6.0 TRANSIT ASSESSMENT

In addition to enhancing pedestrian access to the bus service, the routes were reviewed for potential enhancements that would provide more accessible service to and from user origins and destinations.

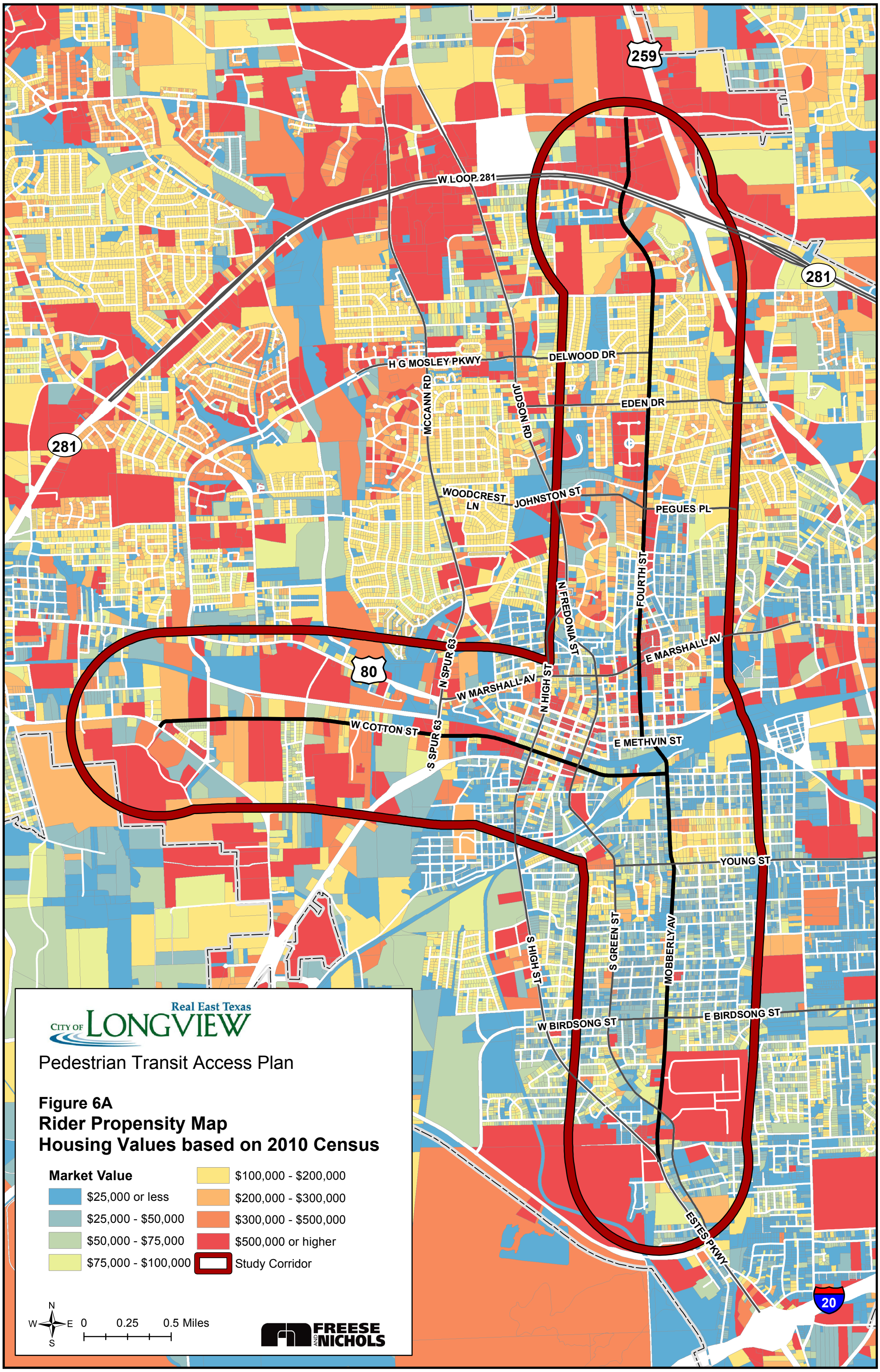
6.1 RIDERSHIP PROPENSITY

The market for transit services can be estimated using geographic information systems (GIS), local information, and census data. These factors are used to identify locations of groups who are more likely to be transit users. Groups that are generally more likely transit users include:

- Low auto ownership households
- Low income households
- Households with lower valued housing
- Households within greater population densities
- Persons working in greater employment densities

This study analyzed the available GIS and 2010 Census data to identify ridership propensity based on three factors: average housing values, the median age of residents and the median income per household. **Figures 6A, 6B and 6C** show each measure as they occur along the focused corridors. The average housing values and the median income per household are similar indicators. Households with lower incomes tend to live in housing with lower values. Studies have showed both groups are more likely to utilize public transit services as a mode of mobility. The median age of residents shows a second level of potential ridership. As people age their dependency on others increase, including their need for transportation assistance. By identifying the areas where higher density of aging residents overlap with lower average housing values and/or median income per household, one could tailor the service amenities to better serve and attract new ridership.

The mapping of these attributes created a comparison between the areas of potential demand for transit services and the existing service coverage. **Figures 6A and 6C** show the Mobberly Avenue corridor has the highest propensity for ridership. Therefore this corridor should be a focus for targeted improvements including service enhancements and stop amenities. **Figure 6B** indicates the highest density of aging residents live along the Fourth Street corridor. When cross-referenced to **Figures 6A and 6C**, the area between Delwood Drive and Eden Drive offers an aging population that may take advantage of public transit services.


259
W LOOP 281
281
H G MOSLEY PKWY
DELWOOD DR
MCCANN RD
JUDSON RD
EDEN DR
281
WOODCREST LN
JOHNSTON ST
PEGUES PL
FOURTH ST
N FREDONIA ST
E MARSHALL AV
80
N SPUR 63
W MARSHALL AV
N HIGH ST
W COTTON ST
S SPUR 63
E METHVIN ST
YOUNG ST
S HIGH ST
S GREEN ST
MOBBERLY AV
E BIRDSONG ST
W BIRDSONG ST
ESTES PKWY
20
Real East Texas
CITY OF LONGVIEW
Pedestrian Transit Access Plan
Figure 6A
Rider Propensity Map
Housing Values based on 2010 Census
Market Value
$25,000 or less
$25,000 - $50,000
$50,000 - $75,000
$75,000 - $100,000
$100,000 - $200,000
$200,000 - $300,000
$300,000 - $500,000
$500,000 or higher
Study Corridor
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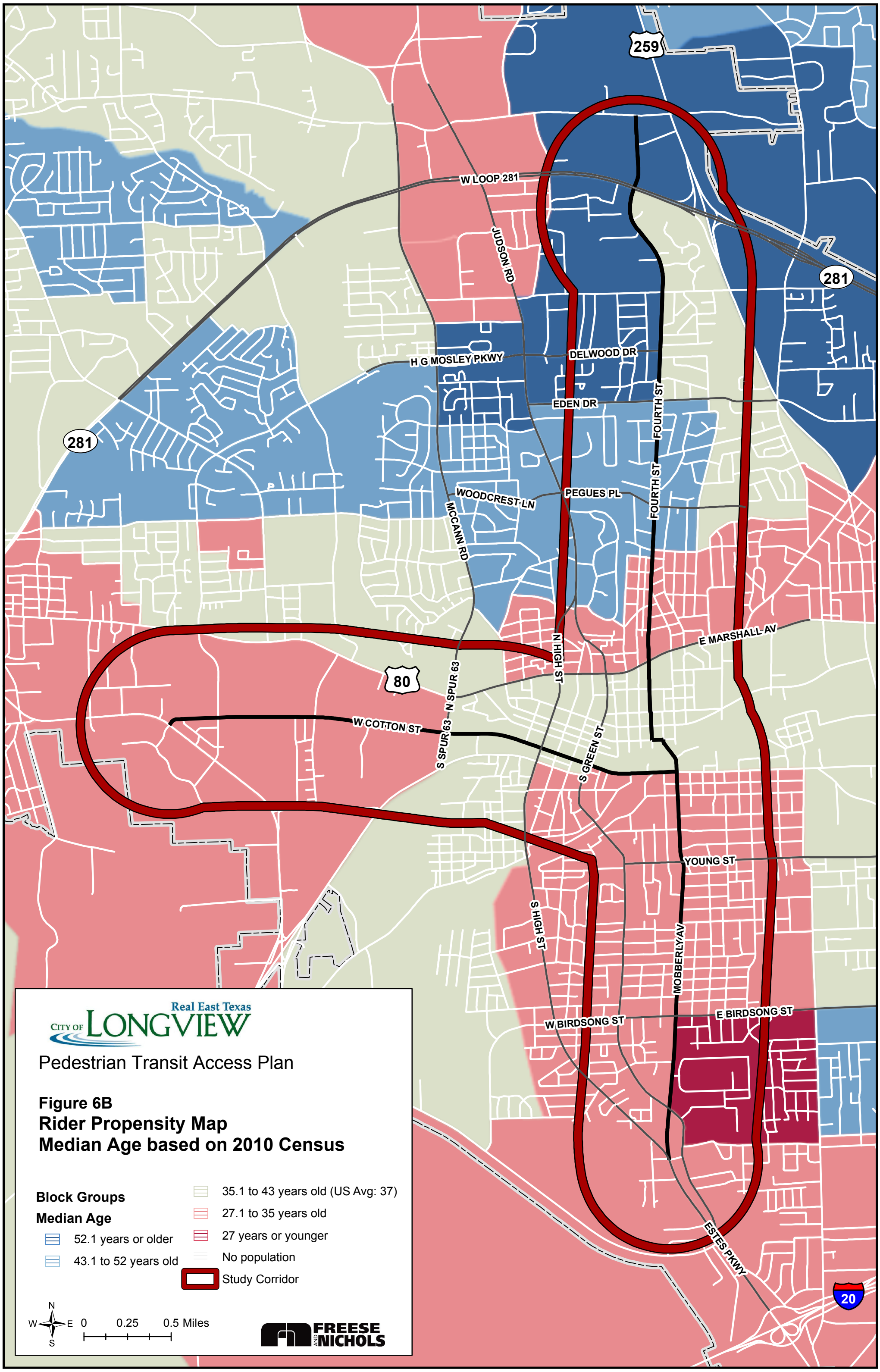
0.5 Miles
FREESE AND NICHOLS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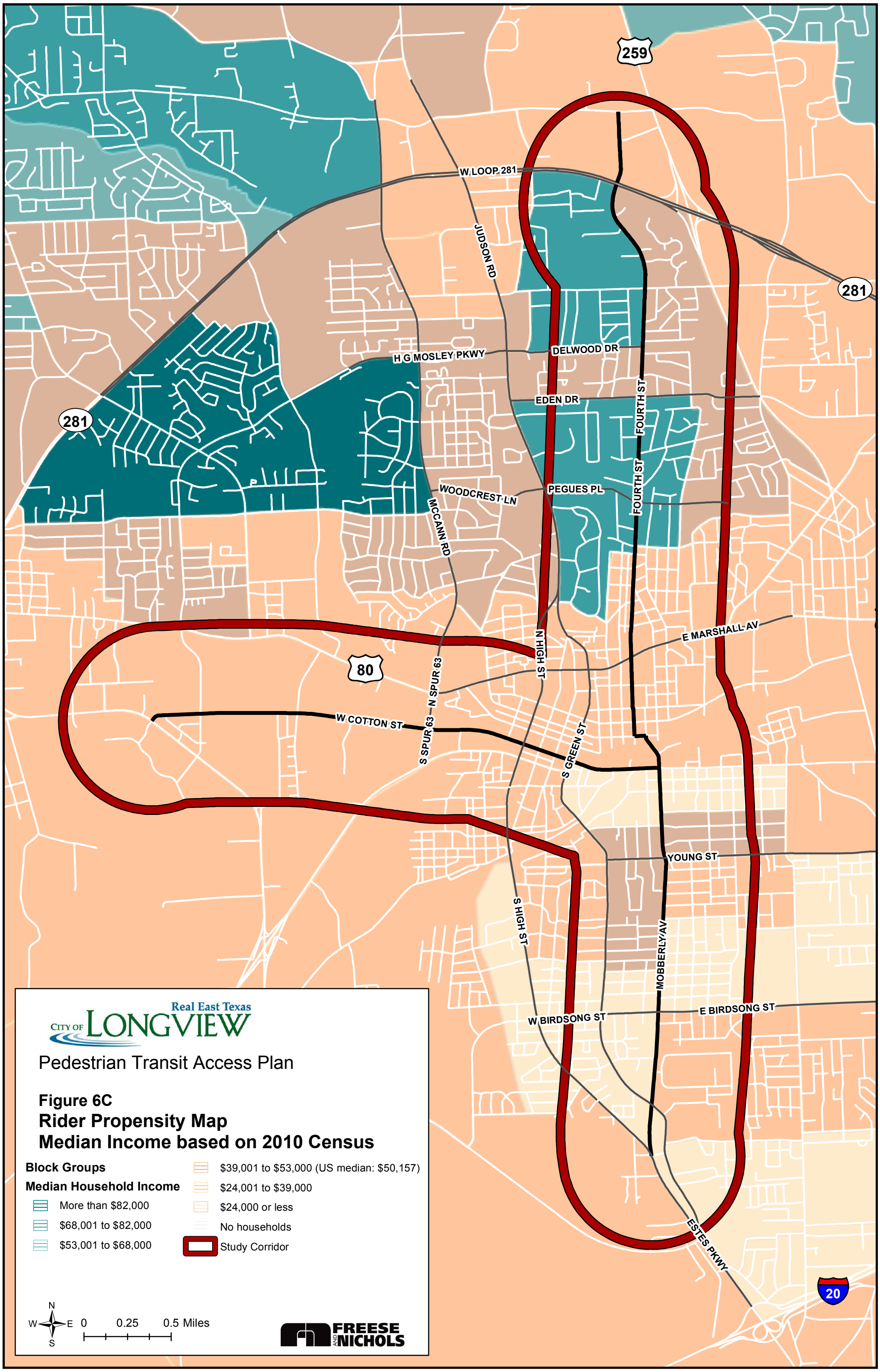
MOBBERLY AV
W BIRDSONG ST
E BIRDSONG ST
ESTES PKWY
20
Real East Texas
CITY OF LONGVIEW
Pedestrian Transit Access Plan
Figure 6B
Rider Propensity Map
Median Age based on 2010 Census
Block Groups
Median Age
52.1 years or older
43.1 to 52 years old
35.1 to 43 years old (US Avg: 37)
27.1 to 35 years old
27 years or younger
No population
Study Corridor
N
W
E
S
0
0.25
0.5 Miles
FREESE AND NICHOLS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EDEN DR
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WOODCREST LN
PEGUES PL
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80
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N HIGH ST
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W COTTON ST
S SPUR 63
S GREEN ST
YOUNG ST
S HIGH ST
MOBBERLY AV
W BIRDSONG ST
E BIRDSONG ST
ESTES PKWY
20
Real East Texas
CITY OF LONGVIEW
Pedestrian Transit Access Plan
Figure 6C
Rider Propensity Map
Median Income based on 2010 Census
Block Groups
Median Household Income
More than $82,000
$68,001 to $82,000
$53,001 to $68,000
$39,001 to $53,000 (US median: $50,157)
$24,001 to $39,000
$24,000 or less
No households
Study Corridor
N
W
E
S
0
0.25
0.5 Miles
FREESE AND NICHOLS

6.2 TARGET AREAS FOR IMPROVED CONNECTIVITY AND RIDERSHIP

In the *2011 Boarding and Alighting Survey*, conducted by Longview Transit, participants were asked what barriers riders experienced while using transit. A significant number of responses indicated the lack of sidewalks. This barrier also extends to mobility-impaired individuals. Without adequate sidewalks and ADA-compliant ramps, many potential fixed route users are forced onto the department's paratransit service. The installation of adequate sidewalks, ramps and crosswalks could reduce the demand on paratransit by transferring some users on the fixed route system. Given these facts, the need for sidewalks, ADA-compliant ramps and protected pedestrian crossings are a focus of the recommendations of this report.

The one-hour headways, coupled with the one-way service on many of the routes, limits the service's attractiveness to the transit-dependent riders in the community. By decreasing the headways, ridership among those with access to a vehicle for personal mobility may increase. Enhancements to reduce headways and provide two-way service along the City's major corridors were explored. The resulting concept utilizes the department's available fleet and provides 30-minute headway coverage to the core area inside Loop 281.

6.2.1 Service Enhancement Concept

The interlined operation of Routes 2 and 4 provided the inspiration for a concept to enhance the existing route structure and make the fixed route bus service more accessible and attractive to both transit-dependent and choice riders. The basic concept is to convert the existing configuration into a set of eight interlined 30-minute routes serving the City's core areas plus two one-hour peripheral routes serving the edge areas. The new route structure would require the same six buses as currently used on the existing routes. This concept is depicted in **Figure 6D** and described below. Detailed enhancement maps by route can be found in **Appendix C**. ***Before implementing this service concept, additional detailed analysis is essential to determine if Longview Transit has or could obtain the resources required to operate the concept. Additional buses and/or personnel may be necessary.***

- BUS #1 – Existing Routes 2 and 4 stay essentially the same, two 30-minute routes interlined on a one-hour headway and served by one bus, although their interlining may shift to other pairings. In **Figure 6D**, these are Routes 2B and 4B in the Reconfigured System.

- BUS #2 – Existing Routes 3 and 5 would be truncated at Loop 281 and sent back in to the Magrill Transit Center, creating 30-minute round trip routes, including time for the pulse transfer. In **Figure 6D**, these are Routes 3A and 3B in the Reconfigured System. One bus could cover two routes, though the preferred pairing for their interlining is yet to be determined.

- BUS #3 - Truncating and interlining existing Routes 3 and 5 leaves one bus to serve the remnants of the truncated service area along and north of Loop 281. With a one-hour headway, the routing of new Route 5X would bring riders in from the remote service areas and drop passengers at transfer points near the ends of Routes 2B, 3A, 3B and 4B. Route 5X could be scheduled to allow passengers to be dropped off before Routes 2B, 3A, and 3B reach the transfer points, allowing riders from Route 5X to access the other routes. After dropping passengers at the transfer points, Route 5X would circulate to serve a new area east of Route 2B, but return to Loop 281 and cross Routes 2B, 3A, and 3B again. The second crossover would allow passengers dropped off by Route 2B, 3A and 3B to board Route 5X.

- BUS #4 – In a similar fashion described for BUS #2, Routes 1 and 6 would be truncated near LeTourneau University into two 30-minute routes. The new routes would cross each other and create a secondary transfer hub location, optimally at one of the existing bus shelters, before circling back to the Transit Center. In **Figure 6D**, these are Routes 1A and 1B in the Reconfigured System. One bus could cover the two routes, though the preferred pairing for their interlining is yet to be determined.

- BUS #5 - In a similar fashion described for BUS #3, a one-hour route would be provided and would extend from a secondary transfer hub to Kodak Boulevard. The new route would cover the service area vacated by truncating existing Routes 1 and 6.

- BUS #6 – By reconfiguring the routes to create 30-minute routes near the City's core and one-hour circulating routes at the periphery, one bus remains to be allocated into service. For this concept, two additional 30-minute routes are proposed – one located to the north and the other to the south of the central transfer point. The routes are identified as Routes 2A and 4B in **Figure 6D**. Route 2A fills in some of the service area that was trimmed from the existing Route 6. Route 4B provides the missing opposite direction of bus service along Fourth Street and McCann Road.

The bus service provided by any one bus will still operate on a one-hour headway, but the core eight routes (four buses) will pulse transfer every 30 minutes. Interlining of the routes, in certain combinations, will allow some passengers to stay on the same bus to make cross-town trips. Also depending on the interlined pairing of the routes, the core area inside Loop 281 will appear to have 30-minute headway coverage, though not all within a quarter mile walking distance.

Real East Texas

CITY OF LONGVIEW

Pedestrian Transit Access Plan

Figure 6D
Service Enhancement Concept

Reconfigured System Routes

- Mcgrill Park Transit Center
- Transit Station
- Transit Route Direction

Route

- 1A
- 1B
- 2A
- 2B
- 3A
- 3B
- 4A
- 4AA
- 4B
- 5X
- 6X

N
W E
S

0 0.5 1 2 Miles

FREESE AND NICHOLS

6.2.2 Bus Pullover Bays

A bus pullover – sometimes referred to as a bus turnout, bus pullout, bus bay or off-line bus stop – is an added width of pavement adjacent to the travel lane that allows buses to exit traffic during boarding and alighting operations. Bus pullover bays can be provided at mid-block or at intersection locations. Pullovers located before an intersection are considered near-side pullovers and when placed on the departing leg of the intersection, they are considered far-side pullovers. Far-side pullovers are preferred. On near-side bays, buses have trouble getting back into traffic and through an intersection. These pullovers also create confusion for right turning vehicles.

In general, bus pullovers have both positive and negative attributes as shown in **Table 1**.

Table 1 ▪ Comparison of Attributes for Bus Pullovers

Positive Attributes	Negative Attributes
Reduces delay to the general traffic flow	Buses can experience delay re-entering traffic
Reduces potential for rear end collisions with bus	Buses are exposed to re-entry collisions
Allows bus to dwell as long as needed	Can be expensive depending on ROW needs

The inclusion of bus pullover bays as a recommendation of this report was investigated to follow-up on feedback received from the City of Longview's Public Transportation Advisory Committee (PTAC). Though not directly related to pedestrian access, the use of bus pullover bays is important under certain traffic conditions. The following guidelines are offered as implementation standards:

- Bus turnouts can be an effective strategy for bus routes along streets with only one travel lane in each direction, as right-of-way permits.
- Generally, bus bays are needed less on streets with two or more travel lanes in each direction, especially if a center turn lane or median is provided.

Bus pullover bays are increasingly beneficial as the following factors become significant:

- Traffic congestion on the roadway creates Level of Service (LOS) E, or worse, near the bus stop for more than 2 hours per day
- Traffic speeds near the bus stop are over 40 miles per hour
- Bus frequency along the corridor is greater than 2 buses per hour, especially during periods of poor LOS on the roadway

- Bus dwell times at the stop are greater than an average of 30 seconds, especially during periods of poor LOS on the roadway
- Line of sight along the roadway near bus stop creates a less than desirable stopping distance for traffic to see a stopped bus

Using these guidelines as implementation standards, no locations along the three focused corridors included in this plan currently qualify for the installation of a bus pullover bay.