

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



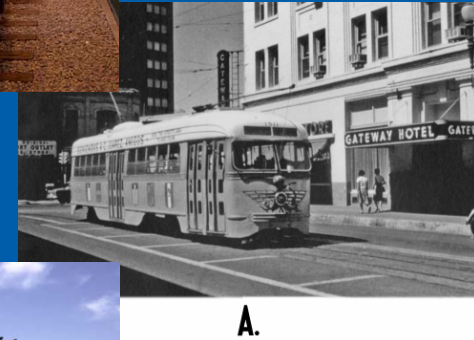
Disclaimers

- 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)



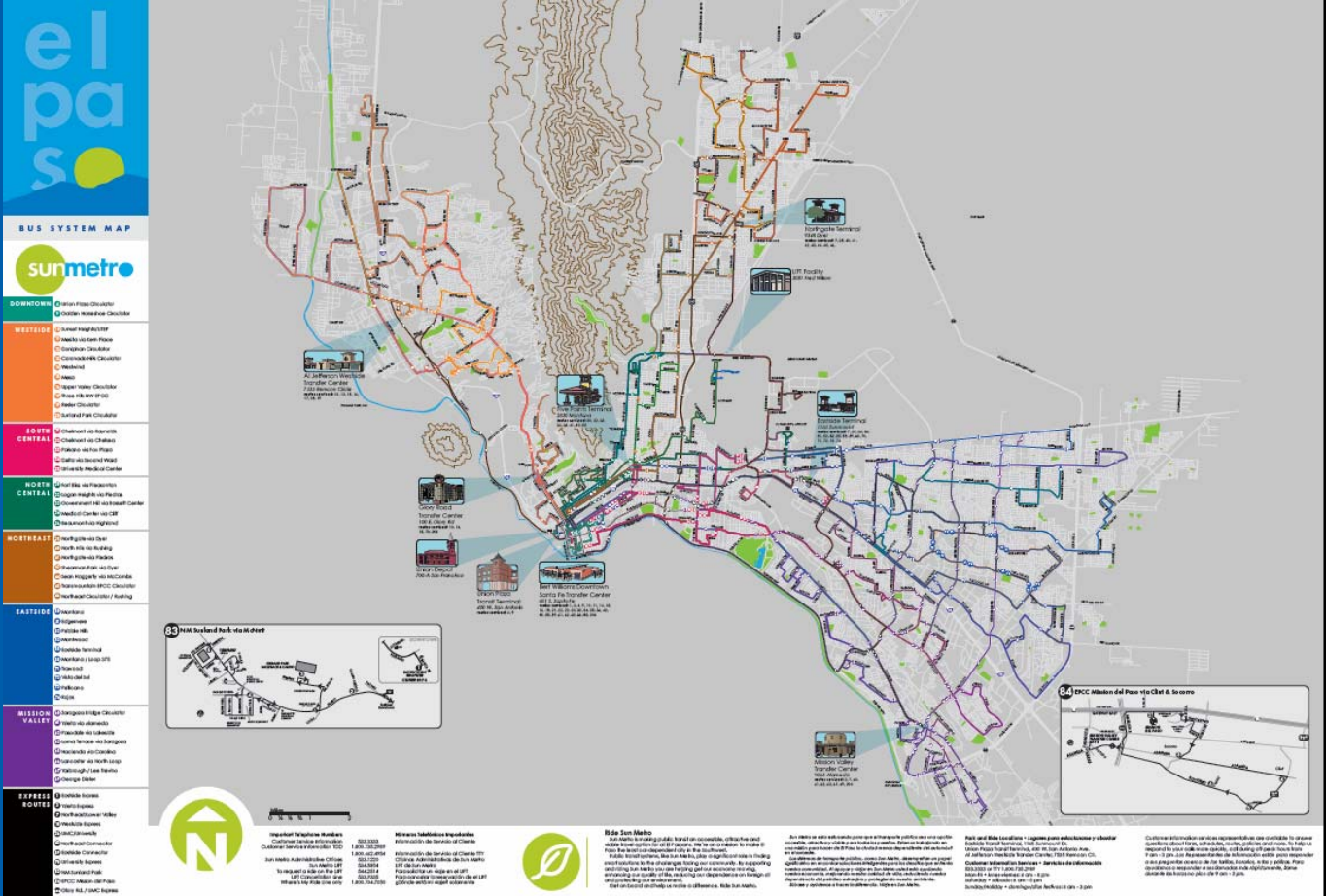
History of Public Transportation in El Paso

- 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



A.

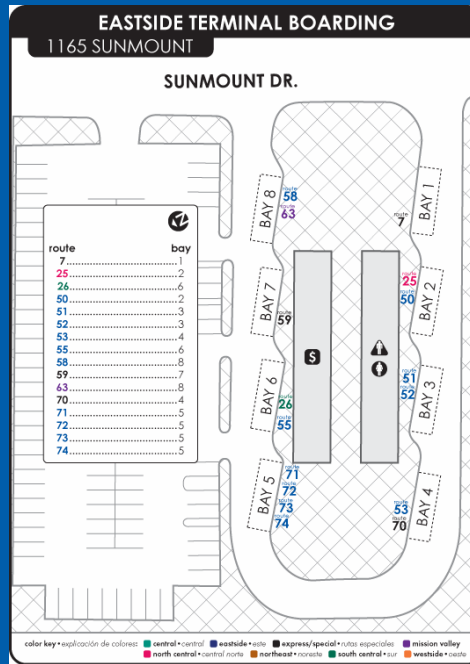
Sun Metro Existing System Map & Notes



- 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



OVERALL BRT SYSTEM

Opening Years

- 2013 – Alameda
- 2013 – Mesa
- 2015 – Dyer
- 2016 – Montana

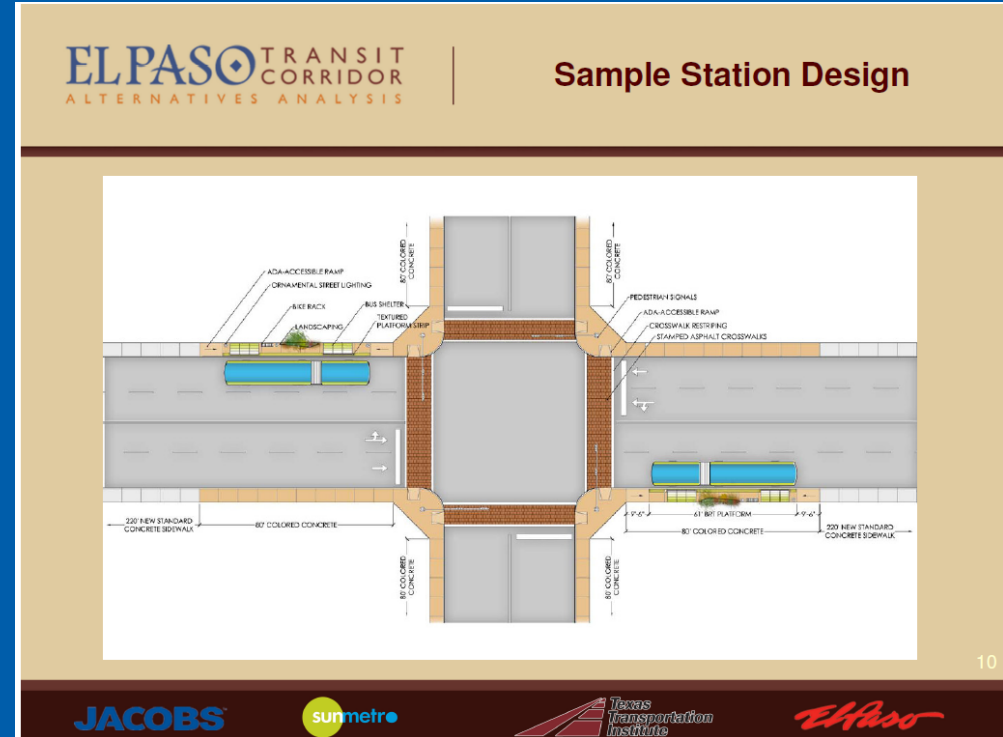


City of El Paso – Alameda Corridor Bus Rapid Transit



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



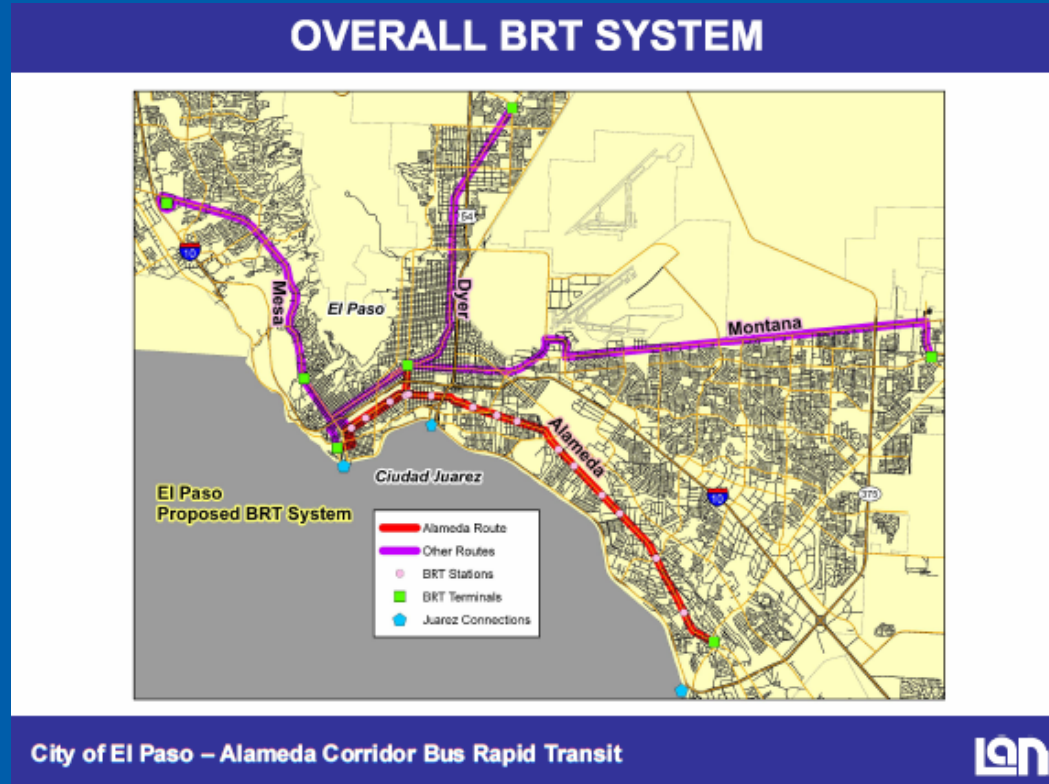
RTS Currently Under Design

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



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

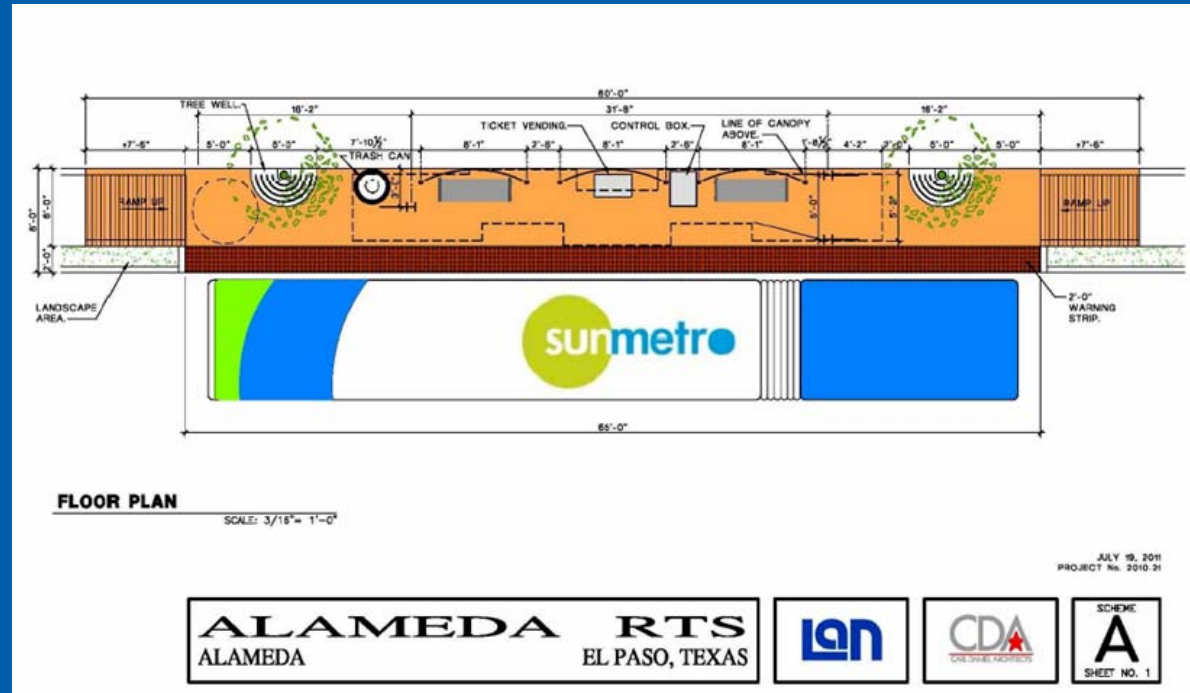
- Survey / ROW
- Utilities
- Drainage
- TxDOT Coordination
- FTA (Mesa Street)
- Station Locations
 - Sight Distance
 - Cross Slopes
 - Horizontal & Vertical Curvature
 - Driveways
 - Sidewalks
 - ADA
- **Architecture & Public Art - Schedule Impacts**

“Soft” Design

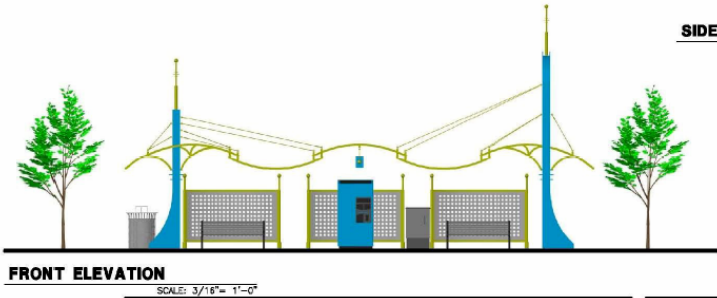
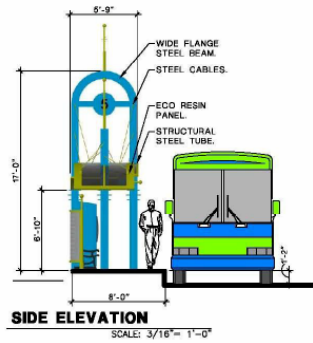
- Branding
 - Stations & Vehicles
 - Color, Name & Logo
- Architecture
 - Design to Budget
 - Unique & Identifiable
 - “Wow” Factor Vs. “Too Futuristic”
 - **Shade, Shade & More Shade**
 - Wind Protection
 - Public Art
 - Coordinate with Branding & Public Artists
 - **Managing Preferences**

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



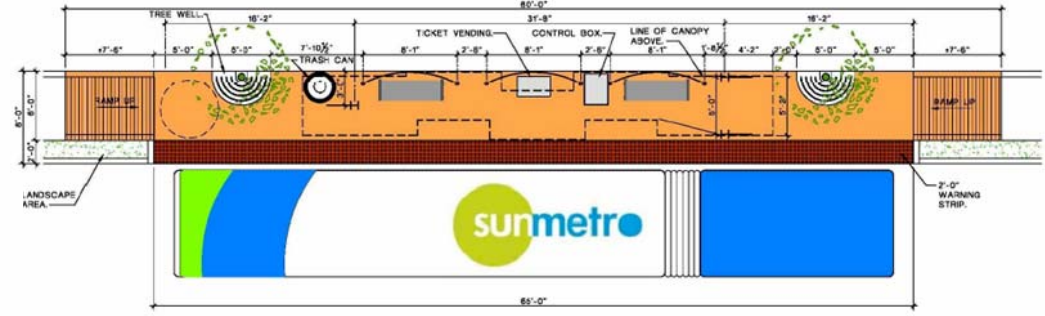
Challenges



ALAMEDA RTS
ALAMEDA EL PASO, TEXAS



JULY 19, 2011
PROJECT No. 2010 21

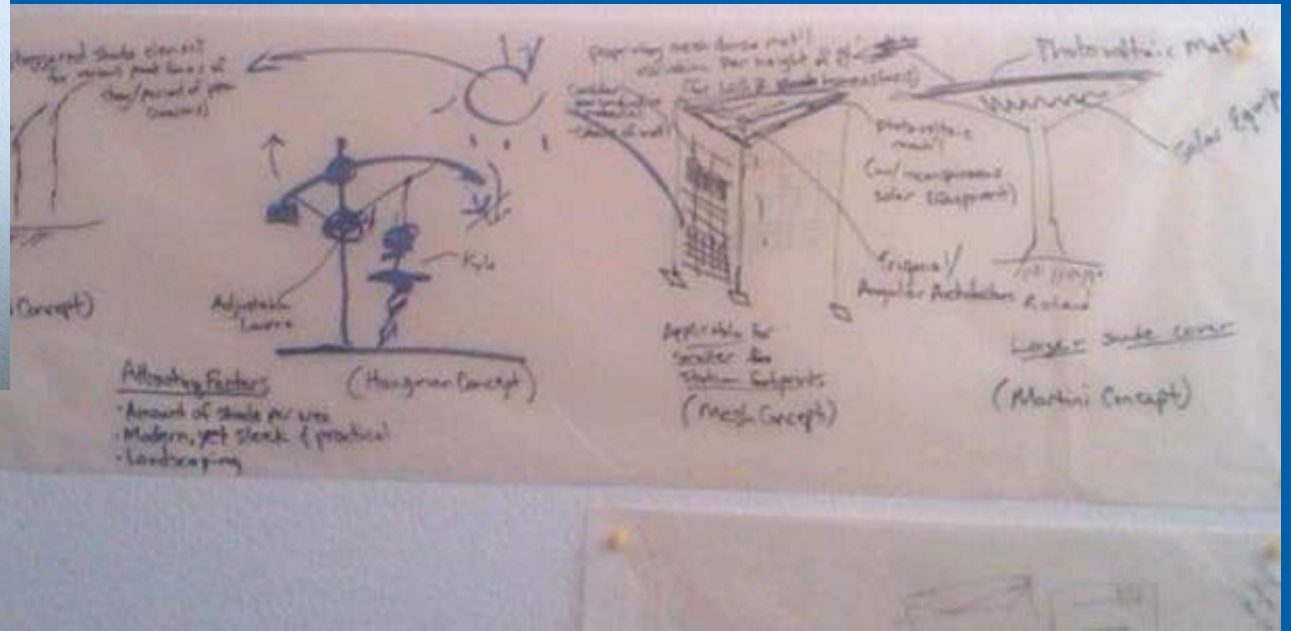
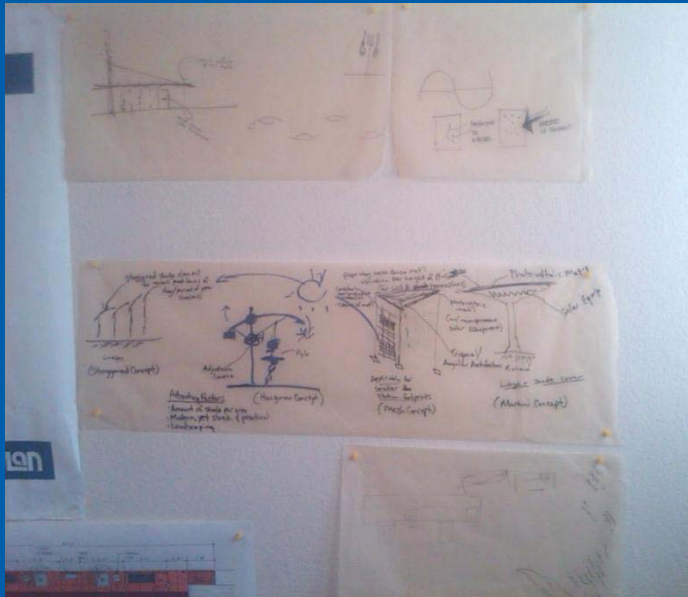


ALAMEDA RTS
ALAMEDA EL PASO, TEXAS

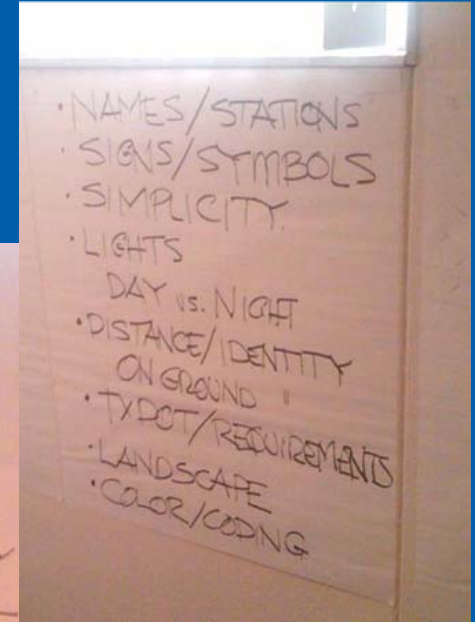
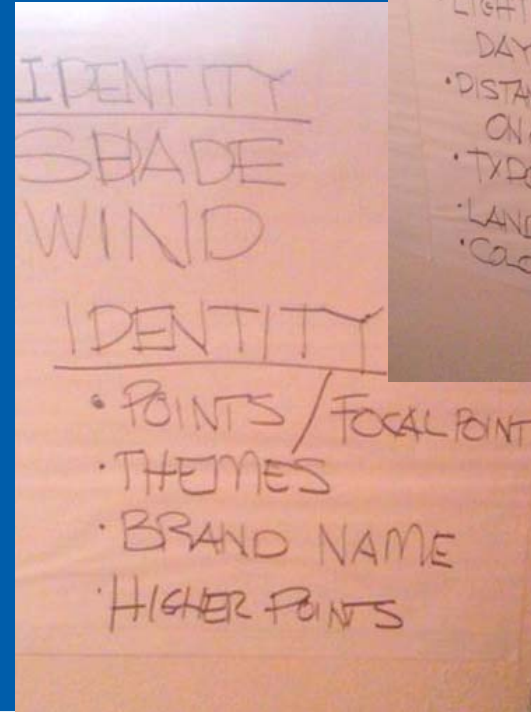
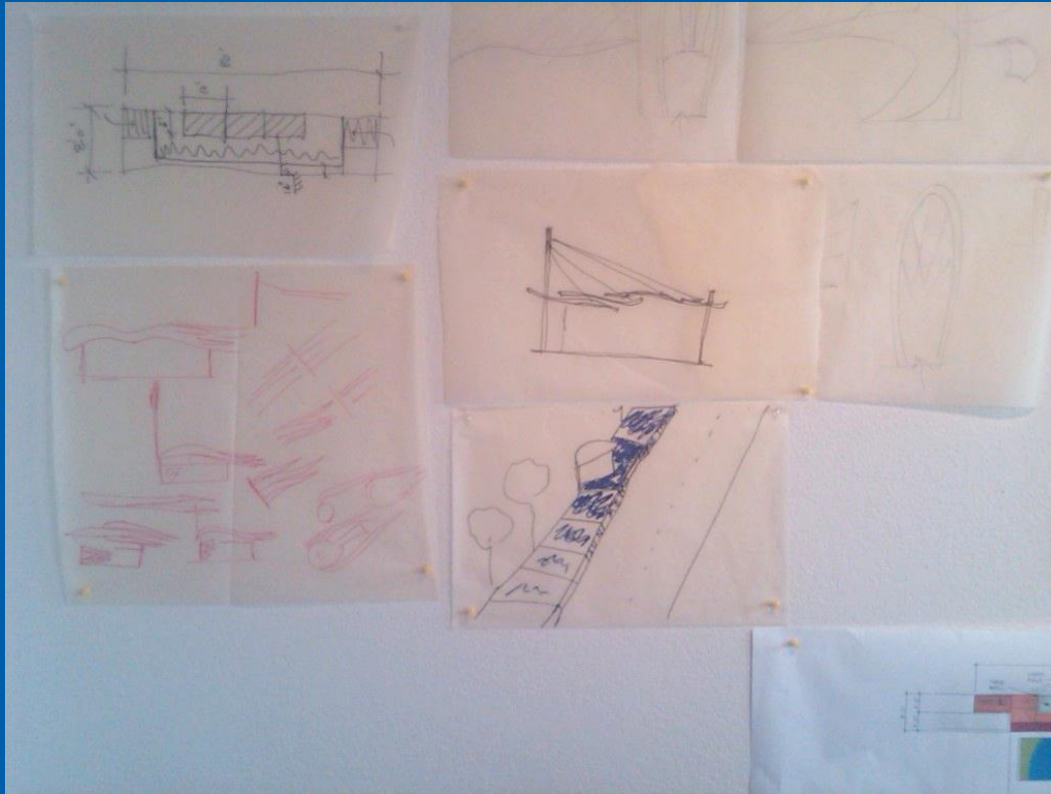


JULY 19, 2011
PROJECT No. 2010 21

Evolution of Architecture - Design Charrette



Evolution of Architecture - Design Charrette



Evolution of Architecture



JULY 13, 2011
PROJECT No. 2010-21

ALAMEDA **RTS**
ALAMEDA EL PASO, TEXAS



SCHEME
A
SHEET NO. 4



JULY 13, 2011
PROJECT No. 2010-21

ALAMEDA **RTS**
ALAMEDA EL PASO, TEXAS



SCHEME
A
SHEET NO. 5

Evolution of Architecture



JULY 13, 2011
PROJECT No. 2010-21

ALAMEDA RTS
ALAMEDA EL PASO, TEXAS



JULY 13, 2011
PROJECT No. 2010-21

ALAMEDA RTS
ALAMEDA EL PASO, TEXAS



Evolution of Architecture



JULY 13, 2011
PROJECT No. 2010-21

ALAMEDA **RTS**
ALAMEDA EL PASO, TEXAS

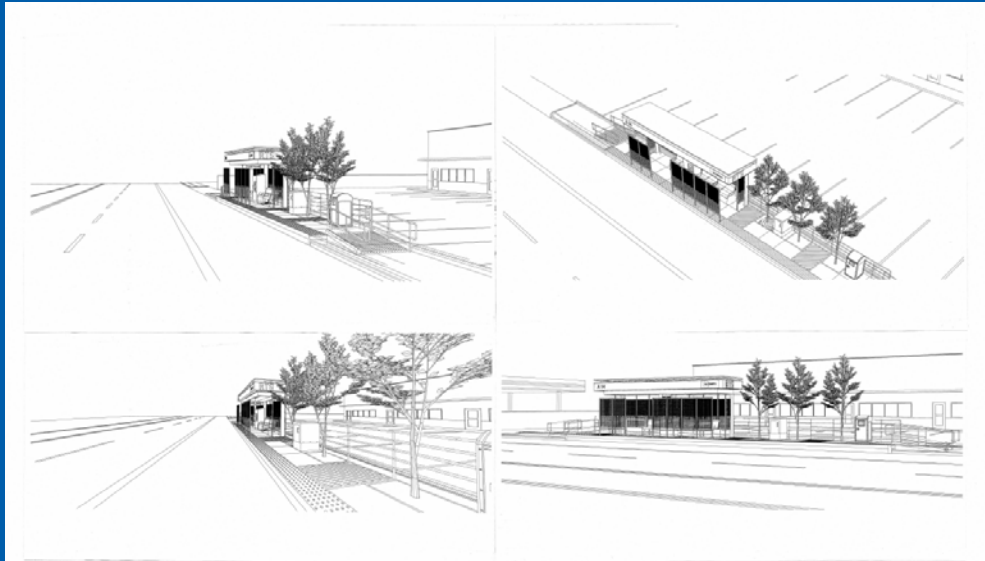


JULY 13, 2011
PROJECT No. 2010-21

ALAMEDA **RTS**
ALAMEDA EL PASO, TEXAS



Evolution of Architecture— But I Saw Some Stations in Phoenix I Liked.....



ALAMEDA ALAMEDA	RTS EL PASO, TEXAS			SCHEME D SHEET NO. 2
---------------------------	------------------------------	--	--	-----------------------------------



ALAMEDA ALAMEDA	RTS EL PASO, TEXAS			SCHEME D SHEET NO. 1
---------------------------	------------------------------	--	--	-----------------------------------

Evolution of Architecture -- But I Saw Some Stations in Phoenix I Liked.....

Schedule

Mesa Street RTS

- Preliminary Engineering 105 days
- Pre-Final Engineering 80 days
- Final Engineering 40 days

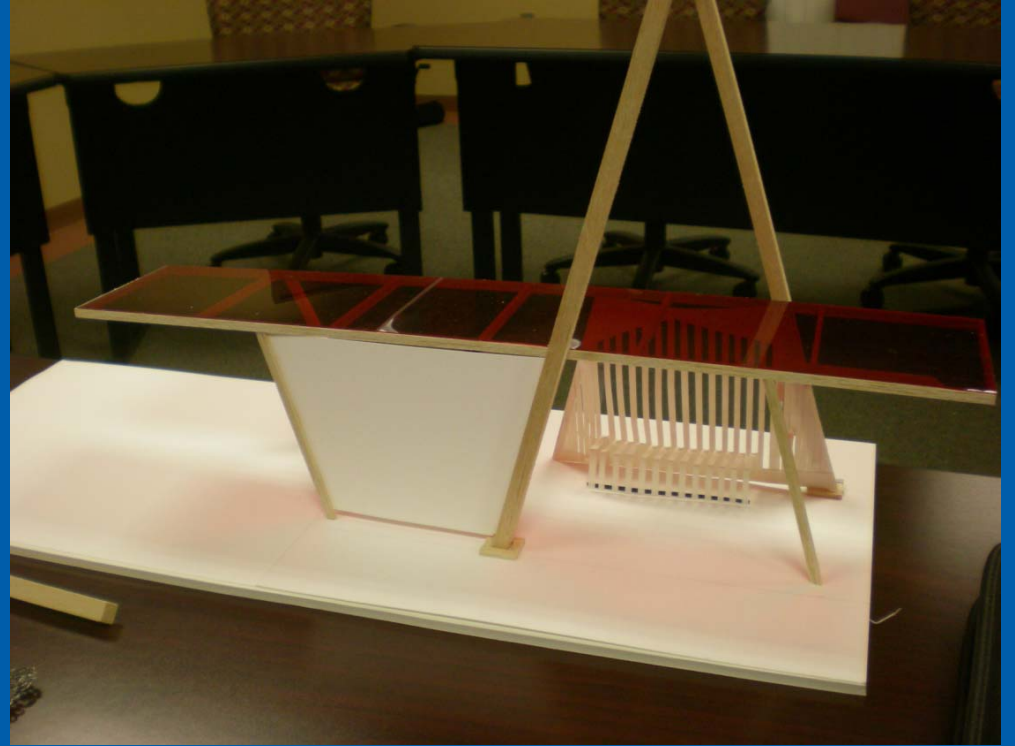
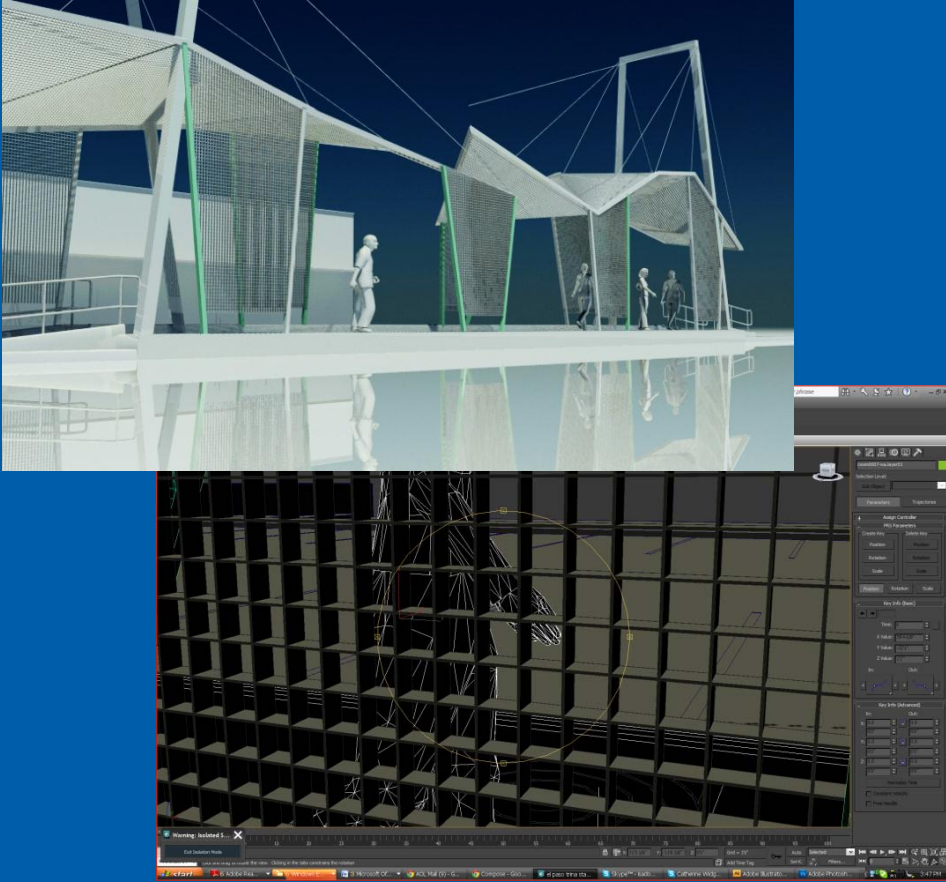
Alameda Avenue RTS

- Preliminary Engineering 180 days
- Pre-Final Engineering 90 days
- Final Engineering 60 days

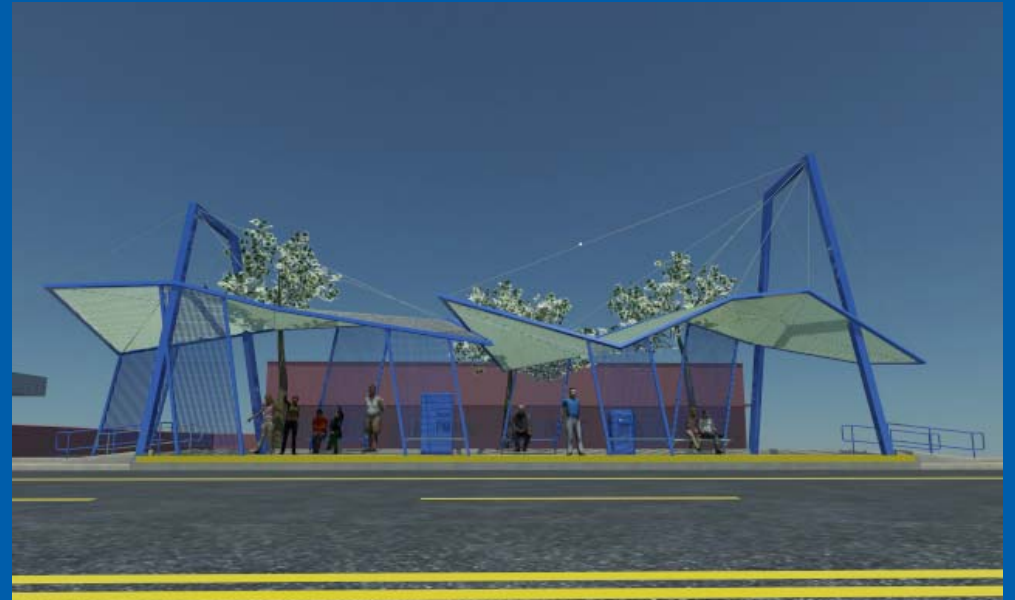
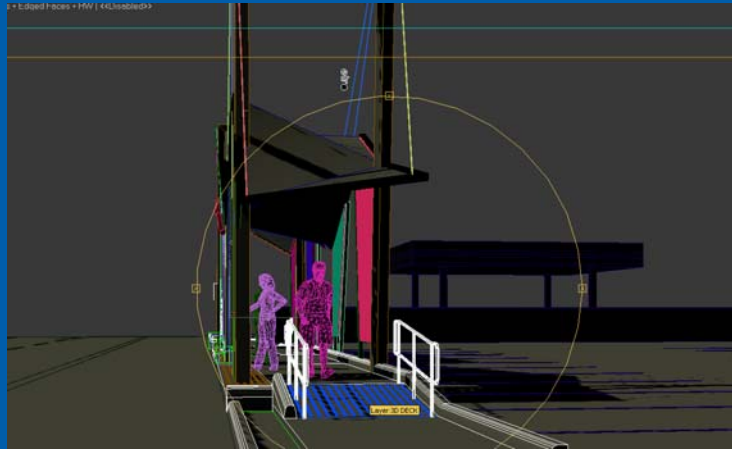
Evolution of Architecture - Mission & Bhutanese Themes



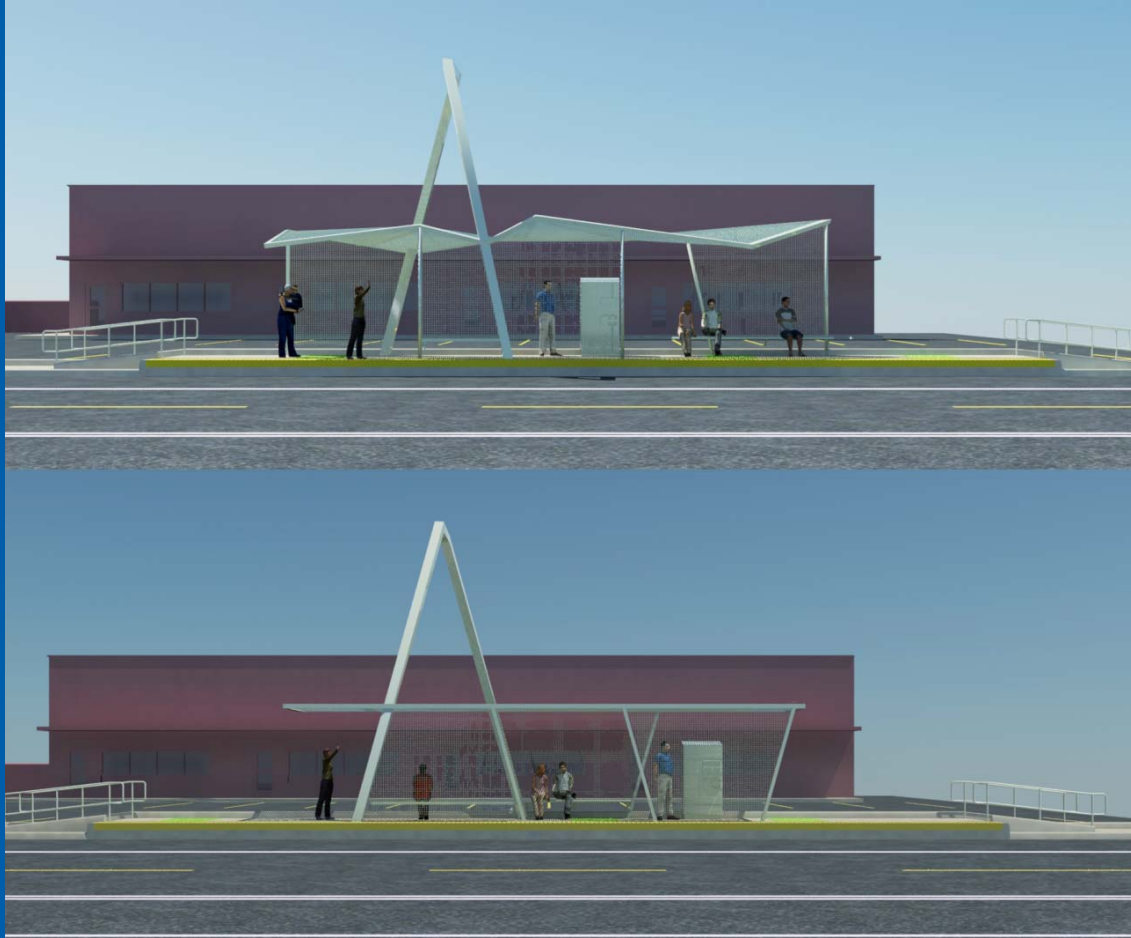
Evolution of Architecture – Artist Input



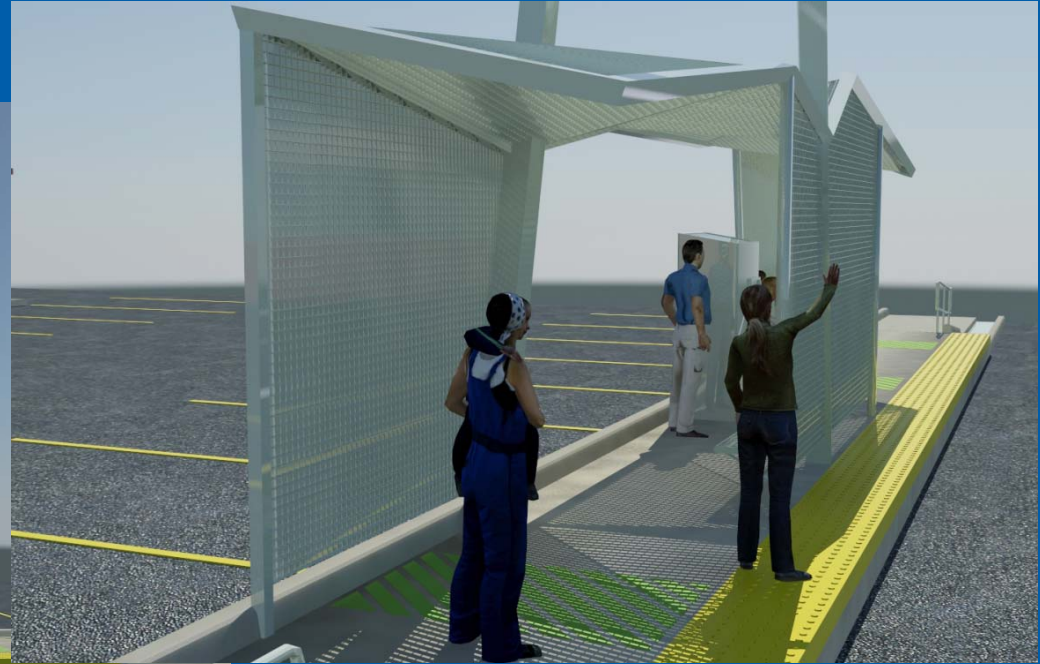
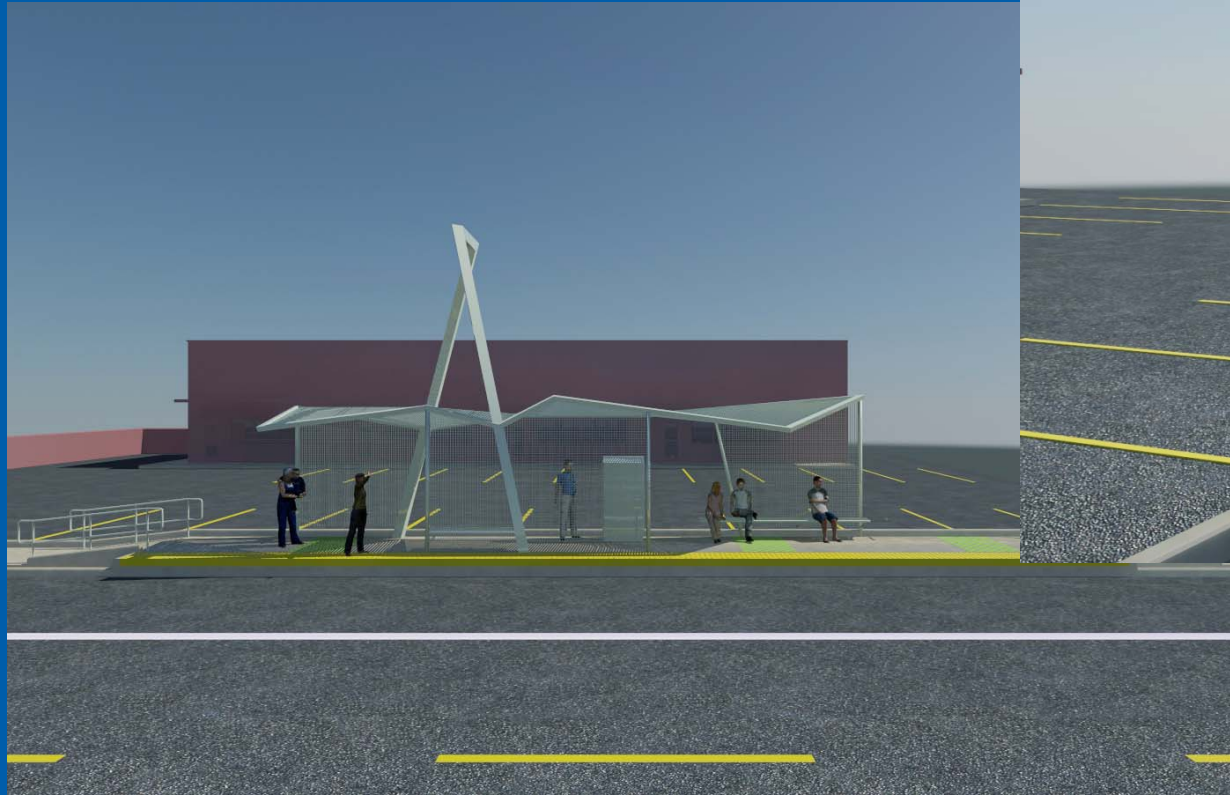
Evolution of Architecture - Artist Input



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)



72

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

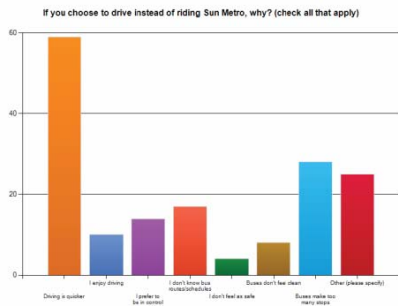
Almost all were working animals: Serving others above self

Traits: Loyalty, consistency, strength (but not speed)



14

citizen insights



20



Results of All That

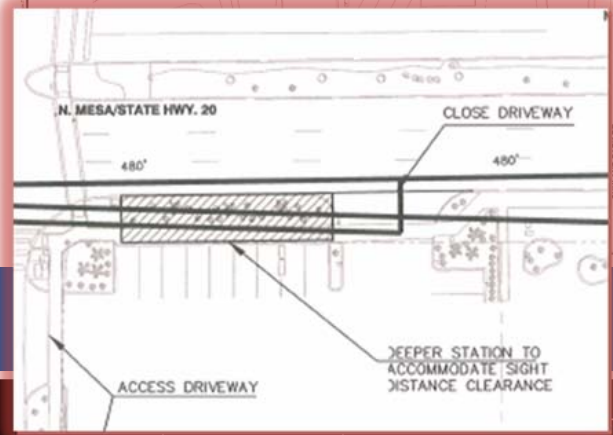
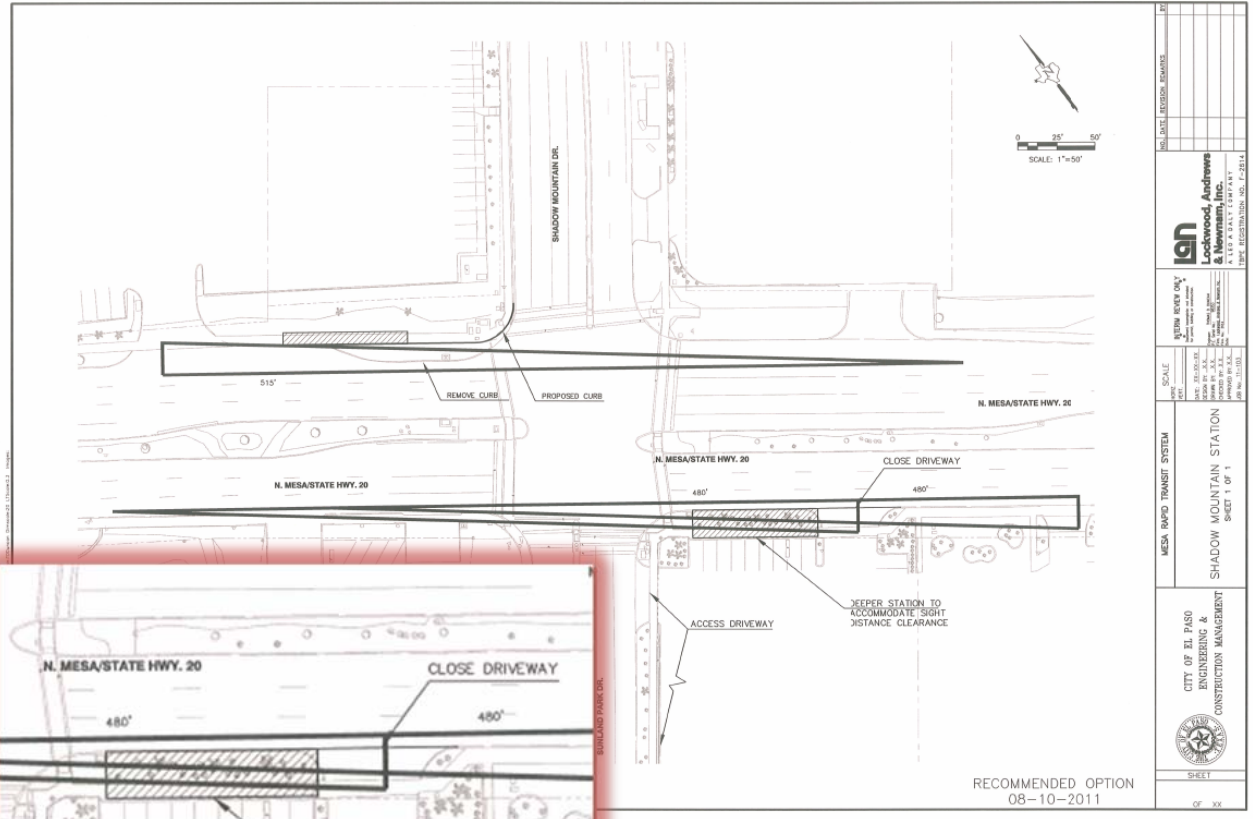
Process

- **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

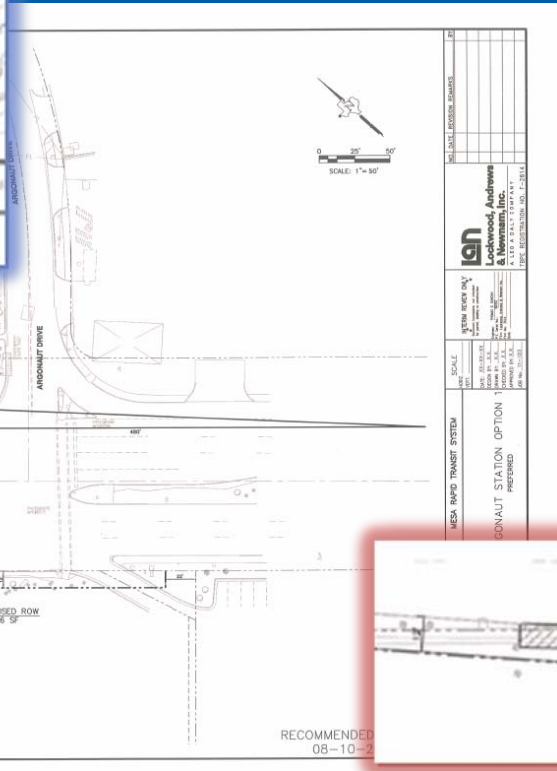
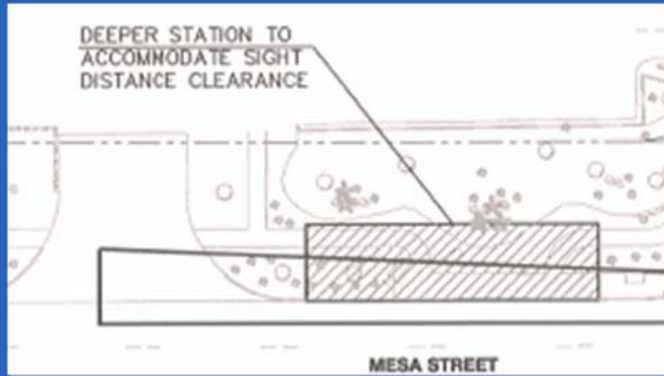
- **Matter of Preference**
- **Design Costs & Issues**
- **Design Schedule**
- **Construction Costs**
- **Maintenance / Repair Costs**
- **Ideally – One Kit of Parts**

Typical Issue - Sight Distance Vs. ROW



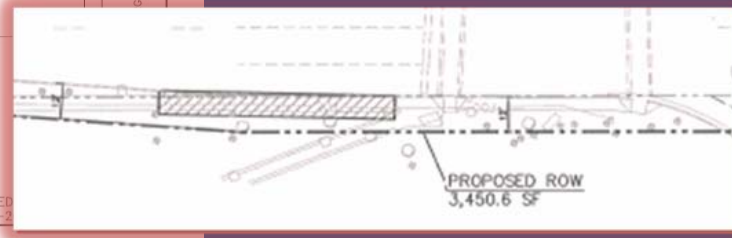
- Adjust Station Slightly
- Deeper Station if Existing ROW Allows
- Move Station and Impact CE Document & Schedule
- Close Driveways
- Acquire ROW / Easement

Typical Issue - Final Station Location

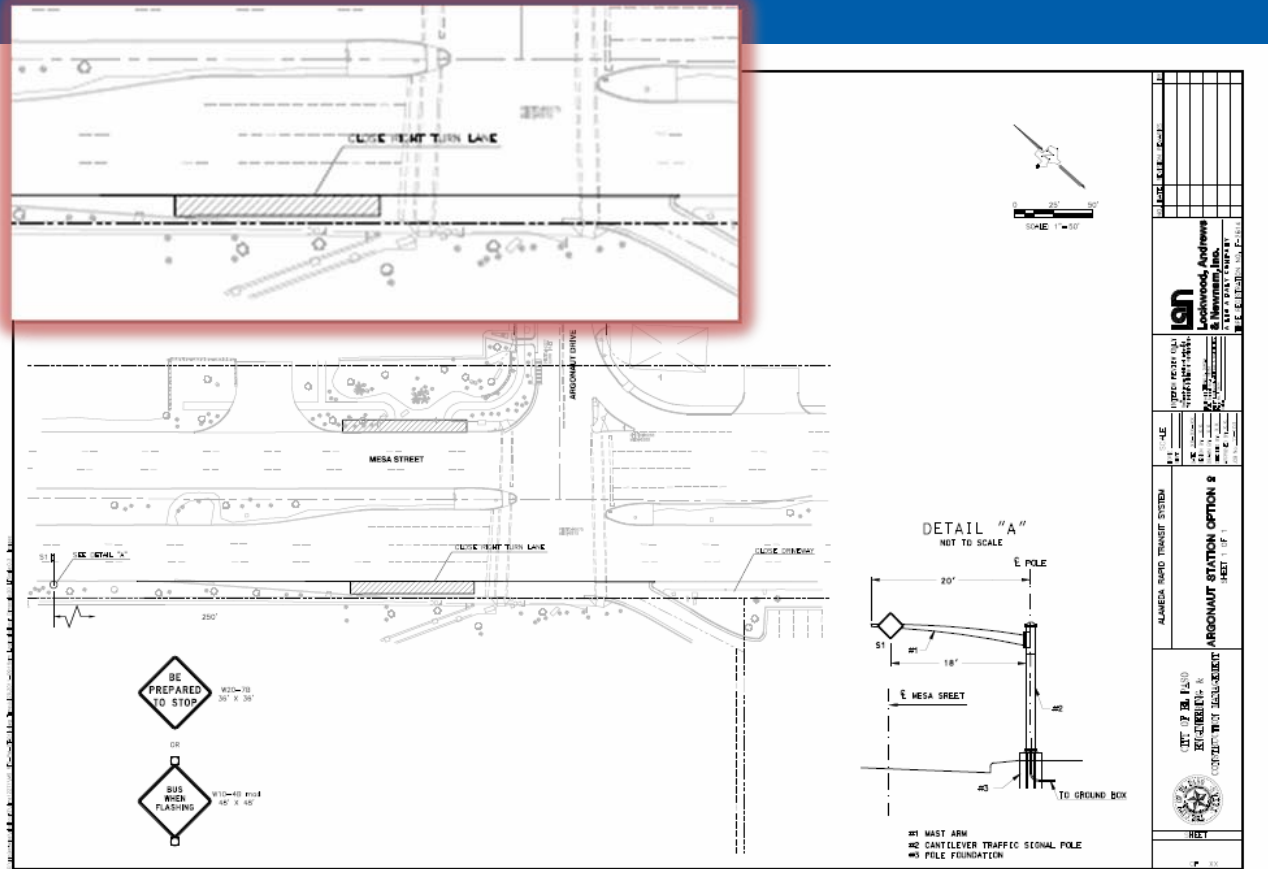


Argonaut - Option 1 Inbound

- 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

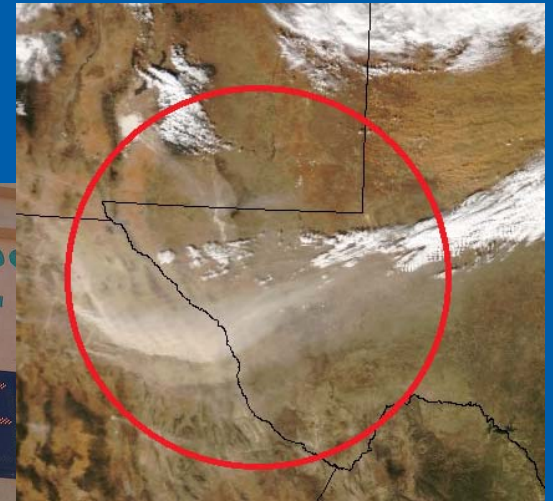
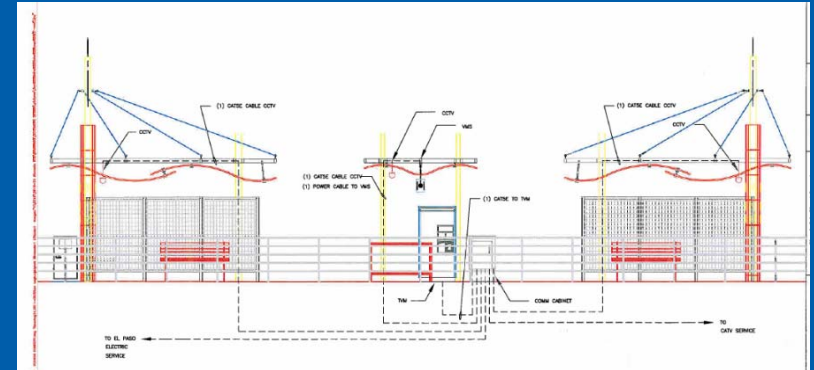
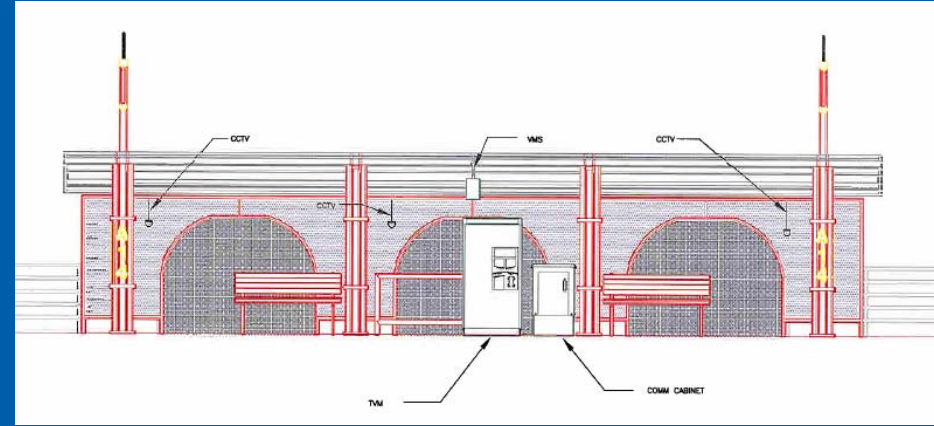


Photo - J.Jagger, USNOAA



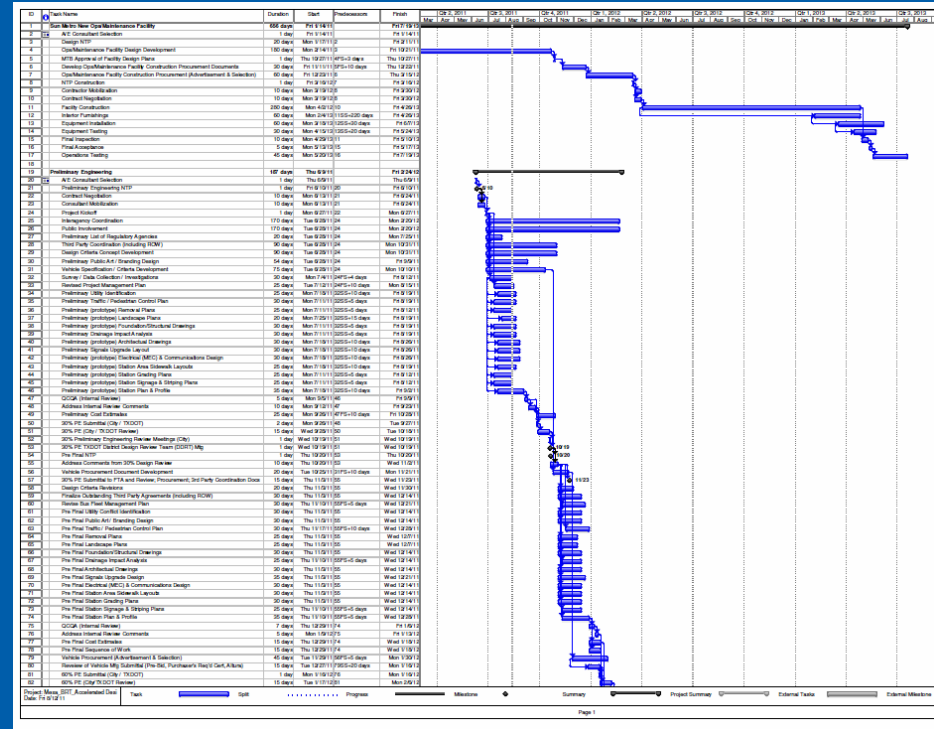
Communications & ITS Challenges

- 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

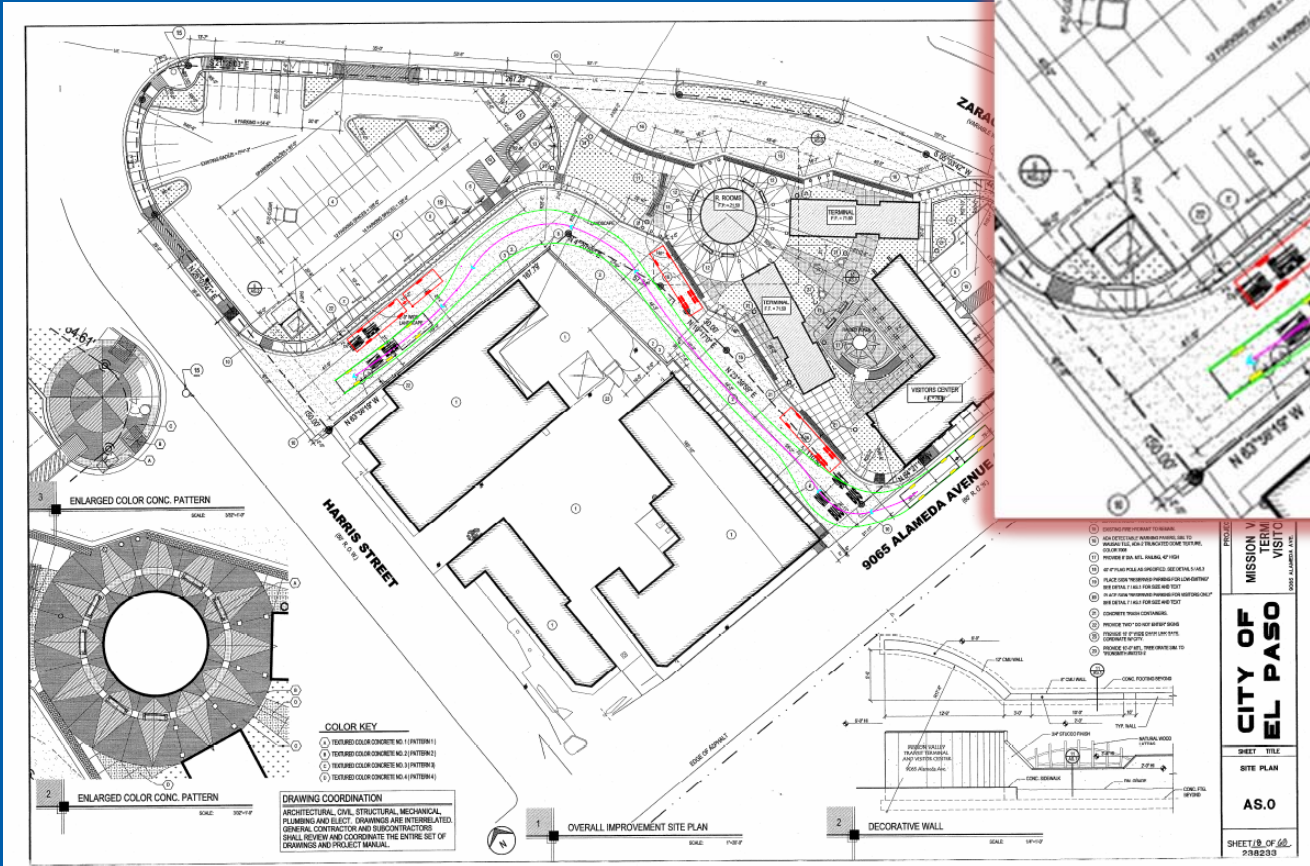


FTA & TxDOT Coordination

- 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



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



**LOVE EL PASO.
PLAN EL PASO.
PLAN THE FUTURE. NOW.**

www.planelpaso.org

Kick-Off Meeting
5:30PM to 8:00PM Thursday, November 4
Bel Air High School
731 N Yarbrough Drive
Introduction presentation to the project with an overview of planning principles and Q & A session

Hands-On Design 1: East-Central & Eastside
9AM to 1PM Saturday, November 6
Eastwood High School
2430 Mcrae Boulevard
Work alongside your community to draw your vision for the east side of the City. This is a family-friendly event: bring your children! Refreshments will also be available.

"A Brief History of Built America"
6:30PM Tuesday, November 9
1700 N. Zaragoza, Suite 153-154
Zaraplex Shopping Center
Lecture on American Urbanism by James Dougherty, Director of Design, Dover, Kohl & Partners

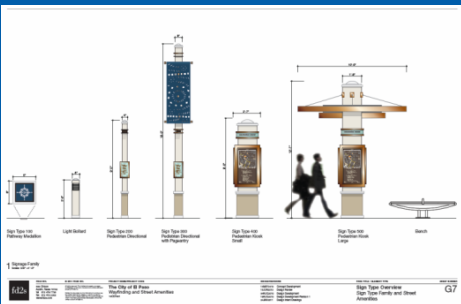
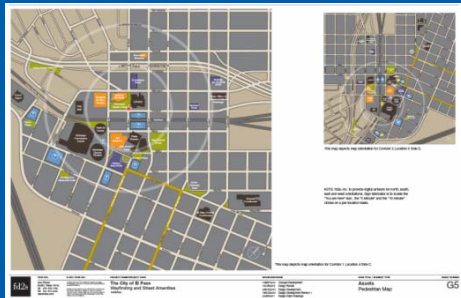
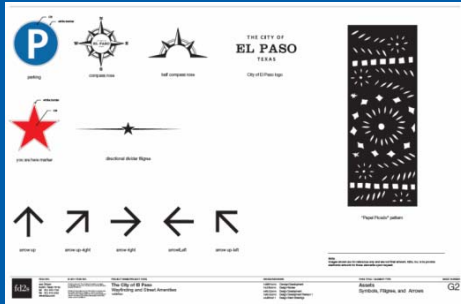
Hands-On Design 2: Mission Valley
5:30PM to 8PM Wednesday, November 10
Yaleta High School
8600 Alameda Avenue
Work alongside your community to draw your vision for the Mission Valley area. This is a family-friendly event: bring your children! Refreshments will also be available.

Design Studio & Technical Meetings
9AM to 7PM November 8 to November 12 and 15
1700 N. Zaragoza, Suite 153-154
Zaraplex Shopping Center
Stop by the studio to talk with the design team and provide input as the plans evolve

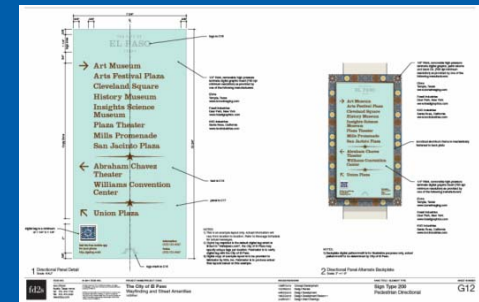
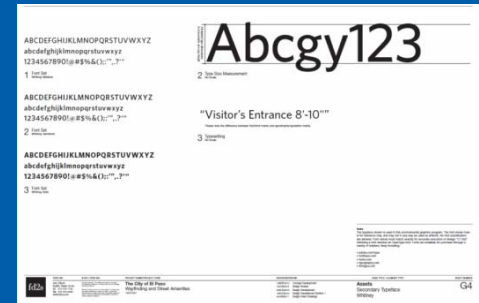
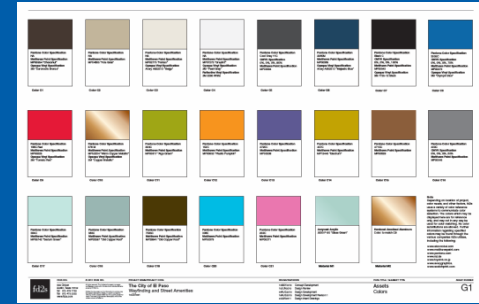
PLAN THE FUTURE OF EL PASO



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?