Riverside streetcars, clockwise from top left: Chinatown; Market Street; Magnolia Ave; Fox Theatre
INTRODUCTION

Staff

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This study is funded by a grant to the City of Riverside awarded by SCAG, with funding from Caltrans.
INTRODUCTION

Consultant Team

- **BAE Urban Economics**
  - Ron Golem, Principal
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- **PlaceWorks**
  - Karen Gulley, Principal
  - Suzanne Schwab, Project Planner

- **IBI Group**
  - Bill Delo, Associate
  - Max Backlund, Transportation Planner
STREETCAR FEASIBILITY STUDY

Analysis of the full range of issues related to a streetcar system in Riverside, for community and City Council review:

- Routes and ridership
- Relationship to economic development
- Cost, funding to build and operate
- Benefits and costs, compared to alternatives
  - Bus Rapid Transit (BRT)
  - Modern Electric Trolley bus
  - “No build” - existing and future RTA bus
STUDY PROCESS: SUMMER 2014 – FALL 2015

- Tonight: Start of community engagement
- Steering Committee: representatives of transportation agencies, the community, business, and universities
  - 1st meeting next month, meetings through Summer 2015
- Ongoing community engagement
- Evaluation of key items:
  - Existing conditions, costs & benefits: November 2014
  - Alignment alternatives, preferred alignment: January 2015
  - Development analysis and funding alternatives: May 2015
  - Implementation plan and draft report: August 2015
  - Present final report to Council: Fall 2015
TONIGHT’S WORKSHOP
WORKSHOP ORGANIZATION

Tonight:
- Riverside’s Future and the Setting for A Streetcar
- Basics of Streetcar Systems and Alternatives
- Key Considerations for a Streetcar in Riverside
- Questions & Answers
- Group Exercise: Potential Routes
- Next Steps
RIVERSIDE’S FUTURE & THE SETTING FOR A STREETCAR

Riverside, California is a city that honors and builds on its assets to become known as a location of choice that catalyzes innovation in all forms, enjoys a high quality of life and is unified in pursuing the common good.

Read, share and celebrate Riverside’s success stories as the community continues to build a prosperous future:

CHECK OUT THESE RIVERSIDE CHAMPIONS:

THE RESULTS ARE IN; READ WHAT RIVERSIDERS HAVE TO SAY ...

GET IN ON THE MOVEMENT!
Find events, meetings, trainings, festivals and more
WHY CONSIDER A STREETCAR?

- Expands transit choices and local mobility
- Focuses growth and reduces its impacts
- Attracts development and transit riders
- Enhances competitiveness, economic development
- Value of its benefits can exceed the cost of investment, operation
The study area

Riverside General Plan: The “L Corridor,” Magnolia – Market – University is Riverside’s major development corridor, and a key transit corridor for future growth.
CURRENT CONDITIONS

Current road usage & congestion

- University Avenue is Level of Service D – nearing capacity, still meets City standards
- Magnolia Avenue is Level of Service A – good, some congestion at peak periods

Trolley routes: Jury Trolley; Crest Cruiser
RTA bus service in the Study Area:

- Route 1, UCR to Market-Magnolia-Corona is RTA’s busiest line; weekdays 7,600 riders, peak headway is 20 minutes
  - Enhanced service with 10 minute headways starts May 2016
- Route 16 along University is 2nd busiest; weekdays 2,400 riders, peak headway is 25 minutes
- Four other RTA lines in study area, peak headways 45 – 74 minutes
Based on SCAG projections, Riverside will grow
- Up to 69,000 new residents by 2035 (over 20% growth)

Sources: California Dept. of Finance (DOF) for 2014; Southern California Association of Governments (SCAG) for 2035.
Based on SCAG projections, Riverside will grow
- Up to 24,000 new households by 2035 (25% growth)

**FUTURE HOUSEHOLD GROWTH**

Sources: California Dept. of Finance (DOF) for 2014; Southern California Association of Governments (SCAG) for 2035.
Based on SCAG projections, Riverside will grow

- Up to 45,000 new jobs by 2035 (25% growth)

Riverside is growing

- Over 90 percent of Riverside workers drive or carpool to work

UC RIVERSIDE

Published UCR projections

- Growth from 29,000 students, faculty, and staff to 41,000 by 2020
- New School of Medicine on West Campus

**UCR Population**

<table>
<thead>
<tr>
<th>Year</th>
<th>Student Enrollment</th>
<th>Campus Affiliates</th>
</tr>
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<tbody>
<tr>
<td>2013</td>
<td>21,297</td>
<td>7,556</td>
</tr>
<tr>
<td>2020</td>
<td>25,000</td>
<td>16,393</td>
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</table>

Sources: UCR Strategic Academic Research & Analysis for 2013 figures; 2005 Long Range Development Plan (LRDP) for 2020 projections. Campus Affiliates in 2020 include School of Medicine visitors, patients, and staff plus UCR faculty and staff.
Riverside City College (RCC)

- Currently enrolls 18,000 students and employs 900 faculty and staff
- New Cosmetology Building opening in 2020

RCC Population

<table>
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<tr>
<th>Year</th>
<th>Student Enrollment</th>
<th>Campus Affiliates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>17,798</td>
<td>916</td>
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<tr>
<td>2024</td>
<td>20,910</td>
<td>1,076</td>
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</tbody>
</table>

Sources: RCCD Fact Book for 2013 figures; 2008 RCC Campus Master Plan for 2024 figures.
California Baptist University (CBU)

- To add over 2,000 students and 250 faculty and staff by 2025

CBU Population

<table>
<thead>
<tr>
<th>Year</th>
<th>Student Enrollment</th>
<th>Campus Affiliates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>7,144</td>
<td>564</td>
</tr>
<tr>
<td>2025</td>
<td>9,193</td>
<td>827</td>
</tr>
</tbody>
</table>

Sources: CBU Common Data Set 2013-14 for 2013 figures; 2013 CBU Specific Plan for 2025 figures.
La Sierra University (LSU)
- May add up to 3,300 students in the future

Sources: LSU 2011-12 Fact Book for 2011 figures; LSU 2006 Master Plan for 2025 enrollment cap.
Approximately 75 percent of college students in Riverside commute to campus.

- **UCR**: 60% Commute, 40% University Housing
- **RCC**: 100% Commute
- **CBU**: 60% Commute, 40% University Housing
- **LSU**: 40% Commute, 60% University Housing
- **All Campuses**: 74% Commute, 26% University Housing

'University Housing' includes all students in university-affiliated housing based on current statistics published by each institution. 'Commute' is defined as total enrollment less students in university-affiliated housing.
WHERE GROWTH OCCURS

SCAG projections show growth to 2035 focused on University, Market, Magnolia corridor

- 60 percent of new residents, households in Study Area
- 50 percent of new jobs in Study Area

SCAG projections for growth in the University and Eastside neighborhoods (2008 – 2035)

- **13,500 new residents**
  - (40 percent growth)

- **4,000 new households**
  - (33 percent growth)

- **10,000 new jobs**
  - (45 percent growth)

DOWNTOWN

SCAG projections for growth Downtown (2008 – 2035)

- **2,500 new residents**
  - (20 percent growth)

- **900 new households**
  - (20 percent growth)

- **3,500 new jobs**
  - (25 percent growth)

SOUTH OF DOWNTOWN

SCAG projections for growth in the Wood Streets, Magnolia, and Ramona Neighborhoods (2008 – 2035)

- **20,000 new residents**
  - (40 percent growth)

- **6,500 new households**
  - (40 percent growth)

- **11,000 new jobs**
  - (45 percent growth)

SOUTH OF DOWNTOWN

SCAG projections for growth in the Arlington and La Sierra neighborhoods (2008 – 2035)

- 17,000 new residents
  - (40 percent growth)

- 5,000 new households
  - (35 percent growth)

- 10,000 new jobs
  - (50 percent growth)

space required to transport 60 people

car  bus  bicycle
WHAT IS A STREETCAR?

Vehicles typically about 65 to 70 feet in length
- Typical maximum speed of 35 mph, matches local traffic
- Can operate in traffic lanes like a bus
- Operates in a defined area (downtown, university, etc.)
- Initial routes 3 to 5 miles in length, full system can be longer
- Frequent service (~15 minutes or better)
- Frequent stops (~1/8 to 1/4 mile)
TYPES OF STREETCAR

- Historic Replica
- Historic
- Modern
PROPULSION OPTIONS

Single Wire

Modern Electric Trolley

Double Wire

In-Ground or Self Propelled
STREETCAR VS. LIGHT RAIL

Light Rail – Metro Gold Line, San Diego Trolley
- Larger and longer vehicles (~90 feet long)
- Higher passenger capacity
- Greater spacing between stations (1/2 mile to 1 mile)
- Faster operating speed designed for intercity travel
STREETCAR VS. COMMUTER RAIL

Commuter Rail - Metrolink
- Operates on freight rail tracks, using diesel-powered locomotives
- Larger and longer trains (multiple passenger cars)
- Even greater spacing between stations (2 miles to 5 miles)
- Service long distance trips (>10 to 20 miles)
STREETCAR VS. REGIONAL BUS

Regional Bus – RTA, Omnitrans

- Uses a range of bus sizes
  - Small – 25-30 feet
  - Standard – 40 feet
  - Articulated – 60 feet

- Route structure designed for cross-county travel
- Focus on regional transportation needs and mobility
Modern Electric Trolley (rubber-tire vehicle)

- Used Widely in Europe
- Under Study in United States as Streetcar Alternative
- Potentially Lower Construction Costs
STUDY OBJECTIVES

- Identify potential alignments and station locations
- Assess ridership potential
- Develop conceptual construction and operating costs
- Analyze feasibility based on local, state, and federal criteria
- Identify opportunities for funding
ANALYZING FEASIBILITY

Ridership Demand
- Population and Employment
- Key Destinations
- Connections to Transit
- Potential Ridership Numbers
ANALYZING FEASIBILITY

Technology/Operations
- Rail or Rubber-Tired
- Mixed-Traffic or Dedicated Right-of-Way
- Maintenance and Fuel Needs
- Compatibility with Other Transit

Alignment
- Route and length
- Station locations and spacing
ANALYZING FEASIBILITY

Physical Environment
- Traffic compatibility
- Right-of-way availability
- Integration with regional transit
- Infrastructure conditions (street, utilities)

Costs
- Construction costs and funding
- Operating costs and funding
KEY DESTINATIONS
SAMPLE ROUTE IDEAS
KEY ALIGNMENT ATTRIBUTES

- Operates in a defined area (downtown, university, etc.)
- Connects to regional transit
- Serves multiple types of users (residents, employees, students, tourists)
- Can operate in streets with mixed traffic
EVALUATION CRITERIA

Community Considerations
- Land Use Compatibility
- Noise/Visual Impacts
- Population and Employment

Operations
- Travel Time
- Ridership
- Costs
- Physical Constraints
EVALUATION CRITERIA

Transportation Considerations
- Traffic Impacts
- Connectivity to Activity/Employment Centers
- Connectivity to Other Transit

Economic Considerations
- Economic Development Potential
- Job Creation
KEY CONSIDERATIONS FOR STREETCAR
LAND USE & DEVELOPMENT

Streetcars generate the greatest benefit when they increase mobility and connect new development along a route

- Focus is on ¼ - ½ mile on either side of a route
- Attracts developer and employer interest in new projects
- Higher education and institutions growth impacts mitigated
Development does not need to be continuous along a route – connect clusters of new development

- Protect existing residential neighborhoods on the route
- Increase density at appropriate locations
FINANCING & OPERATIONS

Strategies for funding construction and operation:
- No impact on City’s General Fund
- Don’t compete with funding for existing RTA service
- Seek financial support from those who benefit from a streetcar

Potential funding sources:
- Federal transit funding
- State, regional, local sources
- Farebox revenues
- Assessments on new development
- Private investment
PLANNING & IMPLEMENTATION

Streetcar routes are usually developed in phases

- Initial segments are often 2 – 3 miles in length

Timing can vary based on funding sources:

- Federal funding: 8 years +
- Without federal funds: 4 years +

Planning would begin after feasibility study, Council action

- Study answers the question of would it work and how – but isn’t a plan ready to implement
GROUP EXERCISE:
DESTINATIONS & ROUTES
SMALL GROUP EXERCISE: POTENTIAL ROUTES

- Discuss as a Group:
  - Key destinations that should be served
  - Potential routes to connect to the destinations
  - Pros and Cons associated with the potential routes

- Map and Comment:
  - Identify 1 – 2 preferred alignments
  - Use a Highlighter to mark the route(s)
  - Write down what you like about your preferred route
  - Write down what you don’t like about the other routes
  - Note any preferred stops (location and frequency)
EXERCISE GUIDELINES

- Try to give "equal air time" to everyone in the group
- If you do not understand what another person has said, ask for clarification
- Respect the contributions of others
GROUP EXERCISE: DESTINATIONS & ROUTES
NEXT STEPS

Stay Informed! Participate in the Discussion:
- Project website: www.riversidereconnects.org
- MindMixer website on: www.EngageRiverside.com

Community Charrette on alignments, development
- Late September
- Announced on MindMixer, riversidereconnects.org

THANK YOU!