



Ride or Relocate? Transportation and Housing Options for Senior Adults

Del Peterson

Small Urban & Rural Transit Center · Upper Great Plains Transportation Institute · North Dakota State University, Fargo

Introduction and Objective

The American population continues to mature with an impending 'aging tsunami' just a few years away. It is projected that by 2030, more than one in five Americans will be 65 years of age or older. Public transportation provides freedom to much of the aging population who would otherwise be forced to give up their lifestyles.

Critics of publicly funded transportation argue that many of the aging population would be better off relocating to larger communities where desired services are more readily available. Public transportation proponents believe that it is more desirable for aging Americans in rural areas to remain in their homes and utilize public transportation. This is a topic that receives a lot of discussion, but very little research has attempted to quantify the actual cost.

The objective of this research was to quantify the cost of living at home and riding transit in North Dakota versus relocating to an assisted living facility. Special attention was paid to different home living situations such as homeowners with and without mortgages as well as apartment dwellers. The point at which those living at home should consider a move to assisted living was another objective considered in this study.

North Dakota Assisted Living Defined

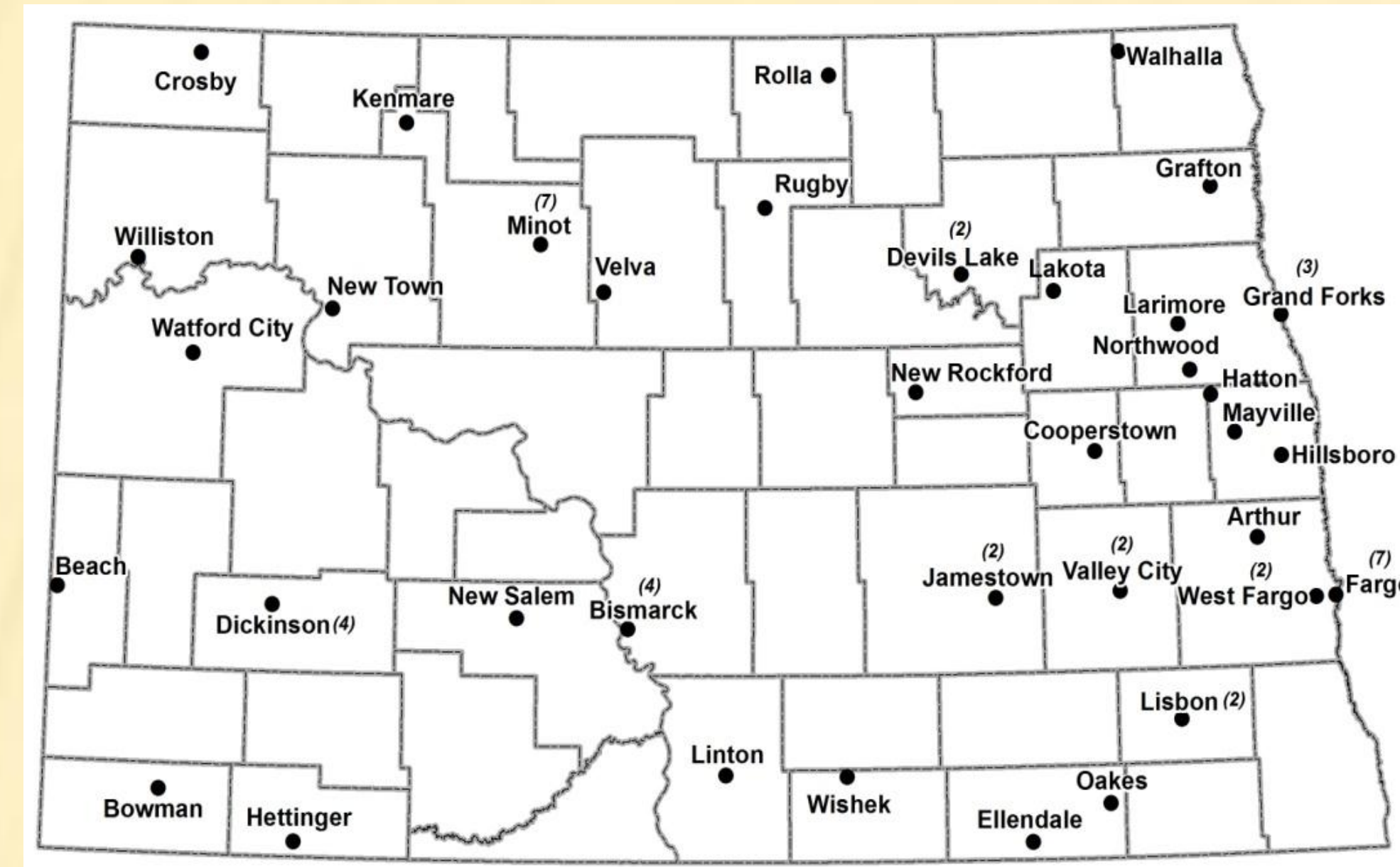
The definition of assisted living varies dramatically throughout the United States and the world. For this research, the North Dakota definition for assisted living was followed. Assisted living facilities in North Dakota are defined by the North Dakota Department of Human Services (2009) as:

"A building that has at least five separate living units where individualized support services are made available to individuals to accommodate needs and disabilities to enable individuals to remain independent. An entity providing assisted living services to five or more individuals in this type of setting must be licensed as assisted living facility by both the North Dakota Department of Human Services and the North Dakota Department of Health."

Assisted Living Facilities Survey

- 36 Facilities Surveyed
- 1,386 living units
- 90% of living units occupied
- 125 living units had more than one occupant
- Average Age: 85
- 74% of Tenants Female
- 84% Lived at Home Prior to Admission
- Top 3 Reasons for Admission
 - Physical decline
 - Cognitive decline
 - Social isolation

Assisted Living Locations and Common Features



North Dakota Assisted Living Facilities

Rental range \$720 - \$2,650/month
 Service package \$200 - \$2,000/month
 Common Service Package Features

- Transportation
- Housekeeping
- Meals
- Activities
- Bathing
- Medication Management (nearly 50% of tenants)
- Exercise
- Cable TV

Definitions

Home-Based Health Services

- Homemaker Services: Provides "hands-off" care such as cooking and running errands
- Home Health Aide Services: Provides "hands-on" personal care such as bathing, dressing, and transferring
- Adult Day Health Care: Provides social support services in a protective setting

Methodology

Compare cost of senior citizens living at home while utilizing home-based health services and transit versus moving to an assisted living facility

- Used @Risk simulations (Microsoft excel add-in program)
- Each individual unique (uncertainty involve)
- Generate observation from random variables
- Example: RISKNORMAL (5,1) generates observation from a normally distributed variable with mean 5 and standard deviation 1
- Simulations run to imitate real-life situation
- Probability distributions: Logistic, triangular, normal, etc.
- Monte Carlo simulations: similar to roulette wheel, iterations are independent of each other

Methodology

@Risk Variables

- Assisted living facility costs
- Homemaker services
- Home health aide services
- Adult day health care
- Home value appreciation

Communities Studied

- Fargo
- Bismarck
- Grand Forks
- Rest of state

Simulation Settings

Base Case Settings, Fargo Homeowner

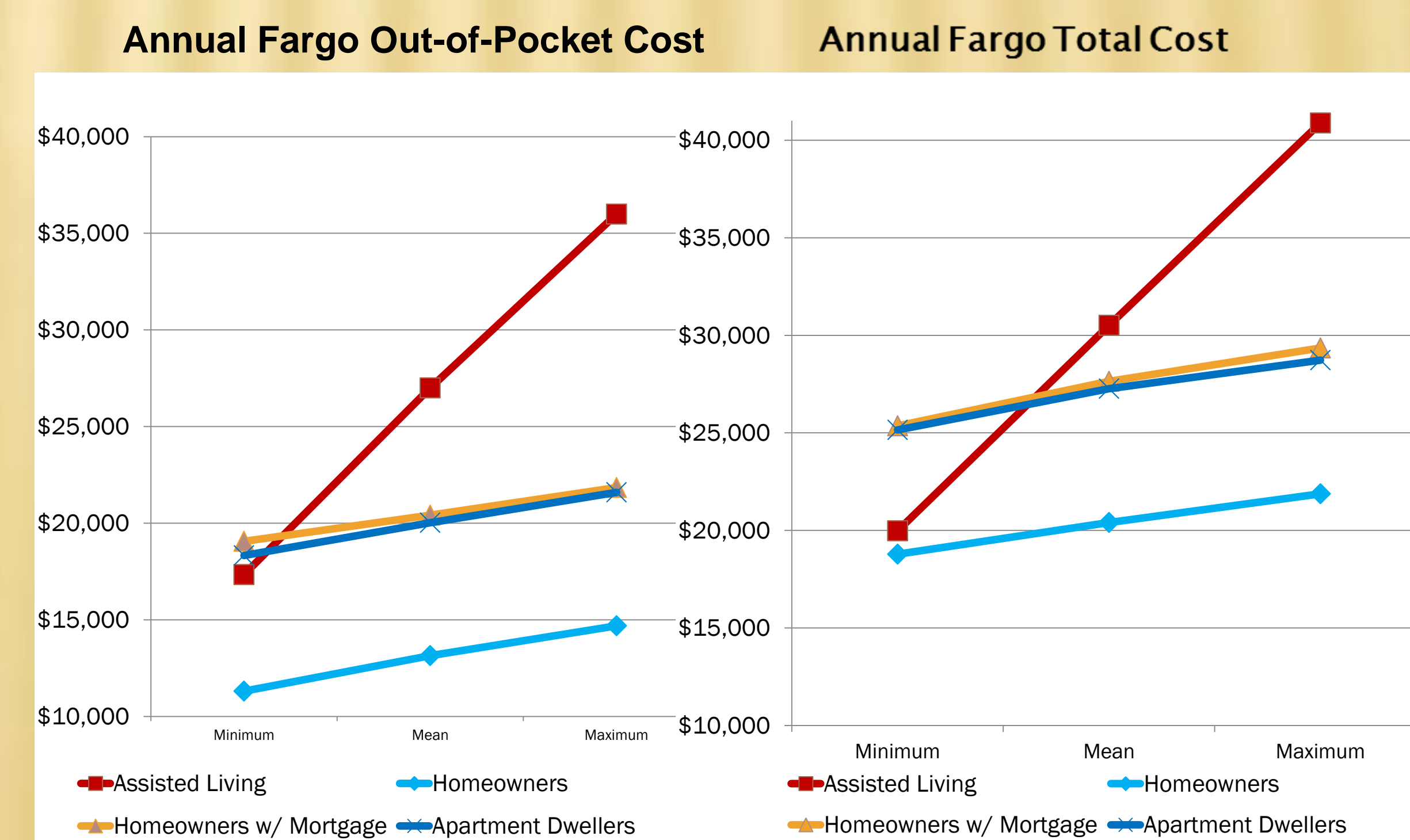
Cost Variables	Cost/Hr/Ride	Monthly Rides/Hours	Cost/Month
Transit (Fare)	\$2.50	40	\$100
Transit (Agency Cost-Fare)	14.71	40	588
Homemaker Services	RiskLogistic(17.64,0.31)	15	265
Home Health Aide Services	RiskNormal(20.80,1.3)	15	312
Adult Day Health Care	Risk Normal(8.00,1)	30	240
Utilities (Heat,Power, City Services)			\$150
Lawn Care/Snow Removal			60
Miscellaneous Maintenance			100
Property Taxes	\$144,000 home	\$2500/yr	208
Homeowners Insurance	\$144,000 home	\$840/yr	70
Groceries		\$40/week	160
Home Appreciation	\$144,000 home	5% annually	RiskNormal(600, 100)
Cost Increase/Month	RiskNormal(0.45%,0.08%)		

Base Case Settings, Fargo Assisted Living

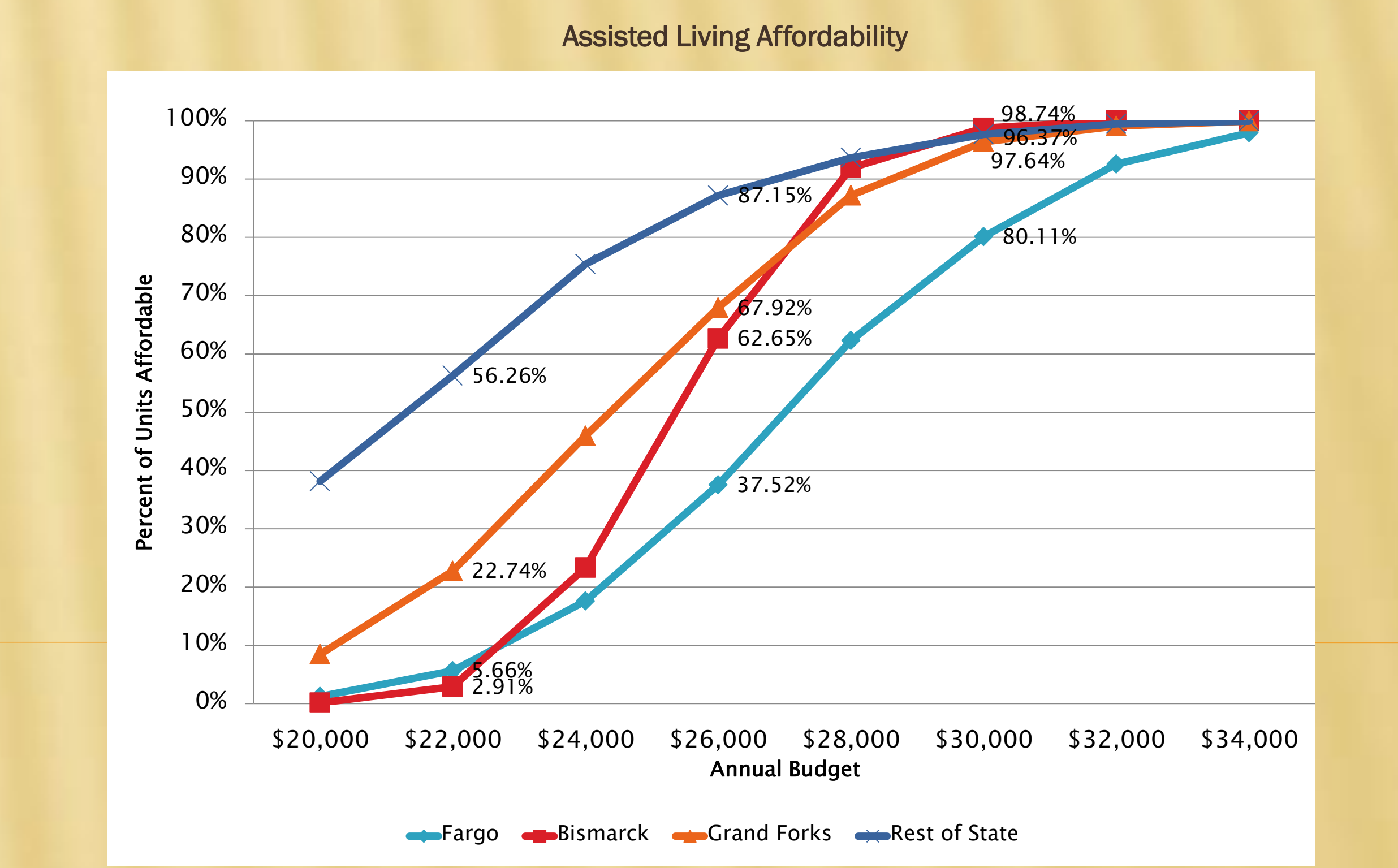
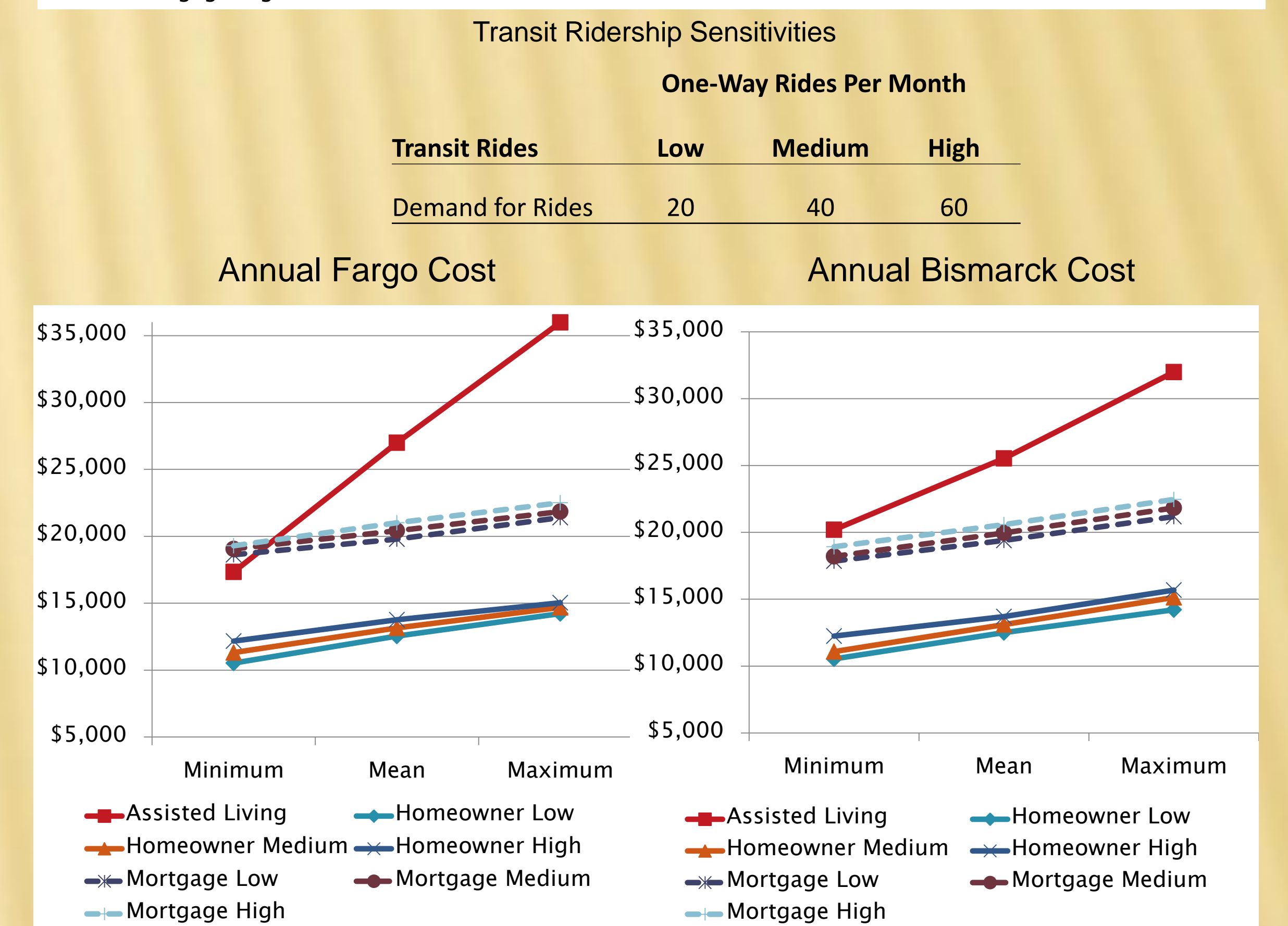
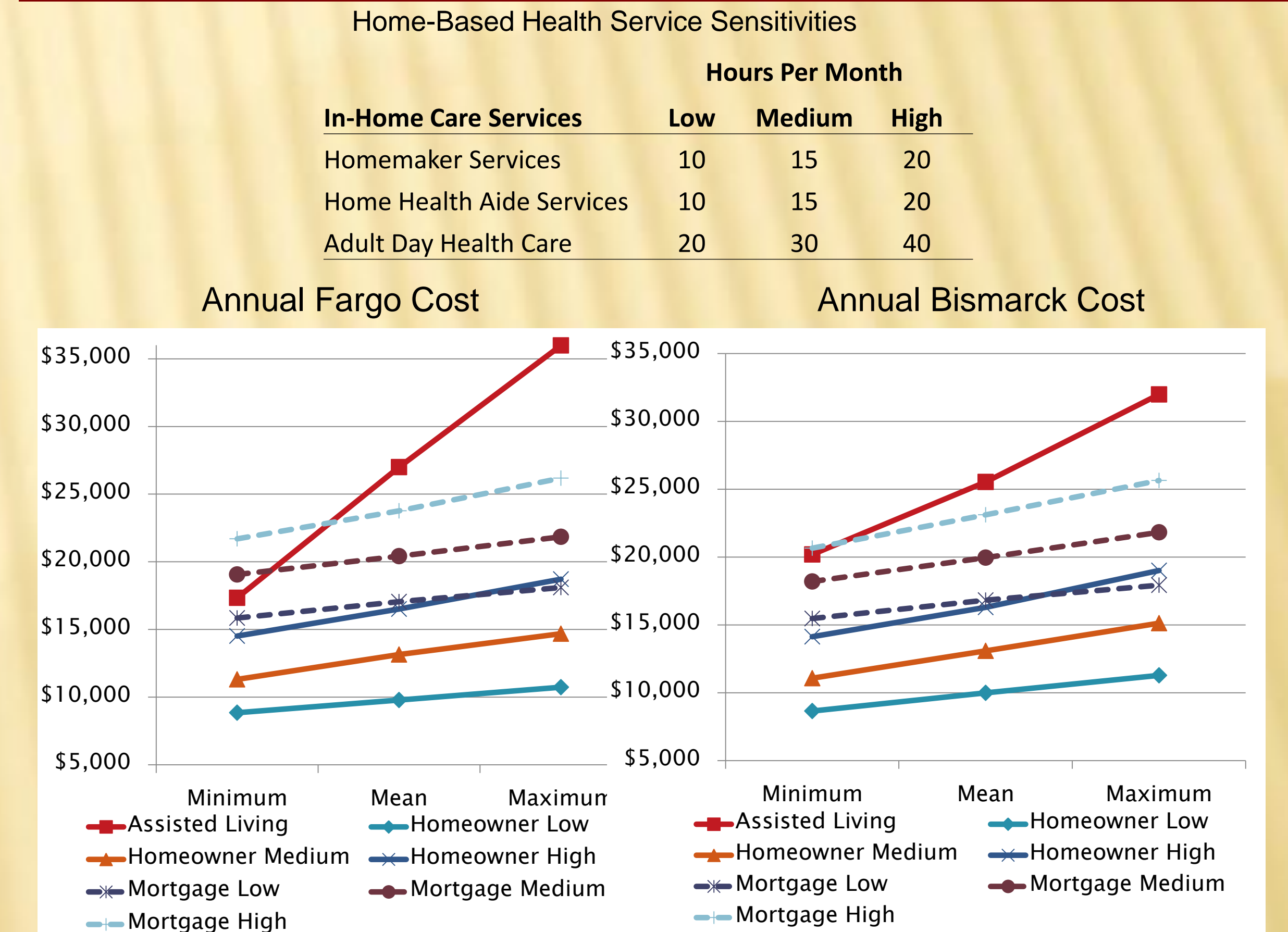
Cost Variables	Cost/Ride	Monthly Rides	Cost/Month
Transit (Fare)	\$2.50	20	\$50
Transit (Agency Cost-Fare)	14.71	20	294
Rent			Risk Normal(2050,275)
Miscellaneous Expenses			100
Cost Increase/Month	RiskNormal(0.42%,0.08%)		

Rural NTD, Genworth Financial, U.S. Census

Results



Results



Conclusions

- Assisted living costs almost always higher than other living arrangements assuming similar service levels
- Homeowners without mortgages have distinct advantage
- Considering total cost made assisted living comparably less costly, especially in Fargo
- Other factors such as amenities and safety should be considered as well