

## 4. Presentation and Discussion: Phoenix Light Rail Implementation

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## Light Rail Transit in Phoenix

Broadway Citizen's Task Force

February 25, 2013



## Valley Metro – Who Are We?

- Operate Regional Transit Services
  - Valley Metro and Phoenix are region's primary service providers
  - Light Rail and Bus
- Project Development
  - Rail and bus corridors
  - Support facilities



## Total Transit Network

- Every transit mode serves a certain purpose and market.
- Many modes working in concert create a successful transportation network.
- We have to continue to build.
  - Economic prosperity
  - Mobility choices
  - Quality of life





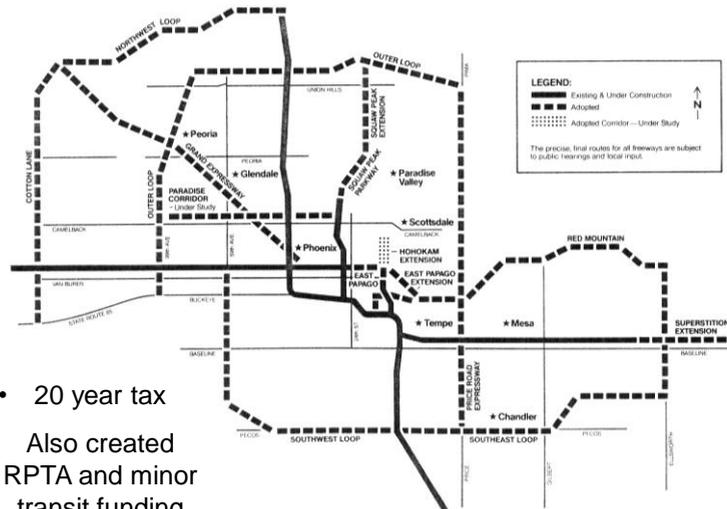
## Valley-Wide Transit Growth – 25 years

- **Population - Doubled**
  - 3.8 million in 2010
- **Miles of Operation - Tripled**
  - 31 million annual revenue miles
- **Transit Boardings - Quadrupled**
  - 72 million annual passengers



*Travellers have responded to the investment in transit!*

## 1985 – Regional Sales Tax Proposed Freeways



- 20 year tax
- Also created RPTA and minor transit funding



## Light Rail Funding Sources

- Tempe Sales Tax - 1996 (Prop 400)
- Phoenix Sales Tax - 2000 (Prop 2000)
- Mesa General Fund
- Glendale Sales Tax – 2001 (Prop 402)
- Regional Sales Tax 2004 (Prop 400)
  - 20 year tax; 2/3 highways & 1/3 transit
- Federal Transit Administration
  - New Starts
  - CMAQ and STP

7



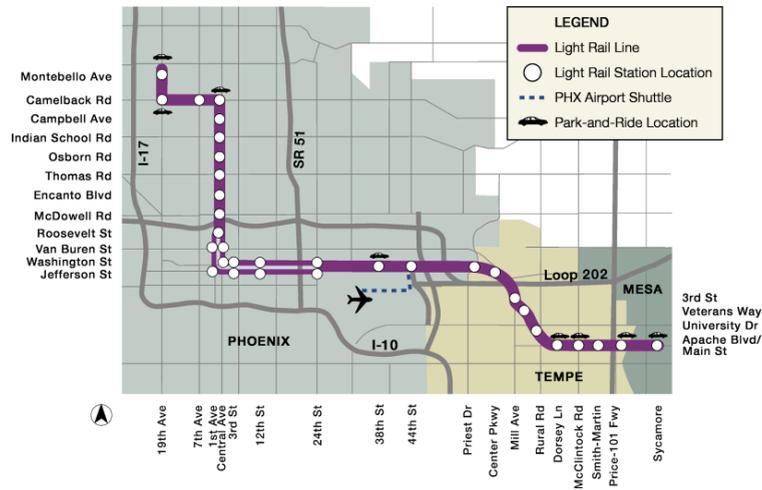
## Phoenix Metro Area Rail Projects



8



## 20-Mile Light Rail Line



9



## Why this route?

- Corridor has highest travel demand
- High demonstrated bus ridership
- Highest employment concentrations
- Good residential base
- High student population
- Corridor contains most special event facilities



10



## 20-mile LRT Project History

- Initiated Project Planning -1996
- Selected Preferred Alternative - May 1998
- Started Preliminary Engineering - Sept 1998
- Completed Environmental Work - Jan 2003
- Started Final Design - July 2003
- Started Construction - Oct 2003
- Full Funding Grant Agreement - Jan 2005
- Open for Operations – Dec 2008

11



## Defining Success : LRT Ridership

- Exceeding all expectations
  - Exceeded opening year forecast by 34%
    - Forecast - 26,000/day; Actual - 35,000/day
  - Nearing 2020 ridership projection
    - Forecast - 48,000/day; Current - 44,000/day
  - All-time high = 65,773 on Dec 7, 2013
- Demographics:
  - Students
  - Workers
  - Special event-goers

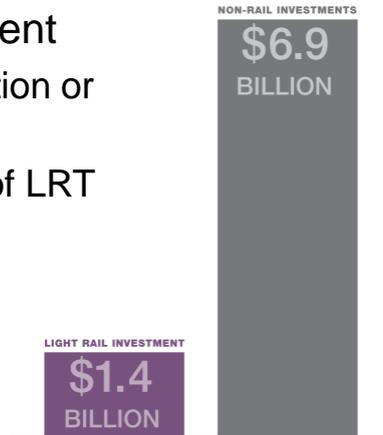


12



## Defining Success: Development

- \$6.9 billion total investment
  - Planned, under construction or completed
  - Within walking distance of LRT
  - \$5.4B private investment
  - \$1.5B public investment



13



## Developments: Residential



Grigio Metro  
Tempe



Campus Suites  
Tempe

Tapestry on Central  
Phoenix



14



## Developments: Large Mixed Use



CityScape  
Phoenix



Hayden Ferry Lakeside  
Tempe

15



## Developments: Public Investment



Phoenix Convention Center



Civic Space Park



ASU Downtown Campus

16



## Connecting Sky Harbor Airport

- Initial connection was by bus – 1200 daily riders
- PHX Sky Train Phase I opened on April 8, 2013



## LRT Characteristics

- 19 of 20 miles are in street
- 149 signalized intersections



18



## Central Avenue – Before 6 lanes



25% of people were on buses during peak periods

19



## Central Ave - After



Goal was to maintain previous curb line

20



## Central Ave - After



21



## Central Ave - After

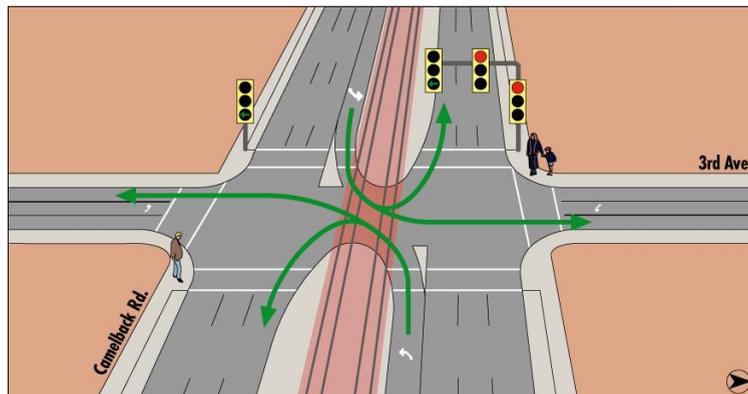


22



## LRT in Street Median

- Left turn access is restricted
- Traffic signals located every 1/4 mile to allow left turns and u-turns for property access



## Camelback Rd – Before 5 lanes



Phoenix requested the addition of 1 EB lane



## Camelback Rd - After



25

## 19<sup>th</sup> Ave – Before 5 lanes



**Phoenix desired to retain all existing lanes  
because 19th Ave is an I-17 traffic reliever**

26



## 19<sup>th</sup> Ave - After



27

## Washington St – Before 6 lanes



**Street capacity was no longer needed because of the I-10 freeway completion**

28



## Washington St - After



29

## Apache Boulevard – Before 6 lanes



Tempe residents wanted traffic calming

30



## Apache Boulevard - After



31



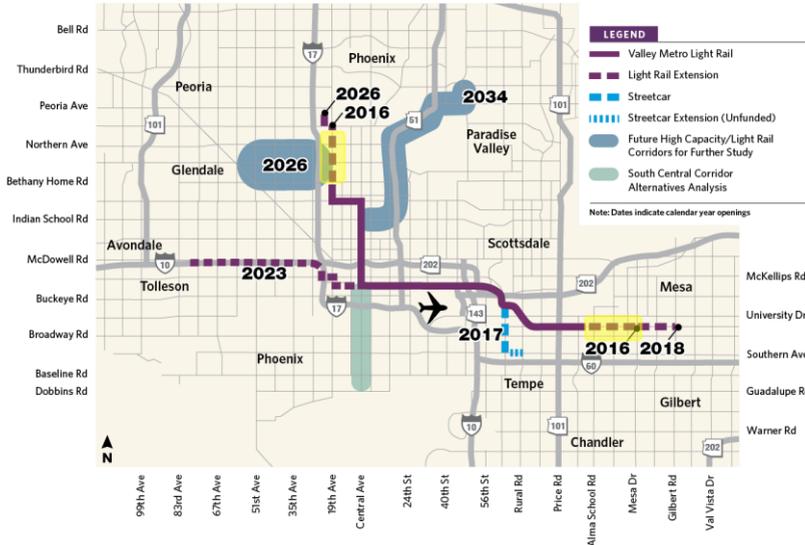
## Apache Boulevard - After



32



# Light Rail Construction Projects



33



## Northwest LRT Extension – 19<sup>th</sup> Ave

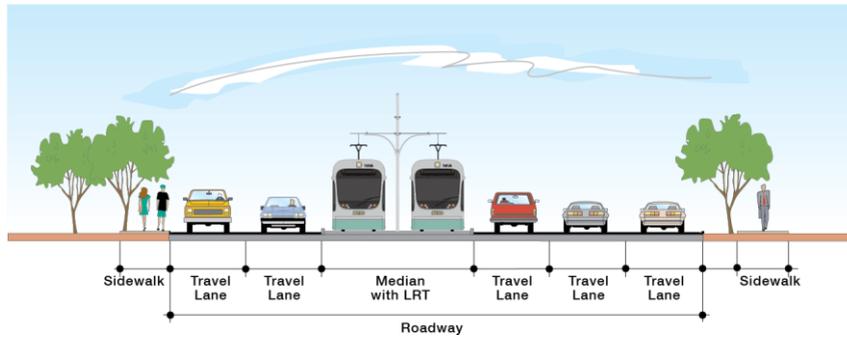


Phoenix desired to retain all existing lanes

34



# Northwest LRT Extension Cross Section



35



# Central Mesa LRT Extension - Before



West Mesa  
- Retain 4 lanes

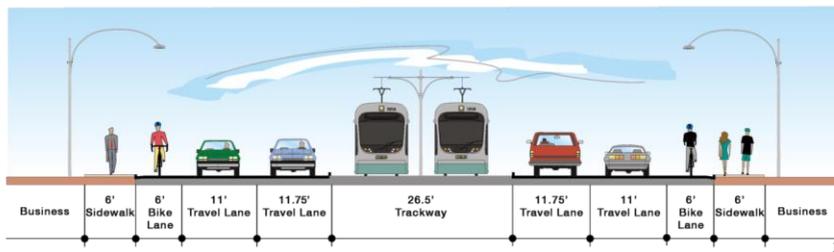


Downtown Mesa  
- No property acquisition

36



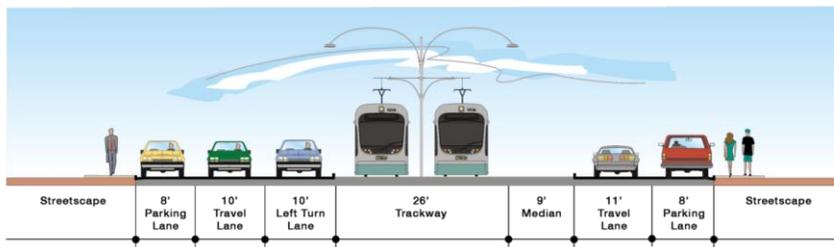
## Sycamore to Country Club



37



## Country Club to Mesa Drive



38



# Downtown Mesa Photo-Simulation



39



# Gilbert Road LRT Extension



40



## Gilbert Road LRT Extension Street Configuration Options

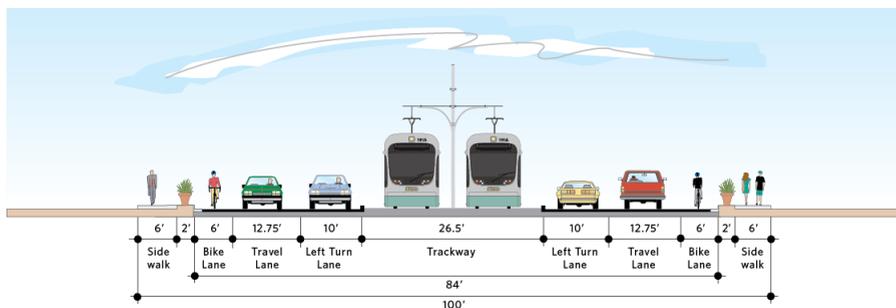
- Existing – Four lanes with parking
- Options Evaluated
  - Four lane option
  - Two lane option



41



## Gilbert Road LRT Extension Recommended Cross Section



- 2 through lanes
- Widen to 4 traffic lanes at arterial Intersections
- Retains bicycle lanes and some on-street parking
- Minimizes property acquisition

42



## Preparing for Future Light Rail

- Right-of-way preservation
- Early utility relocations
- Land use
- Transit Oriented Development
- Pedestrian and bicycles
- ADA considerations
- Phasing from bus to rail



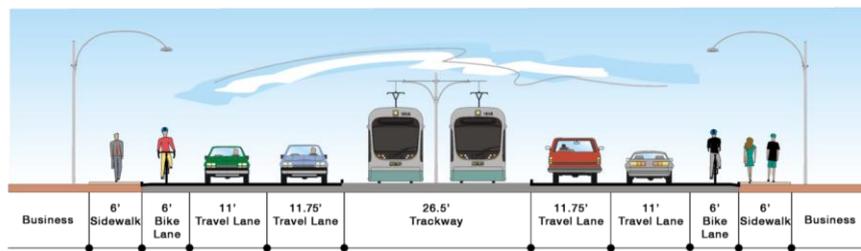
43

## Right-of-Way Preservation



LRT width requirements:

- Two Track Alignment – 27' to 34'
- At Stations (two track) – 41' to 60'
- Left turn lanes for in-street LRT – add 10' to 12'
- Varies according to site conditions



44



## Early Utility Relocations

- Reasons to relocate:
  - Allows utility maintenance
  - Minimum clearance for structural loads
- Can be 15 to 20% of project cost
- Can be a significant source of project delay
- Consider relocating as part of street projects



45



## Transit Compatible Land Use

- Steps to success:
  - General Plan Policies
  - Overlay Zoning Districts
  - Building Code Modifications
  - Station Area Planning
  - Development Community Education and Recruitment
  - Market Analysis



46



## Transit Oriented Development (TOD)

- Create compatible land uses at stations to improve ridership
- Make access to transit stations easy and attractive for pedestrians
- Provide an environment that is human-scaled (rather than auto oriented)



47



## Access to future light rail

- Items to include with street projects:
  - Improve sidewalks & pedestrian environment
  - Bring sidewalks and curb ramps in compliance with ADA requirements
  - Add bike lanes
- Develop bike routes/paths to access future LRT stations



48



## Phasing From Bus to Rail

- Successful bus ridership makes the case for federal funds
- Bus operations can be a challenge during LRT construction
  - about 3 years
- Dedicated bus lanes located in future LRT space makes transition to rail difficult
  - Bus lanes close down during LRT construction



49



## Broadway Boulevard

Considerations – Phoenix vs. Tucson

- Regional Freeways
- Regional sales tax
- Land use

Vision

- Highway oriented?
- Transit oriented?

50



## People Lined Up to Experience LRT



51



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52