

Implementation Task Force Meeting

Thursday, May 24, 2007



Agenda

- Evaluation criteria
- Operating plans, costs
- Ridership forecast refinements
- Cost effectiveness

Evaluation Criteria

Criteria	Alternatives					
	1 - BRT	2a - LPA*	2b - LPA/ Isthmus	3 - LPA/Airport	4 - Street Running	5 - LPA/Whit./Min. Pt.
Capital costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Operation and Maintenance Costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social, Economic, Environmental Impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transit Integration Potential	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Feasibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ridership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economic Development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regional Land Use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* LPA is the Locally Preferred Alternative selected in the first phase of Transport 2020. The Locally Preferred Alternative must be carried forward into detailed analysis.

Alternative 1 Bus Rapid Transit

Alternative 2a Railroad right-of-way from Greenway Center to East Towne (Original LPA)

Alternative 2b Alternative 2a plus street running through the Isthmus

Alternative 3 Railroad right-of-way from Greenway Center to Dane County Airport

Alternative 4 Street running from Prairie Town Center on Whitney Way and Mineral Point, railroad right-of-way from Whitney Way to Kohl Center, street running from Kohl Center to East Towne

Alternative 5 Alternative 2b plus Whitney Way/Mineral Point street running; minus rail segment between Whitney Way and Greenway Center



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Operating Plans

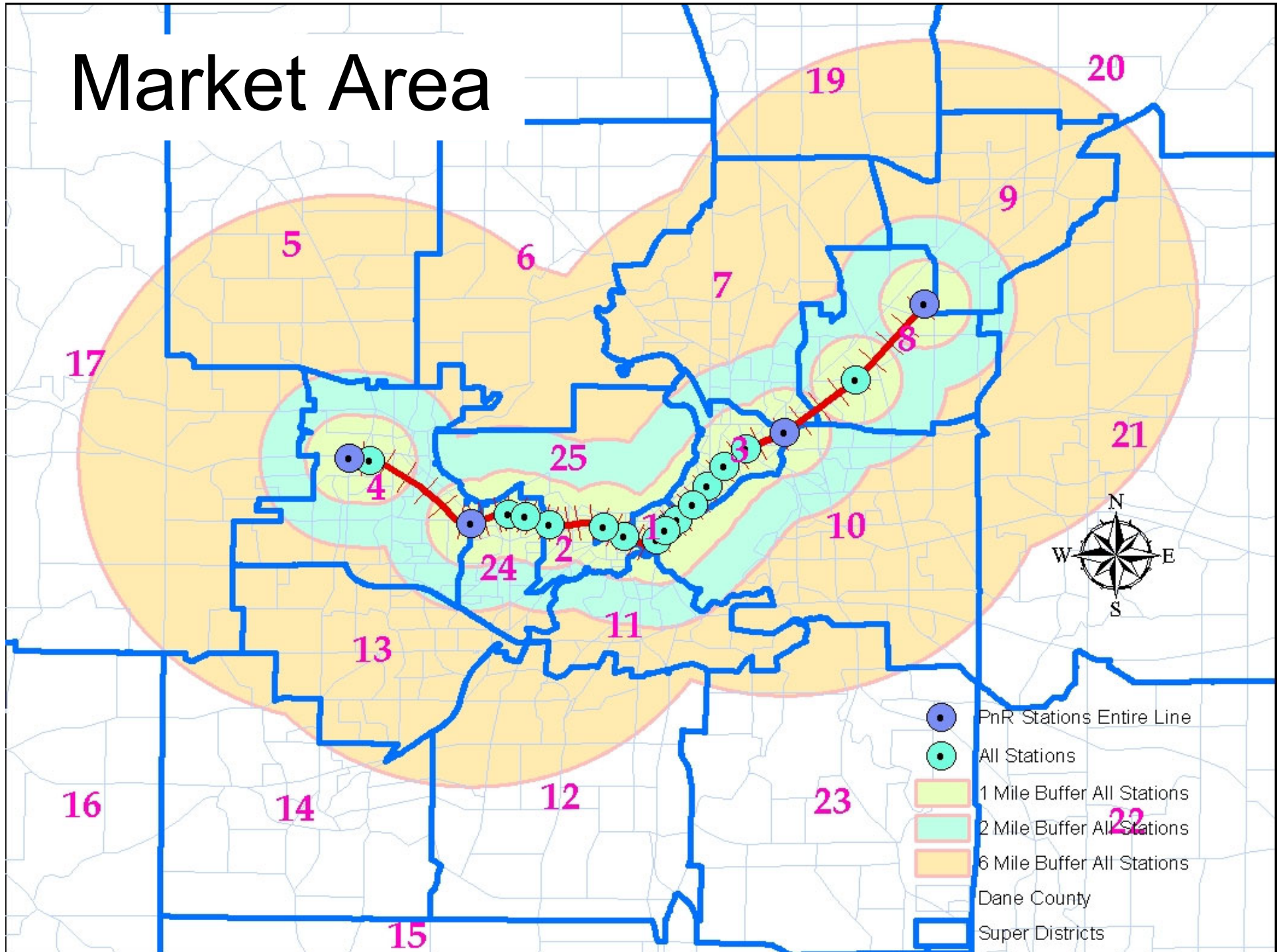
	Alternative 2a		Alternative 3	
Headways	15 minutes	20 minutes (10/10)	15 minutes	20 minutes (10/10)
Capital Costs	\$204 – 245 M	\$246 - 297 M	\$174 – 204 M	\$210 – 246 M
Ridership	10,000	12,000	10,000	9,000

Ridership Forecasts

Overview

- FTA's sketch planning tool
- Madison model application
- Comparison of rail ridership
 - “2A”: Middleton 12/14 to Reiner Road
 - “3”: Middleton 12/14 to Airport
- Impact of rail “attractiveness” constants
- Preliminary system user benefits
- Upcoming meeting with the FTA

Market Area



FTA Sketch Tool vs. Model

- FTA sketch tool (“ARRF”)
 - Additional “data points”
 - Range of ridership estimates
 - “Commuter rail” estimate: 4,250 – 8,500 riders
 - “Light rail” estimate: Up to 20,000 daily riders
- Madison model estimates
 - Within the FTA range
 - Alternative 2A: 10,690 daily riders
 - Alternative 3: 8,350 daily riders

Attractiveness of Rail

- Models account for transit quality of service
- Perceived rail advantages not traditionally accounted
- FTA's recent guidance on:
 - **Rail travel time**
 - **Rail headway**
 - **Attractiveness of rail**
 - Guideway characteristics
 - Span of good service
 - Passenger amenities
- Quantifying the impact of rail advantages

Travel Time Impacts

- Comfort and seat availability make ride less onerous
- 80% discount for rail travel time
 - Guaranteed-seat
 - Comfortable ride
- A 10 minute travel time translates as:
 - 10 minutes for highway
 - 10 minutes for bus
 - 8 minutes for rail

Headway Impacts

- Traditionally, random arrivals assumed
 - Wait time = headway / 2
- FTA guidance
 - Same convention for headways less than 15 min.
 - Discounted impact of headways 15+ min.
 - Small impact on headways of 20 minutes
 - Measurable impact for 30 or 40 min. headways
 - 30 min. rail headway: 11 min. vs. 15 min. wait time
 - 40 min. rail headway: 14 min. vs. 20 min. wait time

Rail Attractiveness

- Guideway characteristics
 - Operating reliability up to 4 points
 - Visibility and branding up to 2 points
 - Schedule-free service up to 2 points
- Span of good service up to 3 points
- Passenger amenities
 - Stations/stops up to 3 points
 - Dynamic schedule information up to 1 point

Impact on Ridership

- Ridership higher with “rail attractiveness” attributes

	Alt. 2A to Reiner Rd	Alt. 3 to Airport
In-vehicle travel time discount	10,690	8,350
Headway discount	10,920	8,840
Rail Attractiveness	12,430	9,910

Comparison: 2A versus 3

- Differences in headway
 - 20 min. peak / 40 min. off-peak for Alternative 2A
 - 15 min. peak / 30 min. off-peak for Alternative 3
- Use of consistent frequencies for both alternatives

	Alt. 2A to Reiner Rd	Alt. 3 to Airport
Peak Headway: 15 min. Off-peak Headway: 30 min.	11,950	9,910

Cost Effectiveness (CEI)

$$\text{CEI} = \frac{\text{Annualized Costs: Rail – Baseline}}{\text{Benefits: Rail – Baseline}}$$

















- Benefits to current and new transit riders
 - Speed of service
 - Accessibility
 - Fares
 - Frequency of service
 - Other attributes of rail attractiveness

Transportation System User Benefits

Alternative 2a = \$31

Alternative 3 = \$38

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