

Statewide Passenger Transportation Funding Study MTMUG Presentation September 23, 2009









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Agenda

*****Brief Study Overview

*****Discuss Forecasting Elements

- Enhance Existing Service
- Evaluate Opportunities for New Passenger Transportation Corridors





What is Passenger Transportation?

Travel Modes Where Rides are Shared:

- Carpools
- Vanpools
- Cab
- Fixed Route Transit
- Paratransit/Dial-a-Ride
- Agency/Organization Ride Service:
 - Volunteer
 - Paid
- Intercity Bus
- Intercity Rail







Study Goals

Quantify Current and Future **NEEDS**

*****Quantify Revenue:

- **Federal/State Transportation**
- o Local
- HHS Grants-Services

Gap Analysis:

Does/Will Revenue Cover Cost

Identify/Prioritize Strategies **Based on Needs:**

- Today
- **Tomorrow** 0



Skilled

Available

Land





Reconciling with the Goals

- Determine Whether Revenue Meets Needs:
 - Funding Today
 - Sustainability of Funding Streams
- *****Needs/Policy Decisions:
 - Mobility
 - Energy Independence
 - Economic Competitiveness

Short-Moderate-Long Term Recommendations (Could Be Different Focus)







lowa Department of Transportation **Forecasting Effort**

Two Elements Support Overall Study:

- **Identify Opportunities to Enhance Existing Regional / Urban Systems**
- Identify Potential Corridors for **New Passenger Transportation Services**





Enhance Existing Transit Services









- Existing Demand is Not Existing Ridership
- Demand = Ridership + Person Trips Made via More Convenient Mode
- And Not Made Because Too Difficult
- *****Trips not Made Due to:
 - Time
 - Physical Barriers
 - Too Costly



Estimating Demand

- *****3 Alternate Demand Models
- Different Applicability Based on Location Type/Service Type:
 - o Rural/Paratransit Only
 - Small Urban/Limited Fixed Route/ Paratransit
 - Metro/Fixed Route/Smaller Paratransit
- All Focus on Mobility Differences from Typical



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Typical – Level of Travel Made by:

- Able-bodied
- Has convenient access to vehicle
- Above poverty level income
- o < 65 years old</p>







3 Methods and Applicability

*****Arkansas Public Transportation Needs:

- Rural/Paratransit Only
- Income (below poverty line)
- Persons with Disability
- Over 65
- No double or trip counting due to age/income/ disability

T = 8.4**Seniors* + 29.3**Disabled* + 14.5**Low Income*





3 Methods and Applicability

*****Washington State Method:

- Small Urban
- Fixed Route (Small)/Paratransit (Predominant)
- Income (below poverty line)
- o Persons with Disability
- Over 65
- No double or trip counting due to age/income/ disability

6.4*Seniors + 12.5*Pop+ 120*Mobility Limited

1.7*% Population Not in Poverty



T =

of Transportation

3 Methods and Applicability

Mobility Gap:

- Larger Urban/Extensive System
- Fixed Route (Predominant)/Paratransit (Lower Ridership)
- Number of Vehicles Available:
 - Zero Car
 - Two Car
- Assumes "Typical" or Target is Number of Trips by 2 Car Household

T = 827*0-*Car HH* (*Urban*) + 959*0-*Car HH* (*Rural*)







Interpreting the Gap

Statewide Gap = 54% of Ridership

- ***** Gap by Area Type:
 - Rural: 47%
 - Small Urban: 70%
 - Larger Urban: 54%
- **No Observable Pattern:**
 - Population
 - Service Type
 - Geographical Area
 - Coverage Area





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Addressing the Gap - More Service

Requires Added Operating Costs

Requires Added Capital and Operating Costs

"More Service" Scenario	Cost Category Included in Scenario			
	Operating	Capital		
Increase Service Frequency				
Extend Hours of Service to Current Days				
Extend Fixed Route Geographical Service Limits				
Increase density of service coverage				
Add Service Days to Week				
Increase Daily Paratransit Trips/Runs				







Scenario – More Frequency

***** Big Range of Fixed Route Headways:

- >= 10 Minutes (Des Moines, Ames, Iowa City)
- 60 Minutes or more
- *****Average: 60 Minutes
- **Average/Typical Elasticity: 0.55**
- ***** Ridership to Frequency Change:
 - Increase Freq 33%, Gain in Ridership = 18%
 - Increase Freq 66%, Gain in Ridership = 36%
 - Increase Freq 100%, Gain in Ridership = 55%
- Approach Close Gap 100%+ Increase



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Scenario – Increase Hours of Service

- Many Fixed Route Services End at 5:30 to 6:30 PM
- Selected Run Until 11:00 or Midnight
- Add Hours Work Towards All to 11:00 PM Service:
 - Add 1 to 5 Hours
 - Modify only those not meeting goal
- *****Operating Costs Only



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S, Iowa DOT Transit Operations Data, URS Corporation



*****Two Concepts – Same Variable

More Revenue Miles

Increases Both Capital and Operating Costs

*****Assumptions:

- No Headway/Frequency Change
- No Hours of Service Change
- Similar Days of Service





Ridership Impact of Change

- Increasing Density Similar to Increasing Frequency:
 - For Each 10% Increase 5.5% Increase in Ridership
 - Will Diminish As Increase to 100% as Complementary Improvement becomes Redundant Service
- *****Extend Service Area:
 - Limited Return if Outside City (Low Density-Lots of Miles Needed)



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Scenario – Add Weekend Service

- Most Fixed Route Services Run Some Saturday Service
- Few Fixed Route Services Run on Sunday
- Typical Saturday Ridership:
 - 36% of Weekday
 - Adding Saturday Increases Annual Ridership by 7%
- Adding Sunday Marginal if Similar to Saturday
- Reduced Weekend Service (headway/hours) Negative Impact on Productivity
- Mirror Weekday Parameters 15-18% Increase in Annual Ridership





Scenario – Increase Runs For Paratransit/Regional Systems

- No "Fixed" Schedule
- **Similar Conditions as:**
 - Add more frequency
 - Extend service area
 - Increase density of coverage
- *****Assumptions:
 - Cost Per Revenue Mile Similar
 - Average Trip Length is Similar

*****Operating/Maintenance and Capital





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Elasticity Impacts – Add Regional Runs

Similar to Adding Frequency to Fixed Route

*****Elasticity: 0.55

*****Ridership to Runs Change:

- Increase Runs 10%, Gain in Ridership = 5.5%
- Increase Runs 50%, Gain in Ridership = 28%
- Increase Runs 100%, Gain in Ridership = 55%
- Approach Close Gap Must at Least Double Runs



Identify Intercity Corridors for More Service











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Iowa Person Trip Table

* Person Trip Generation for Most

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Reasonableness Test: Daily Traffic





Sub Total

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110.5

26.9

1,644

110,996

800

94,200

450

50,930

56%

54%





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Des Moines as a Hub

							District Cl	ass	Community Pair	Distance	Revised 2005 Daily Trips
							Des Moin	es Trips	Indianola-Des Moines	17.9	21,000
									Des Moines-Adel	18.0	18,000
	Figure 6 Trips Exchanged by Distance, Des Moines and Other Community								Winterset-Des Moines	26.3	8,000
									Perry-Des Moines	27.5	9,000
									Des Moines-Ames	28.6	15,800
	25,000 T								Nevada-Des Moines	30.6	3,200
									Des Moines-Boone	33.1	4,000
									Knoxville-Des Moines	35.6	4,000
	20,000 +								Osceola-Des Moines	39.9	2,500
									Pella-Des Moines	41.2	2,500
s									Des Moines-Chariton	45.1	1,300
L H	15,000								Marshalltown-Des Moines	49.1	2,800
ji		1							Grinnell-Des Moines	49.5	1,300
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					Trip Distance						

Potentially Supported Service Intensity:





Small - Large Communities



Moderate: - All Day Bus - Express Bus - Express Bus - Car/Vanpool

Medium - Medium Communities







Next Steps

Intercity Passenger Service Recommendations

Finalize Funding Options for Enhanced Service

*****Documentation





- ***** Jurisdictional Level for Collection
- Yield/Effective Yield if in Use Today
- ***** Familiarity with use for Transit
- Range of Acceptable Uses
 - **O/M**
 - Capital
 - Financing
- Allowed In State?
- *****Equitability (Who Pays/Benefits)
- ***** Barriers/Opportunities to Implementation
- Long Term Impacts



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