October 10, 2011



ANN ARBOR CONNECTOR FEASIBILITY STUDY Ann Arbor City Council Presentation

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ANN ARBOR CONNECTOR FEASIBILITY STUDY City Council Presentation

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





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







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Study Overview

Study Area Map





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







Transportation is Important to our Community

Previous studies by the City, County, AATA, DDA, U-M and WATS have identified common themes that have led to this study:



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- Challenges
- Costs and Funding

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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

2010 to 2035 Employment Change







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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

	Service Frequency	Riders per Weekday
Plymouth Road	15 Minute	2,286
State Street	7 Minute	2,771

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

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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





Volume-to-Capacity Ratio



Defining the Need – Transit Utilization

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

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Source: URS Corporation counts conducted September 2010



Total Number of Northbound and Southbound Bus Trips per Hour Between CC Little and Pierpont Commons





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









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

- New Route(s):
 - Uses Existing Street?
 - Separate Corridor / Guideway

- Intermodal Connectivity
 - Locations
 - Amenities

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• Changes to Existing Routes?

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Streetcars

Little Rock, AR





Portland, OR



Tacoma, WA



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Light Rail Transit (LRT)



Minneapolis, MN





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Dallas, TX





Denver, CO



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Defining the Alternatives

Eugene, OR



Kansas City, MO







Bus Rapid Transit (BRT)



Cleveland, OH

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Elevated Automated Guideway Transit







Las Vegas, NV







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Defining the Alternatives



Other Options Considered

Heavy Rail/Commuter Rail





Personal Rapid Transit (PRT)

Double Decker Buses



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Study Findings





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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





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Study Findings

Connector Service Concept

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





Connector





East Med. Campus



Study Findings

Recommended End-to-End Technologies





Study Findings

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



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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



Study Findings

Funding

- Funding for major transit investments typically comes from multiple sources
- Project could qualify for federal funding of up to 50%







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Study Findings

Summary

- There are two distinct areas of travel demand:
 - High Demand Core warrants high capacity service
 - Moderate Demand
 Shoulders warrant
 end-to-end connection



Source: URS Corporation



Study Findings

Summary

• Within the High Demand Core, appropriate technologies are:



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







Study Findings

- 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



Next Steps



Next Steps



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.



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Questions

Thank You

