



Washington Metropolitan Area Transit Authority

Metrobus Network Effectiveness Study

Stakeholder Work Session

June 10, 2013



Study Objectives

Strategically position Metrobus towards building an effective network and enhancing productivity and efficiency

- How is Metrobus serving the bus market?
- What is the role of Metrobus in the service area?
- What would be the preferred network for Metrobus?





Work Session Purpose

Present findings of interviews and market analysis and seek stakeholder input on the development of alternative Metrobus networks

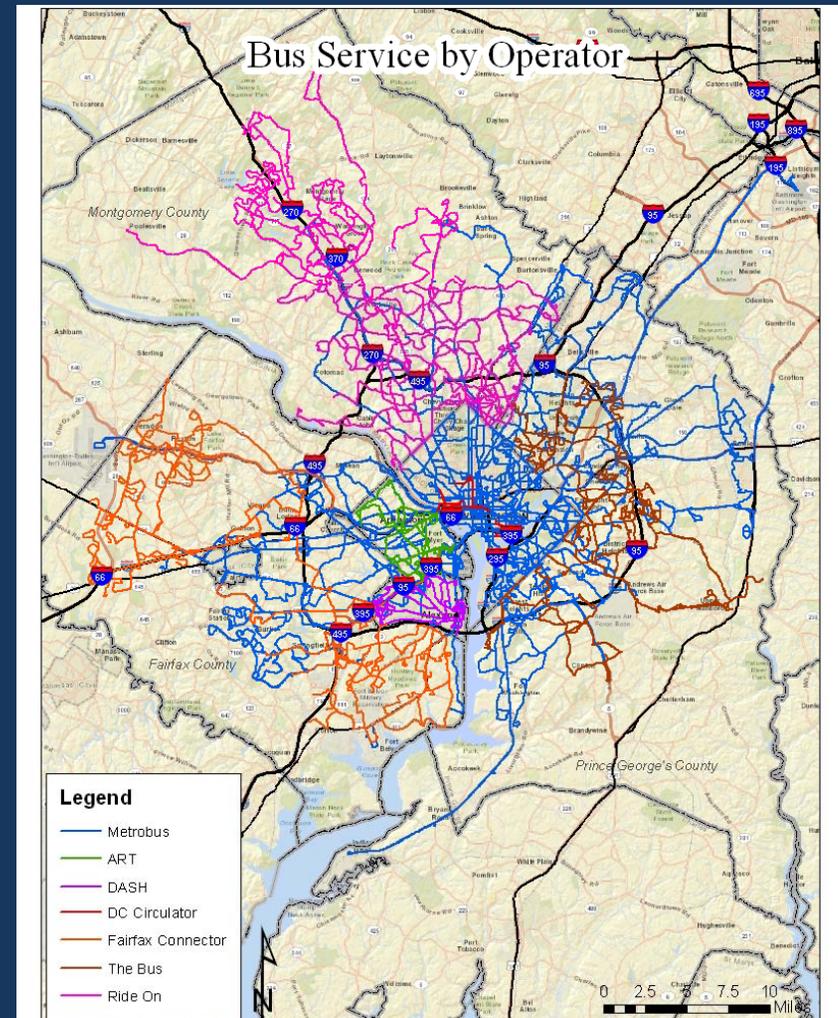
Project Status

- ✓ 1. Interview with jurisdictions & peer agencies
- ✓ 2. Market and SWOC analysis (Strengths, Weaknesses, Opportunities and Challenges)
- 3. Alternative networks development
 - ✓ Proposed goals and concepts
 - Development and evaluation of alternative networks
 - Selection of preferred alternative



Study Area Service Profile

- Land use density and mix vary substantially from inner to outer area
- Bus service contributes to half of transit mode share
- Bus service covers 36% of the entire region
- Service level is generally good provided during peak periods but poor during off-peak and weekends





Interviews

Peer Agency Interview

- **Peer Agency experience**

- + Recognize the importance of establishing a “Family of Services”
 - LACMTA has gone the farthest in developing a family of services
- + Use demand-based, not policy-based service to maximize effectiveness
 - Enables the agency to focus resources on where demand is greatest
- + Promote PCN-type service
 - A network of priority services, often with distinctive branding and high visibility stops



Interviews

Compact Jurisdictions

- **Compact Jurisdictions – Positive Comments**
 - + Support Metro efforts to evaluate markets and make decisions based on demand and productivity
 - + Agree that most Metrobus and local services complement each other
 - + Believe that Metrobus should continue to operate regional service while expanding the PCN
 - + Strong, but not unanimous, support for Metrobus providing arterial-based, long haul, express, BRT, and premium transitway services



Interviews

Compact Jurisdictions

- **Compact Jurisdictions – Neutral/Negative Comments**
 - Lack of clarity on Metrobus' role
 - Enhance regional service
 - Lack of understanding of Metrobus' role in future BRT
 - Some jurisdictions want WMATA be the high quality/BRT/PCN type provider
 - Comment that WMATA should provide more direction for these services
 - Need for consistent region-wide branding
 - Limited Funding for capital and operating improvements affects WMATA's ability to implement new plans/services



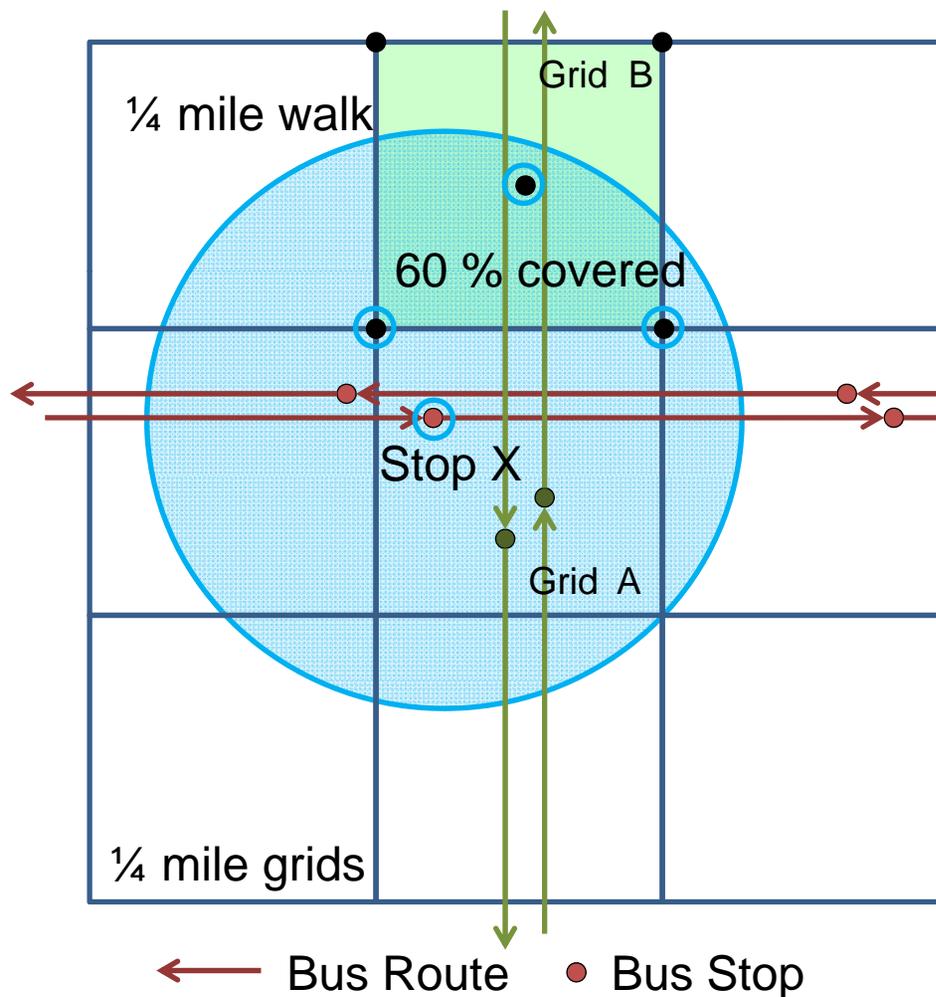
Bus Market Analysis

Data Sources

- Bus Service:
 - Stop locations and service data for Metrobus service: bus trips/hour, ridership, frequency, span and revenue hours
 - WMATA's Priority Corridor Network Plan (update for 2020/2030)
 - GIS data for Metrobus and Metrorail systems: lines and stops
 - Service data for non WMATA services
- Travel and Land-Use Patterns
 - MWCOG Round 8.1 Cooperative Land Use Forecasts
 - MWCOG Regional Forecasting Model Results
 - 2008 Metrobus Rider Survey



Bus Market Analysis Methodology – Grid Approach



Capture and analyze data at a fine-grained level:

- Compact area divided into 1/4-mile grids with 24,000+ grids
- Bus service, land use and travel data assigned to grids
- Supply-demand balance calculated for each grid



Bus Market Analysis

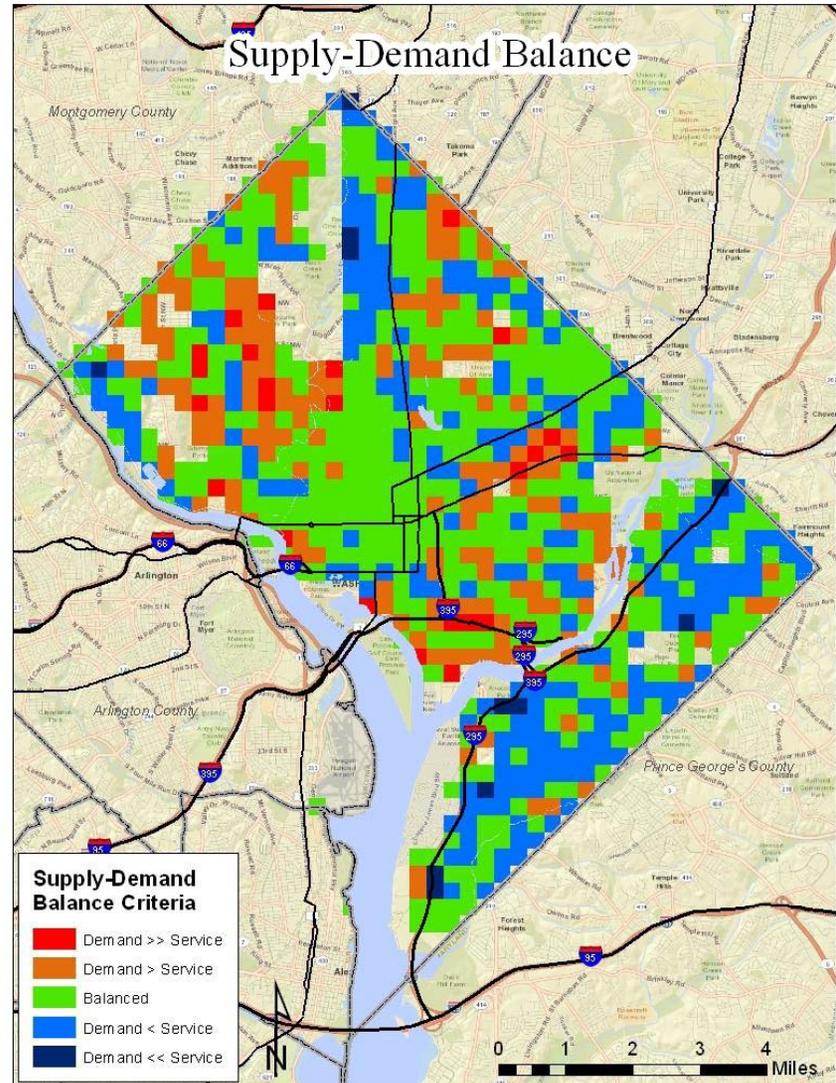
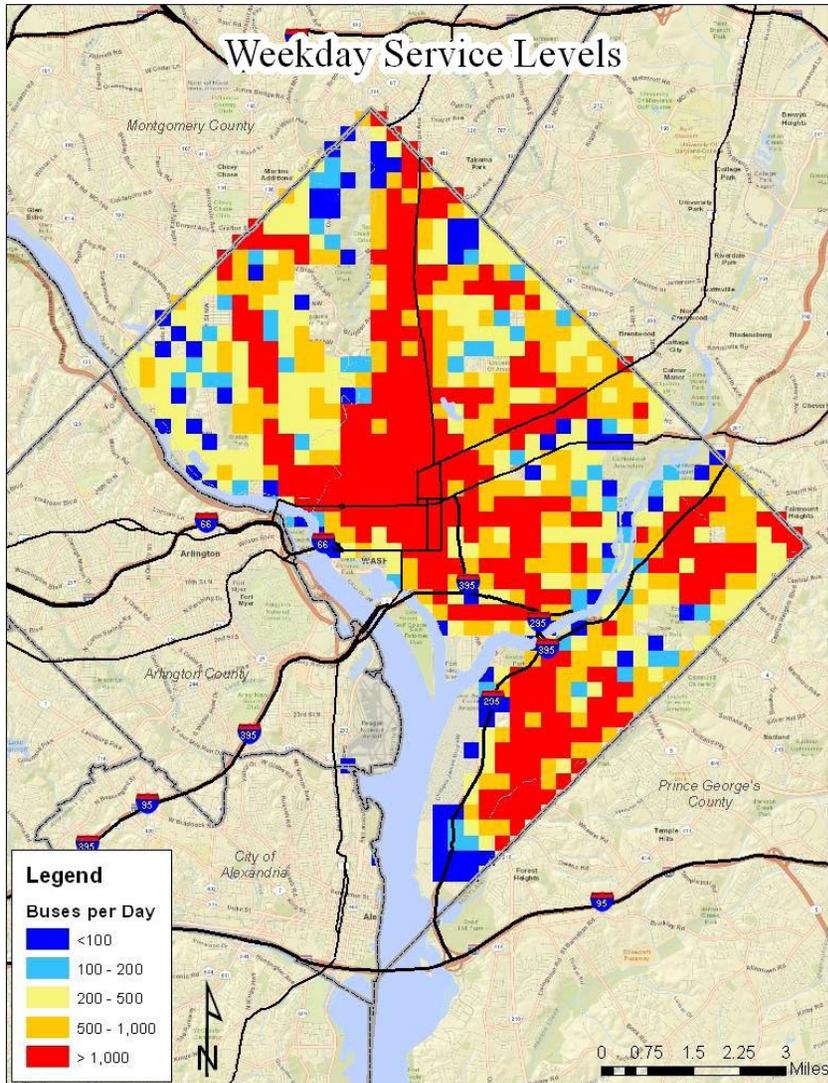
Market Segments

- Used market segment analysis to establish patterns of demand:
 - Markets:
 - Jurisdictions
 - Transit Propensity
 - Transit Supportive Areas
 - Regional Activity Centers
 - Area Types
 - Service Types
 - Priority Corridor Network
- Overlaid bus service for each market to identify supply-demand balance



Bus Market Analysis

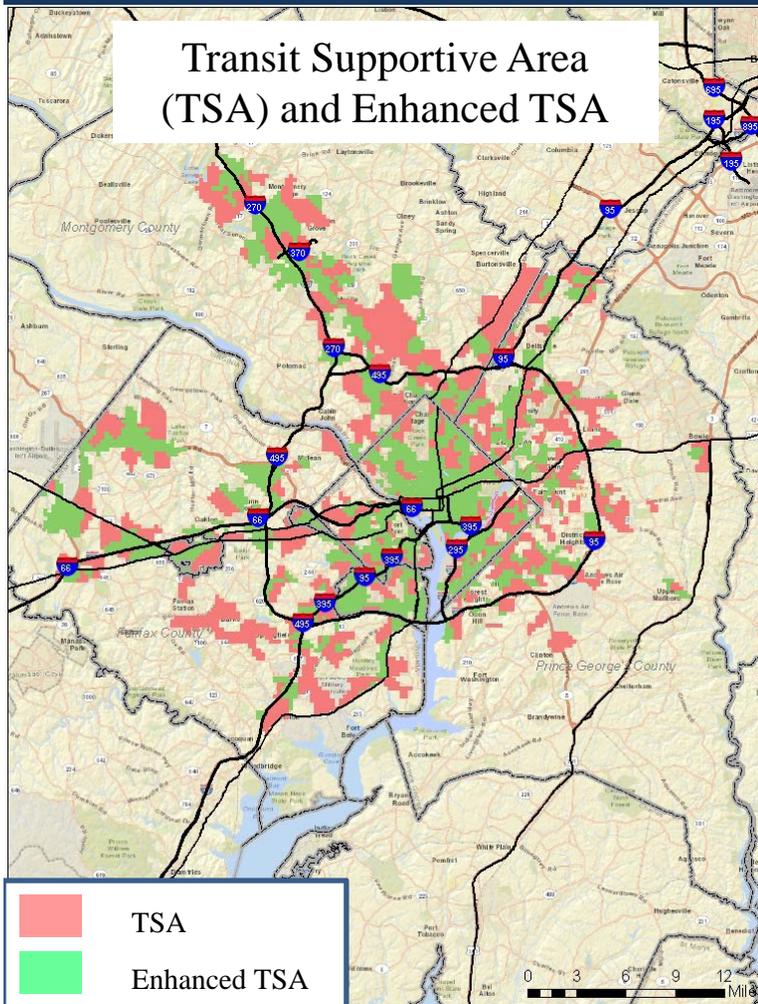
Example Jurisdictional Market – DC





Bus Market Analysis

Transit Supportive Areas



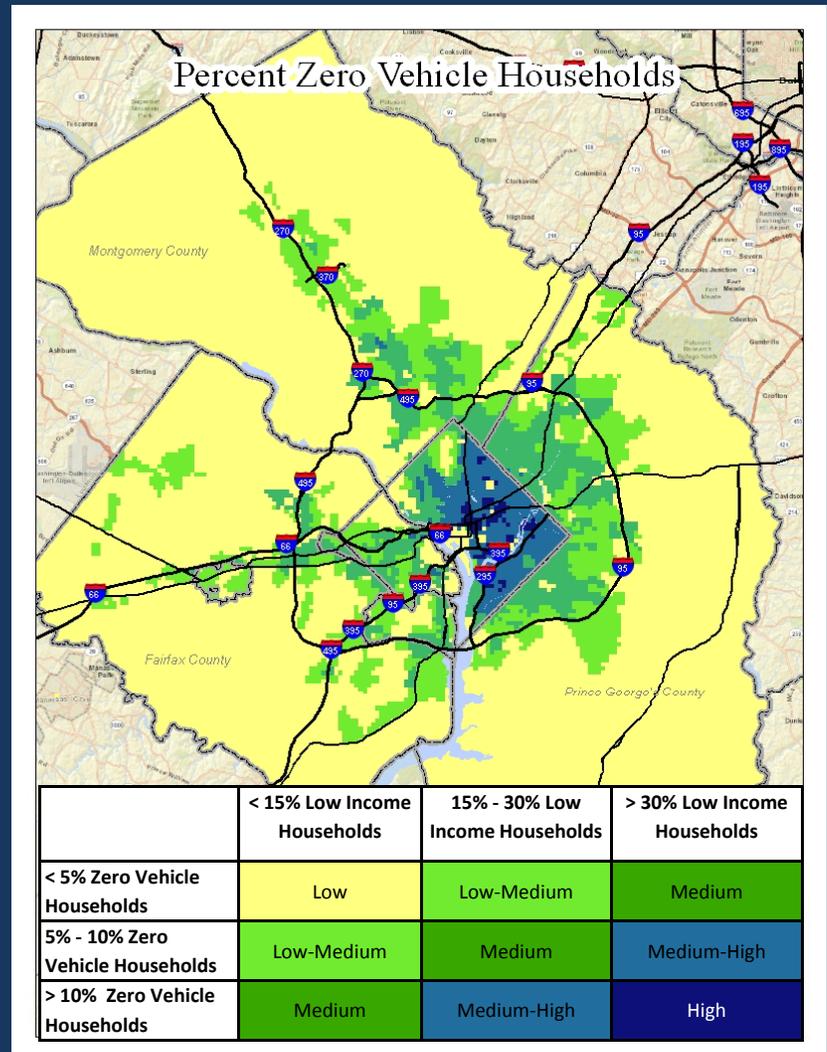
- Transit Supportive Area (TSA)
A threshold for hourly service
 - Accounts for 90% regional jobs
 - Transit mode choice is twice regional average
- Metrobus and local bus collectively serve TSA
 - Covers more than 80% of market
 - 50% of market has 15-min peak service
- Enhanced TSA (doubling TSA density) helps pin point areas with even higher transit propensity



Bus Market Analysis

Transit Propensity

- Associated with zero vehicle households or low income
- High transit propensity market is in the central core
 - Transit mode is at least twice regional average
- Metrobus is the primary bus service
- Many areas in need of increased service have medium to high transit propensity.





Bus Market Analysis

Methodology – SWOC Analysis

S

Strengths: What are the ways Metrobus succeeds in serving the different markets?

W

Weaknesses: Where is Metrobus underperforming?

O

Opportunities: What are the opportunities Metrobus can take advantage of for more effective service?

C

Challenges: What factors pose as challenges to Metrobus service

- Builds upon market analysis results
- Focuses on high-level, strategic and priority needs for future network development



Major Findings

SWOC

S

Strengths

1. Metrobus concentrates service in areas of high transit propensity
2. Metrobus serves the market well – supply meets demand
3. Metrobus provides frequent service in Urban Diamond

O

Opportunities

1. Focus on Core & Urban areas, TSAs, the PCN
 - Alleviate Metrorail capacity constraints

W

Weaknesses

1. Metrobus coverage outside the Beltway is weak
 - Local operators are the dominant providers outside the Beltway
2. Service frequency in many areas is not adequate
3. Some select areas have underserved populations ($S < D$)

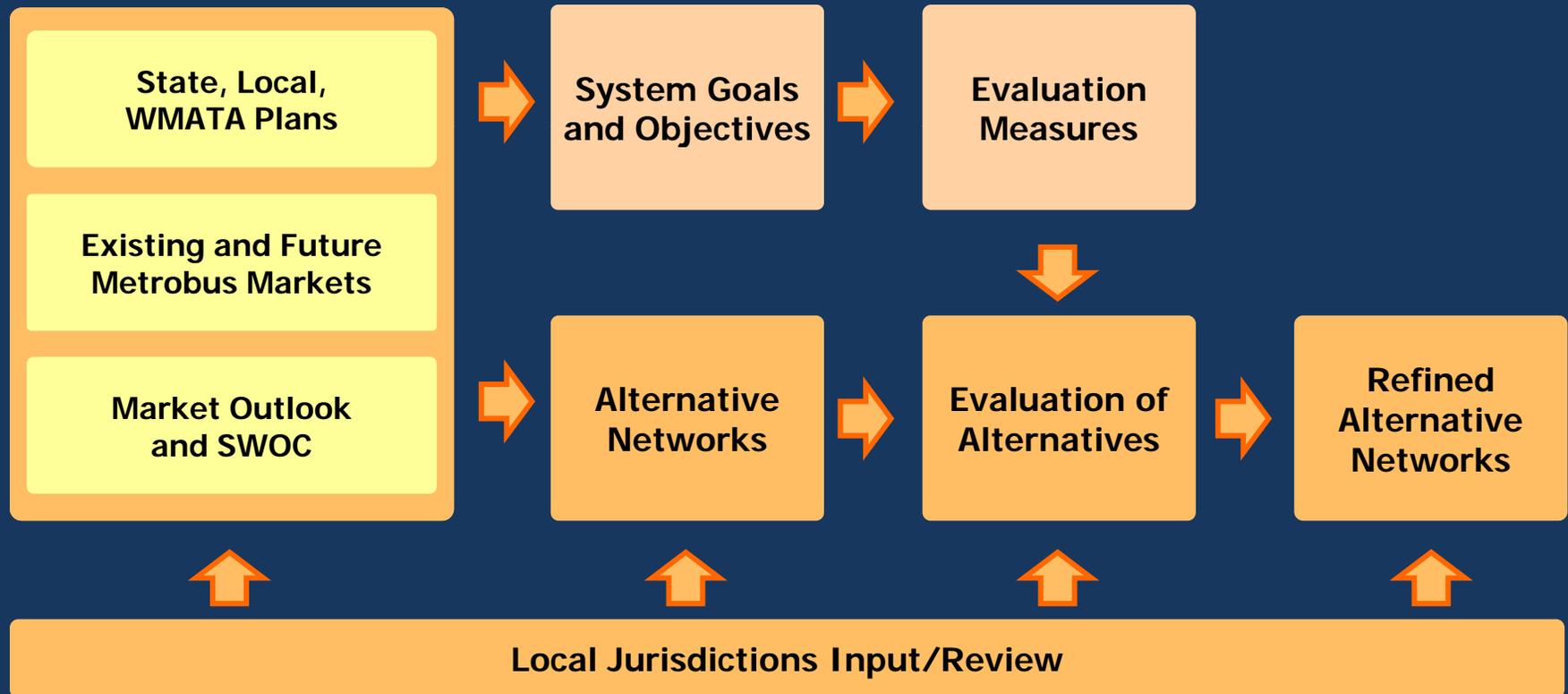
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Challenges

1. Planned expansion of high quality service by local operators
2. Lack of clear market focus
3. Future land use (job decentralization and outer RACs) weakens transit efficiency
4. Growing demand in areas not served by transit



Alternative Network Development Evaluation Framework





Alternative Network Development Proposed Goals and Objectives

Goal	Objective
1.Enhance Regional Mobility	Maximize ridership and mode share
	Maximize coverage
2.Provide Effective and Efficient Services	Maximize productivity
	Maximize cost effectiveness
	Minimize transit travel times
3.Promote Economic Vitality	Meet demand in Transit Friendly Areas
	Maximize service in core and Regional Activity Centers
	Provide core capacity relief for Metrorail
4.Enhance Quality of Life	Attract new transit users
	Reduce single occupant vehicle use
5.Establish a Clearly Defined Role for Metrobus	Minimize overlap of Metrobus and local transit services
	Focus on arterial and cross-jurisdictional routes coordinated with local feeder routes



Alternative Network Development

Proposed Network Concepts

- A. Baseline Option-** The current bus network with improvements in CLRP
- B1. Arterial and Express Corridor Focus-** service enhancements for Metrobus arterial and express lines and eliminate Metrobus local service
- B2. Transit Priority Enhancements-** Arterial and express focused network (B1) with runningway enhancements to speed up bus service
- C. High Density Coverage Focus-** serve all Transit Supportive Areas (TSAs) with enhanced regional and local Metrobus service to meet demand
- D. Rebuilding Regional Metrobus-** entirely new network of arterial and express lines connecting the urban core, high volume corridors, and activity centers



Alternative Network Development Proposed Regional Route Definition

Market Segment Criteria	Metric
1. Regional Activity Centers	Serves 2 or more activity centers as defined by MWCOG
2. Inter-jurisdictional Service	½ mile or more of open door service in 2 jurisdictions
3. Priority Corridor Network (PCN)	Majority of route is in a PCN or Emerging PCN Corridor
4. Transit Propensity	Majority of route in within ¼ mile of medium-high or high transit propensity
5. Mixed Use Development	Majority of route is in mixed use area (employment/population ratio between 0.5 and 2.0)
6. Transit Supportive Development Patterns	Majority of route is within ¼ mile of Transit Supportive Area (TSA)
7. Other	Majority of route is along major roadway



Next Steps

Schedule

Conduct work session and seek input from BPLAN	May 2013
Brief jurisdiction staff who participated in the interview and seek input on network alternatives	June 2013
Develop and assess Metrobus network scenarios	Summer 2013
Brief BPLAN and jurisdictions and select preferred alternative	Fall 2013
Finalize project report and decide on potential Phase II network implementation	Winter 2013