

# Kansas City BRT

## *Metro Area Express (MAX)*

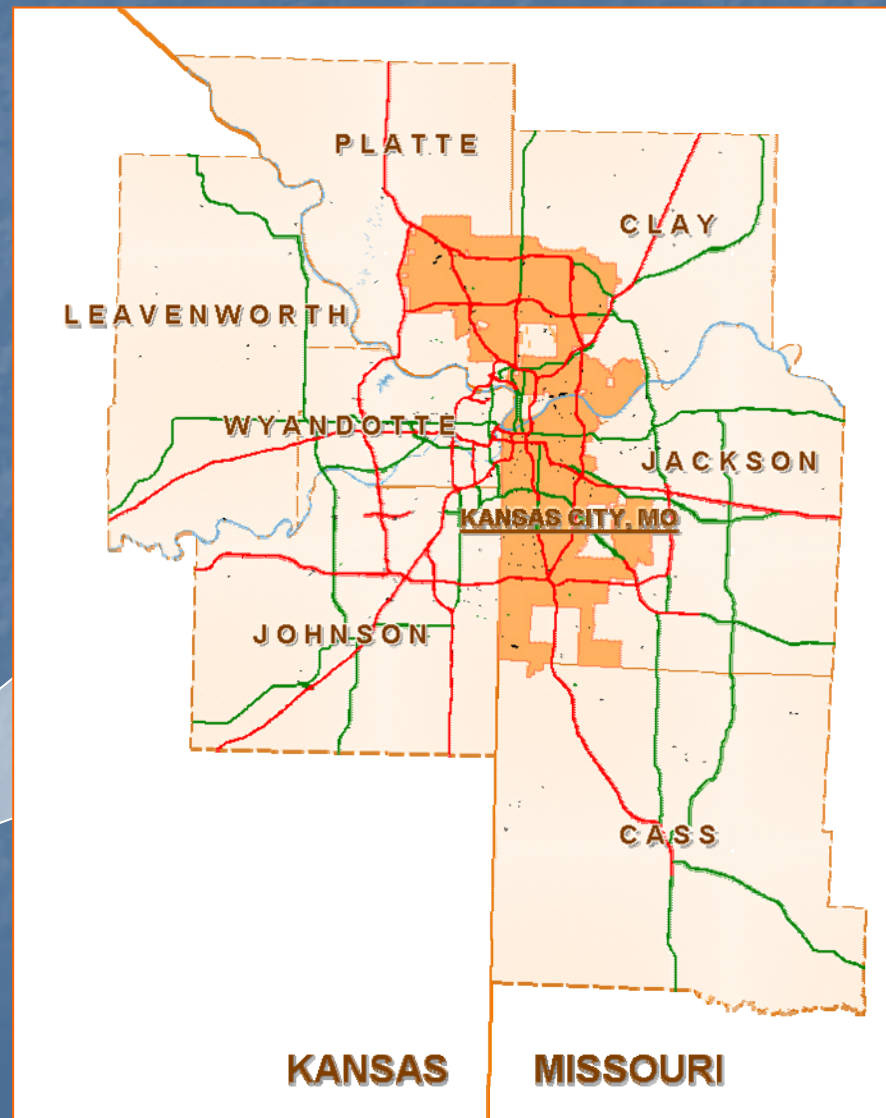
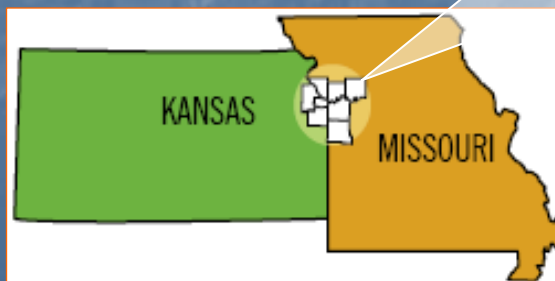


October 2008

# Metropolitan Kansas City



- Bi-State (Kansas / Missouri)
- 1.8 Million Population
- Prior to BRT
  - All Bus System
  - < 50,000 Average Weekday Trips



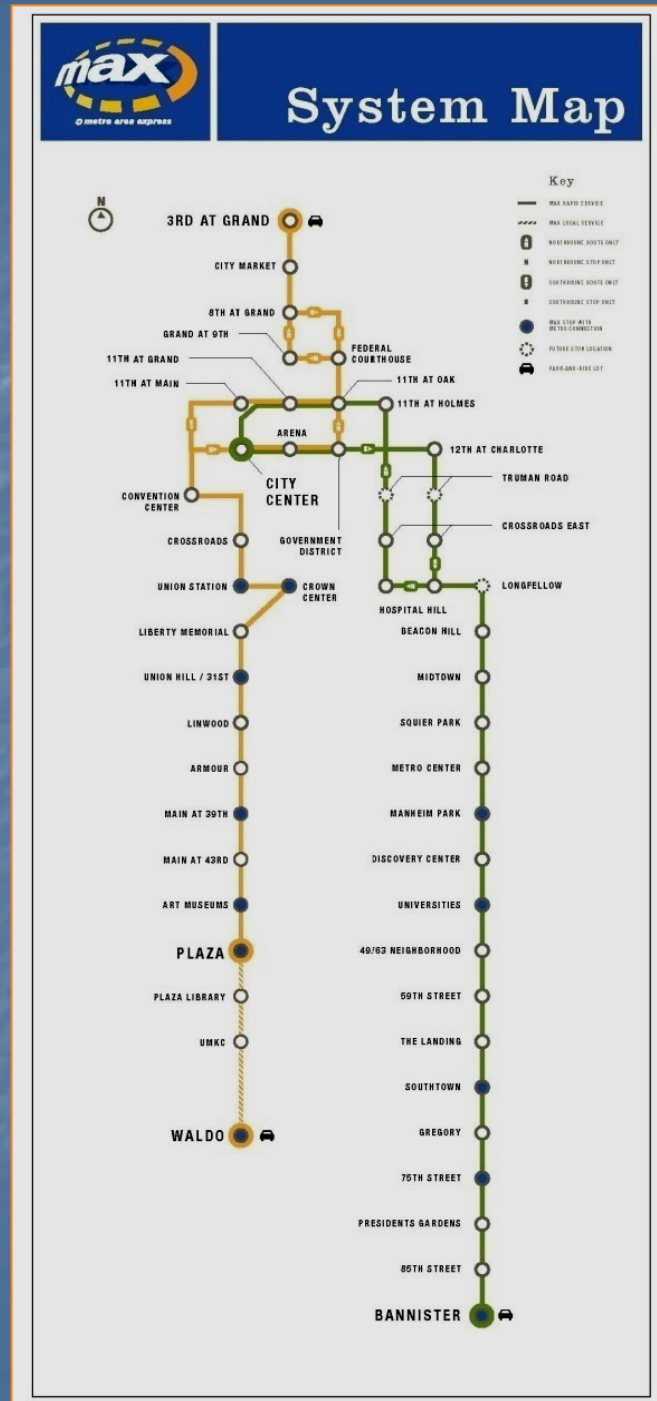
# Two Corridors Arterial Street BRT

## ■ Main Street MAX

- Orange Line
- Opened July 2005

## ■ Troost Ave. MAX

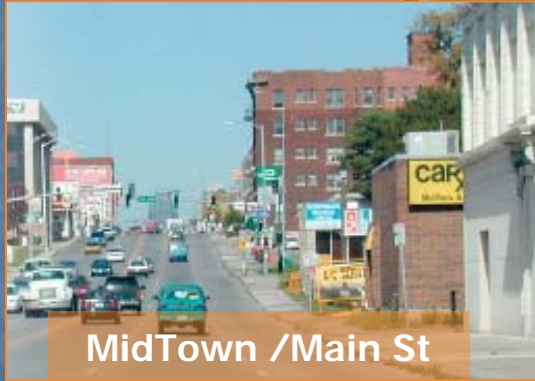
- Green Line
- Construction 2009
- Open to Service 2010





# Main Street MAX Corridor

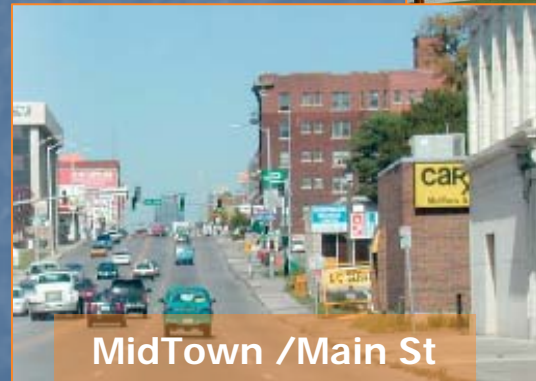
- Regional Employment Center
- Civic And Cultural Amenities
- Commercial and Retail
- Diverse Communities
- Slow Transit Service
- Declining Transit Ridership
  - 2004 Average 3,200 Daily Trips





# Main Street Corridor Previous Planning Work

- Multiple AA & MIS Studies  
1970's Thru 2001
- Focus on Light Rail
- Failed Rail Sales Tax Vote  
August 2001
  - High cost of light rail
  - Low point for regional transit



# After Years of Rail Planning Support for BRT:

- Quality “rail like” service linking  
Downtown, Crown Center, and Plaza
- BUT, Can Build and Operate:
  - At a Fraction of the Cost of Rail
  - *Without New Local Taxes*
  - 80% Federal Funding
  - *In Less Than 5 Years (Actually 3+ Years)*
- Business and Political Support





# Main Street MAX Timeframe



- Planning 2002
- Formal Partnerships
  - City and Parks Dept. 2003
  - Main St. Community 2003 – Present
- Design / Engineering 2003 / 2004
- Vehicles Ordered 2004
- Construction 2004-2005
- Operational July 2005



# BRT Planning Objectives

- Operate Like Rail
  - Stations Rather Than Stops
  - Unique Identity
- Introduce New Technology
  - Signal Priority, Real-Time Signs, Stop Announcements
- Reduce Travel Time by 20%
- Existing Street ROW
  - Minimize acquisition & disruption





# Profile of Main Street MAX

- Arterial Street Running BRT (6 Miles)
- Exclusive Transit Lanes
- Signal Priority – 31 Intersections
- Simple but Substantial Stations w/Enhanced Amenities
- Real-Time Information – All Stations
- Identity / Branding – MAX
- 9-Minute Peak Hour Headways
- Travel Time Reduced by 20%+



# MAX Operations

- 7 Days a Week
- 4:30 AM to Midnight
- 9 Minute Peak Headways
- 15 Minutes Midday, Saturday, Events
- 30 Minutes Nights and Sundays
- Plaza to Downtown: 18 Minutes
  - Previously 24 Minutes
- Local Bus Service with MAX in Corridor





# MAX 'Bus Only' Lanes

- Street Capacity Available
- Peak Hour 'Bus Only' Lanes
- Full-Time 'Bus Only' Lane Downtown
- 'Bus Only' Lanes 52% of MAX
- Meets FTA "Fixed Guideway" Requirement (for New Starts)



 CURB  
LANE  
BUSES AND  
TURNS  
ONLY  
6AM - 9AM  
MON - FRI

LANE  
BUS

FEB 23 2006

DRIVE THRU  
BANKING  
AVAILABLE  
MATT LEWIS  
**BLUCK**  
816 531 1140

PAYDAY  
LOANS



# Station Design



# MAX Station Design Goals



- Reposition Transit Image
- Clean, Sleek and Modern
- Sense of Permanence
- Integrate New Technology
- Branding / BRT Identity
- Standard Elements (Site Adapted Kit of Parts)
- Station Prototype





# MAX Station



Shelter and Marker

# MAX Station





# ITS Technology



- Real-Time Arrival Information
  - All Stations
- Traffic Signal Priority
  - 31 Intersections
  - If > 1 Minute Late
- Automated Announcements
  - Audio and Visual (Sign)
  - On-Board and External



# MAX Vehicles (Fleet of 13)

- Enhance MAX BRT Identity
  - Distinctive Shape & Style
  - Unique MAX Paint Scheme
- Must Be Affordable (\$323,000)
  - Purchase and Operate
- 42' Low Floor Vehicle
- Wider Doors & Windows
- Improve Knee-Hip Room
- Technology: GPS, MDT, TSP





# MAX Vehicles / BRT Specific



# Capital Cost \$20.9 Million



- 80% Federal Funding
- \$16.7 Million - Earmarked Over Five (5) Years
  - 5309 New Starts: \$3.4 M
  - 5309 Bus Capital: \$8.3 M
  - Sect. 330 (RABA): \$5.0 M
- 20% + Local Funding
  - Match Plus Other Infrastructure Improvements





# Main St. MAX Capital Cost \$20.9 Million



## Budget Breakdown (In Millions)

- \$ 3.1 Planning, Design & Engineering
- \$ 4.3 Vehicles and Inspections
- \$ 2.3 Street Paving Construction
- \$ 1.8 Traffic Signal and Signal Priority
- \$ 8.6 Station Construction / Installation
- \$ 0.8 Administration, Easements, Utility & Legal

# MAX Bus Rapid Transit

- MAX Opened July 2005
- Ridership Up 50%+
  - Pre-MAX: < 3,200 daily
  - Current: > 6,000+ daily
- High Level of Public Acceptance and Satisfaction





# Keys to MAX Success on Main



- Early Cooperative Partnerships
  - City, Community, MainCor
- Formal ATA / City Agreement
- Early Prototype Station
- Avoiding ROW Acquisition
- Stations on Far Side of Intersections
- MAX Branding and Marketing
- Affordable – Existing Local Funds



# What Would We Change?



- More Buses – Small Fleet Challenges
- Fewer Station Compromises
  - Fewer Near Side Stations
  - Fewer Added Stations
- Signal Priority
  - Negotiate More Transit Priority
  - Add Intersections
- Expanded Sidewalk Improvements
- More BRT Lane Dedication
- More Pavement Improvements





# Expanding MAX

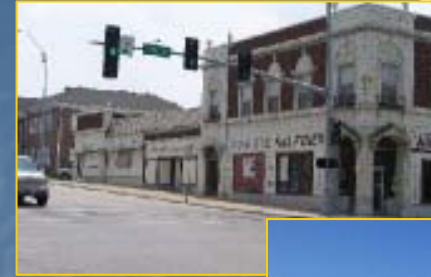
## Regional BRT Feasibility Study 2005

## Help Identify and Prioritize BRT Corridors



# Troost Corridor

- Highest Ridership (7,800+)
- 13+ Miles Long
- Lower Income Population
- High Transit Dependency
- Very Diverse Population
- Frequent, Closely Spaced Bus Stops
- Very Slow Bus Service

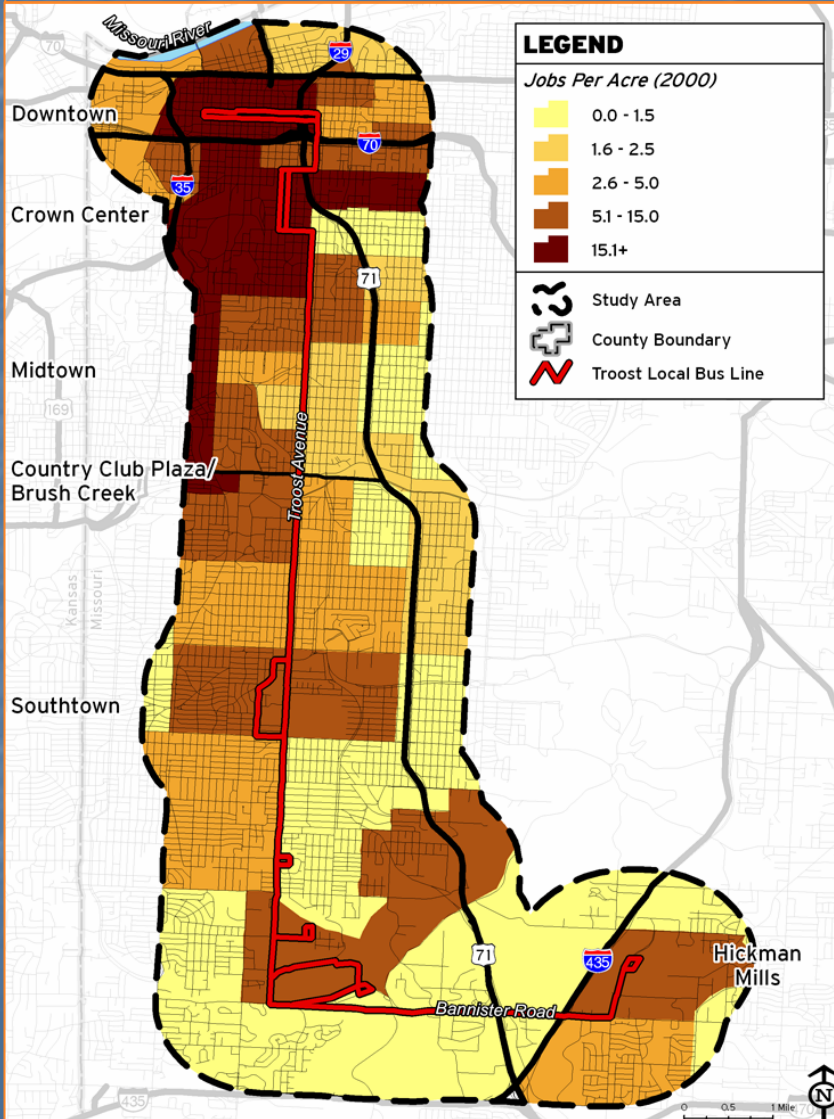




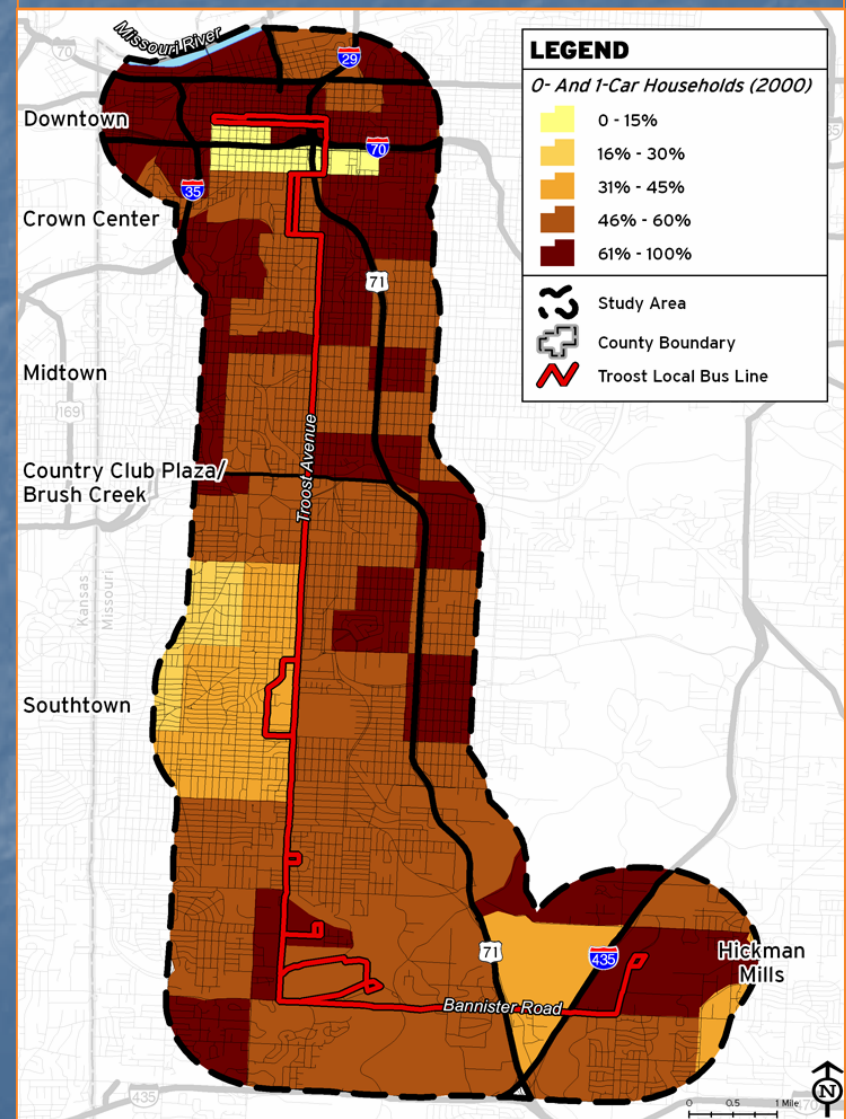
# Troost Corridor – Census Data



## Employment



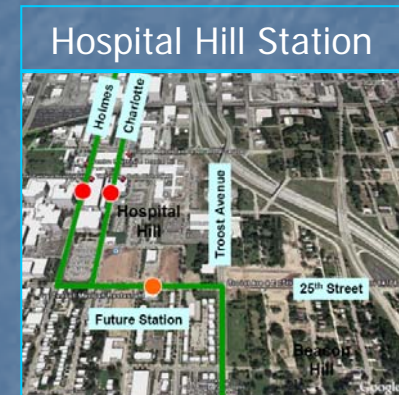
## Transit Dependents



# Troost MAX Implementation Timelines



- 2005 / 2006 - Planning/Alt. Analysis
- Sept. 2006 – FTA Submission  
'Very Small Starts'
- 2007 – Project Development
- 2008 – Finish Design/Development
- 2009 - Construction / Procurement
- Open Early 2010

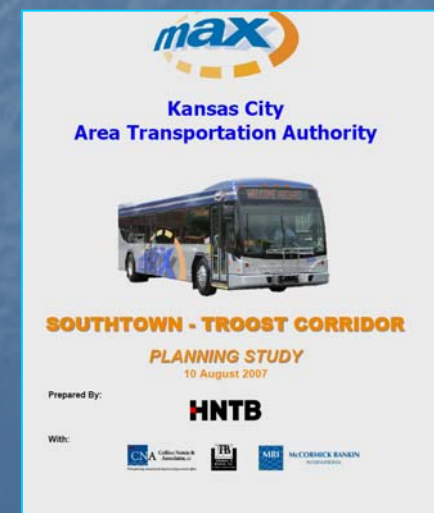




# Federal Funding

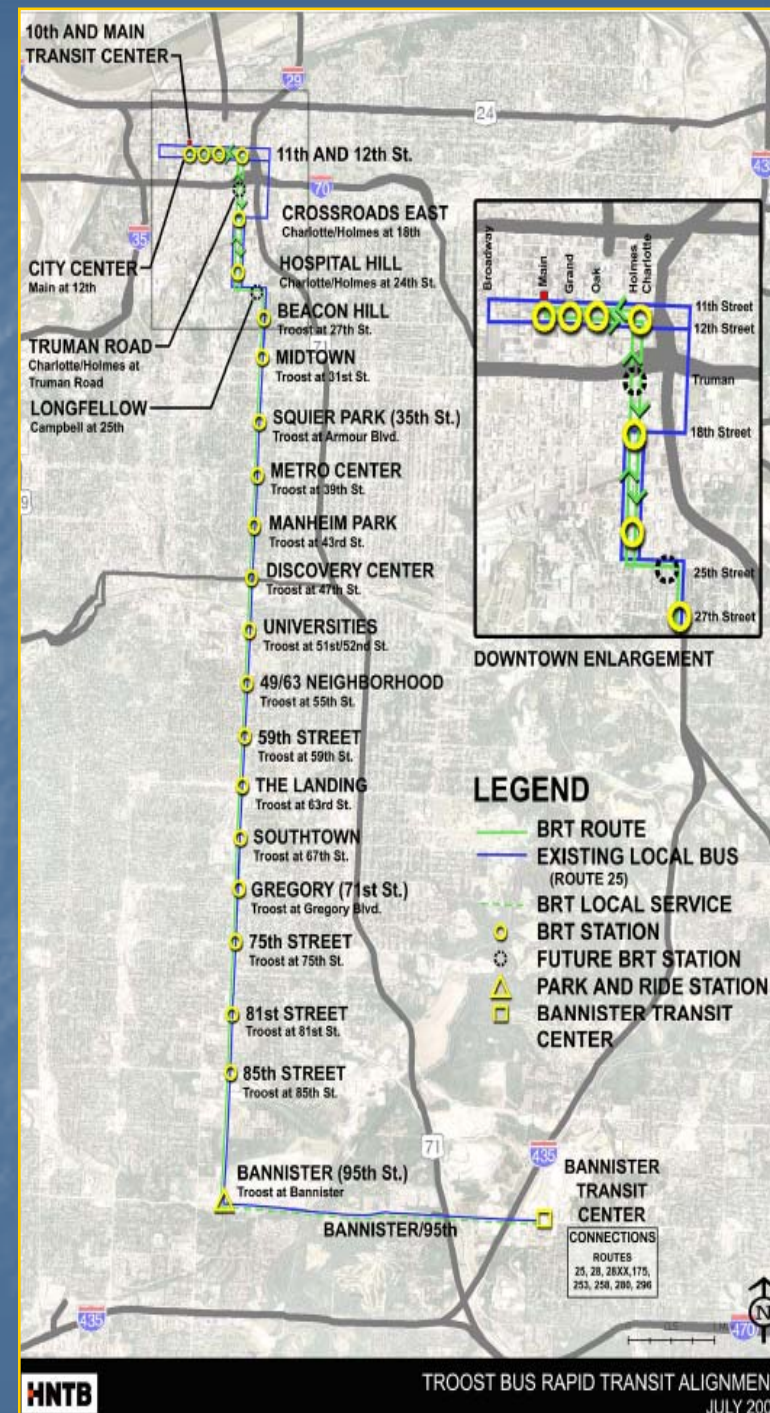
## Requested \$24.5 Million (80%)

- Request to FTA Sept. 2006
  - Documented Feasibility, Alternatives & Corridor Planning
  - Detailed Project Description
  - Very Small Starts Criteria
  - Budget / Schedule in FTA format
  - "Making the Case" Document
- FTA Project Development Approval, December 2006



# Very Small Starts

- Corridor Based
- 13 Miles, Urban Arterial
- Existing Ridership ~ 7,800
- To > 9,500 (20% + Increase)
- Emphasize MAX Brand
- < 10 Min. Peak Headways
- 20%+ Time Savings

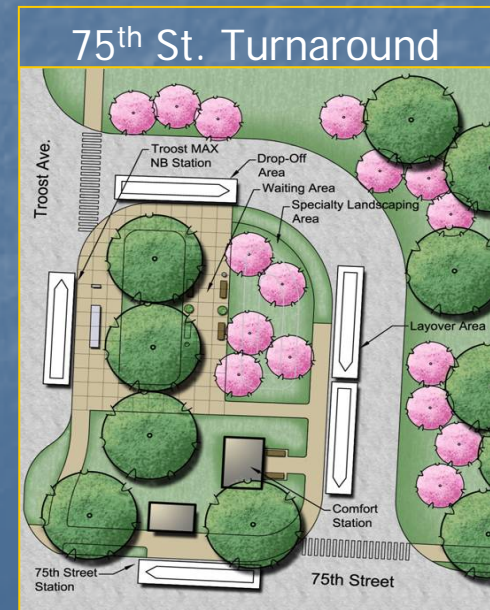




# Troost BRT – Very Small Starts



- Substantial Branded Stations
  - 44 Stations (2 per Intersection)
  - 2 Park & Rides
  - 1 Transit Center
- Signal Priority @ 34 Intersections
- Low Floor BRT Vehicles (14)
- Capital Cost < \$3 M per Mile



# Troost MAX Station Design Community Input



- Emphasize MAX Brand
- Retain Iconic MAX Marker
- Unique Troost MAX Shelter
- Multi-Directional Weather Protection
- Larger Waiting Areas
- More "Green Elements"

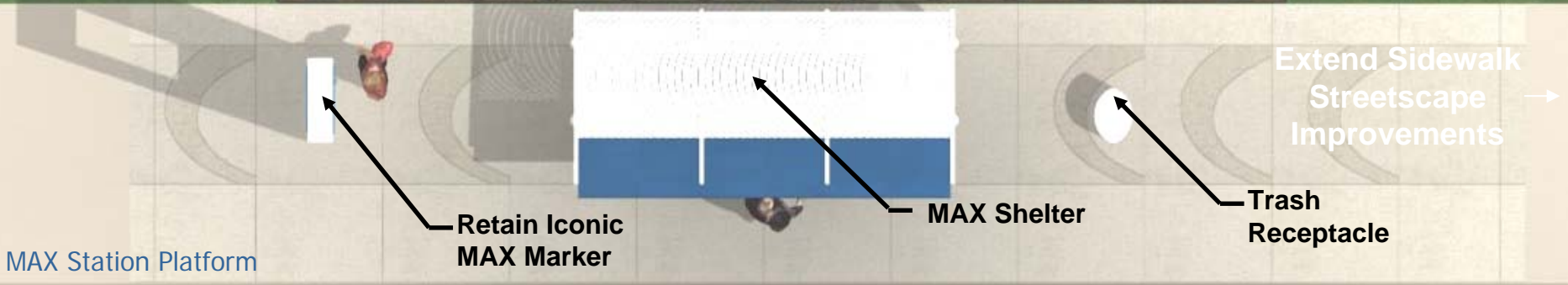




# MAX Station and Amenities Community Input



Landscaping/Public Art – where ROW and funds available



MAX Station Platform

Retain Iconic  
MAX Marker

MAX Shelter

Trash  
Receptacle

Extend Sidewalk  
Streetscape  
Improvements →

Concrete Station Pad – Streetside

- Name Stations for Community / Neighborhoods
- Add Pedestrian and Sidewalk Improvements
- Additional Lighting Around Platform Area

# Troost MAX Station Design





# Troost MAX Capital Cost



- Capital Cost - \$30.7 Million
  - 80% Federal Funding
    - \$24.6 Million
    - Very Small Starts Program
  - 20% Local Funding
    - \$6.1 Million
    - Local Sales Tax
    - City Infrastructure (Streetscape)



# Troost MAX Capital Cost \$30.7 M

## Budget Breakdown (Millions)



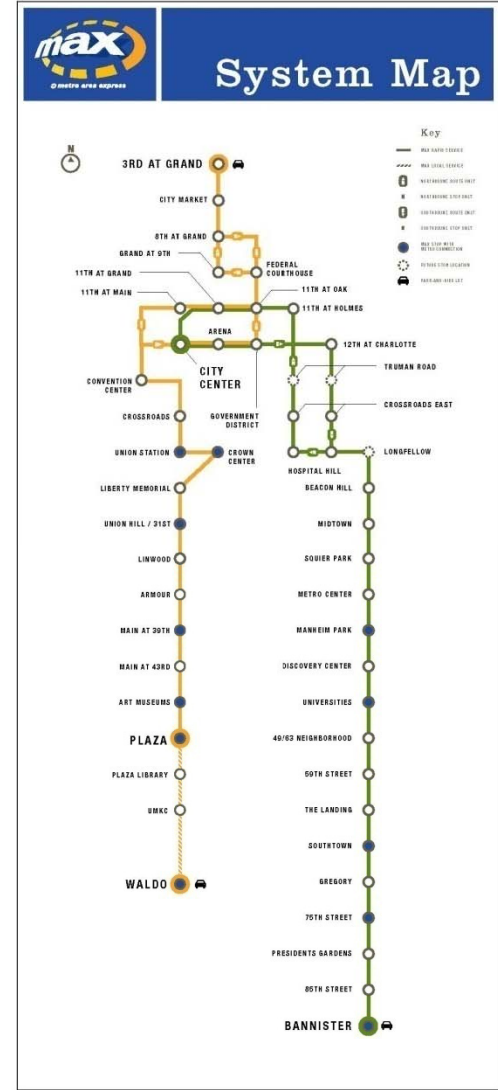
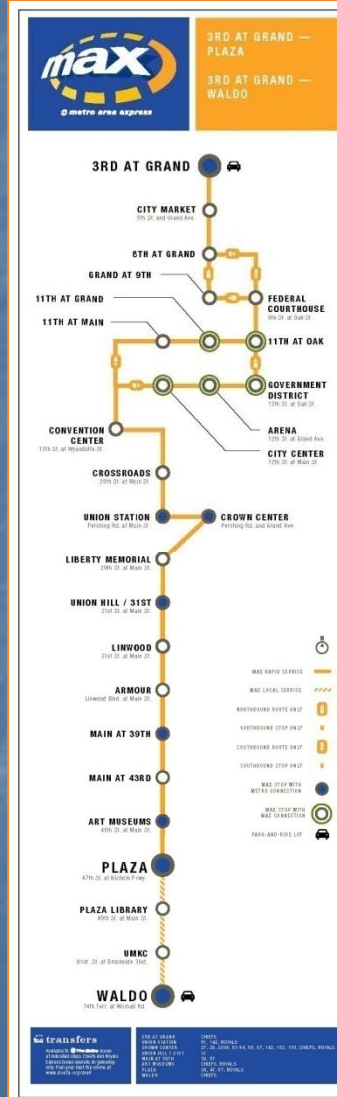
- \$ 3.2 Planning, Design & Engineering
- \$ 5.9 BRT Vehicles (14 Including 3 Hybrids)
- \$ 0.4 Support Facilities (Maintenance)
- \$ 3.2 Paving, Streetscape, Sidewalk
- \$ 2.5 Systems (Signals, Signs, TVM)
- \$12.6 Stations & Park-and-Rides
- \$ 1.3 Admin., Easements, Utility & Legal
- \$ 1.3 Contingency



# Making MAX A System



- Troost MAX
- Main St. MAX
- Different Colors
- Multi-Colored Head Signs





***COMING TO TROOST IN 2010 !***





Unused slides





# Bus Rapid Transit - Missouri River to 75th Street

## Missouri River to 47th Street



## 47th Street to 75th Street



**BRT Stop**



**BRT Park & Ride Stop**



**BRT Service**



**Exclusive BRT Lane**



**Local Service**


October 2004





# Station Information Neighborhood and Transit





## 39th and Main

**ATTRACTIONS**

**Westport**  
Where Kansas City began

It's a little like an old-fashioned town, with its streets lined with historic buildings and its sidewalks lined with historic homes. It's a little like a town that's been frozen in time, and it's a little like a town that's been brought back to life. It's a little like a town that's been waiting for you to discover it.

**Uptown Theater**


The Uptown Theater is a historic landmark in Westport, Kansas City. It was built in 1928 and is one of the few theaters in the city that has remained in its original location. The theater has a rich history and has been the site of many memorable performances.

**Mill Creek Park**  
A nice jag through the Plaza

Mill Creek Park is a beautiful park located in the Westport neighborhood of Kansas City. It features a winding path through the Plaza, a playground, and a picnic area. It's a great place to enjoy the outdoors and take a break from the city.

**Hyde Park**  
Kansas City's best golf course

Hyde Park is a beautiful golf course located in the Westport neighborhood of Kansas City. It was founded in 1906 and is one of the oldest golf courses in the city. The course is known for its challenging layout and its scenic views of the city.





## MAX ROUTE



**MAX BUS RAPID TRANSIT ROUTE**

**MAX LOCAL SERVICE SOUTH OF THE PLAZA**

**NORTHBOUND STOPS ONLY**

**SOUTHBOUND STOPS ONLY**

**MAX STOPS**

**PARK-AND-RIDE LOT**