final Station Location

Argonaut - Option 2 Inbound

- Moving Further South Not Feasible
- Moving Further North Not Feasible
- Eliminate Right Turn Bay
- Requires No ROW
- Crest Curve Ahead of Station
- Previous Crash Issue
Communications & ITS Challenges

- Environmental Considerations
- Real Time Arrival Information – Radio
- TVM’s
  - Wireless Communications
  - Requires System Upgrade
    - Credit / Debit Cards
    - Secure Transactions
- Transit Signal Priority (TSP)
  - Use Existing AVL System
  - City Installing TSP Equipment
Communications & ITS Challenges

• Video Surveillance
  • For Traffic – TxDOT Equipment OK
  • For Security – TxDOT Equipment Not OK
  • Alameda Avenue RTS
    • City - Wireless Communications
  • Mesa Street RTS
    • Some Fiber Exists
    • Some Gaps Exist

• Bandwidth for Video
  • Ability to View in Real Time on Demand
  • Store Data Locally
FTA & TxDOT Coordination

- Mesa Street RTS Federally Funded
- Alameda Avenue RTS Locally Funded
- Adhere to All FTA Requirements
  - Remain on FTA Funding Calendar
  - MUA’s in Place Early
  - Amending CE Document Impacts Schedule
- TxDOT Coordination
  - Some Agreements Exist With City of El Paso
  - Some New MUA’s Required
Other Issues - Fitting RTS Into Existing Facilities

- Most images created by LAN
- Some images provided by:
  - City of El Paso
  - Sun Metro
  - Jacobs Engineering
  - Carl Daniel Architects
  - Widgery Works, Inc.
  - Public Artist
Other Issues - Planning and Redevelopment

- City Very Active in Transformation
- New Regulations
  - Sign Ordinance
  - Smart Code Rezoning
  - Congress on New Urbanism
- Multiple Redevelopment Areas
- Planned TOD
- Active Projects
  - University Medical Center
  - UTEP
Other Issues - Wayfinding Example

- Downtown Wayfinding
- Downtown Management District
- Downtown TIRZ
- Economic Development
- Historic Landmark Commission
- Museums and Cultural Affairs Department
- City Engineering
- Sun Metro
- Merchant / Business Groups
Lessons Learned / Challenges Overcome - To Date

- **Planning**
  - City Leaders & Departments in Agreement
  - AA and CE Documents

- **Art, Architecture and “Softer” Elements**
  - Drive Schedule
  - Consensus on More Visible Elements Key - Multiple Stakeholders

- **Design**
  - FTA Coordination for Funding
  - TxDOT Coordination for Technical Issues
  - City and TxDOT Have Good Working Relationship
  - Local Subconsultants Key - Knowledge & Relationships

- **Next Presentation(s)**
  - Spring 2012 - Design Complete
  - October 2013 - Construction Complete
Sun Metro Rapid Transit Service (RTS) Program
City of El Paso, Texas

QUESTIONS?