ANN ARBOR CONNECTOR
FEASIBILITY STUDY
Ann Arbor City Council Presentation

October 10, 2011
ANN ARBOR CONNECTOR FEASIBILITY STUDY
City Council Presentation

1. Connector study overview
2. Alternative transit technologies
3. Study findings
4. Potential next steps
Study Overview

What is the Ann Arbor Connector Feasibility Study?

**Study Purpose** - To determine the feasibility of advanced transit options for the city to meet growing transportation demands.

- Supplement multi-modal transportation system
- More travel options
- Convenience
- Sustainability
- Improve safety
- Economic stability and growth
- Improve overall quality of life

Project Sponsors:

- Downtown Development Authority
- City of Ann Arbor
- University of Michigan
- Ann Arbor Transportation Authority

Study Overview
Study Overview

Public and Agency Involvement

- Monthly Advisory Committee Meetings
  - AATA, UM, City, DDA, WATS
- One-on-one meetings
- Focus Groups
- Newsletters
- Public Meetings
- Web Site - aaconnector.com
Previous studies by the City, County, AATA, DDA, U-M and WATS have identified common themes that have led to this study:

**Sustainable Transportation**

**Minimize Road Expansion**

**Support Non-motorized Travel**

**Increased Use of Transit**

*The University of Michigan sponsored a Transportation Technology Forum to explore and advance input to the Connector Study*
Study Overview

Project Approach

- Congestion
- Travel Reliability
- Regional Policies / Goals
- High Trip Demand

Is There a Need?

Define the Market

- Geographic Location

Feasibility Analysis / Screening

- Ridership
- Engineering / Environmental Challenges
- Costs and Funding

Findings Recommendations

Develop Alternatives

Geographic Location

Recommendations

Study Overview
Defining the Need – Corridor Congestion

Key Corridors are Congested:
- Plymouth Road
- State Street

Source: City of Ann Arbor 2009 Transportation Plan Update
Defining the Need – Corridor Congestion

• Key Corridors are Congested:
  – Plymouth Road
  – State Street

• Development Expected to Occur in Corridor

Source: URS Corporation and the WATS Travel Demand Model
Defining the Need – Corridor Congestion

- Key Corridors are Congested:
  - Plymouth Road
  - State Street

- Development Expected to Occur in Corridor

- Volume Forecasted to Increase:
  - Plymouth Road: +10%
  - Fuller Road: +11%
  - State Street: +10%

- LRTP: Widening Key Routes is Not In Plan

Source: City of Ann Arbor 2009 Transportation Plan Update
Defining the Need – Regional Connectivity

- Connector for intercity rail initiatives
- Support for county-wide transit
- Attract the ‘choice’ riders
- Park and ride intercept service
Defining the Need – Transit Utilization

- Key corridors for existing AATA Service

<table>
<thead>
<tr>
<th></th>
<th>Service Frequency</th>
<th>Riders per Weekday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plymouth Road</td>
<td>15 Minute</td>
<td>2,286</td>
</tr>
<tr>
<td>State Street</td>
<td>7 Minute</td>
<td>2,771</td>
</tr>
</tbody>
</table>

Source: AATA

- Primary Destinations
  - UM Medical Center
  - Downtown
  - UM Central Campus

- Standing loads occur frequently
- Extra buses added to accommodate peak ridership

Source: URS Corporation and the WATS Travel Demand Model
Defining the Need – Transit Utilization

- Bus Performance: Negatively Impacted by Roadway Congestion
- Currently: 25-30% of Time is Waiting for Signals!!
- More Volume – More Delay:
  - Congested Conditions: Delay Increases by 2-3 Times Volume Increase
- Bus Times Will Become Less Reliable
UM Inter-Campus Bus System Operates at Critical Capacity:

- Buses run every 2 – 3 Minutes during peak periods
- Peak periods last from 8:00 am to 4:00 pm
- Buses in peak periods are standing room only
- Ridership Between North and Central Campus:
  - 30,700 Rider per Day
  - 2,100 Riders in Peak Hour
  - 780 riders in peak 15 Mins.
- Peak Buses between Campuses: 60 Per Hour

Source: URS Corporation counts conducted September 2010
Defining the Need – Community Vitality

- Better transit makes Ann Arbor a more desirable place to live and work
  - Maintain jobs
  - Accessible work force
  - Stabilize tax base
  - Affordable housing
- Transit is an alternative to building more parking
Defining the Alternatives

• Hours of the Day
• Frequency / Time Between Vehicles
• Fare Collection Methods

• New Route(s):
  – Uses Existing Street?
  – Separate Corridor / Guideway
• Changes to Existing Routes?

• Intermodal Connectivity
• Locations
• Amenities
Defining the Alternatives

- Light Rail Transit
- Bus Rapid Transit
- Streetcar
- Elevated Automated Guideway Transit
Defining the Alternatives

Streetcars

Little Rock, AR

Portland, OR

Tacoma, WA
Defining the Alternatives

Light Rail Transit (LRT)

Minneapolis, MN
Charlottesville, NC

Dallas, TX

Denver, CO
Defining the Alternatives

Bus Rapid Transit (BRT)

Eugene, OR

Kansas City, MO

Cleveland, OH
Defining the Alternatives

Elevated Automated Guideway Transit

Detroit, MI

Las Vegas, NV
Defining the Alternatives

Other Options Considered

- Heavy Rail/Commuter Rail
- Personal Rapid Transit (PRT)
- Double Decker Buses
Study Findings

2010 Forecast Daily Connector Ridership

Source: URS Corporation and the WATS Travel Demand Model
Study Findings

- Two Area Types:
  - High Demand Core
  - Moderate Demand Shoulders

- Because there is travel demand between all Activity Centers, it makes sense to connect them
Study Findings

Connector Service Concept

- Core:
  - High Capacity
  - High Frequency
- End-to-End:
  - Moderate Capacity
  - Moderate Frequency
- Dual Service in Core

Source: URS Corporation
Study Findings

Recommended Core Technologies

Source: URS Corporation
Study Findings

Recommended End-to-End Technologies

Bus Rapid Transit

Streetcar

Bus

Legend
- High Ridership Core
- Moderate Ridership Shoulders

Source: URS Corporation
Engineering and Environmental Challenges

- Huron River Crossing
- Topography
- Railroad Crossings
- Roadway Crossings
- Right of way
- Historic districts
- Floodplains

These challenges are not barriers but will be considerations in the cost and design of a new transit system.

Source: URS Corporation using City of Ann Arbor GIS data
Study Findings

Capital and Operating Costs

- Capital Costs depend on technology and alignment
  - BRT $15-20M per mile
  - LRT $50-60M per mile
  - Elevated $200M+ per mile

- Operating Costs
  - Net new costs of operating and maintaining an advanced transit system would range from $0.5 to $1.5 M/mile annually, depending on technology and alignment

Source: URS Corporation
Funding for major transit investments typically comes from multiple sources.

Project could qualify for federal funding of up to 50%.

Hiawatha Light Rail

Portland Streetcar

Euclid Corridor Healthline BRT

Source: URS Corporation
There are two distinct areas of travel demand:

- High Demand Core warrants high capacity service
- Moderate Demand Shoulders warrant end-to-end connection
Within the High Demand Core, appropriate technologies are:

- Elevated AGT
- Light Rail Transit
- Bus Rapid Transit

End-to-end service should be integrated with the core service. Appropriate end-to-end technologies are:

- Bus
- Streetcar
- Bus Rapid Transit

Source: URS Corporation
The engineering and environmental challenges are not barriers but will be considerations in the cost and design of a new transit system.

Funding for major transit investments typically comes from multiple sources.

Project could qualify for federal funding of up to 50%.

Implementing an advanced transit system would help move Ann Arbor to achieving long term transportation goals.
This feasibility study is the first of a number of steps required to implement an advanced transit system.

If feasible, more detailed design studies and additional community working sessions will be required.

Identification of funding sources is a critical step to implementation.
Thank You