
Acknowledgments

Preparation of this report has been financed in part through grants from the U.S. Department of Transportation, Federal Transit Administration and Federal Highway Administration.

Special thanks to public- and private-sector financial contributors:

- Arapahoe County
- City of Arvada
- City of Boulder
- City of Centennial
- City of Commerce City
- City and County of Denver
- City of Englewood
- City of Lakewood
- City of Louisville
- Colorado Department of Local Affairs, Division of Housing
- Regional Transportation District
- Thornton Gateway Property, LLC
- City of Thornton
- City of Westminster
- City of Wheat Ridge

List of Tables

Table 1: Employment Density within a Half Mile of Rail Transit Stations	6
Table 2: Average Number of Employees by Business Type.....	12
Table 5: Awareness of Station When Locating Business.....	16
Table 6: Top Reasons for Choosing Current Location	17
Table 7: Top Reasons for Choosing Current Location by Business Type	18
Table 8: Categories of Amenities	22
Table 9: Preferred Additions to Area	28
Table 10: Proportion of Businesses using Transportation Demand Management (TDM) Strategies	29
Table 11: Proportion of Businesses using TDM Strategies by Number of Employees	30
Table 12: Interest in TDM Strategies.....	31
Table 13: Effectiveness of TDM Strategies	32
Table 14: Distance of Nearest Free Parking	33
Table 15: Distance of Nearest Free Parking by Business Type	33
Table 16: Types of Parking Provided or Available	35
Table 17: Parking Spaces Owned or Leased per 1,000 Square Feet of Building Space (by Companies who Owned and/or Leased Any Spaces)	36
Table 18: Employees' Payment for Parking in Spaces Owned or Leased by Company.....	36
Table 19: Employees' Payment for Parking in Non-Company Controlled Spaces	37
Table 20: Employees' Payment for Parking in Any Space	37
Table 21: Customers' Payment for Parking in Company Controlled Spaces	37
Table 22: Shared Parking.....	38
Table 23: Type of Company Parking Shared With	39

List of Figures

Figure 1: Station Areas Included in Business Survey Sample.....	7
Figure 2: Types of Businesses Interviewed within a Mile Walking Distance of Rail Transit Stations.....	11
Figure 3: Number of Employees by Area	12
Figure 4: Proportion of Businesses Renting Facility by Area.....	14
Figure 5: Proportion of Businesses Renting Facility by Business Type.....	15
Figure 6: Influence of Specific Neighborhood Amenities on Location Choice	21
Figure 7: Influence of Transit Amenities on Location Choice by Area.....	23
Figure 8: Influence of Mixed-use Amenities on Location Choice by Area.....	23
Figure 9: Influence of Access and Parking for Cars on Location Choice by Area.....	23
Figure 10: Influence of Transit Amenities on Location Choice by Business Type	24
Figure 11: Influence of Mixed-use Amenities on Location Choice by Business Type	25
Figure 12: Influence of Access and Parking for Cars on Location Choice by Business Type.....	25
Figure 13: Satisfaction with Expectations Regarding Neighborhood Amenities	27
Figure 14: Overall Access to Parking for Employees	34
Figure 15: Overall Access to Parking for Customers.....	34
Figure 16: Parking Concerns	35
Figure 17: Do you run out of spaces at any time of day in this shared lot?	38

Executive Summary

This report summarizes the findings of a survey conducted in April 2009 of 300 businesses located within an estimated one-mile walk distance of a metro Denver rail transit station. It provides information regarding the types of business, number of employees, ownership, square footage, management's motivations for selecting current location, satisfaction with current location, intent to move, supply and demand for parking, and use of transit management strategies and incentives of businesses located in existing rail-transit station areas.

The **Who is TOD in Metro Denver?** study is the first original research in the Denver region to benchmark how people's attitudes, perceptions and behaviors are changing as transit-oriented development (TOD) policy and investment decisions are being made. Metro Denver has a relatively small transit system compared to regions such as Washington, D.C., that have more mature transit systems and TODs. In fact, the three most significant findings of the business survey confirm that TOD is still evolving in metro Denver.

Auto orientation still dominates. While many businesses near station areas perceive benefits associated with locating near rail transit stations, these benefits have not risen above the importance placed on accommodating the automobile. Seventy-eight percent of respondents stated that access for parking and cars was influential in their location decisions compared to only 49 percent who stated the benefits associated with transit amenities were influential.

There is abundant free parking. Convenient, free parking (which has been associated with low transit ridership) is abundant near rail-transit stations outside of downtown Denver. More than 80 percent of non-downtown businesses had free parking adjacent to their building, and 79 percent felt that they had enough or more than enough for employees and customers.

Use of travel demand management (TDM) strategies, including incentives to use transit, is low outside of downtown. Only four percent of businesses outside of downtown Denver reported offering their employees free or subsidized transit passes. By comparison, 33 percent of businesses in downtown Denver provide free or subsidized passes.

These results contrast with a 2008 study of three transit station areas in metropolitan Washington, D.C., that found businesses value "commute options" over parking availability in their location decisions, and that the majority of businesses offer transit subsidies to their employees. This contrast suggests that business perceptions and behaviors in the Denver region are likely to change as the transit system continues to expand.

The business survey results are part of a larger study that will include surveys of employees and residents and in transit station areas. A final report will summarize the findings of all three studies. Repetition of these surveys in the future will provide further information on how business, employee and resident perceptions and behaviors change over time as the rail-transit system expands and TOD matures.

Raw data from this survey is available to those interested in completing further analysis. Data can be downloaded from www.drcog.org or contact Tom Boone at tboone@drcog.org or 303-480-6776 for further information.

Survey Background

Study Purpose

The *Who is TOD in Metro Denver?* study is the first original research to benchmark how people's attitudes, perceptions and behaviors are changing as TOD policy and investment decisions are being made. As described in the *Who is TOD in Metro Denver?* research plan dated August 23, 2008, this research contains three surveys.

- **A business survey** (discussed in this preliminary report) collected information regarding businesses located *within one mile* of an existing rail transit station, including the type of business, number of employees, ownership, square footage, management's motivations for selecting current location, satisfaction with current location, intent to move, supply and demand for parking, and use of transit management strategies and incentives.
- **An employee survey** (to be conducted in the fall of 2009) will collect information from employees of businesses that participated (and agreed to have employees surveyed), including the location of the employee's home, reason for employment and home location decisions, mode choice and perceptions of transportation management strategies and incentives.
- **A resident survey** (to be conducted in the winter of 2009 and spring of 2010) will provide a comprehensive assessment of demographics, behaviors and perceptions of residents at varying distances from rail-transit. It will collect information from households across the metro area, with emphasis on those living within one mile of transit stations. Information to be collected includes household member ages, incomes, employment, travel behaviors, current housing characteristics, home location decision influences, and future intent regarding home location.

This report covers the findings of the business survey, the first of the three to be implemented.

Stakeholder Involvement

In phase one of this project, a list of potential stakeholders was developed that included metro-Denver area local government planners and representatives, housing and land developers, transportation modelers and affordable housing advocates. Each stakeholder was invited via email to participate in an input process to determine the data needs of these groups related to TOD. The process included a Web survey of local government stakeholders with a follow-up meeting, and telephone interviews with housing and land developers, transportation modelers and affordable housing advocates.

Local Governments

DRCOG identified 134 local government representatives (employees and elected officials) from 28 jurisdictions that were likely to have a vested interest in this research. Representatives were members of their jurisdiction's planning department or the DRCOG Board of Directors. All local

government representatives were asked to review preliminary research plans that outlined potential questions for residents, businesses and employees in TOD areas. They were then asked to complete a Web survey about how useful each potential research plan would be for their organization and how they would use the information gathered through these surveys. Thirty-three local government representatives from 20 jurisdictions responded.

These stakeholders indicated that the most pressing issues or decisions they face with respect to TOD were related to parking and economic development, followed by affordable housing and accessibility.

Developers

Six developers with an interest in TOD were interviewed by telephone. They were asked about the kinds of data they use to make decisions about developing properties in TOD areas, what additional data they would like to have and how useful surveys of residents, businesses and employees in TOD areas would be.

As with local government stakeholders, developers were most interested in finding out about current TOD residents and businesses and understanding how people throughout metro Denver make decisions about where to live.

Affordable housing advocates

Two stakeholders working on issues of workforce and affordable housing were interviewed via telephone. They were most interested in finding out whether locating a business near a rail transit area expands access to larger workforce, whether living near rail transit gives residents access to a larger employment base and how far a resident can live from a station and still perceive rail transit to be a convenient commute option.

Transportation Modelers

Transportation modelers working at DRCOG provided feedback via email and telephone interviews. To enhance transportation models, modelers wanted to collect specific information about the travel patterns of people living in TOD areas, including: commute data (distance, modes, and stops en route), data about trips for leisure/entertainment (distance, modes, and stops en route), data about shopping trips (distance, modes, and stops en route) and rail transit passenger characteristics. Modelers were consulted throughout the stakeholder input process and reviewed survey instruments during the development stage to ensure their data needs would be met.

Survey Methods

Representatives from 300 metro Denver businesses located within one mile of a rail transit station were interviewed from April 13 to April 24, 2009. The sample of businesses was stratified by metro area with 80 located in downtown Denver, 110 in higher employment density areas outside downtown and 110 in lower employment density areas outside downtown.

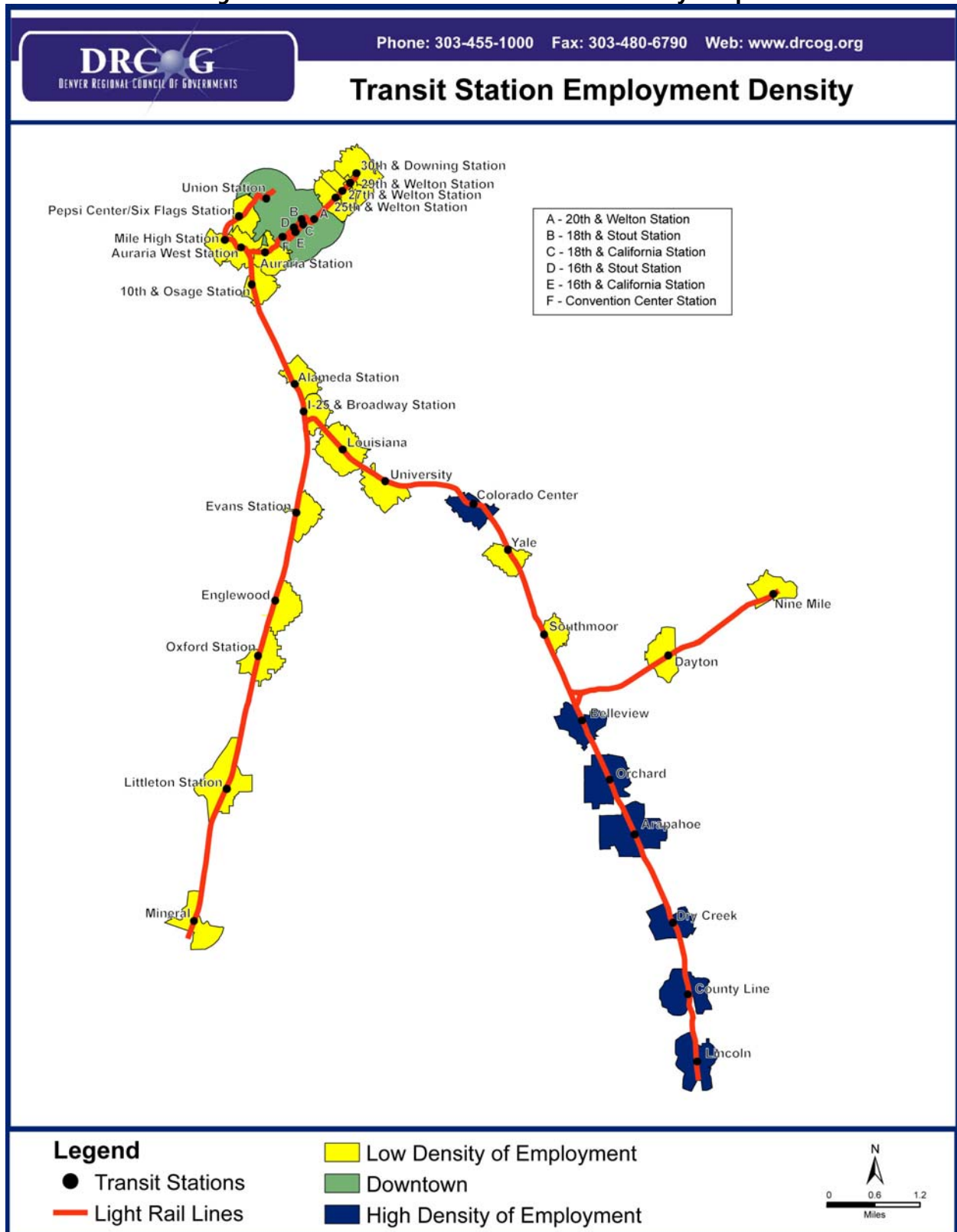
Table 1 shows the number of employees within a half-mile of each rail station. Figure 1 shows the location of each station area included in the sample and whether it was classified as downtown Denver, a higher-density employment area outside downtown or a lower-density employment area outside downtown.

More information about the survey methodology can be found in *Appendix E: Survey Methodology*.

Table 1: Employment Density within a Half Mile of Rail Transit Stations

Downtown		High Employment Density– Not Downtown		Low Employment Density – Not Downtown	
Station	Number of employees	Station	Number of employees	Station	Number of employees
All stations	72,509	All stations	78,918	All stations	42,294
Convention Center	6,359	Arapahoe	28,782	Alameda	2,851
16 th and California	13,179	Belleview	10,665	I-25 and Broadway	3,141
16 th and Stout	8,609	Colorado Center	7,645	25 th and Welton	1,130
18 th and California	21,054	County Line	6,321	27 th and Welton	981
18 th and Stout	6,045	Dry Creek	6,106	29 th and Welton	442
20 th and Welton	6,045	Lincoln	5,161	30 th and Downing	359
Union Station	11,218	Orchard	14,238	10 th and Osage	4,143
				Auraria	1,604
				Auraria West	613
				Mile High	635
				Pepsi Center/Six Flags	1,363
				Louisiana	1,539
				Nine Mile	2,683
				Southmoor	1,013
				University	2,738
				Yale	1,029
				Evans	2,492
				Mineral	832
				Oxford	2,755
				Littleton	4,688
				Englewood	4,216
				Dayton	1,047

Figure 1: Station Areas Included in Business Survey Sample



Understanding the Results

How the Results are Reported

For the most part, frequency distributions (the percent of respondents giving each possible response to a particular question) are presented in the body of the report. A complete set of frequencies for each survey question is presented in *Appendix A: Responses to Survey Questions*.

Precision of Estimates

It is customary to describe the precision of estimates made from surveys by a “level of confidence” (or margin of error). The 95 percent confidence level for this survey is generally no greater than plus or minus six percentage points around any given percent reported for the entire sample (300). For comparisons among subgroups, the margin of error rises to approximately plus or minus 14 percent for sample sizes of 80 and to plus or minus 10 percent for sample sizes of 110.

“Don’t Know” Responses and Rounding

On many of the questions in the survey, respondents gave an answer of “don’t know.” The proportion of respondents giving this reply is shown in the full set of responses included in *Appendix A: Responses to Survey Questions*. These responses are excluded from the analyses presented in the body of the report, unless the proportion is 20 percent or greater. In other words, the majority of the tables and graphs in the body of the report display the responses from respondents who had an opinion about a specific item.

For some questions, respondents were permitted to select multiple responses. When the total exceeds 100 percent in a table for a multiple-response question, it is because some respondents are counted in multiple categories. When a table for a question that only permitted a single response does not total to exactly 100 percent, it is due to the customary practice of rounding percentages to the nearest whole number.

Comparing Survey Results

Survey results were compared by several subgroups and these cross tabulations are presented in *Appendices B, C and D*. The subgroups are:

- Business location
 - Downtown
 - Higher employment density, not downtown
 - Lower employment density, not downtown
- Type of business based on North American Industry Classification System (NAICS) categories.¹

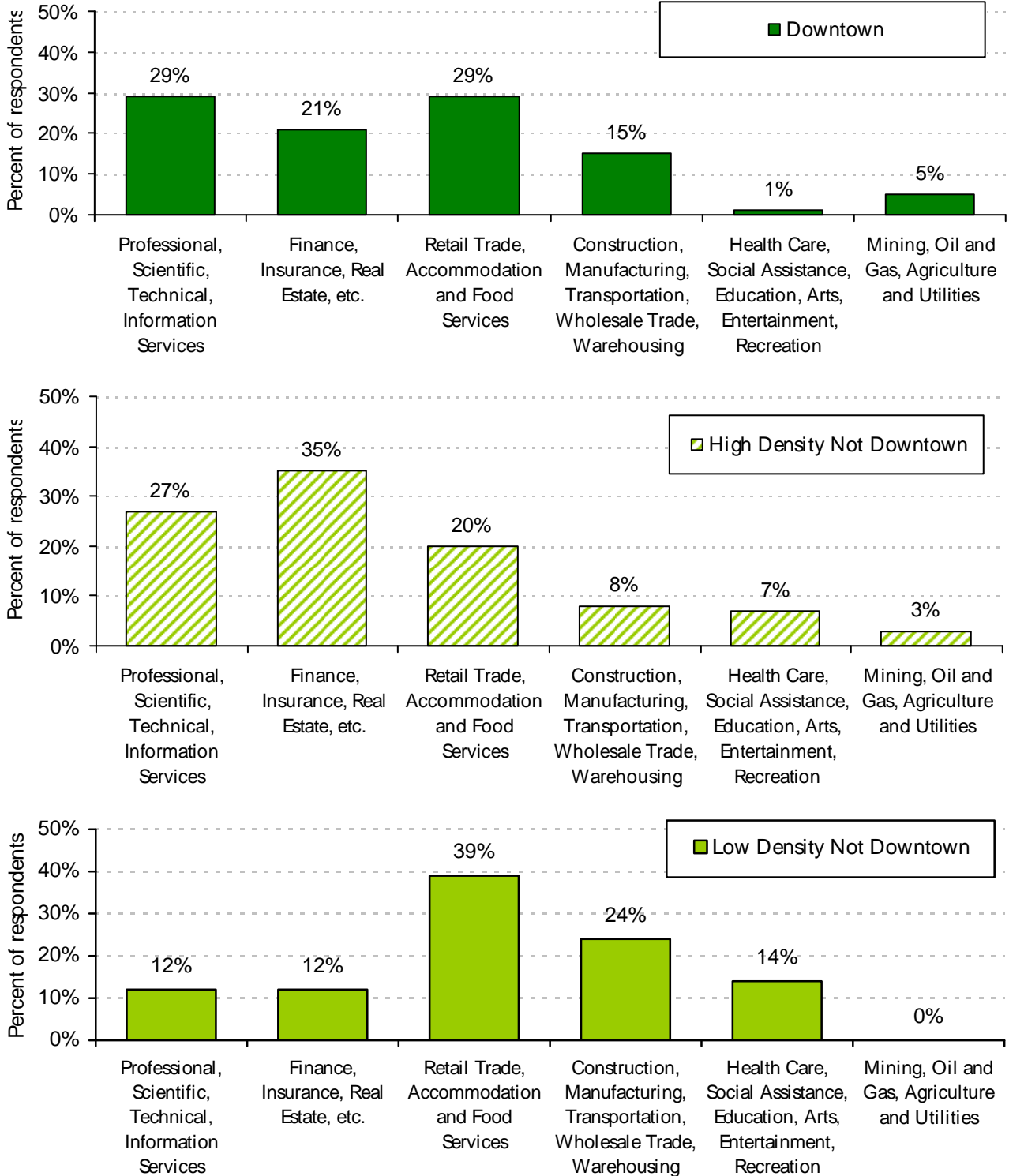
¹ The public administration category (government buildings, offices or services) was not included in the survey effort as their decisions about location, parking and commute strategies were thought to be different than the private sector, and the number of public administration offices that would be randomly selected for the survey would be too small to be representative.

- Professional, Scientific, Technical, Information Services
- Finance, Insurance, Real Estate, Leasing, Administration and Support and Management of Companies
- Retail Trade, Accommodation and Food Services and other services
- Construction, Manufacturing, Transportation, Wholesale Trade and Warehousing
- Health Care, Social Assistance, Education, Arts, Entertainment, and Recreation
- Mining, Oil and Gas, Agriculture and Utilities
- Walking distance from business to a rail-transit station
 - 0.00 to 0.24 miles
 - 0.25 to 0.49 miles
 - 0.50 to 0.74 miles
 - 0.75 miles or more

Businesses in TOD

Businesses were categorized into six groups by combining North American Industry Classification System (NAICS) categories thought to be most similar (e.g. finance was grouped with insurance, and real estate and retail trade was grouped with accommodation and food services). Figure 2 shows the types of businesses located downtown and in higher employment density areas and lower employment density areas. Most business types were found in all three areas. However, businesses that require an office setting were most likely located downtown or in higher employment density areas outside of downtown. Retail, accommodation and food services were prominently in lower employment density rail station areas outside of downtown. Construction, manufacturing, transportation, wholesale trade and warehousing were most common in lower employment density areas outside downtown, but were also found downtown and in higher employment density areas. There were only a few mining, oil and gas, agriculture and utilities business personnel interviewed and they tended to be in offices located downtown.

Figure 2: Types of Businesses Interviewed within a Mile Walking Distance of Rail Transit Stations



Types of businesses are based on North American Industry Classification System (NAICS) categories, not including public administration (government buildings, offices or services), the distribution of NAICS categories of businesses interviewed was similar the distribution of NAICS categories in the sample.

All rail transit areas (downtown, higher and lower employment density) included a range of company sizes (Figure 3). Office-based companies were more likely to have smaller staff sizes (on average 21-23 employees) and retail, accommodation and food services were most likely to have larger staff sizes (on average 56 employees; see Table 2). As would be expected, retail, accommodation and food services also had the most part-time employees and the most employees working weekends, evenings and unpredictable schedules). These schedules were also more common in lower employment density non-downtown areas, compared to downtown and higher employment density non-downtown areas.

Figure 3: Number of Employees by Area

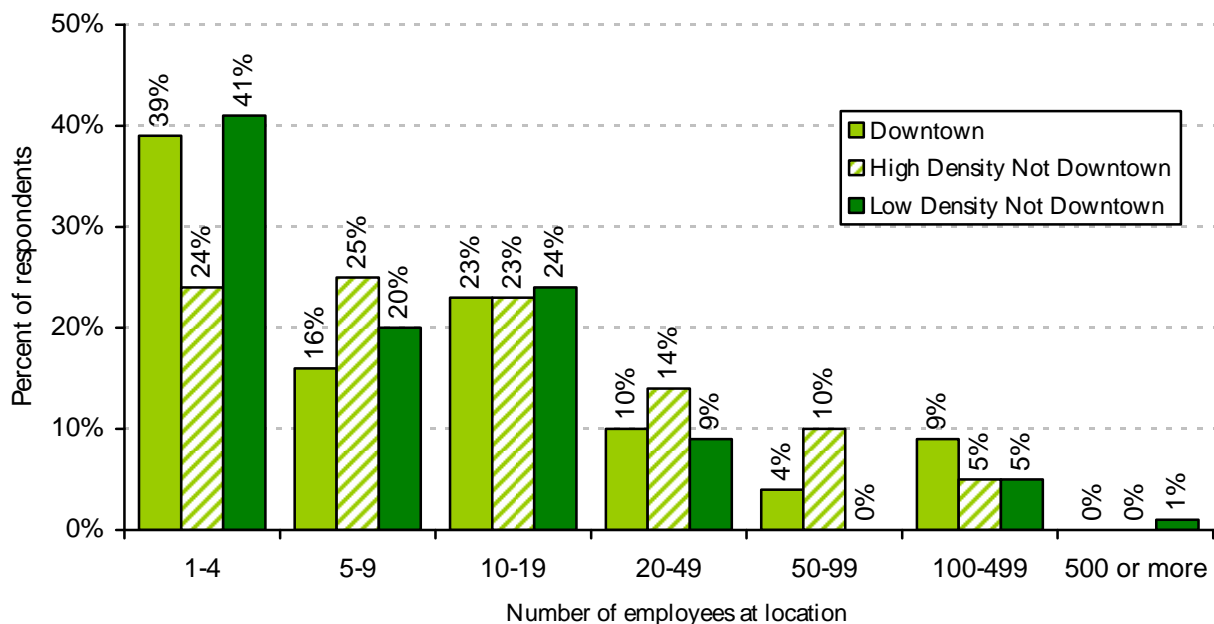


Table 2: Average Number of Employees by Business Type

Including yourself, how many full-time, part-time and contract employees do you have at this location?	Full time	Part time	Contract	All types
Retail Trade, Accommodation and Food Services and other services	40.0	14.9	1.3	56.2
Construction, Manufacturing, Transportation, Wholesale Trade and Warehousing	37.8	1.6	2.5	41.9
Mining, Oil and Gas, Agriculture and Utilities	29.1	1.0	4.7	34.9
Health Care, Social Assistance, Education, Arts, Entertainment, and Recreation	22.5	6.0	2.3	30.7
Finance, Insurance, Real Estate, Leasing, Administration and Support and Management of Companies	18.6	1.2	3.3	23.1
Professional, Scientific, Technical, Information Services	17.7	1.0	2.1	20.9

Including yourself, how many full-time, part-time and contract employees do you have at this location?	Full time	Part time	Contract	All types
All business types	28.3	5.6	2.3	36.2

The majority of businesses near rail transit were renting their building space. This varied across the region with 81percent of downtown businesses, 75 percent of higher employment density area businesses and 64% of lower employment density area businesses renting (Figure 4). Those in the retail, accommodation and food services as well as construction and manufacturing trades were more likely to own their building space (Figure 5).

Overall the average business size was 2,200 square feet, ranging from 60 to 285,197 square feet. The most common size (the mode) was 1,000 square feet for both downtown and higher employment density areas and 2,000 square feet for lower employment density areas. The median size was 2,000 square feet for downtown, 2,400 square feet for higher employment density areas and 2,200 square feet for lower employment density areas. Company representatives were also asked about the cost of the space they rented; too many either did not want to share this information or gave improbable answers. For that reason it was not possible to assess the rental costs with a reasonable degree of certainty.

Figure 4: Proportion of Businesses Renting Facility by Area

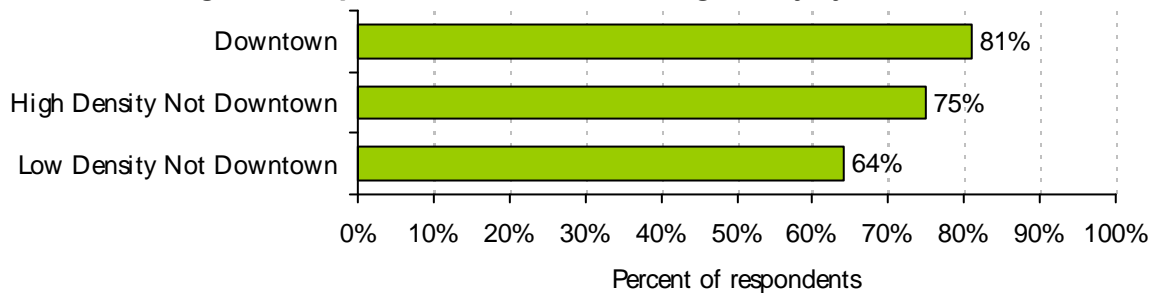
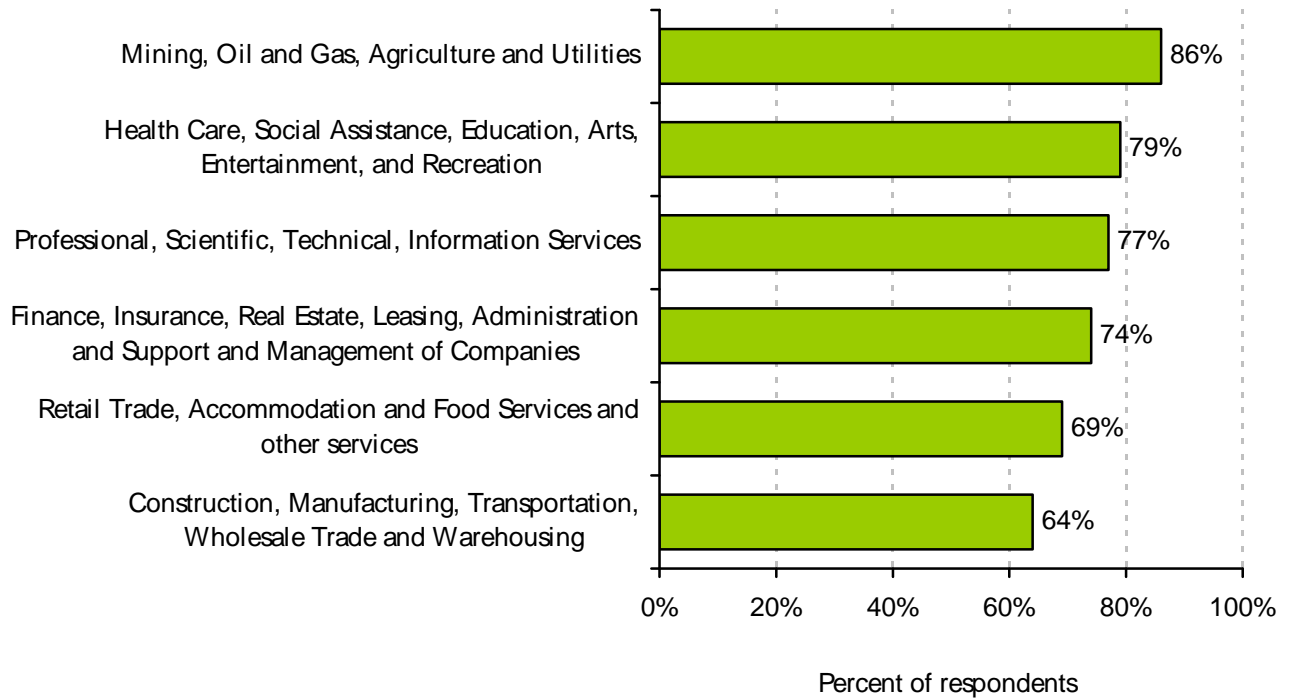


Figure 5: Proportion of Businesses Renting Facility by Business Type



Influence of Neighborhood Amenities on Business Location

Stakeholders would like to know whether rail stations and other amenities (higher-density communities, access to residences, businesses and shopping and commuters) influence businesses to locate near rail transit stations.

Most downtown businesses (68 percent) moved to their location after the rail station nearest them was open. However, only 45 percent in lower employment density and 18 percent in higher employment density non-downtown areas moved after their nearest station was opened and only a few more made their location choice knowing the nearest rail station would be built (Table 3).

Table 3: Awareness of Station When Locating Business

	Downtown	High Density Not Downtown	Low Density Not Downtown
Moved before station, did not know about station	29%	75%	51%
Moved before station, knew station was coming	4%	7%	5%
Moved after rail station was open	68%	18%	45%

Respondents were asked to give the top three reasons they chose their current location. They were not read a list of potential reasons or otherwise prompted in their answers. The most common reasons they gave were that it was near main roads for easy access, it had good lease rates and the building structure suited their business needs (Table 4).

Overall, fewer than seven percent of businesses cited access to rail transit as a top reason for choosing the location. This did not vary between those who were aware and not aware of their nearest rail transit station before they made their business location choice.

Those in the professional, scientific, technical, information services and construction, manufacturing, transportation, wholesale trade and warehousing fields being somewhat more likely (11 percent) to name access to rail transit as a top reason for locating their business, compared to other sectors (Table 5).

Table 4: Top Reasons for Choosing Current Location

	Downtown	High Density Not Downtown	Low Density Not Downtown
Near main roads	25%	35%	36%
Lease rates	30%	27%	25%
Building structure	23%	33%	24%
Other complementary businesses	11%	5%	17%
Close to home	3%	13%	15%
Parking availability	4%	12%	6%
Access to customers from employees at near by businesses	5%	10%	7%
Central or downtown	13%	5%	5%
Access to rail transit	6%	4%	7%
Access to customers from near by residences	6%	5%	5%
Owens the building	3%	5%	7%
Supports brand positioning (being in young, green, urban area etc.)	8%	3%	5%
Access to customer base	8%	4%	2%
Location	4%	5%	3%
Access to customers from rail station foot traffic	4%	5%	0%
Security	0%	2%	1%
Close to bus	0%	0%	2%
Other	8%	5%	5%

Table 5: Top Reasons for Choosing Current Location by Business Type

	Professional, Scientific, Technical, Information Services	Finance, Insurance, Real Estate, Leasing, Administration and Support and Management of Companies	Retail Trade, Accommodation and Food Services and other services	Construction, Manufacturing, Transportation, Wholesale Trade and Warehousing	Health Care, Social Assistance, Education, Arts, Entertainment, and Recreation	Mining, Oil and Gas, Agriculture and Utilities
Near main roads	36%	32%	30%	43%	17%	29%
Lease rates	39%	28%	19%	28%	17%	29%
Building structure	35%	32%	20%	19%	29%	14%
Other complementary businesses	6%	6%	19%	13%	4%	14%
Close to home	9%	10%	10%	9%	21%	29%
Parking availability	9%	12%	6%	6%	4%	0%
Access to customers from employees at nearby businesses	5%	10%	10%	9%	0%	0%
Central/downtown	12%	1%	3%	6%	8%	43%
Access to rail transit	11%	3%	3%	11%	0%	0%
Access to customers from near by residences	3%	4%	9%	6%	4%	0%
Other	5%	6%	7%	4%	8%	0%
Owens the building	3%	10%	3%	4%	4%	14%
Supports brand positioning (young/green/urban area etc.)	8%	3%	6%	2%	4%	0%
Access to customer base	3%	3%	5%	4%	4%	14%
Location	2%	6%	6%	2%	4%	0%
Access to customers from	3%	4%	2%	2%	0%	0%

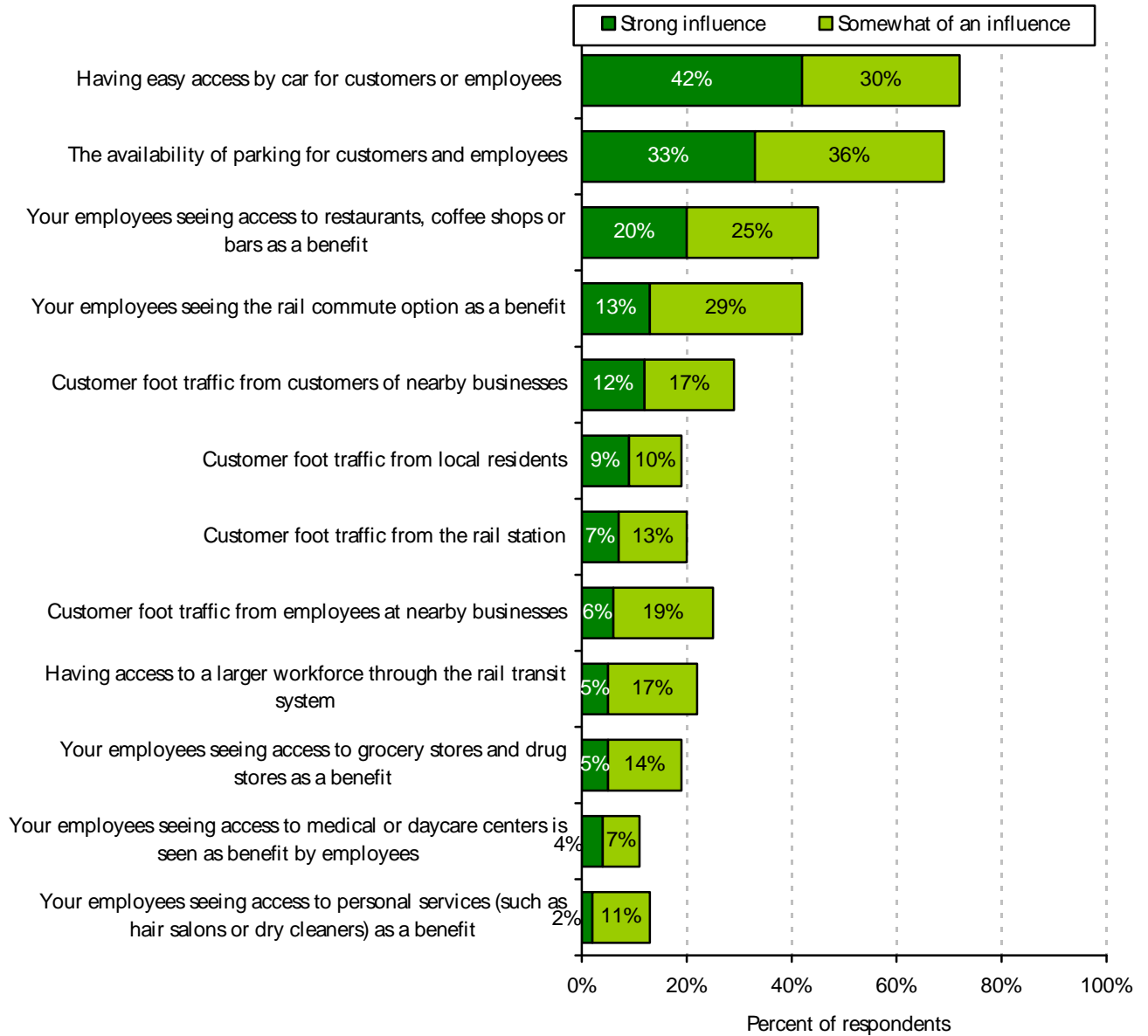
	Professional, Scientific, Technical, Information Services	Finance, Insurance, Real Estate, Leasing, Administration and Support and Management of Companies	Retail Trade, Accommodation and Food Services and other services	Construction, Manufacturing, Transportation, Wholesale Trade and Warehousing	Health Care, Social Assistance, Education, Arts, Entertainment, and Recreation	Mining, Oil and Gas, Agriculture and Utilities
rail station foot traffic						
Security	0%	3%	1%	0%	0%	0%
Close to bus	0%	0%	1%	2%	0%	0%

Respondents who moved to their location after the station was built or were aware that the station would be built were asked to indicate how strong an influence specific neighborhood amenities were on their location choice. These amenities may or may not be present at each business location.

As shown in Figure 6, access by car and availability of parking were the strongest influencers of location choice, followed by employees seeing access to restaurants, coffee shops or bars as a benefit and employees seeing the rail commute option as a benefit.

Employees seeing the rail commute option as a benefit was a strong influence for 13 percent of the businesses and somewhat of an influence for 29 percent. Additionally, about 20 percent of businesses indicated that access to a larger workforce from rail transit and access to rail transit foot traffic had at least some influence on their location choice.

Figure 6: Influence of Specific Neighborhood Amenities on Location Choice



Asked only if were aware the station would be built or the station was already built at time of move

Table 6 groups the amenities into three categories: transit amenities; mixed-use amenities; and access and parking for cars. Overall, 49 percent of businesses stated that least one amenity in the transit category was somewhat or strongly influential. By comparison, 61 percent stated that at least one amenity in the mixed-use category was influential, and 78 percent stated that at least one amenity in the access for parking and cars category was influential. Figures 7 through 9 show these figures broken down by area.

Access and parking for cars was the strongest location choice influence for all three areas (downtown, high employment density and low employment density areas outside downtown).

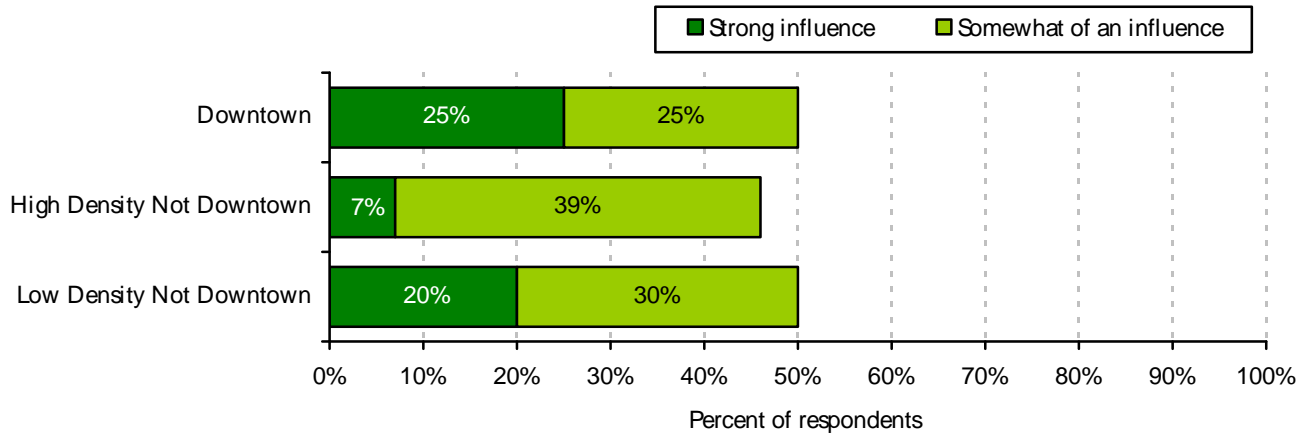
Mixed-use amenities had the next strongest influence on location, particularly for downtown and lower employment density areas outside downtown.

Transit amenities were a somewhat or strong influence on location for about half the businesses in each of the areas, but were a stronger influence on location choice for downtown businesses.

Table 6: Categories of Amenities

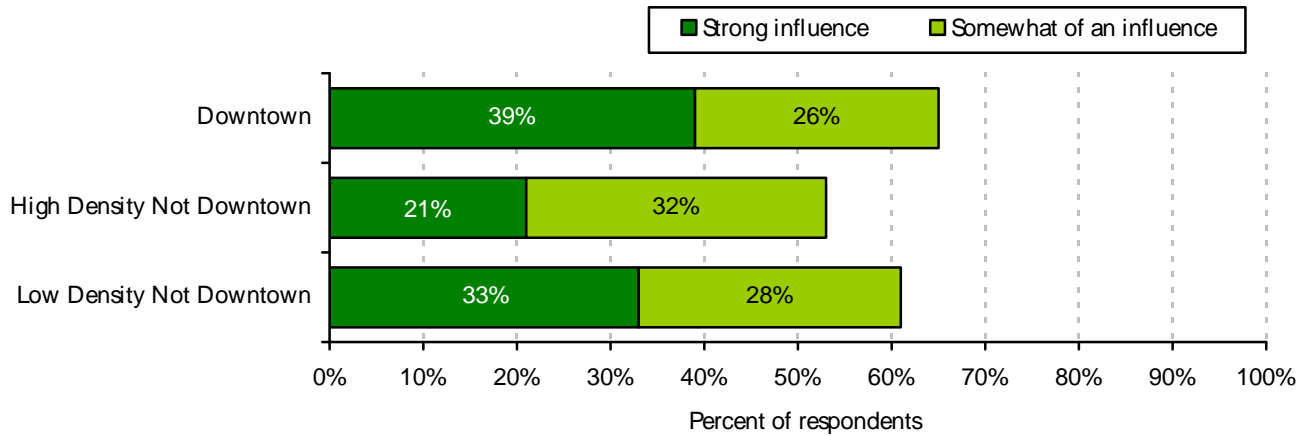
Transit Amenities	Mixed-Use Amenities	Access and Parking for Cars
<ul style="list-style-type: none"> ▪ Having access to a larger workforce through the rail transit system ▪ Your employees seeing the rail commute option as a benefit ▪ Customer foot traffic from the rail station 	<ul style="list-style-type: none"> ▪ Customer foot traffic from employees at nearby businesses ▪ Customer foot traffic from customers of nearby businesses ▪ Customer foot traffic from local residents ▪ Your employees seeing access to restaurants, coffee shops or bars as a benefit ▪ Your employees seeing access to grocery stores and drug stores as a benefit ▪ Your employees seeing access to personal services (such as hair salons or dry cleaners) as a benefit ▪ Your employees seeing access to medical or daycare centers is seen as benefit 	<ul style="list-style-type: none"> ▪ Having easy access by car for customers or employees ▪ The availability of parking for customers and employees

Figure 7: Influence of Transit Amenities on Location Choice by Area



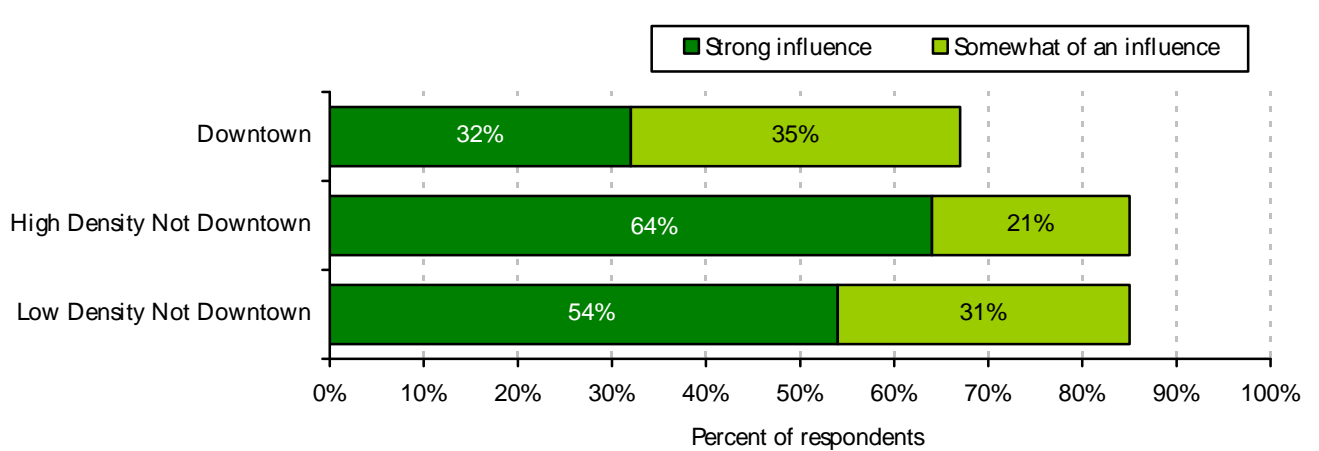
Asked only if were aware the station would be built or the station was already built at time of move

Figure 8: Influence of Mixed-use Amenities on Location Choice by Area



Asked only if were aware the station would be built or the station was already built at time of move

Figure 9: Influence of Access and Parking for Cars on Location Choice by Area

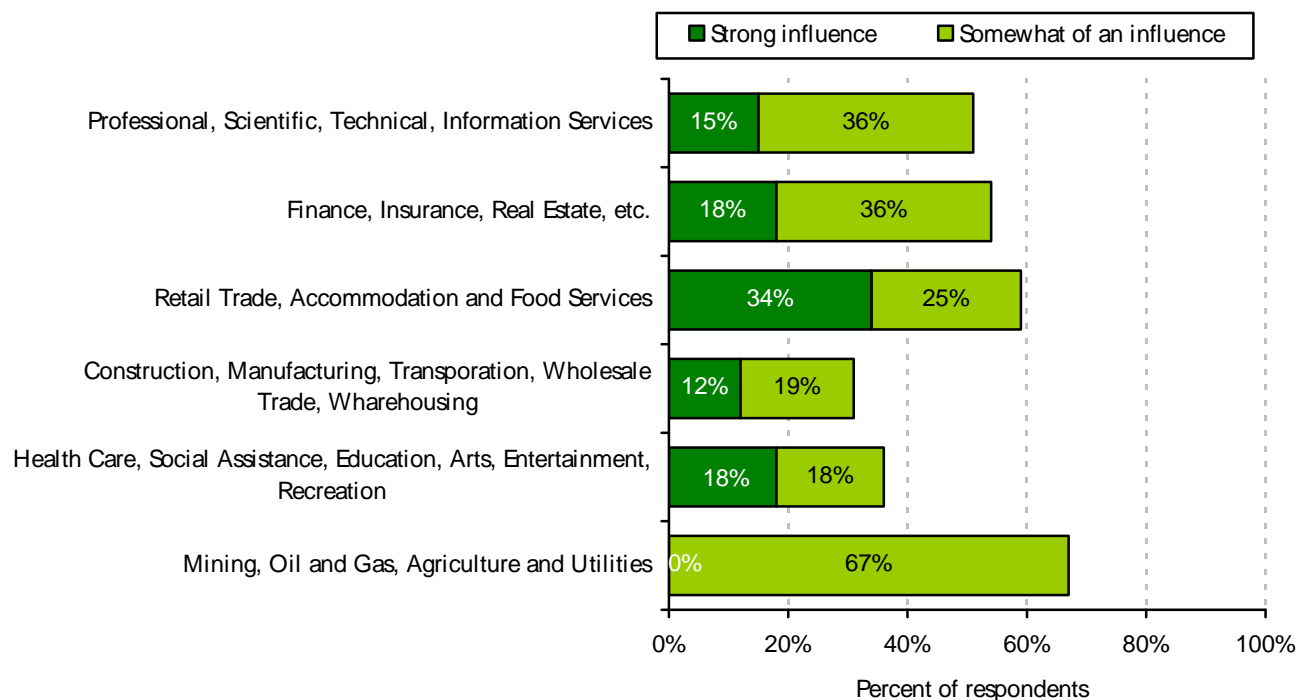


Asked only if were aware the station would be built or the station was already built at time of move

Figures 10 through 12 show the influence of each amenity category by business sector. Retail trade, accommodation and food services businesses were the most likely to cite rail transit amenities as a strong influence in their location choice followed by office-based businesses such as information services, finance and real estate. This was also true for the influence of mixed-use amenities.

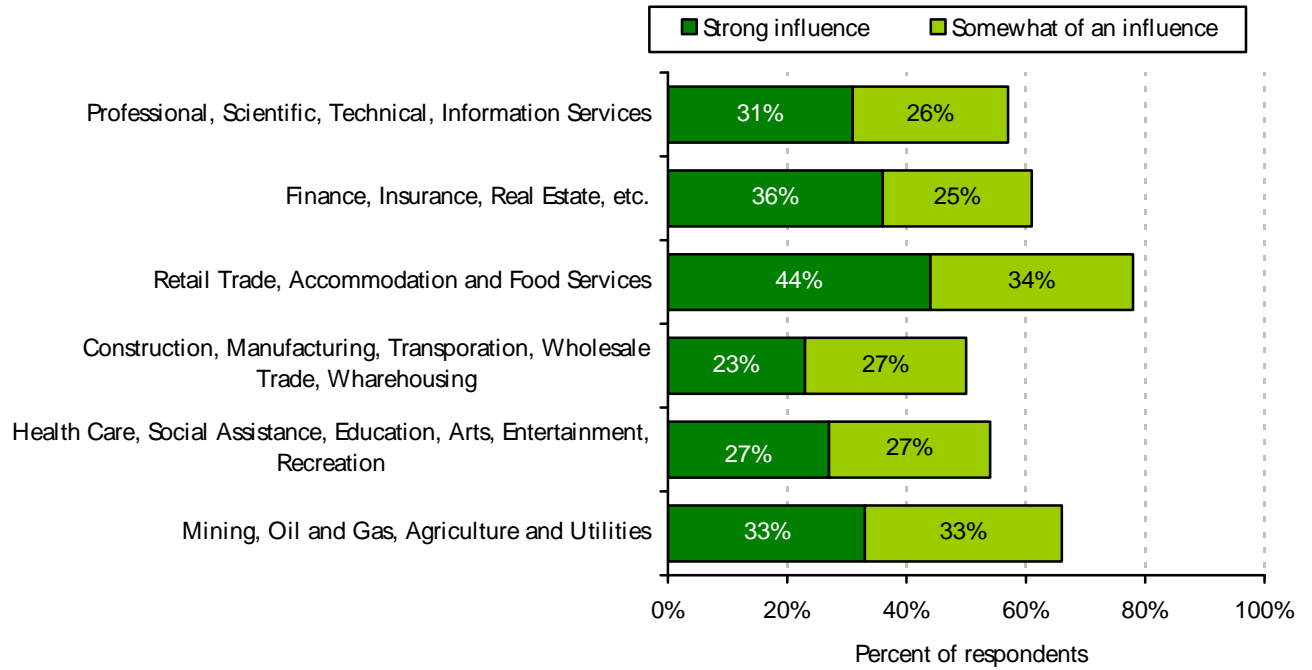
Access and parking for cars had the strongest influence on location for all types of businesses. Health care, social assistance, education, arts, entertainment and recreation-based businesses were the least likely to cite access and parking for cars as an influence in their location choice, but it was at least somewhat of an influence for 63 percent.

Figure 10: Influence of Transit Amenities on Location Choice by Business Type



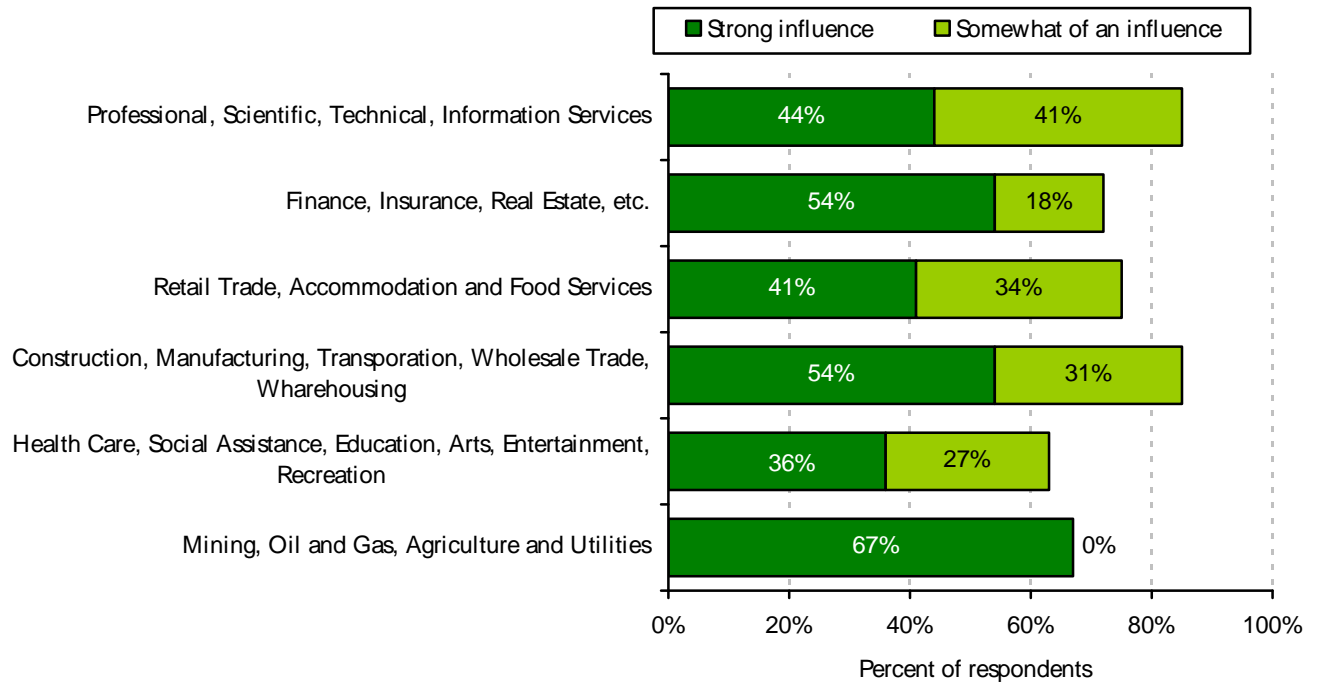
Asked only if were aware the station would be built or the station was already built at time of move

Figure 11: Influence of Mixed-Use Amenities on Location Choice by Business Type



Asked only if were aware the station would be built or the station was already built at time of move

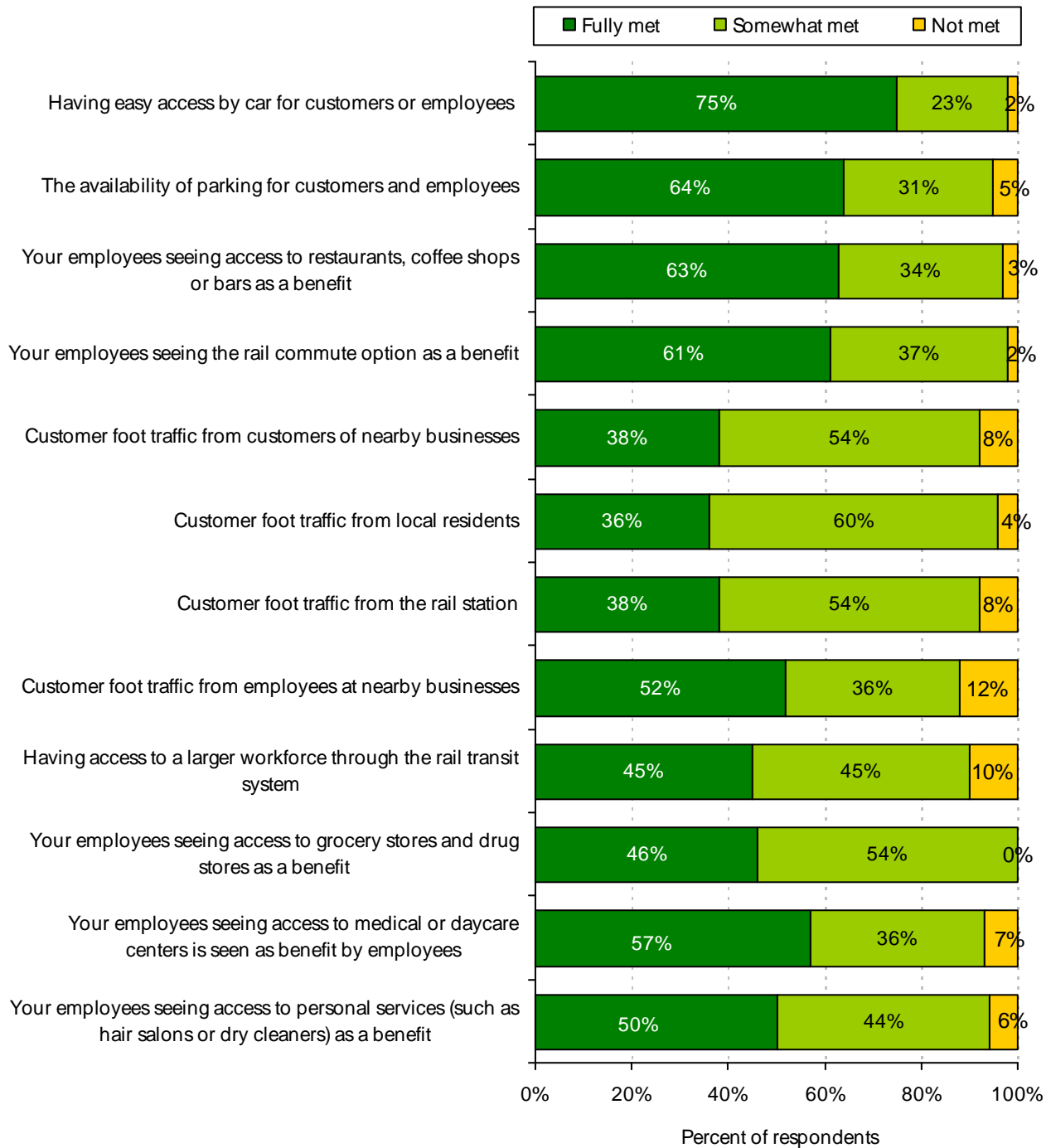
Figure 12: Influence of Access and Parking for Cars on Location Choice by Business Type



Asked only if were aware the station would be built or the station was already built at time of move

Businesses' satisfaction with their location choices appears to be high. Ninety-five percent have no plans to move, and 98 percent of businesses that anticipated employees would be attracted to the rail commute option had their expectations at least somewhat met (Figure 13). Also, ninety percent of businesses that chose their location anticipating that they would have access to a larger workforce had their expectations met.

Figure 13: Satisfaction with Expectations Regarding Neighborhood Amenities



Asked only if indicated the amenity had a somewhat or strong influence on their decision to locate business

When asked what amenities or services were missing from their neighborhoods, about 45 percent of businesses indicated that they didn't know or thought that nothing more was needed (Table 7). About one-quarter of businesses outside of downtown would like to see more restaurants, but no other strong preferences emerged. In the downtown area, department and grocery stores were the most desired additions.

Table 7: Preferred Additions to Area

	Downtown	High Density Not Downtown	Low Density Not Downtown
Don't know	46%	42%	35%
Nothing more/ good as is	3%	7%	5%
Restaurants	11%	26%	22%
Department stores	18%	3%	5%
Grocery/ drug/ convenience stores	16%	4%	3%
Multi family housing	8%	5%	5%
Clothing/shoe stores	9%	3%	5%
General office (law, insurance, temp help, marketing etc)	3%	7%	5%
Coffee shops	4%	1%	5%
Financial (banking, investment, mortgage, accounting)	3%	4%	3%
Single family housing	4%	2%	4%
Parks/ open space	3%	5%	2%
Entertainment (theater, art gallery, museum)	1%	2%	5%

Only those mentioned by at least 5 percent of businesses are shown.

Transportation Demand Management Strategies

Transportation demand management (TDM) is the application of strategies and policies to reduce automobile travel "demand," or to redistribute this demand in space or in time, as opposed to simply increasing the "supply" by building more roads or lanes to accommodate single-occupancy vehicle travel. Table 8 lists a variety of TDM strategies.

Representatives of the companies surveyed were asked whether their organization provided any TDM strategies to its employees. (The question wording used was, "There are many strategies for influencing how employees travel to and from work. A few examples are: providing transit passes, organizing car or van pools, charging for parking, providing secure bike storage and showers or lockers for cyclists, guaranteed ride home programs and flexible work schedules. Do you use any of these strategies, or others, to influence how employees travel to and from work?")

Overall only 69 of the 300 companies (23 percent, Table 8) reported they were using TDM strategies. It may be that more companies would have reported using some strategies if they had been asked about each strategy one at a time, instead of reading the example list and asking the respondent to recall.

Companies in the downtown area (Table 8) and large companies (Table 9) were most likely to use TDM strategies. The most common TDM strategy employed was subsidized transit passes for employees, through the Eco Pass or other pass programs, although these offerings were made almost exclusively by downtown businesses.

Table 8: Proportion of Businesses using Transportation Demand Management (TDM) Strategies

	Downtown	High Density Not Downtown	Low Density Not Downtown	Total
None of these	54%	85%	86%	77%
Free/subsidized transit passes, such as the Eco Pass	33%	4%	3%	11%
Secure bike storage	8%	5%	8%	7%
On-site amenities for walkers and bicyclists (i.e. showers, lockers)	3%	5%	5%	4%
Flexible work schedules (varying starting and ending times)	5%	4%	2%	3%
Guaranteed ride home	4%	0%	2%	2%
Organized carpooling	3%	0%	2%	1%
Organized vanpooling	4%	0%	0%	1%
Substituting "paid parking" with a commute allowance which could be used for bus or vanpool fares as well as parking fees	3%	0%	0%	1%

Teleworking (a regular, off-site work arrangement)	0%	2%	0%	1%
Shuttles to transit or other frequently used locations	0%	0%	1%	0%
Access to vehicles for mid-day trips	1%	0%	0%	0%
Access to bicycles for mid-day trips	1%	0%	0%	0%
Compressed work weeks (i.e. 40 hrs in 4 days, 80 hrs in 9 days)	0%	1%	0%	0%

Table 9: Proportion of Businesses using TDM Strategies by Number of Employees

	Number of Employees						
	1-4	5-9	10-19	20-49	50-99	100-499	500 or more
None of these	87%	78%	75%	67%	64%	56%	0%
Free/subsidized transit passes, such as the Eco Pass	6%	8%	10%	18%	21%	28%	100%*
Secure bike storage	4%	6%	3%	9%	21%	22%	0%
Organized vanpooling	0%	0%	0%	3%	0%	11%	0%
On-site amenities for walkers and bicyclists (i.e. showers, lockers)	4%	0%	4%	6%	14%	11%	0%
Guaranteed ride home	1%	0%	1%	3%	0%	11%	0%
Flexible work schedules (varying starting and ending times)	1%	5%	6%	0%	0%	11%	0%
Organized carpooling	0%	3%	1%	0%	0%	6%	0%
Access to vehicles for mid-day trips	0%	0%	0%	0%	0%	6%	0%
Teleworking (a regular, off-site work arrangement)	0%	2%	0%	0%	0%	6%	0%
Preferred parking spaces for carpools/vanpools	0%	0%	0%	0%	0%	0%	0%
Charging employees to park in company owned or leased spaces	0%	0%	0%	0%	0%	0%	0%
Substituting "paid parking" with a commute allowance which could be used for bus or vanpool fares as well as parking fees	1%	0%	1%	0%	0%	0%	0%
Shuttles to transit or other frequently used locations	1%	0%	0%	0%	0%	0%	0%
Access to bicycles for mid-day trips	0%	0%	1%	0%	0%	0%	0%
Compressed work weeks (i.e. 40 hrs in 4 days, 80 hrs in 9 days)	0%	2%	0%	0%	0%	0%	0%
Other	0%	0%	0%	3%	7%	0%	0%

*there was only one business in this size category.

Table 10: Interest in TDM Strategies

Are you interested in learning more about transportation management strategies?	Number of businesses	Percent
Yes	52	17%
No	248	83%

For each TDM strategy that the company representative said their organization offered, the representative was then asked how effective they felt that strategy was in reducing automobile travel and parking needs. Most respondents (86 percent) felt that the strategies were at least "somewhat" effective (Table 11). Transit passes, organized carpooling, substitution of "paid parking" with a commuting allowance, access to bicycles for mid-day trips and teleworking were deemed "very effective" at encouraging alternate mode travel by 50 percent or more of companies providing such options.

Table 11: Effectiveness of TDM Strategies

Do you think . . . is very effective, somewhat effective or not effective in reducing single car trips and parking needs?*	Very effective	Somewhat effective	Not effective	Total
Free/subsidized transit passes, such as the Eco Pass?	58%	32%	10%	100%
Organized carpooling	50%	50%	0%	100%
Organized vanpooling	33%	33%	33%	100%
Substituting "paid parking" with a commute allowance which could be used for bus or vanpool fares as well as parking fees	50%	50%	0%	100%
Shuttles to transit or other frequently used locations	0%	100%	0%	100%
Access to vehicles for mid-day trips	0%	100%	0%	100%
Access to bicycles for mid-day trips	100%	0%	0%	100%
Secure bike storage	35%	55%	10%	100%
On-site amenities for walkers and bicyclists (i.e. showers, lockers)	38%	46%	15%	100%
Guaranteed ride home	40%	20%	40%	100%
Teleworking (a regular, off-site work arrangement)	100%	0%	0%	100%
Flexible work schedules (varying starting and ending times)	50%	20%	30%	100%
Compressed work weeks (i.e. 40 hrs in 4 days, 80 hrs in 9 days)	0%	100%	0%	100%
Average across all strategies**	47%	39%	14%	100%

* For each strategy, only asked of those whose company offered the strategy.

** "Weighted" average – strategies used by more companies were given greater weight.

Parking

Free parking was readily available to businesses that were not located downtown, while downtown businesses had much less access to free parking. More than three-quarters of businesses located in downtown Denver had no free parking within a block of their building, while more than 80 percent of businesses in other locations had free parking right next to their building (Table 12).

Table 12: Distance of Nearest Free Parking

How close is your business to parking that is free for both your company and your customers and employees? Is there free parking right next to your building, within a block of your building or more than a block from your building?	Downtown	High Density Not Downtown	Low Density Not Downtown
Right next to your building	18%	83%	86%
Within a block of your building	6%	14%	12%
More than a block	76%	4%	2%

As might be expected, businesses in the health care or entertainment sector were the most likely to have free parking right next to their building compared to other types of businesses (Table 13). The few companies in the mining, oil and gas, agriculture, and utilities sector, which were almost all downtown, were least likely to have access to free parking within one block.

Table 13: Distance of Nearest Free Parking by Business Type

	Professional, Scientific, Technical, Information Services	Finance, Insurance, Real Estate Companies	Retail Trade, Accommodation and Food Services and other services	Construction, Manufacturing, Transportation, Wholesale Trade and Warehousing	Health Care, Social Assistance, Education, Arts, Entertainment, and Recreation	Mining, Oil and Gas, Agriculture and Utilities
Right next to building	61%	63%	68%	68%	92%	43%
Within a block	6%	21%	10%	9%	4%	14%
More than a block	33%	16%	22%	23%	4%	43%

More than 80 percent of businesses felt they had enough or more than enough access to parking for their employees (Figure 14). More than 70 percent felt they had enough or more than enough access to parking for their customers (Figure 15).

Figure 14: Overall Access to Parking for Employees

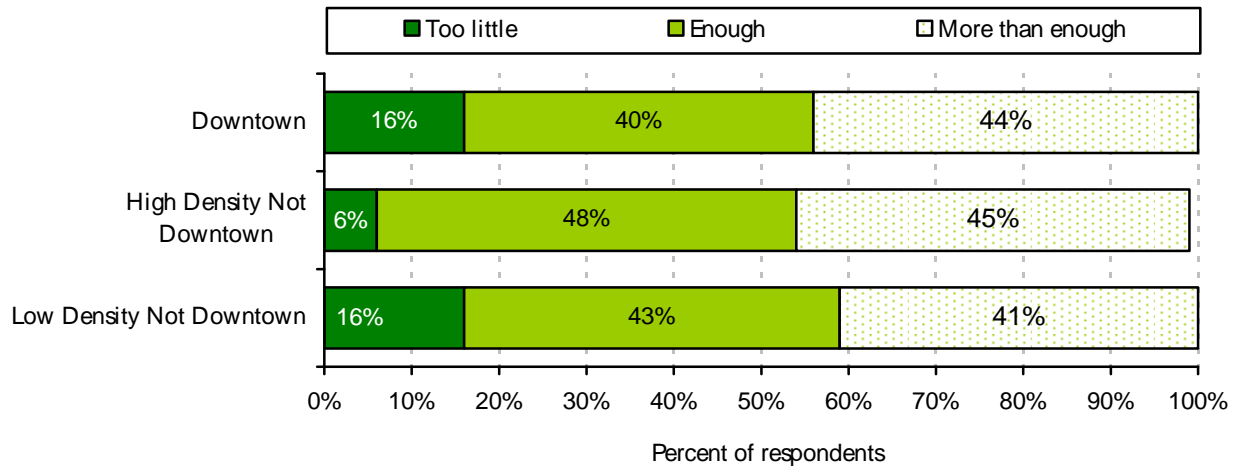
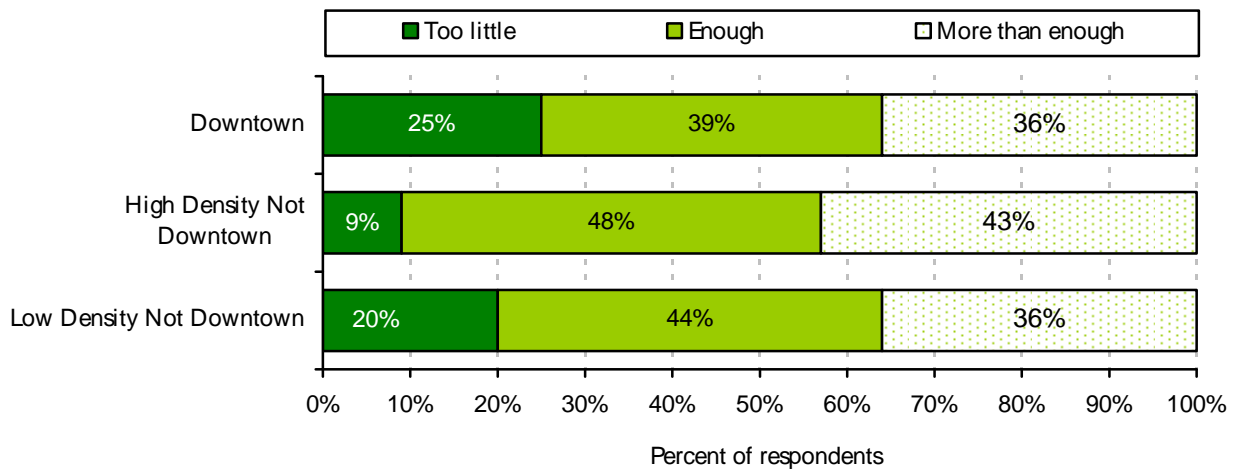
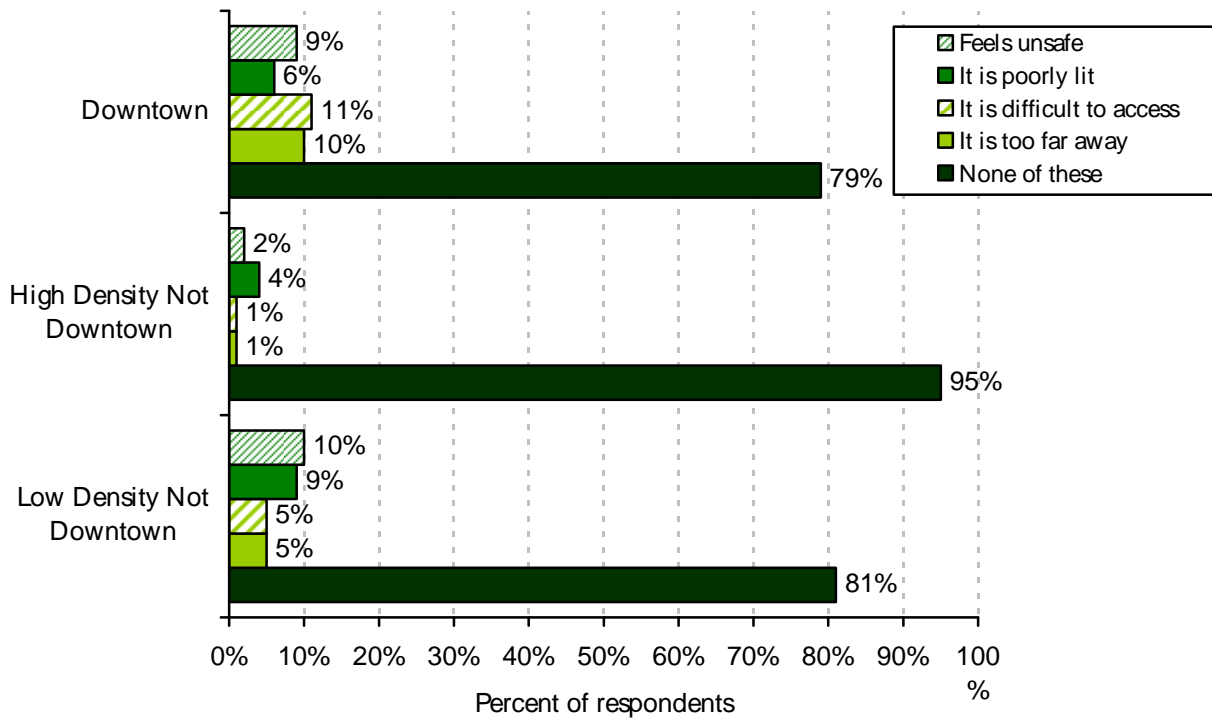


Figure 15: Overall Access to Parking for Customers



When asked if they had any concerns about parking being far away, difficult to access, poorly lit or unsafe, most respondents felt they did not have any of these concerns about their parking. Companies located in downtown Denver were somewhat more likely to have parking concerns than those in other locations. When concerns were mentioned, those in downtown were more likely to mention access than those in other locations. Lighting was a bigger concern for those in locations other than downtown (Figure 16).

Figure 16: Parking Concerns



Just over half of the companies surveyed reported that they own and/or lease their parking (Table 14). Companies in the lower employment density areas outside of downtown were the least likely to report that they own and/or lease parking spaces.

Table 14: Types of Parking Provided or Available

	Downtown	High Density Not Downtown	Low Density Not Downtown
Company reported they do not own or lease parking	42%	37%	50%
Company reported they own and/or lease parking	58%	63%	50%
<i>Company owns parking spaces*</i>	13%	26%	35%
<i>Company has assigned spaces included in building lease*</i>	22%	37%	19%
<i>Company has assigned spaces leased separately from building lease*</i>	31%	4%	3%

* These percents may add to more than the total percent reporting they own and/or lease parking, as companies could fall into more than one category.

The average number of parking spaces owned or leased per 1,000 square feet of business space was 2.7 for higher employment density areas and 2.4 for lower employment density areas. The median was about 1 parking space per 1,000 square feet of business space. However, the range was quite large, as some large businesses had only a few assigned spots and some smaller businesses had many (Table 15).

Table 15: Parking Spaces Owned or Leased per 1,000 Square Feet of Building Space (by Companies who Owned and/or Leased Any Spaces)

	Number of businesses	Average number of spaces per 1,000 SF of building space	Standard Error	Median	Mode	Minimum	Maximum
Downtown	36	2.7	.8	1.1	.3	.004	25.8
High Density Not Downtown	58	2.7	.6	1.0	1.0	.013	33.3
Low Density Not Downtown	45	2.4	.4	1.4	.2	.033	14.0

Those who did own and/or lease parking spaces were asked whether their employees had to pay to park in those spaces. Among companies that owned or leased parking spaces, less than 15 percent reported that their employees pay to park in those spaces (Table 16), with a slightly higher percent in the downtown area reporting their employees pay to park in those spaces than those outside downtown.

Table 16: Employees' Payment for Parking in Spaces Owned or Leased by Company

Type of Parking		Downtown	High Density Not Downtown	Low Density Not Downtown
Parking spaces owned or leased by company	Employee Pays	13%	7%	4%
	Employee Does Not Pay	87%	93%	96%
	Total	100%	100%	100%

All companies, regardless of whether they owned or leased some parking, were asked whether employees had to pay to park in spaces not owned or leased by the company. Very few companies outside of downtown reported that employees had to pay to park in these types of spaces (Table 17). In downtown Denver, however, 40 percent of companies reported that employees do have to pay for parking in spaces not owned or leased by the company. These findings will be confirmed via the employee survey.

Table 17: Employees' Payment for Parking in Non-Company Controlled Spaces

Type of Parking		Downtown	High Density Not Downtown	Low Density Not Downtown
Parking that is not owned or leased by your company	Employee Pays	40%	1%	2%
	Employee Does Not Pay	60%	99%	98%
	Total	100%	100%	100%

In order to determine what proportion of companies had free parking always available to employees, a company was classified as "employee does not pay" if employees did not have to pay to park in spaces owned or leased by the company (when companies owned or leased parking) and did not have to pay to park in spaces not owned or leased by the company. Free parking was available to employees of more than half of the surveyed companies in downtown Denver (Table 18), while nearly all (95 percent or more) of the companies surveyed outside of downtown Denver had free parking available to employees.

Table 18: Employees' Payment for Parking in Any Space

Type of Parking		Downtown	High Density Not Downtown	Low Density Not Downtown
All parking, company provided or not (Companies could have both kinds of parking)	Employee Pays For At Least One Type of Space	46%	5%	4%
	Employee Does Not Pay	54%	95%	96%
	TOTAL	100%	100%	100%

All companies were asked whether their customers have to pay for parking that is not owned or leased by the company. About three in five companies downtown reported that their customers have to pay for parking if they park in spaces not owned or leased by the company (Table 19). Outside of downtown, very few companies reported that their customers have to pay for parking that is not owned or leased by the company.

Table 19: Customers' Payment for Parking in Company Controlled Spaces

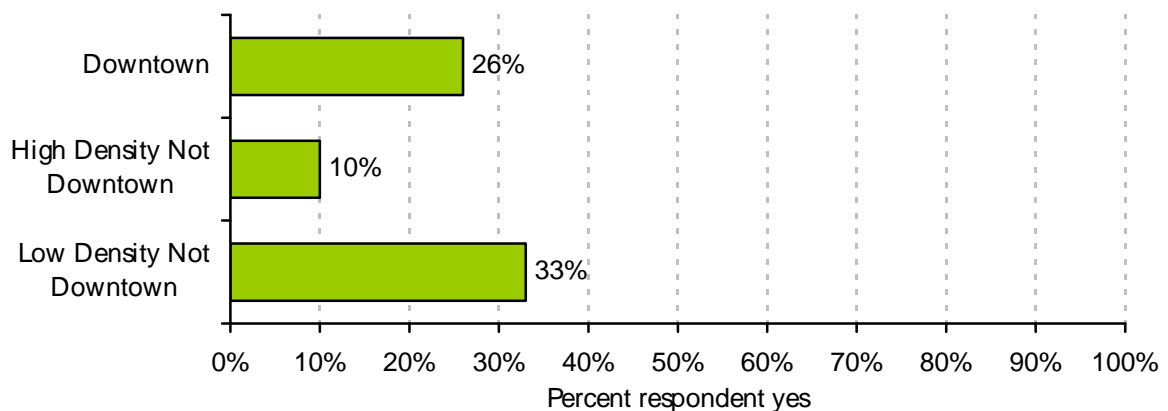
Type of Parking		Downtown	High Density Not Downtown	Low Density Not Downtown
Customers pay for parking that is not owned or leased by your company	Customer Pays	61%	5%	2%
	Customer Does Not Pay	39%	95%	98%
	Total	100%	100%	100%

Surveyed companies were asked whether they shared a parking lot with another business or businesses. Among those located in high-density areas outside of downtown Denver, 70 percent reported they did share a parking lot (Table 20). About 50 percent of companies in downtown Denver or in low-density areas outside of downtown reported they shared a parking lot. Companies who shared parking lots with other businesses were asked whether they run out of parking spaces in the shared lot. Only about 10 percent of those in the high-density areas outside of downtown with shared lots reported that they run out of parking spaces (Figure 17). About a quarter of those with shared spaces in downtown Denver reported they run out of parking spaces, and about a third of those in low-density areas outside of downtown said they run out of parking spaces in the shared lot.

Table 20: Shared parking

	Downtown	High Density Not Downtown	Low Density Not Downtown
Share a parking lot with other business(es)	47%	70%	50%
Do not share a parking lot with other business(es)	53%	30%	50%
Total	100%	100%	100%

Figure 17: Do you run out of spaces at any time of day in this shared lot?



Parking is most easily shared if businesses work on different schedules (e.g. an insurance company sharing a parking lot with a tavern) or if both have high turnover in parking (e.g. retail businesses where customers park for short periods of time throughout the day).

Office businesses who shared parking tended to share their parking with other office-based businesses. However, retail, construction and service businesses shared parking with a variety of other businesses (Table 21).

Table 21: Type of Company Share Parking with

Business Type	Number of businesses who share parking	Type of company parking is shared with			
		Office based business	Service(dry cleaning, gas station, health care)	Restaurant, coffee shop, bar etc.	Retail stores
Professional, Scientific, Technical, Information Services	45	84%	16%	7%	7%
Finance, Insurance, Real Estate, Leasing, Administration and Support and Management of Companies	39	97%	18%	13%	8%
Retail Trade, Accommodation and Food Services and other services	45	47%	29%	42%	24%
Construction, Manufacturing, Transportation, Wholesale Trade and Warehousing	20	75%	25%	20%	30%
Health Care, Social Assistance, Education, Arts, Entertainment, and Recreation	15	87%	33%	20%	7%
Mining, Oil and Gas, Agriculture and Utilities	6	100%	17%	17%	0%

Conclusion

This research is the first step in documenting the evolution of TOD in metro Denver. The employee and resident surveys, to be implemented within the next few months, will complete the picture of the current state of TOD in metro Denver. Repeating these studies every five to ten years will reveal how people's attitudes, perceptions and behaviors change over time as the rail-transit system expands and TOD matures.

This study's key findings indicate that metro Denver is early on the TOD evolutionary curve. An auto orientation still dominates business location decisions, relatively few businesses use TDM strategies, and free, convenient parking dominates station areas outside of downtown.

Studies conducted across the country, specifically those conducted in more mature transit markets, provide a glimpse of what can be expected to occur in metro Denver as the transit system continues to expand. The Washington, D.C., Metrorail system is the most extensive network of any recent generation system in the country and has the highest recorded rail capture rates, according to TCRP Project H27. In contrast to the current business survey, a 2008 study of three Metrorail station areas in Arlington County, Virginia (Ballston, Crystal City and Rosslyn), found that businesses near these stations rated the ability to provide employees with "commute options" as more important than the availability of parking in their location decisions.

The Arlington study further found that 58 percent of businesses located in the three station areas reported offering their employees free or subsidized transit subsidies, compared with only 23 percent in this study. The report for the Arlington County study can be found at: <http://www.commuterpage.com/research/uploads/ACCS030/2008%20ACCS%20Site%20Plan%20Study.pdf>.

Every market is different, however, and not all lessons from other markets can be applied directly to metro Denver. While research has shown that system extensiveness is positively correlated with transit ridership (TCRP 128), real change in travel behaviors are dependent on the specific policy and investment decisions that are made here. This research provides the opportunity to analyze how policy and investment decisions affect mode choice in metro Denver.

Of particular interest are parking policies. According to TCRP Report 128, "The availability of free or low-cost parking is a major deterrent to transit ridership." Also, a 2001 report by The Ralph & Goddy Lewis Center for Regional Policy Study stated that "When commuters can park their cars for free at work, they are more likely to drive alone."

The finding that free and convenient parking is abundant in metro Denver transit station areas suggests that policies aimed at reducing the availability of parking in these areas may boost transit ridership over time. However, until and unless people are provided with a transit system that can compete with the automobile, people will continue to drive and will require a place to park their cars.