



## CHAPTER IV

# Travel Patterns

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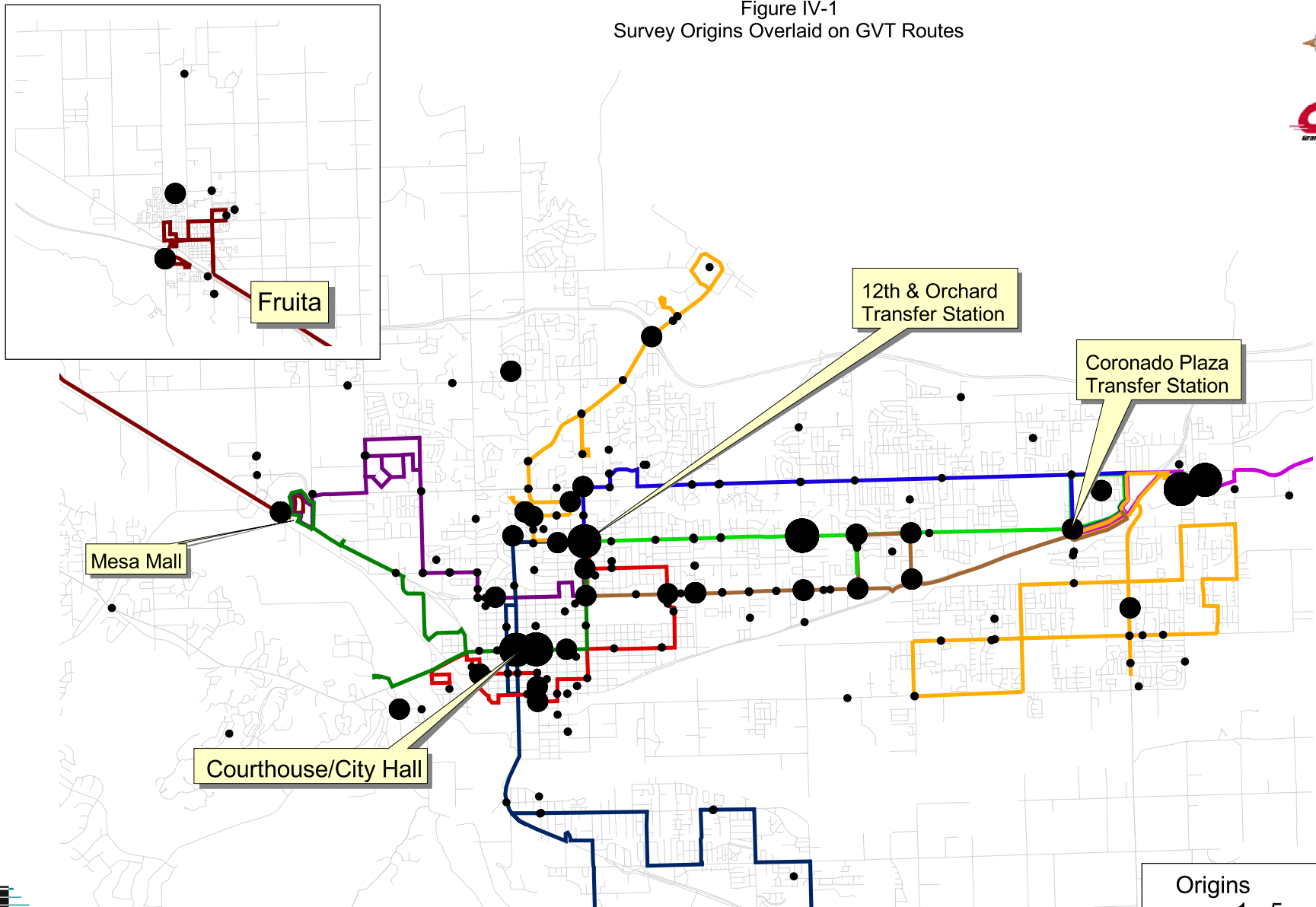
Travel patterns of riders are an important determining factor in understanding travel characteristics and the type and amount of service an area should receive. This information is important to route level planning across a geographical area. Travel patterns indicate where patrons started their trip and their final destination. This information helps determine how much of the routes are directly serving patrons or if patrons are required to transfer a number of times to get to their final destination.

To graphically represent travel patterns, origin-destination travel desire lines were mapped in a Geographic Information System (ArcView). Addresses were interactively geocoded for both origin and destinations. It must be noted that some level of error exists while geocoding—referencing addresses bus patrons provided on the returned surveys to actual mapped locations—due to the GIS geocoding processing and data cleaning process. For example, many times patrons may have indicated an address or intersection which could not correctly be located using the GIS system. Data were cleaned using a spreadsheet program to correct spelling errors and other such errors. Additionally, patrons may have indicated places such as “doctors’ office,” which could not be located.

Figures IV-1 and IV-2 show the maps of survey origins and destinations. These maps were overlaid with GVT routes to determine if the current service provided is serving those patrons that use transit. There were approximately 330 travel desire lines after data were cleaned, which ultimately creates a map which is unreadable. Based on the mapped origins and destinations, the service area was divided into 12 zones—Fruita, Mesa Mall area, Walker Field Airport, 12<sup>th</sup> and Orchard Transfer, Downtown Grand Junction area, Lincoln Park, Orchard Mesa, West Clifton, North Clifton, East Clifton, and South Clifton. These zones were arbitrarily developed based upon the mapped origin-destination points.



Figure IV-1  
Survey Origins Overlaid on GVT Routes

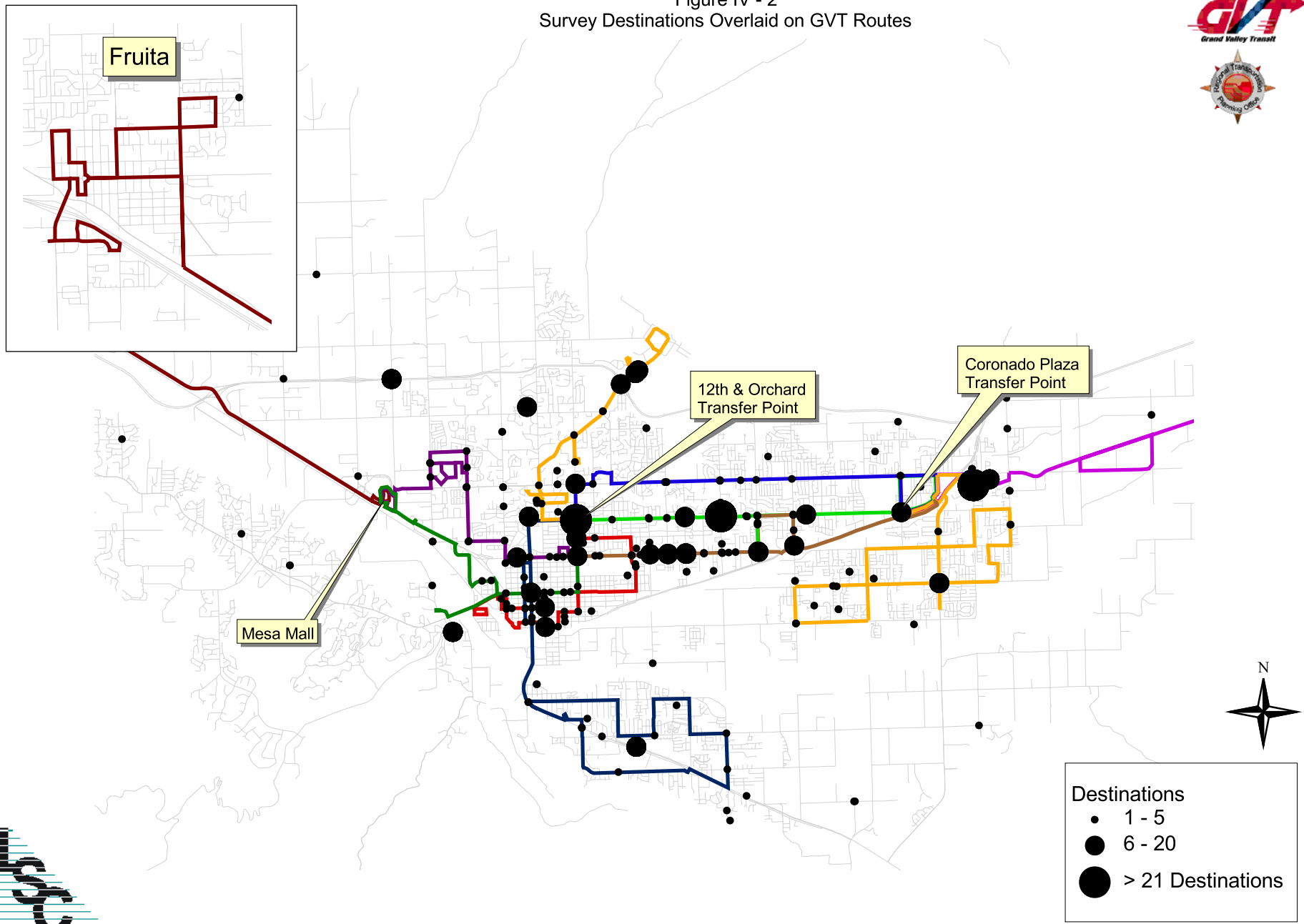


Origins

- 1 - 5
- 6 - 20
- > 21 Origins



Figure IV - 2  
Survey Destinations Overlaid on GVT Routes



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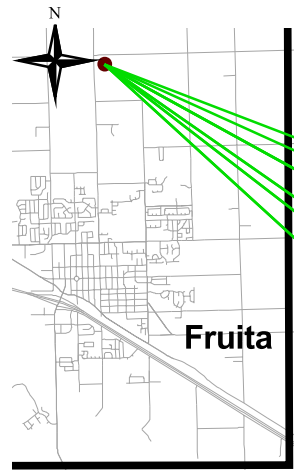
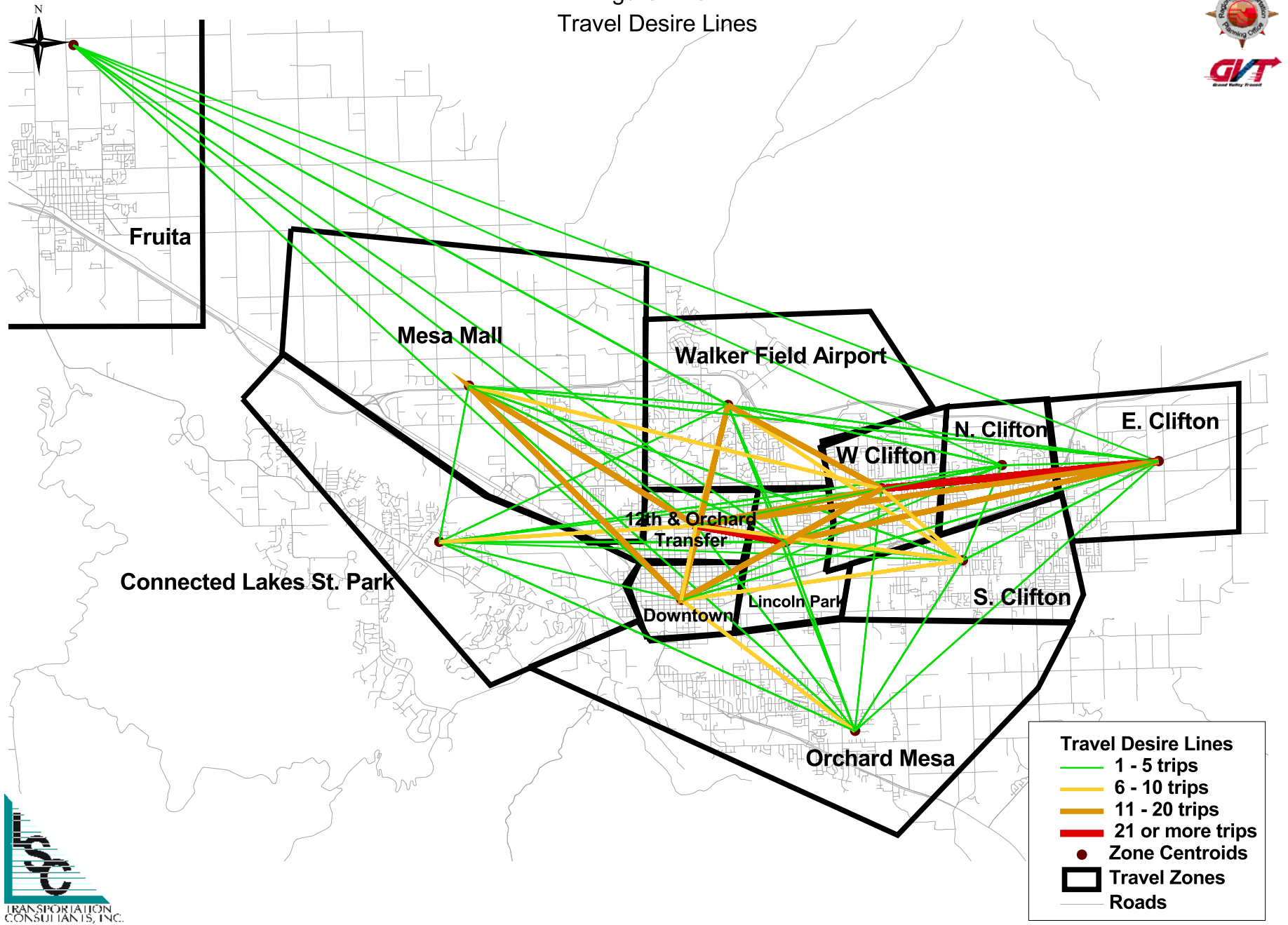
## *Travel Patterns*

Figure IV-3 graphically illustrates the travel desire line between zones by connecting trip origins and destinations. The relative widths of travel desire lines indicate the relative amount of travel desire between zones. Table IV-1 provides a listing of travel between zones. The list ranks the travel desire lines between high, medium, and low. It also lists the percent of usable survey respondents that traveled from one zone to another.

As shown in the map and the table, the greatest travel desire is between the West Clifton area and the East Clifton area, followed by travel desire lines between 12<sup>th</sup> Street and Orchard Mesa Transfer area and Lincoln Park area, 12<sup>th</sup> Street and Orchard Mesa Transfer area to West Clifton, and 12<sup>th</sup> Street and Orchard Mesa Transfer area to North Clifton area. This is followed by travel desire between the Grand Junction downtown area to West Clifton, and Grand Junction downtown to Lincoln Park, and between Mesa Mall and the 12<sup>th</sup> and Orchard Transfer Station area.



Figure IV-3  
Travel Desire Lines



Fruit

Mesa Mall

Walker Field Airport

Connected Lakes St. Park

12th & Orchard Transfer

Downtown

Lincoln Park

Orchard Mesa

W Clifton

N. Clifton

E. Clifton

S. Clifton

Table IV-1 Highest Travel Desire between Zones			
Zone	Zone	Rank	Percent of Survey Respondents
9 - W. Clifton	12 - E. Clifton	High	6.17%
5 - 12th & Orchard Transfer	8 - Lincoln Park	High	5.66%
5 - 12th & Orchard Transfer	9 - W. Clifton	High	4.88%
5 - 12th & Orchard Transfer	11 - N. Clifton	High	4.88%
6 - Downtown	9 - W. Clifton	High	4.88%
6 - Downtown	8 - Lincoln Park	High	4.63%
2 - Mesa Mall	5 - 12th & Orchard Transfer	High	4.11%
8 - Lincoln Park	9 - W. Clifton	Medium	3.86%
8 - Lincoln Park	12 - E. Clifton	Medium	3.86%
4 - Walker Field Airport	6 - Downtown	Medium	3.08%
2 - Mesa Mall	6 - Downtown	Medium	2.83%
4 - Walker Field Airport	9 - W. Clifton	Medium	2.83%
5 - 12th & Orchard Transfer	12 - E. Clifton	Medium	2.83%
6 - Downtown	12 - E. Clifton	Medium	2.83%
5 - 12th & Orchard Transfer	6 - Downtown	Medium	2.31%
5 - 12th & Orchard Transfer	10 - S. Clifton	Medium	2.06%
6 - Downtown	10 - S. Clifton	Medium	2.06%
3 - Connected Lakes St. Park	5 - 12th & Orchard Transfer	Medium	1.80%
2 - Mesa Mall	9 - W. Clifton	Medium	1.54%
4 - Walker Field Airport	5 - 12th & Orchard Transfer	Medium	1.54%
4 - Walker Field Airport	10 - S. Clifton	Medium	1.54%
6 - Downtown	7 - Orchard Mesa	Medium	1.54%
7 - Orchard Mesa	8 - Lincoln Park	Medium	1.54%
9 - W. Clifton	10 - S. Clifton	Medium	1.54%
2 - Mesa Mall	10 - S. Clifton	Low	1.29%
2 - Mesa Mall	12 - E. Clifton	Low	1.29%
4 - Walker Field Airport	7 - Orchard Mesa	Low	1.29%
4 - Walker Field Airport	8 - Lincoln Park	Low	1.29%
4 - Walker Field Airport	11 - N. Clifton	Low	1.29%
2 - Mesa Mall	7 - Orchard Mesa	Low	1.03%
2 - Mesa Mall	8 - Lincoln Park	Low	1.03%
3 - Connected Lakes St. Park	8 - Lincoln Park	Low	1.03%
5 - 12th & Orchard Transfer	7 - Orchard Mesa	Low	1.03%
9 - W. Clifton	11 - N. Clifton	Low	1.03%
2 - Mesa Mall	4 - Walker Field Airport	Low	0.77%
3 - Connected Lakes St. Park	7 - Orchard Mesa	Low	0.77%
3 - Connected Lakes St. Park	11 - N. Clifton	Low	0.77%
4 - Walker Field Airport	12 - E. Clifton	Low	0.77%
7 - Orchard Mesa	10 - S. Clifton	Low	0.77%
8 - Lincoln Park	10 - S. Clifton	Low	0.77%
8 - Lincoln Park	11 - N. Clifton	Low	0.77%
10 - S. Clifton	12 - E. Clifton	Low	0.77%
1 - Fruita	4 - Walker Field Airport	Low	0.51%
1 - Fruita	5 - 12th & Orchard Transfer	Low	0.51%
1 - Fruita	6 - Downtown	Low	0.51%
1 - Fruita	8 - Lincoln Park	Low	0.51%
1 - Fruita	9 - W. Clifton	Low	0.51%
2 - Mesa Mall	3 - Connected Lakes St. Park	Low	0.51%
3 - Connected Lakes St. Park	4 - Walker Field Airport	Low	0.51%
3 - Connected Lakes St. Park	6 - Downtown	Low	0.51%
7 - Orchard Mesa	9 - W. Clifton	Low	0.51%
7 - Orchard Mesa	12 - E. Clifton	Low	0.51%
10 - S. Clifton	11 - N. Clifton	Low	0.51%
11 - N. Clifton	12 - E. Clifton	Low	0.51%
1 - Fruita	11 - N. Clifton	Low	0.26%
1 - Fruita	12 - E. Clifton	Low	0.26%
3 - Connected Lakes St. Park	9 - W. Clifton	Low	0.26%
3 - Connected Lakes St. Park	10 - S. Clifton	Low	0.26%
6 - Downtown	11 - N. Clifton	Low	0.26%

Source: LSC Onboard Survey, 2006.