



Using Geographic Information System (GIS) to Promote Aging in Place through Integration of Formal and Informal Transportation Assets and Accessible Infrastructure

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Older Adults in San Antonio

- Adults 60 plus are over projected to double to 20% in 30 years⁽¹⁾
- Local senior poverty rate is 15.9%, versus national average of 9.9%.
- Disability rates are 47%, also above the national average of 40%⁽²⁾
- Almost 16,000 older adults live in areas without access to public transit⁽³⁾
- Senior transportation deficit: 1 in 6 does not make an average of six essential trips per month, or approximately 200,000 trips a year⁽⁴⁾
- Mobility level, ability to afford service, other differences affect options
- Senior transportation providers focus on medical trips over social trips, which lack of can lead to isolation, depression, and poor health

Local Transportation Choices

- 1) VIA, which charges a fee and assumes mobility of user;
- 2) VIA Trans, the Para-transit service, which charges a fee and requires approval and doctor's note;
- 3) Alternatives such as the City of San Antonio's *Supportive Services for the Elderly Project (SSEP)*, free but limited in capacity, shuttling seniors only to medical appointments;
- 4) *Presa Transportation Collaborative*, which is \$5 each way;
- 5) *Greater Randolph Area Services Program (GRASP)*, which serves only in the Northeast and charges \$10-\$60, depending on distance;
- 6) *Volunteer-driver programs* that provide escorted medical transportation depending on service area and is limited to ambulatory clients;
- 7) *Taxicabs*, which are costly;
- 8) *Independent shuttles*, also costly;
- 9) Medicaid providers;
- 10) Medical-condition specific services such as American Cancer Society's Road to Recovery Program and Alamo Area Resource Center (AARC) program for HIV patients.

1. U.S. Census Bureau: State and County QuickFacts, 2011
2. 2010 American Community Survey
3. Texas Department of Transportation
4. Defined as essential trips not taken by senior citizens in Bexar County (Surface Transportation Policy Project)

Importance of Aging in Place

Aging in Place is a comprehensive, community-driven strategy to give older adults the services, opportunities and infrastructure they need to grow old in a non-healthcare environment, with dignity and in their own homes while remaining active and engaged members of their communities. Aging in Place requires the integration of design, equipment, and services to allow older adults to remain in the home of their choice indefinitely.

Smart growth promotes building communities with housing and transportation choices near jobs, shops and schools and helps promote accessible, life-long communities where people of all ages and abilities are encouraged to be active, accessing services as pedestrians, cyclists, and public transit users. Essential services located in closer proximity to housing also helps ensure more efficient trips in terms of distance traveled and cost.

Complete streets promotes safe and accessible sidewalks and streets that encourage pedestrian, cyclist and public transit use for a lifetime. The City of San Antonio recently approved a Complete Streets ordinance, which means that city projects will seek to accommodate all users. Private developers are also encouraged to abide by the policy and will be invited to attend newly formed work groups that have begun identifying areas for improvement.

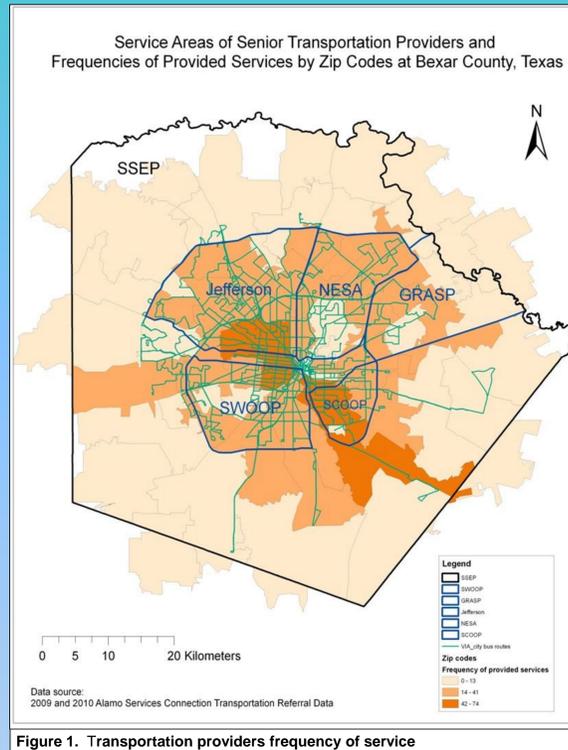


Figure 1. Transportation providers frequency of service

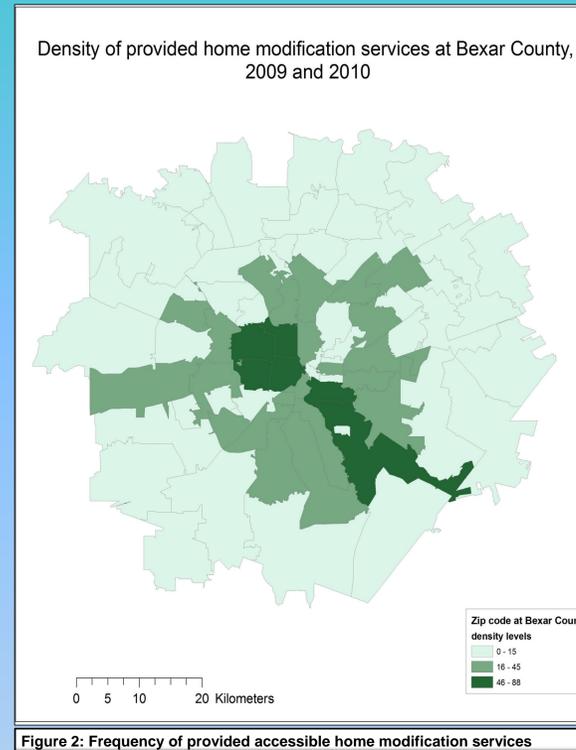


Figure 2: Frequency of provided accessible home modification services

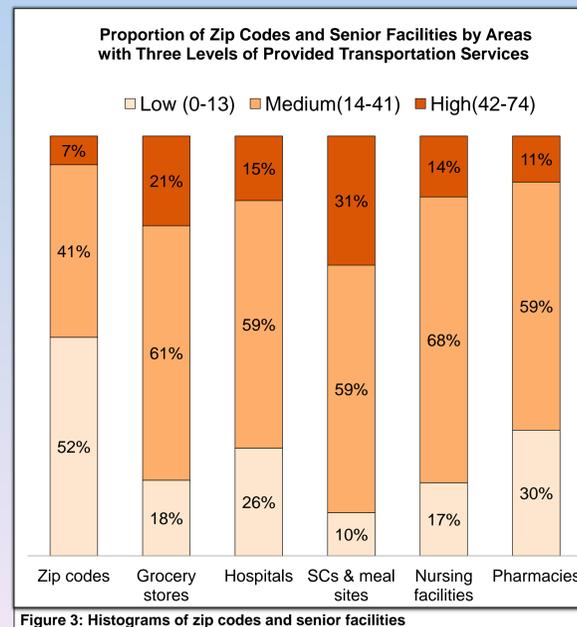


Figure 3: Histograms of zip codes and senior facilities

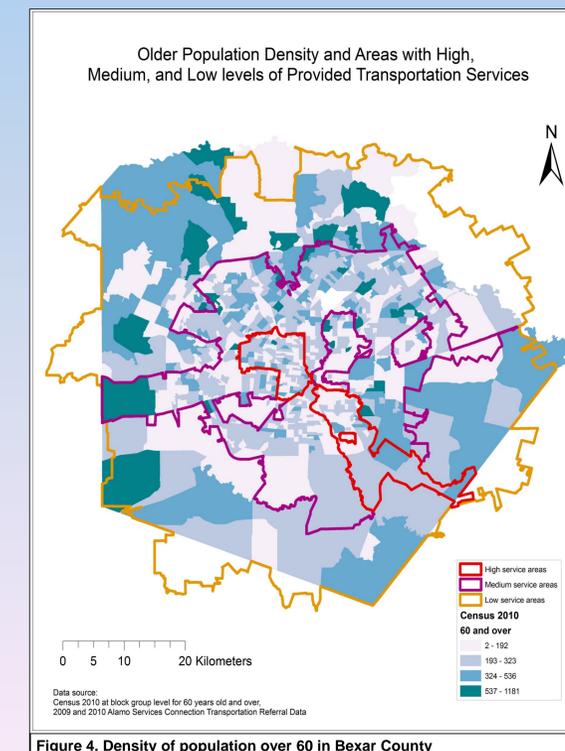


Figure 4. Density of population over 60 in Bexar County

Research Findings

Figure 1 displays VIA bus routes and senior transportation providers. There are total 7197 bus stops at all bus routes, but more than 80 percent of stops have no shelter and almost half of stops have no bench. This is important for mobile seniors (who can walk at least a mile to a bus stop), as lack of benches and shelter can play a role in accessibility and use of bus service.

Zip codes covered by senior transportation providers, especially Jefferson and SCOOP, have higher levels of transportation services accessed.

The comparison between **Figure 1** and **Figure 2** indicated that the areas with high levels of both transportation and home modification services are almost identical. The results also suggest that it is possible that these two services are provided to users with similar characteristics.

Figure 3 shows that over 50% of zip codes at Bexar County were provided low levels of transportation services (0-13), and only 7% of zip codes belonged to high levels of service areas (42-74).

Most proportions of the facilities were located at zip codes with the medium service level (14-41). Almost 70% of nursing facilities were in these zip codes domain.

Findings suggest that zip codes with the highest level of provided transportation services did not have enough senior facilities (perhaps the reason for the high service demand) and these areas were located in central Bexar County

Figure 4 demonstrates that numerous tracts with high senior density were located in northern Bexar County. However, most medical and senior facilities gathered in the central part of the county. This gap suggests more transportation options are needed to connect seniors and facilities.

There were relative high proportions of the elderly living at northern and western Bexar County. However, these areas usually had lower levels of transportation service provision.

Implications and Conclusion

Information should have implications not only for transportation providers and client stakeholders, but for local city planners and infrastructure engineers who will be charged with the task of accommodating an older population. In effect, this means that requests that promote aging in place and universal design standards should be considered when planning large scale projects that affect the community's ability to access needed services.

Given the graying of the population, research and analysis on these topics will benefit the community as a whole for years to come.