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Carter Burgess

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1 STUDY OVERVIEW

The Town of Parker has experienced tremendous population growth in the past twenty years, growing from a community of less than 300, to a town with over 34,000¹ residents. Current projections indicate the town will grow to a population of over 73,000 by 2020². The average annual increase in population has exceeded that of Douglas County, which is often cited as one of the fastest growing areas in the country. While population has increased, employment in the town has not kept pace. With the exception of the retail sector, employment growth is low, with only 0.2 jobs per resident, well below the regional average. The town continues to be a bedroom community to the greater Denver metropolitan area. The current jobs-to-housing balance means that Parker residents primarily travel outside the community for work trips on an increasingly congested roadway system.

The construction of the T-REX Southeast Corridor project, including a light rail (LRT) line along I-25 to Lincoln Avenue and along I-225 to Parker Road, will provide new transit opportunities for not only the Town of Parker, but also the entire southeast community. The LRT station at Lincoln Avenue and I-25 will have a park-n-Ride with over 1,100 spaces, and the park-n-Ride at Parker Road and I-225 will have over 1,200 spaces. With the annexation of Lone Tree into the RTD district on November 4, 2003, the opportunity to extend light rail south to the Lone Tree RidgeGate Center is now part of RTD's FasTracks Plan which will go to the voters in 2004.

1.1 Study Purpose and Process

With the T-REX under construction and scheduled to open in the fall of 2006, and with the possibility of the FasTracks Plan going to the voters in 2004, the Town of Parker initiated this study to examine options to provide enhanced transit options to its residents and employees who work within the Town as well as in other parts of the Denver region.

Three specific objectives were determined for this study.

- Determine options for connections to the regional transit system.
- Determine options for bringing employees and visitors to Parker.
- Determine the feasibility of local bus service.

¹ Town of Parker, 2003

² Town of Parker, 2003

The study was accomplished by working in close coordination with Town of Parker staff, the Parker Economic Development Council (PEDC) and staff from RTD. Additionally, two meetings of Regional Stakeholders were convened to obtain input for the study. The stakeholders consisted of representatives from all affected agencies and organizations, including:

- Regional Transportation District (RTD)
- Parker Economic Development Council (PEDC)
- Parker Chamber of Commerce
- Douglas County
- City of Lone Tree
- Colorado Department of Transportation (CDOT)
- Denver Regional Council of Governments (DRCOG)
- Parker Planning Commission
- Parker Town Council
- Town of Parker staff

The first meeting of the Regional Stakeholders was convened on July 9, 2003. The purpose of the meeting was to acquaint the stakeholders with the study purpose and objectives, to provide an initial overview of study travel characteristics, and to obtain input on project scope, purpose and alternatives. The input received from the stakeholders guided subsequent data collection, analysis and alternatives development. The second meeting of the Regional Stakeholders was convened on October 9, 2003. Stakeholders were presented with the results of the data collection and analysis, and the alternatives development and screening. Based on input from the group, the alternatives were refined for final recommendation to the Town of Parker.

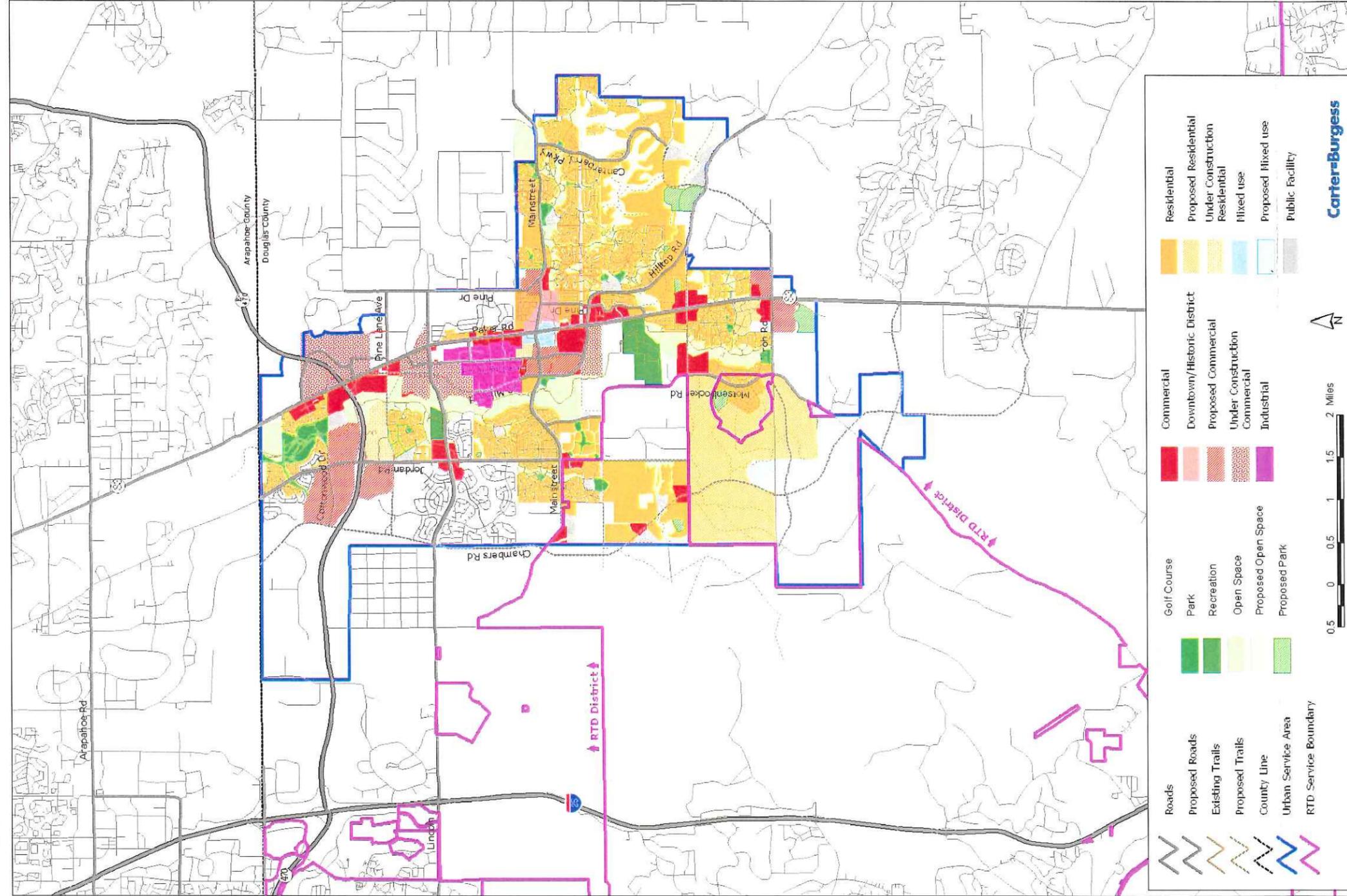
1.2 Study Area Characteristics

Key development patterns in the Parker area are displayed in **Figure 1**. Currently, the Town is predominantly residential, with approximately 34,000 residents.³ Employment, totaling about 8,900, has not kept pace with the growth in population.³ The Town is currently a bedroom community to the Meridian, Inverness, and Denver Tech Center business parks and the greater Denver metropolitan area.

³ Town of Parker, 2003

Figure 1: Study Area

TRANSIT FEASIBILITY STUDY
STUDY AREA



The population-to-jobs balance may shift in the future, as there are many commercial developments either under construction or proposed. For example, the Parker Adventist Hospital is scheduled to open in February 2004 in the Crown Point development in the southeast quadrant of the E-470 and Parker Road interchange. This area will also include retail and residential development. Total population in Parker may approach 73,000 and total employment may approach 26,000 by the year 2020.⁴ The Town is currently characterized by low-to-medium density development, but future growth of population and employment will fill in currently vacant land. Figure 1 also displays the Urban Service Area boundary.



The Town of Parker has an intergovernmental agreement with Douglas County that establishes a buffer around the long-range growth boundary. The Town also has an agreement with the City of Lone Tree to maintain a “green mile” between the two communities.

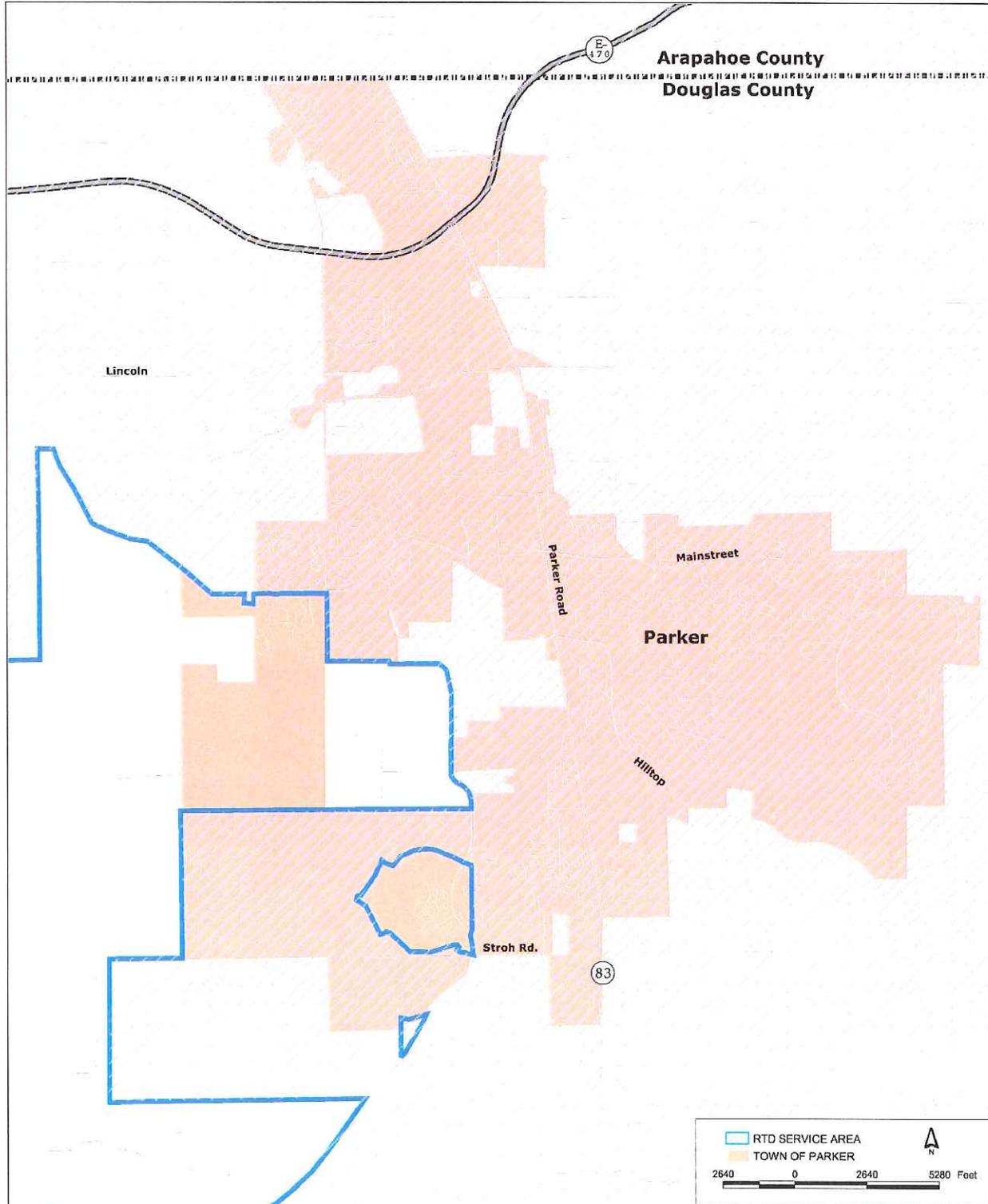
Figure 1 also depicts the RTD service boundary. There are portions of the Town that are not a part of the RTD district, as shown on **Figure 2**. While the Town of Parker has been a part of RTD since the transit agency’s formation, subsequent annexations did not become part of RTD until the rules changed in 1994. The following determines the inclusion of areas in the RTD:

- If the Town of Parker or any part of the Town was in the RTD district as of May 25, 1994, all new annexations to the Town are automatically part of the district.
- If there were portions of the Town of Parker that were not in the RTD district as of May 25, 1994, these areas require a special election by the residents of this area to become part of the district.

The Town has extensive plans to improve its roadway system to meet the needs of the future growth in population and employment. However, the priority of the projects listed in **Table 1** will depend on the degree of funding available, overall benefit, and coordination and cooperation with Douglas County and the development community.

⁴ Town of Parker, 2003.

Figure 2: RTD Service Area



**Table 1:
Town of Parker Roadway Projects**

Major Near-Term (2004 – 2006) Improvements Include:
Twenty Mile Road – Mainstreet to Lincoln Avenue
Longs Way – Dransfeldt Road to Twenty Mile Road
Hess Road – Hilltop Road to Parker Road
Chambers Road – Lincoln Avenue to Hess Road
Major Projects Projected in the Mid-Term (2007 – 2009) Include:
Chambers Road – Hess Road to Parker Road
Stroh Road – Crowfoot Valley Road to Chambers Road
Jordon Road – Mainstreet to Hess Road
Pine Lane – Dransfeldt Road to Jordon Road
Major Priorities Projected in the Long-Term (2010 – 2012) Include:
Mainstreet connection to Lone Tree
Major Priorities Projected in the Extended-Term (2013 – 2014) Include:
Stroh Road – Chambers Road to I-25

1.3 Transit Facilities and Services

An inventory of current and programmed transit facilities and services was undertaken (depicted on **Figure 3**). Two park-n-Rides serve the immediate Parker area: The Parker park-n-Ride, located at Parker Road and Long’s Way, has 173 spaces with an average utilization rate of 74 percent. The Stonegate park-n-Ride, at Lincoln Avenue and Jordan Road, opened in March of 2002 with 101 spaces and has an average utilization rate of 84 percent.

In general, RTD considers a utilization rate of 85 percent or higher indicative of capacity needs at park-n-Rides. A few miles south along Parker Road is the Pinery park-n-Ride. The Pinery has 79 spaces and is currently 40 percent utilized. Franktown has a park-n-Ride with 40 spaces and a current utilization rate of 64 percent.⁵

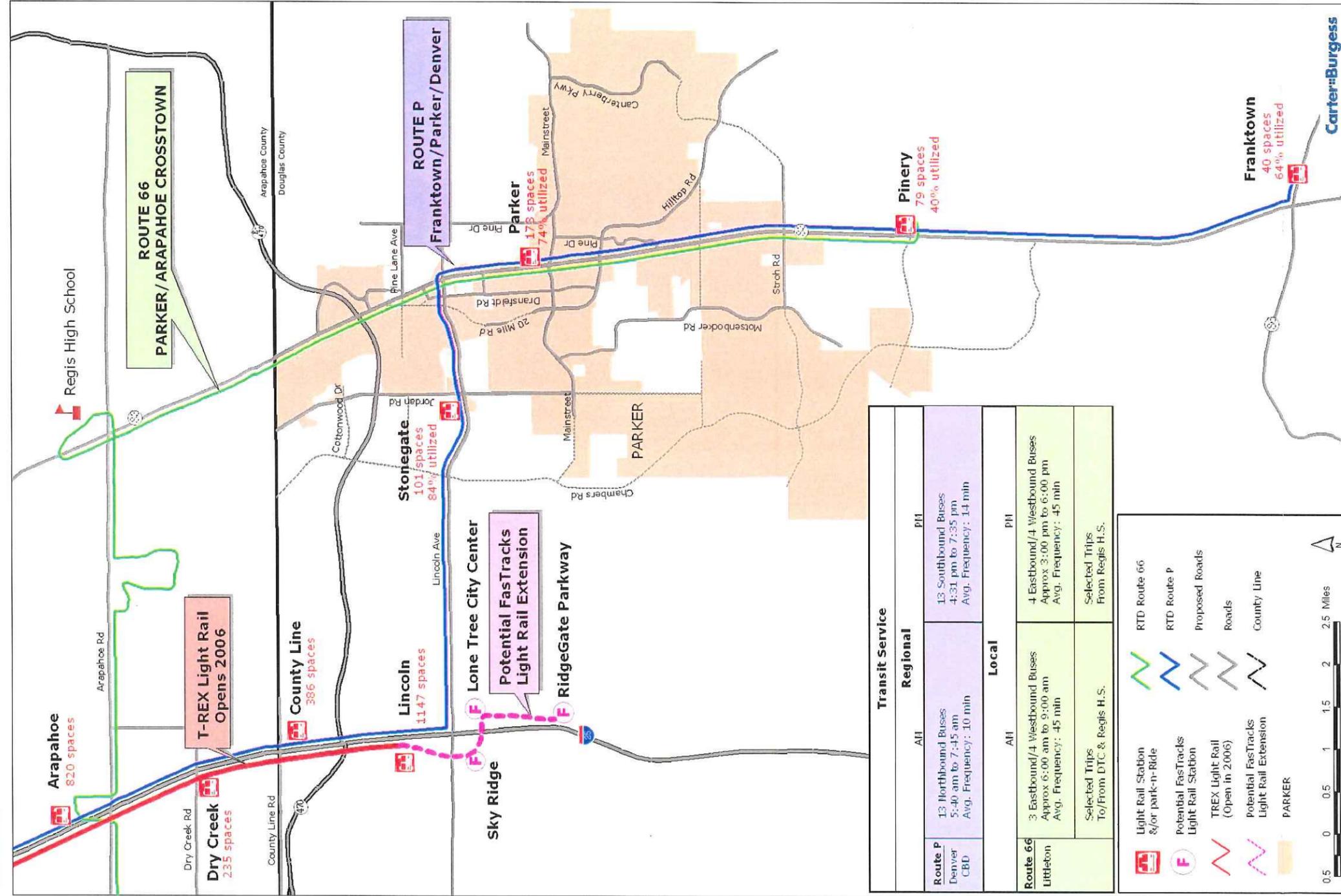


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⁵ RTD park-n-ride utilization data, March 2003.

TRANSIT FEASIBILITY STUDY
TRANSIT FACILITIES AND SERVICE

Figure 3: Transit Facilities Map



The Town of Parker is served by RTD's Regional 'P' route to downtown Denver from Parker area park-n-Rides. The Route P operates directionally during the peak periods (during the morning, northbound buses serve commuters inbound to Denver; during the afternoon southbound buses return the commuters to Parker and Franktown). The Regional service is relatively frequent - averaging every 10 minutes to 14 minutes - during its hours of operation. Due to high ridership on this route, RTD increased service to these levels about two years ago. Before the service increase, ridership averaged 300 riders per day (AM and PM combined).⁶ More recent ridership counts were unavailable.

The Route 66 provides Local service in Parker. The Local Route 66 is a cross-town route operating on Arapahoe Road between Littleton and Parker Road. Select trips operate along Parker Road from Arapahoe Road to the Pinery park-n-Ride. These trips through Parker operate only in the peak periods, and have an average frequency of 45 minutes. Ridership on the Parker Road segment of the Route 66 averaged only 25-30 riders per day in 1999.⁷ More recent ridership counts were unavailable.



Light rail service is scheduled to begin in 2006 when the Southeast Corridor light rail line (T-REX project) is complete. The end-of-line station will be at Lincoln Avenue and I-25 with over 1,100 parking spaces. The station will be

only four miles from the Town's current municipal boundary.

⁶ RTD Ridecheck data, May 2000

⁷ RTD Ridecheck data, May 1999

The City of Lone Tree has a proposed City Center at the RidgeGate area, south of Lincoln Avenue and east of I-25. Light rail will be extended to an end-of-line station at RidgeGate Parkway if RTD's FasTracks Plan is approved by the voters in 2004. (See Appendix 1 for a description of the proposed FasTracks improvements for rapid transit in the Southeast Corridor).

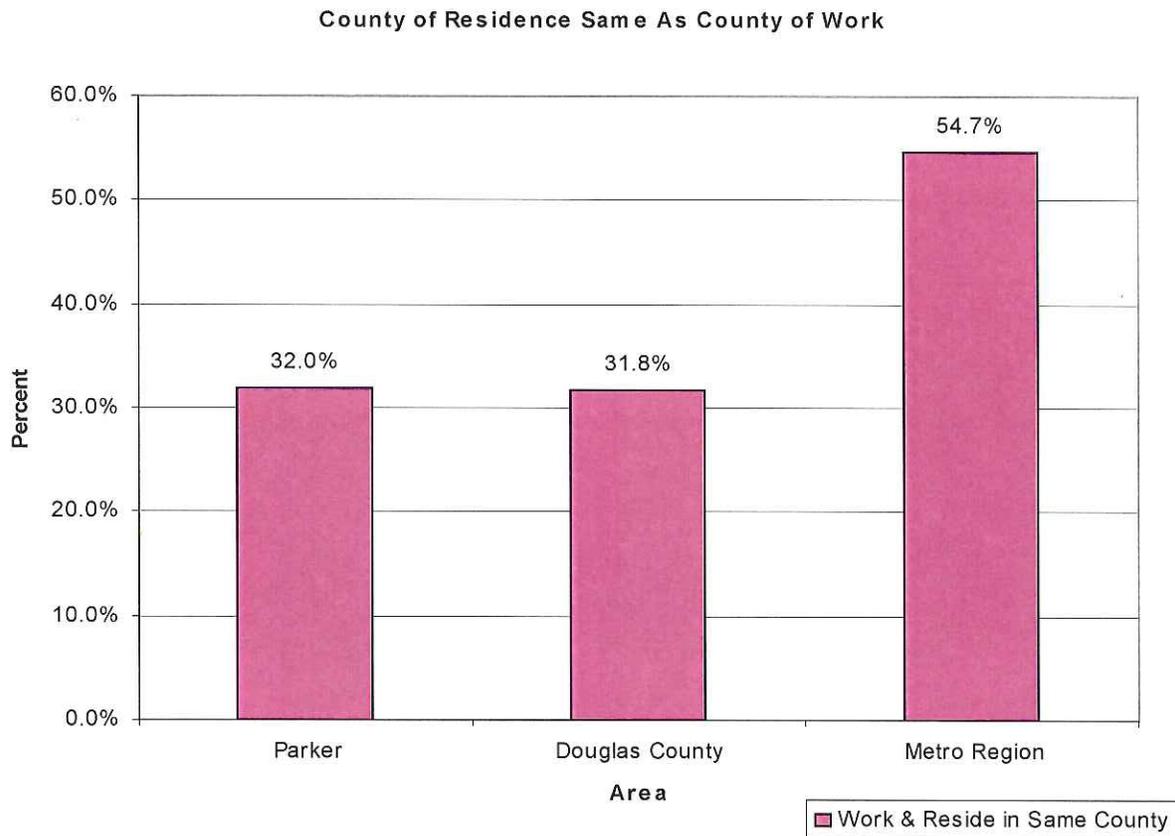
1.4 Travel Patterns

Current and future travel patterns in the Parker area were assessed to guide the development of alternatives. This travel information was assembled from existing sources. The data resources included a survey of park-n-Ride users, the US Census, travel data from the Denver Regional Council of Governments, park-n-Ride user information from RTD, and a local survey by the Parker Economic Development Council.

1.4.1 US Census Data

The 2000 US Census provided data on the journey-to-work trip. **Figure 4**, Residents Who Live and Work in the Same County, confirmed that Parker and Douglas County serve as bedroom communities to the Denver metropolitan area. Census data indicated approximately 30 percent of Parker and Douglas County residents work in Douglas County. In contrast, the Denver metropolitan regional average has an average of over 50 percent living and working in the same county.

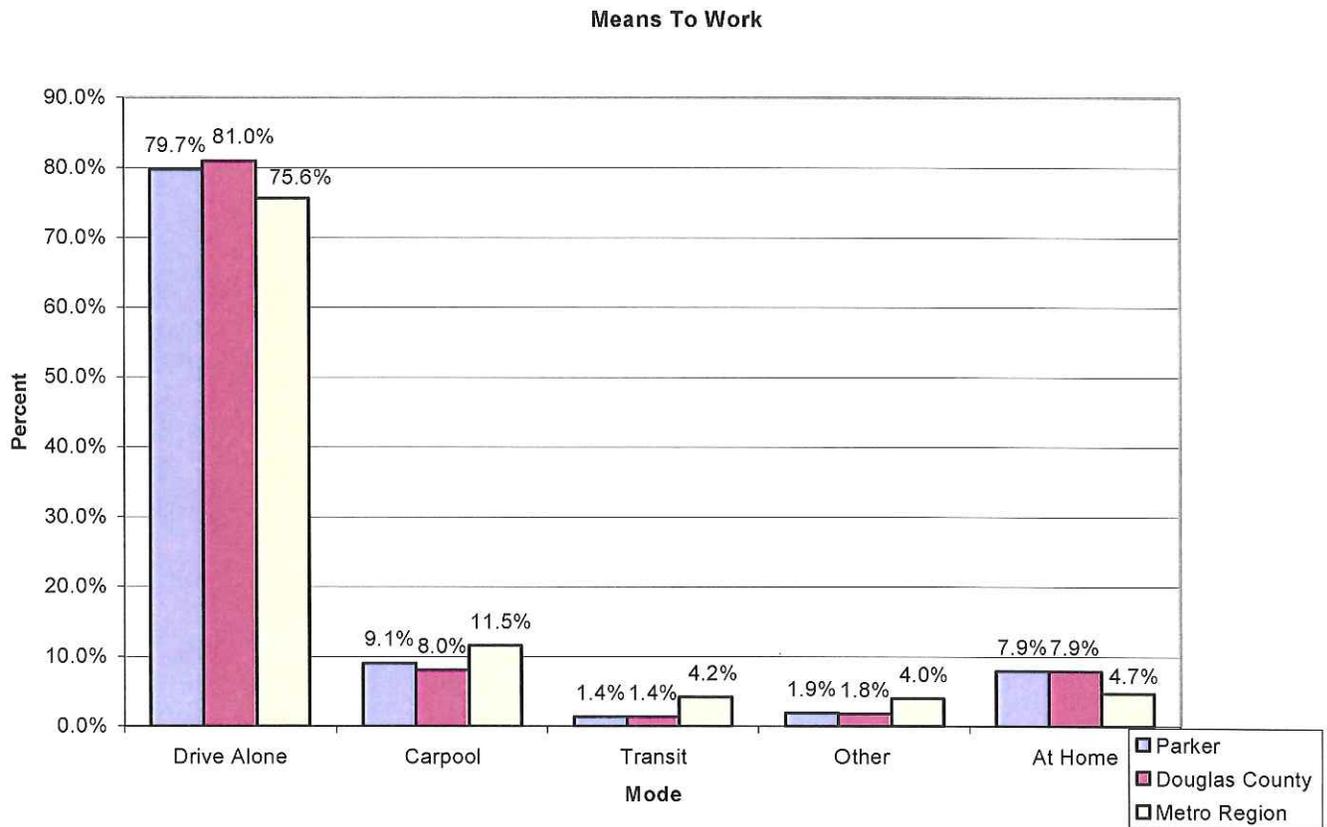
Figure 4: Residents Who Live and Work in the Same County



Source: 2000 US Census

The typical mode of travel to work reported to the Census shows that Parker residents have a lower than average rate of transit use, as shown in **Figure 5, Mode of Travel-To-Work**. While the regional average share of transit for the work trips is 4.2 percent, the reported share for Parker is 1.4 percent.

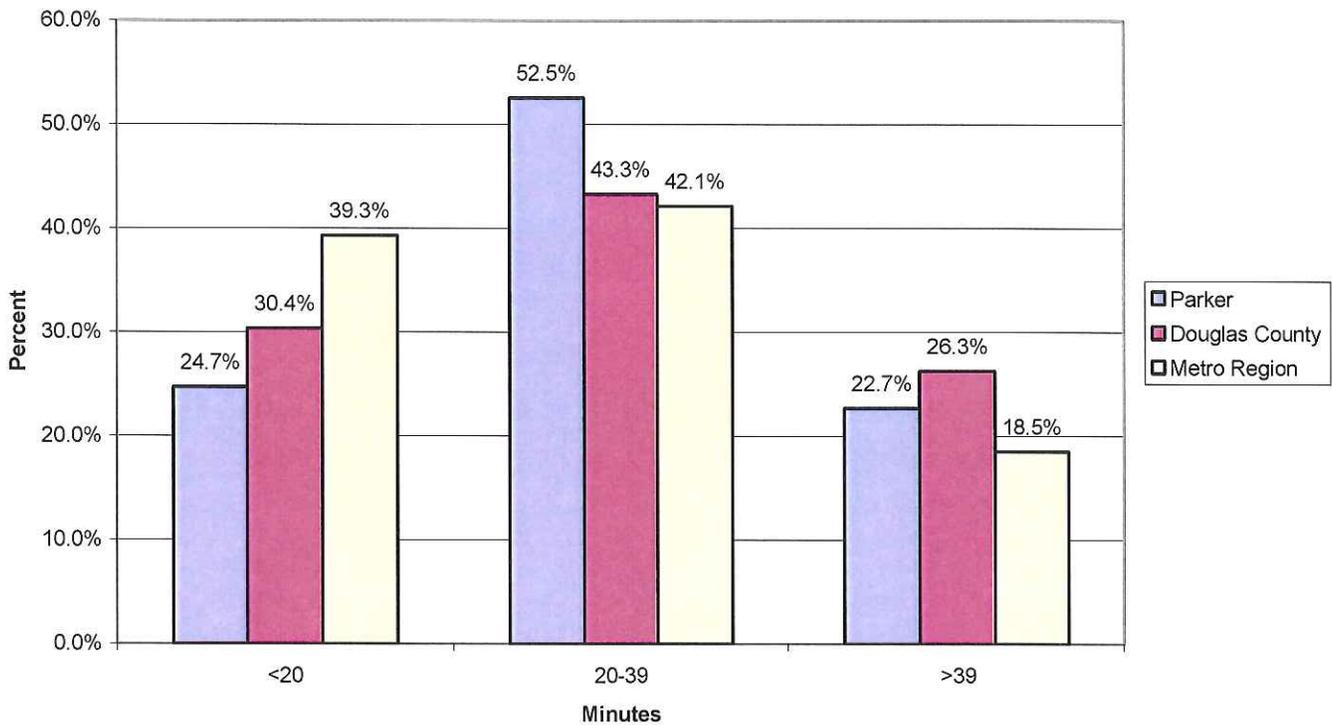
Figure 5: Mode of Travel-To-Work



Source 2000 US Census

The US Census journey-to-work data for travel times indicates that a larger share of Parker residents have longer commute trips than is typical for the Denver metropolitan area (shown in **Figure 6, Travel Time-To-Work**). For example, 23 percent of commute trips by Parker residents are 40 minutes or longer, compared to a Denver regional average of 19 percent. This indicates that many Parker residents are accustomed to traveling long distances to work.

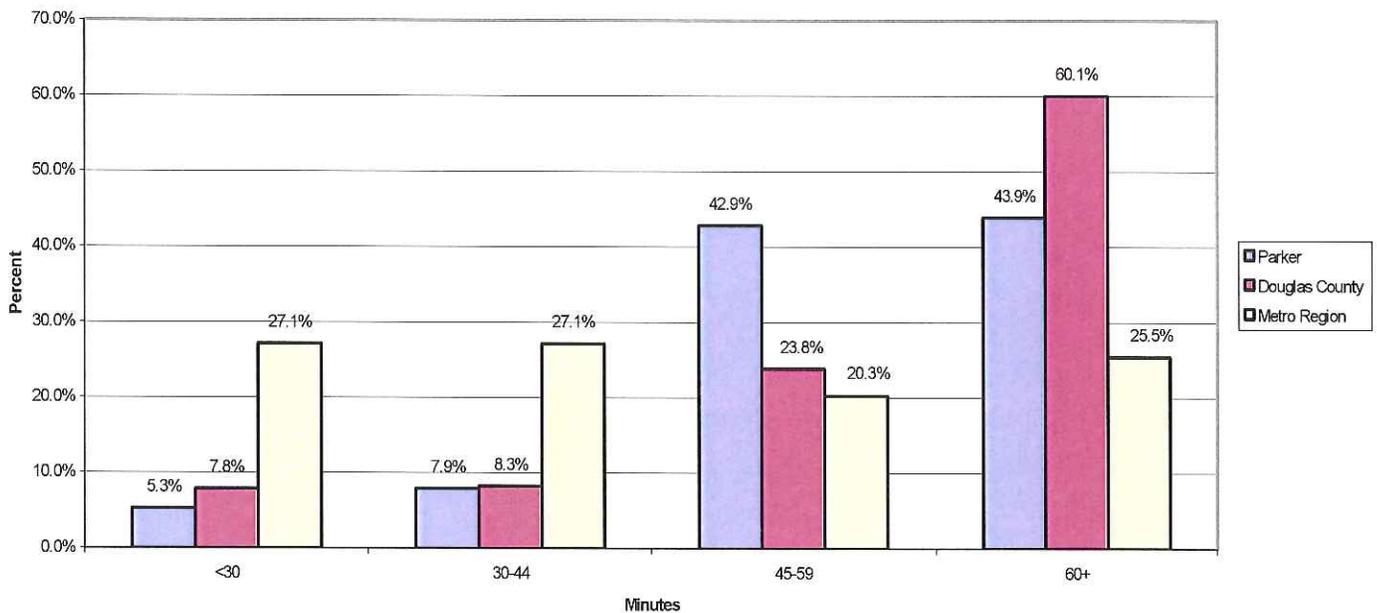
Figure 6: Travel Time-To-Work



Source 2000 US Census

The travel time of the Parker residents who reported using the bus for their journey to work is displayed on **Figure 7, Transit Travel Time-To-Work**. The users of the Regional P route dominate the statistics, since 87 percent reported journey-to-work travel times of over 45 minutes.

Figure 7: Transit Travel Time To Work Frequency



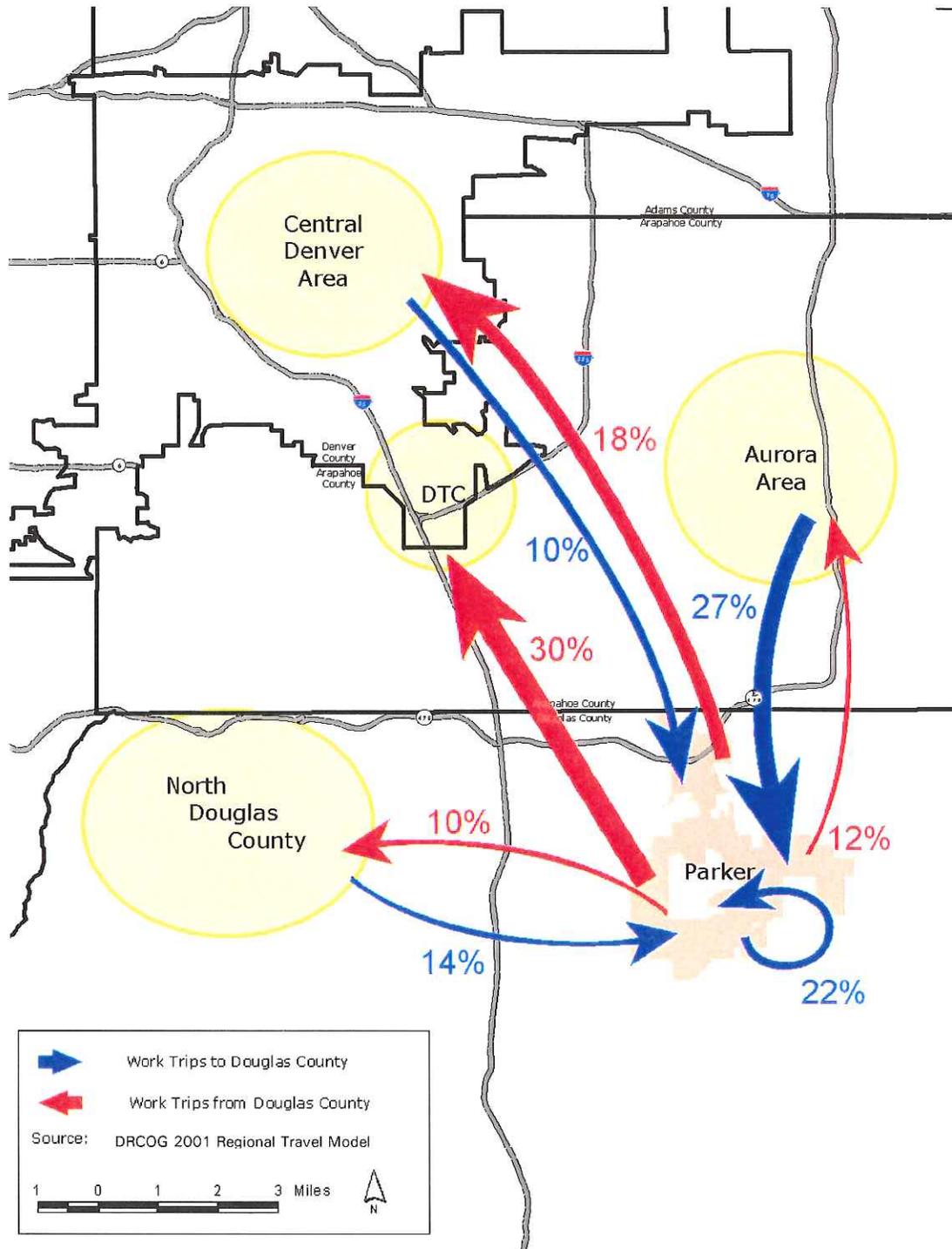
Source: 2000 US Census

1.4.2 Trip Origin and Destination Data

Information regarding the predominant origins and destinations of trips by Parker residents, and by people traveling to Parker, was analyzed to determine potential transit service options. While a specific local origin and destination survey is unavailable, the Denver Regional Council of Governments (DRCOG) regional travel model, validated to year 2001 regional transportation statistics, provided travel pattern information at a subarea level.

The DRCOG regional travel demand model provided estimates of work trip travel patterns. **Figure 8** depicts 2001 work trips to and from the Parker area. The red arrows show the major work destinations of Parker area residents: 30 percent work in the Denver Tech Center area, 18 percent work in the central Denver area, and 12 percent and 10 percent work in the Aurora and northern Douglas County area respectively. The blue arrows in **Figure 8** display the residential locations of persons who work in the Parker area. This information shows that 27 percent of workers in Parker are residents of the Aurora area, 10 percent reside in Denver, 14 percent reside in northern Douglas County, and 22 percent reside in Parker itself.

Figure 8: 2001 Work Travel Patterns



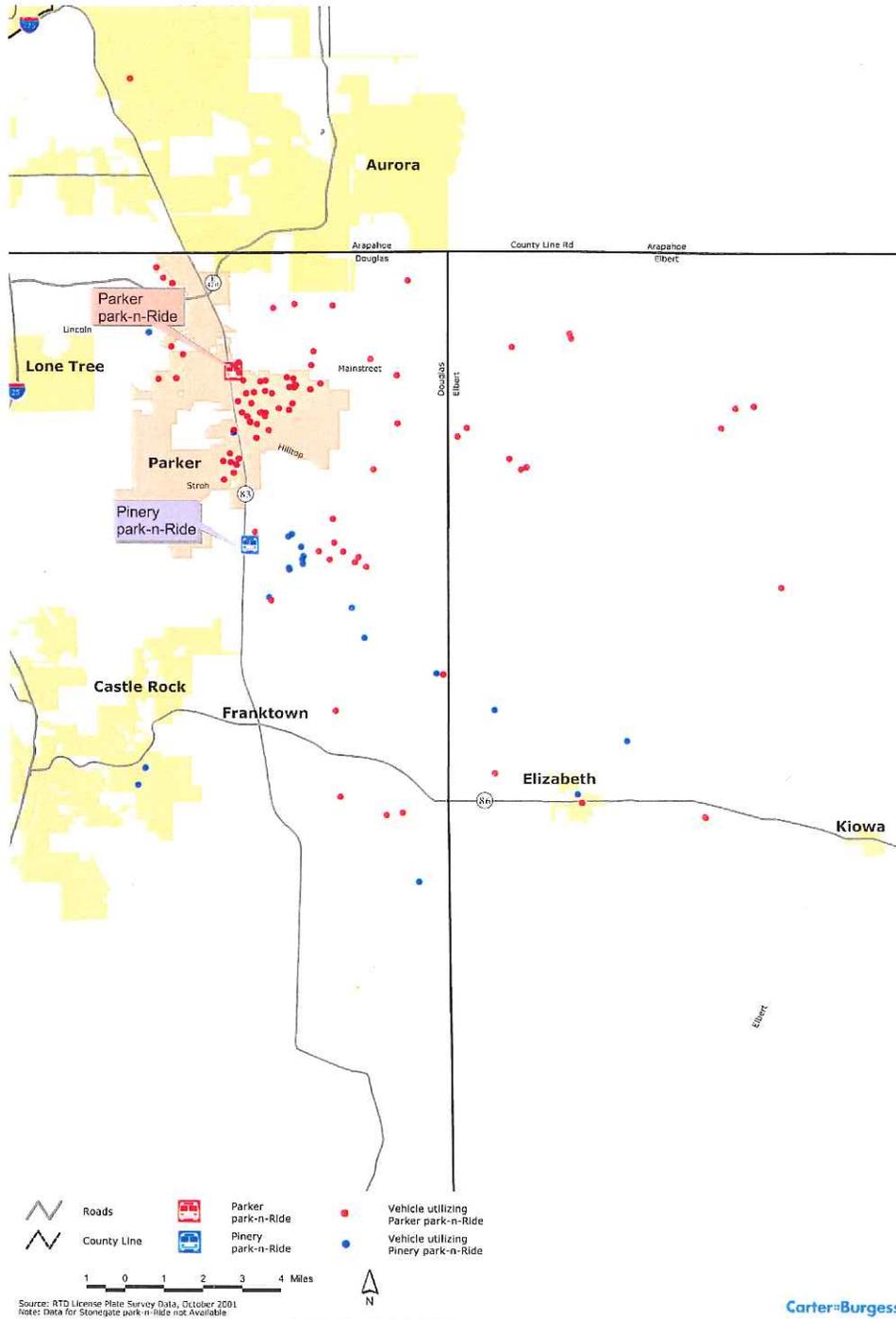
1.4.3 Origins of park-n-Ride Users

Residential locations of persons who use specific park-n-Rides were analyzed to determine the origins of transit users and potential location options for future park-n-Rides.

The origins of park-n-Ride users were obtained from RTD. RTD periodically collects license plate numbers from cars parked in the lots of park-n-Rides, and works with the Colorado Division of Motor Vehicles to obtain the street addresses from the vehicle registration databank. **Figure 9** displays year 2001 information for the Parker and Pinery park-n-Rides. Similar information for the Stonegate park-n-Ride was unavailable, since Stonegate has only been open for just over a year. The data for the Parker park-n-Ride indicates that 55 percent of users are residents of Parker, 25 percent reside elsewhere in Douglas County, and 20 percent are residents of Elbert County⁸. This data demonstrates that central Parker is an appropriate park-n-Ride location to efficiently serve transit users.

⁸ RTD, 2001

Figure 9: Origins of park-n-Ride Users*



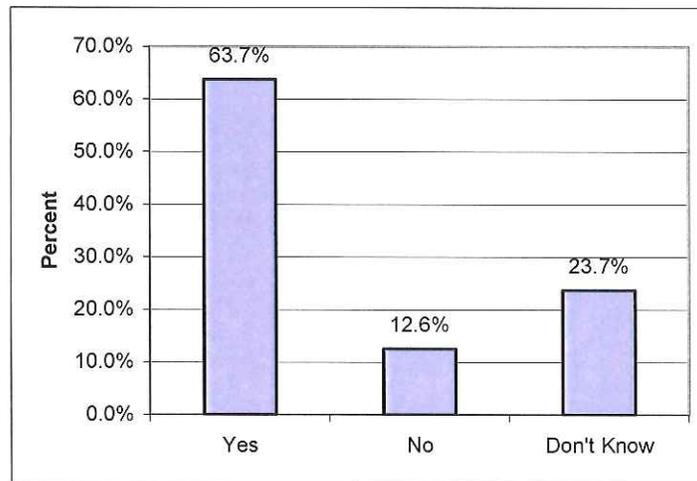
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*No data were available for the Stonegate park-n-Ride.

1.4.4 Park-n-Ride User Survey

To obtain an understanding of the patterns and preferences of current Parker transit users, a survey was conducted at the Parker, Stonegate, and Pinery park-n-Rides in August 2003. The survey was performed by placing pre-stamped mailback postcards on the windshields of cars parked at the respective parking lots. The survey achieved a high mailback response rate of 57 percent. Highlights of the results are presented in Figures 10 and 11. In answer to the question “Do you plan to regularly use light rail when T-REX opens in 2006?” almost 64 percent responded positively as shown on **Figure 10**. About 24 percent answered, “Don’t know”, probably because the opening is three years away. Overall, the response to this question conveys that the introduction of light rail will be well received in the Parker area.

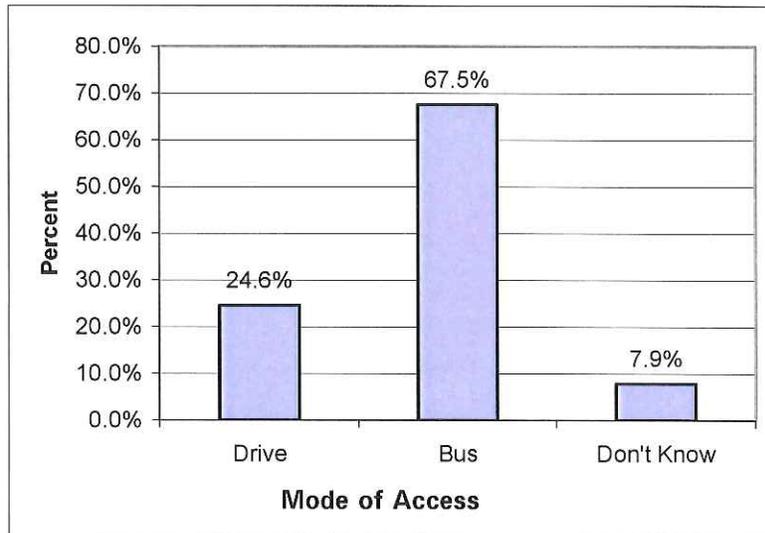
Figure 10: Users of Parker park-n-Rides who Plan to Use Light Rail



Source: Parker Transit Feasibility Study Survey, 2003.

The results of a follow-up question, “If you plan to use light rail, how would you access light rail?” are displayed in **Figure 11**. Two-thirds of the respondents stated they would use bus service provided every 10 minutes from their park-n-Ride. This suggests that people are willing to use public transit for the majority of their trip despite the need to transfer from bus to rail, and that there may be concerns about the planned parking space capacity of park-n-Rides at light rail stations.

**Figure 11: Current Users of Parker park-n-Rides
"How would you Access Light Rail?"**



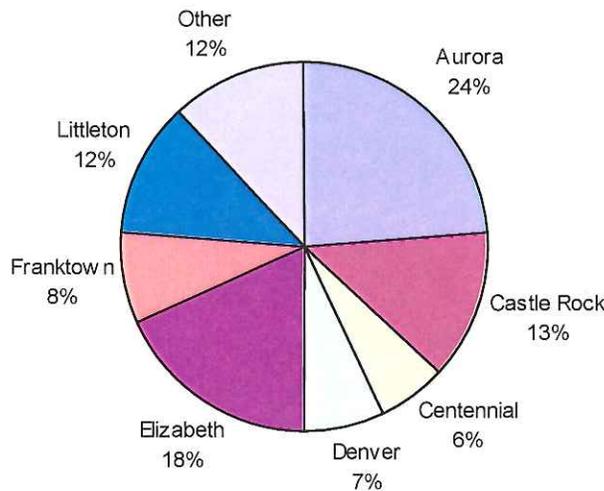
Source: Parker Transit Feasibility Study Survey, 2003.

The comments received from the survey were generally very favorable towards RTD and the current service provided by the Regional 'P' route. The complete survey report is contained in Appendix 2.

1.4.5 Parker Economic Development Council Survey

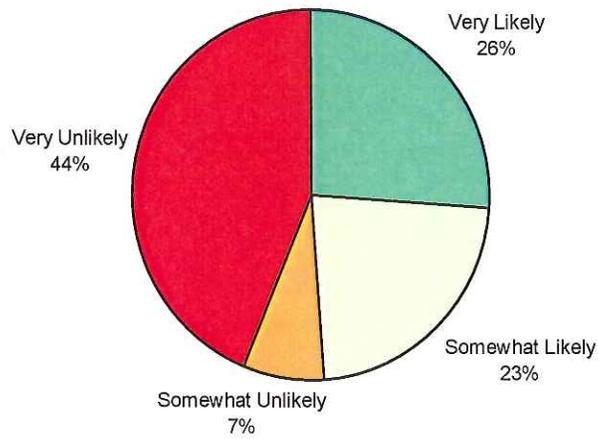
The Parker Economic Development Council (PEDC) completed a survey of about 100 employees who work in Parker in February 2002. The survey revealed that about 24 percent of the surveyed employees live in the City of Aurora, as shown in **Figure 12**. This data corroborates the work trip pattern estimated by the DRCOG travel model (see Figure 8). The employee survey found that there was interest in use of public transit, given improvements in service. As seen in **Figure 13**, about 26 percent stated they would be very likely to use RTD at least once a week if the service was improved to better meet their needs. Similar to the survey of park-n-Ride users, this information suggests there is support and interest in improved transit service in the Parker area.

Figure 12: Parker Employees by Place of Residence



Source: Parker Economic Development Council, 2002

Figure 13: Likelihood of Parker Employees Using RTD at Least Once a Week, Given Improved Transit Service to Meet Your Needs



Source: Parker Economic Development Council, 2002

1.5 Planned Service Changes by RTD

RTD is continually refining and improving its service to accommodate changing demands and resources, and is planning major changes to its bus system upon the opening of the T-REX Southeast Corridor light rail line.

Potential Short-term Service Changes

Service planners at RTD have been developing service changes in the Parker area. While some are minor, others affect the transit system presented to the traveler.

- The Regional 'P' may be re-routed to Jordan and Mainstreet from Lincoln Avenue and Parker Road to avoid a difficult left turn from Jordan Road to Lincoln Avenue.
- Since the Parker Road segment of the Local 66 route does not attract many riders, options for reconfiguring this route have been informally discussed at RTD.
- The RTD board approved a service change to the Local Route 153. Beginning in January 2004, this route on Chambers Road now ends at Arapahoe Road and Parker Road, with select trips ending at the Parker park-n-Ride during the peak periods.
- Due to the economic downturn, RTD has recently needed to make reductions in service across its entire system. Funds for increased service are unavailable. Only expenditure-neutral service changes can be considered.

Planned Service Changes Upon T-REX Completion

Upon completion of the Southeast Corridor light rail line, service changes will be made in the Parker area to provide bus feeder services to the light rail stations.

As currently planned by RTD, the Regional 'P' route will be converted to a Local route, temporarily labeled by RTD as the 410, between the Lincoln and I-25 LRT station and the Parker area. The service frequency of the 410 route will be 10 to 15 minutes during the peak periods, and 30 minutes in the off-peak. The service will operate all day, including the evenings. At least some select trips will terminate in Franktown. The details of the preliminary service operating plan for the 410 route in the Parker area will be finalized before light rail opens in 2006.

The existing Route 66, which provides service to the Denver Tech Center, will remain in place, and provide an additional connection to the LRT station at Arapahoe Road and I-25.

2 DEVELOPMENT OF TRANSIT OPTIONS

An initial list of options for improving transit services in the Parker area was developed by considering the study objectives, analyzing the travel pattern data, and assessing the current and proposed transportation facilities and services. The Regional Stakeholder Committee also provided input to the list of potential options. An initial screening of the potential options was performed with a fatal-flaw analysis, as presented in **Table 2**. The qualitative analysis included a summary of the pros and cons of each option, and a recommendation to advance the option or eliminate from further analysis.

Table 2:
Potential Transit Options

Option	Discussion	Recommendation
Add spaces at existing park-n-Rides	<ul style="list-style-type: none"> • The Parker and Stonegate park-n-Rides are near capacity. • At Parker park-n-Ride, there is no available land for expansion; a parking structure would be very expensive. Access in and out of the park-n-Ride is not efficient. • At Stonegate, land is available to the north but no funds are currently available to purchase. The vacant land may soon be sold to another party. 	Eliminate
New park-n-Rides	<ul style="list-style-type: none"> • A new park-n-Ride could address the capacity needs of Parker area park-n-Rides. 	Advance
Increased bus feeder service to/from LRT stations	<ul style="list-style-type: none"> • Bus feeder service to/from the Lincoln LRT station is being developed by RTD for the opening of the Southeast Corridor light rail line. Frequency of service will be 10-15 minutes during the peak and 30 minute during the off-peak. 	Advance

Table 2 (continued) Potential Transit Options

Option	Discussion	Recommendation
Expanded hours of bus feeder service	<ul style="list-style-type: none"> Bus feeder service to/from the Lincoln LRT station is being developed by RTD for the opening of the Southeast Corridor light rail line. Frequency of service will be 10-15 minutes during the peak and 30 minute during the off-peak. 	Advance
Fixed Guideway (LRT/BRT) connection to Southeast Corridor LRT	<ul style="list-style-type: none"> A fixed guideway to Southeast Corridor LRT would provide a fast, reliable connection to the regional system. Capital costs may be prohibitive for rail options. 	Advance
Special Event Service	<ul style="list-style-type: none"> Due to funding constraints, RTD eliminated RockiesRide to/from the Parker park-n-Ride. Funds are still unavailable to renew this service. Nine-mile park-n-Ride at I-225 and Parker Road is the best location for Parker residents to board the RockiesRide service. Special event service will be provided by LRT upon the completion of the Southeast Corridor. 	Eliminate; special evening service will be addressed by opening of the Southeast Corridor and expanded local bus service to the light rail stations.
Connect to North and South Front Range Bus Service	<ul style="list-style-type: none"> CDOT has recently studied the feasibility of implementing commuter bus service between the larger cities along the Colorado Front Range. The intercity commuter bus service would have stops at Castle Rock and Mineral Station on its way to and from Colorado Springs each morning and evening. Funding and other issues need to be addressed before the service might be implemented. 	Consider as a long-term option; service not operating yet.
Local bus service from Parker park-n-Rides to employment sites	<ul style="list-style-type: none"> Local bus service to park-n-Rides is non-existent Travelers would have no incentive to drive to a park-n-Ride instead of their location of employment. 	Eliminate

Table 2 (continued)
Potential Transit Options

Option	Discussion	Recommendation
Employer-based shuttles from LRT stations/park-n-Rides	<ul style="list-style-type: none"> • Employers in Parker not of sufficient size to warrant shuttles. • Local bus service to park-n-Rides is non-existent. • Travelers have no incentive to drive to a park-n-Ride instead of their location of employment 	Eliminate
New local/circulator service	<ul style="list-style-type: none"> • Current routing of local service serves a small demand travel market. • Parker has several new developments of higher density. • There may be demand for transit service to the new hospital (currently under construction). 	Advance
Jitney Service	<ul style="list-style-type: none"> • Current policy at the Public Utilities Commission (PUC) would have to be changed. • Development densities in Parker may be too low to support this type of service 	Eliminate
call-n-Ride	<ul style="list-style-type: none"> • Parker is a relatively stand-alone community of sufficient size to consider call-n-Ride service • Service could provide mobility for seniors and others to the hospital and other in-town locations. 	Advance

For the next stage of analysis, the options that passed the initial screening were categorized into two types: those that provide or support regional connector service, and those that provide local service. Alternatives were evaluated for each type of service.

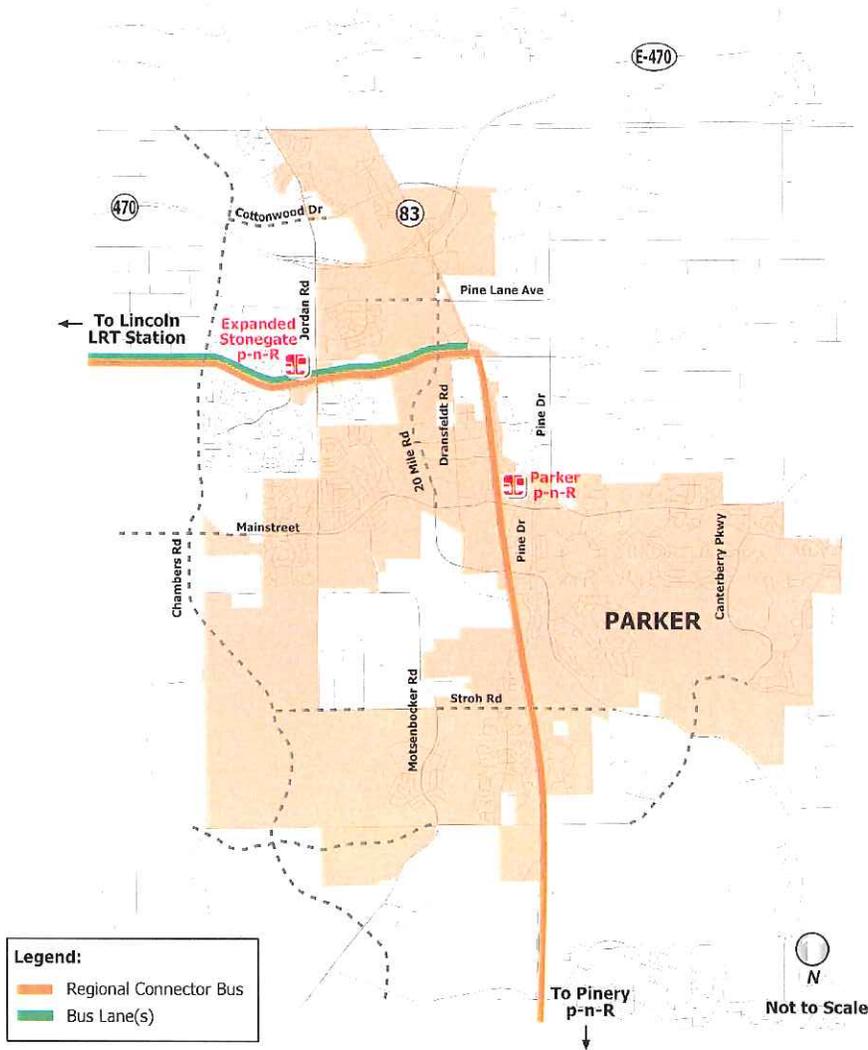
2.1 Development of Regional Connectors

Three alternatives of regional connectors were developed. A recommendation to eliminate or advance the concept for further analysis was made for each alternative, after assessing each alternative's strengths and weaknesses.

2.1.1 Bus Rapid Transit on Lincoln Avenue (Eliminated)

Figure 14 displays the concept of BRT service on Lincoln Avenue. A dedicated bus lane in each direction would be added to Lincoln Avenue between Parker Road and the access to the Lincoln light rail station. This lane would be restricted to buses only or shared with right turning vehicles and/or High Occupant Vehicles (HOV). BRT service to and from the LRT station would serve the Stonegate, Parker, Pinery, and Franktown park-n-Rides. The initial estimated capital cost of this option would be \$77 million, or about \$12 million per mile⁹.

Figure 14: BRT on Lincoln Avenue



⁹ Costs were estimated using unit costs from the RTD Guidance Manual. Appendix 3 contains a breakdown of the cost estimate.

This option was eliminated for the following reasons:

- Obtaining right-of-way (ROW) on Lincoln would be difficult along sections of the roadway that has been developed.
- It would not function well if the potential light rail extension to the Lone Tree RidgeGate development occurs.
- Buses would still be in mixed traffic on Parker Road. Adding bus lanes on Parker Road was found to be cost prohibitive.
- The impacts to general purpose traffic would need to be assessed.
- Park-n-Ride capacity would need to be increased, and the current park-n-Rides are difficult to expand.
- Does not directly serve Parker commercial areas.
- Extensive multi-jurisdictional coordination between CDOT, Douglas County, Lone Tree, and the Town of Parker would be required to implement this alternative.

2.1.2 Light Rail Transit on Mainstreet (Advanced)

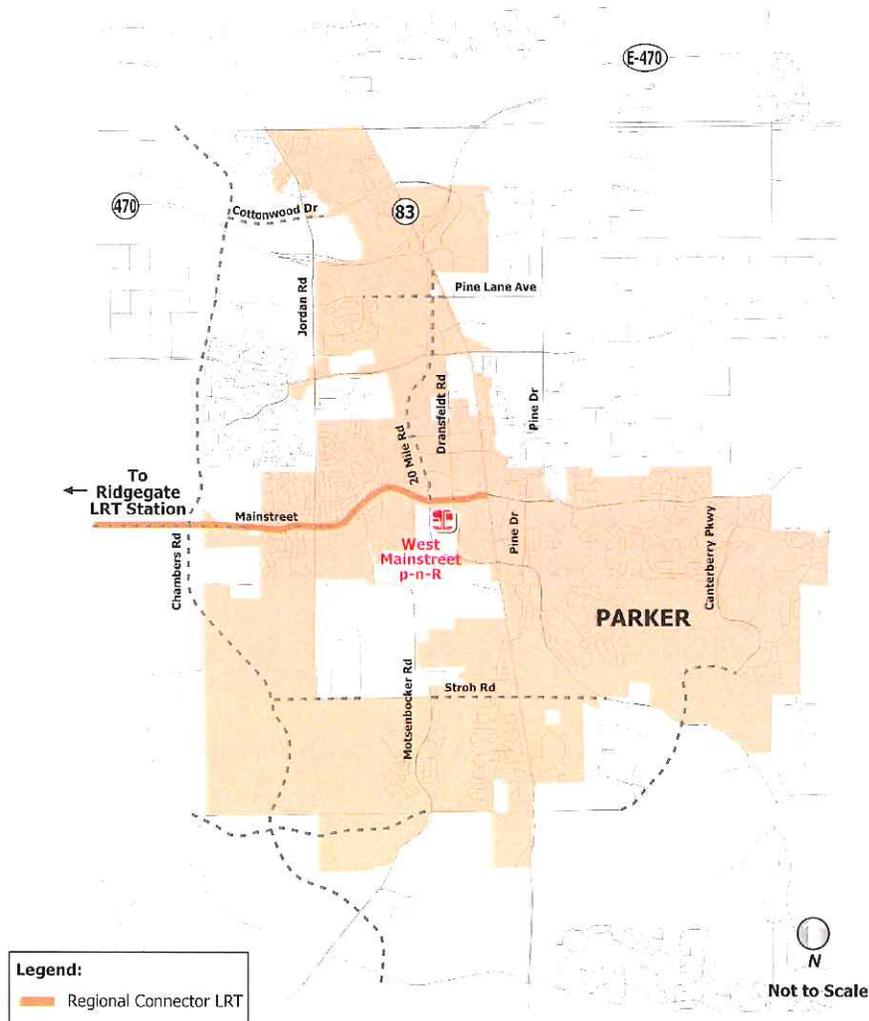
In this alternative shown in **Figure 15**, a light rail line would be constructed along Mainstreet from the potential end-of-line at the RidgeGate center to the vicinity of Parker Road. The light rail line would not cross Parker Road, due to limited right-of-way on Mainstreet east of Parker Road. A park-n-Ride would be added along Mainstreet; potentially at Dransfeldt on the property currently that has a public mini-storage facility. Before the RidgeGate end-of-line LRT station is built, bus service can be routed to the Lincoln end-of-line station. The initial estimated capital cost of this option would be \$191 million, or about \$29 million per mile¹⁰. The capital costs do not include vehicles, which are \$2.6M each. The number of light rail vehicles required would depend on the service frequency, routing and ridership. This option was advanced as a potential long-term option and has the following characteristics:

- Would provide fast and reliable transit service.
- Takes advantage of the partially unbuilt Mainstreet corridor, allowing advanced planning of right-of-way requirements.
- Serves the commercial and residential area along Mainstreet.

¹⁰ Costs were estimated using unit costs from the RTD Guidance Manual. Appendix 3 contains a breakdown of the cost estimate.

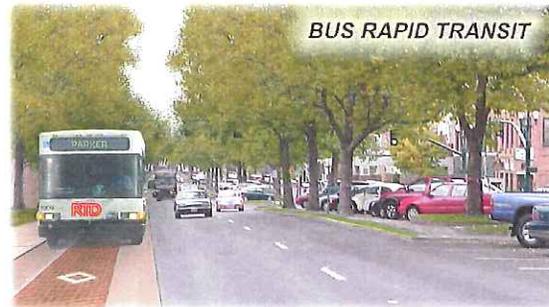
- Offers opportunities for transit oriented developments along the Mainstreet corridor.
- Provides challenges for direct access for the downtown historic district.
- Right-of-way constraints along Mainstreet near Parker Road to accommodate the end-of-line.
- Requires the light rail extension to the Lone Tree RidgeGate development.
- Requires multiple agency coordination.
- Opportunities for direct rail connection to regional system without transfers at the RidgeGate and I-25 LRT Station.

Figure 15: LRT on Mainstreet



2.1.3 Bus Rapid Transit on Mainstreet (Advanced)

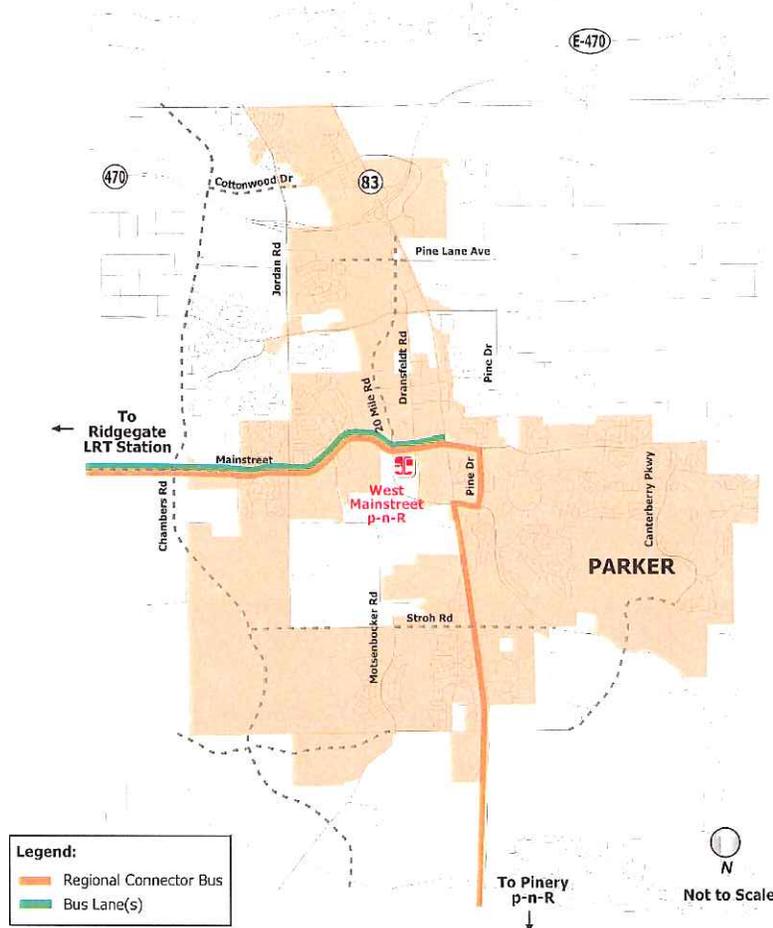
This alternative would use Mainstreet as a transit corridor between downtown Parker and the proposed RidgeGate City Center in Lone Tree. **Figure 16** displays the conceptual alignment of BRT on Mainstreet. Before the RidgeGate end-of-line LRT station is built, bus service can be routed to the Lincoln end-of-line station. The cross section of Mainstreet would be developed to include a



dedicated bus lane in each direction between Parker Road and RidgeGate. This lane would be restricted to buses only or shared with right turning vehicles and/or High Occupant Vehicles (HOV). Along the corridor, stations with platforms, shelters, lighting and other passenger amenities would be provided instead of bus stops. The traffic signals would be enhanced to improve bus operations, and the intersections would be configured to improve bus flow. A structured garage park-n-Ride would be added along Mainstreet. A potential site might be at Dransfeldt and Mainstreet on the property currently that has a public mini-storage facility. For a premium BRT system, the initial estimated capital cost of this option would be \$69 million, or about \$10 million per mile¹¹. The capital cost estimates do not include vehicles, which could range from \$350K to \$1M each depending on the type selected. The number of vehicles required would depend on the service frequency, ridership and travel time of the route. A functioning BRT system could be built at lower costs, with premium enhancements phased in over time.

¹¹ Costs were estimated using unit costs from the RTD Guidance Manual. Appendix 3 contains a breakdown of the cost estimate.

Figure 16: BRT on Mainstreet



This option was advanced for the following reasons:

- Would provide fast and reliable transit service to the LRT end-of-line.
- Takes advantage of the partially unbuilt Mainstreet corridor, allowing advanced planning of right-of-way requirements.
- Does not depend on the construction of RidgeGate, as it can provide a direct connection to either RidgeGate or the Lincoln end-of-line station.
- Buses can directly serve Mainstreet east of Parker Road in mixed traffic.
- Serves the commercial and residential area along Mainstreet.
- Offers opportunities for transit oriented developments along the Mainstreet corridor.
- Can be phased in over time as funds become available.

2.2 Development of Local Service

The development of local service options was based on an analysis of the current and planned local services operated by RTD. Improved circulation within Parker and possibilities for transit service from other communities were combined to meet both of these needs.

Local Circulation

A stand-alone circulator service within the Town of Parker was considered but eliminated. At this time, high-density activity centers do not exist in the Town that would attract a sufficient quantity of trips from residents within the Town. As the housing-to-jobs ratio changes in the future, this will need to be re-evaluated.



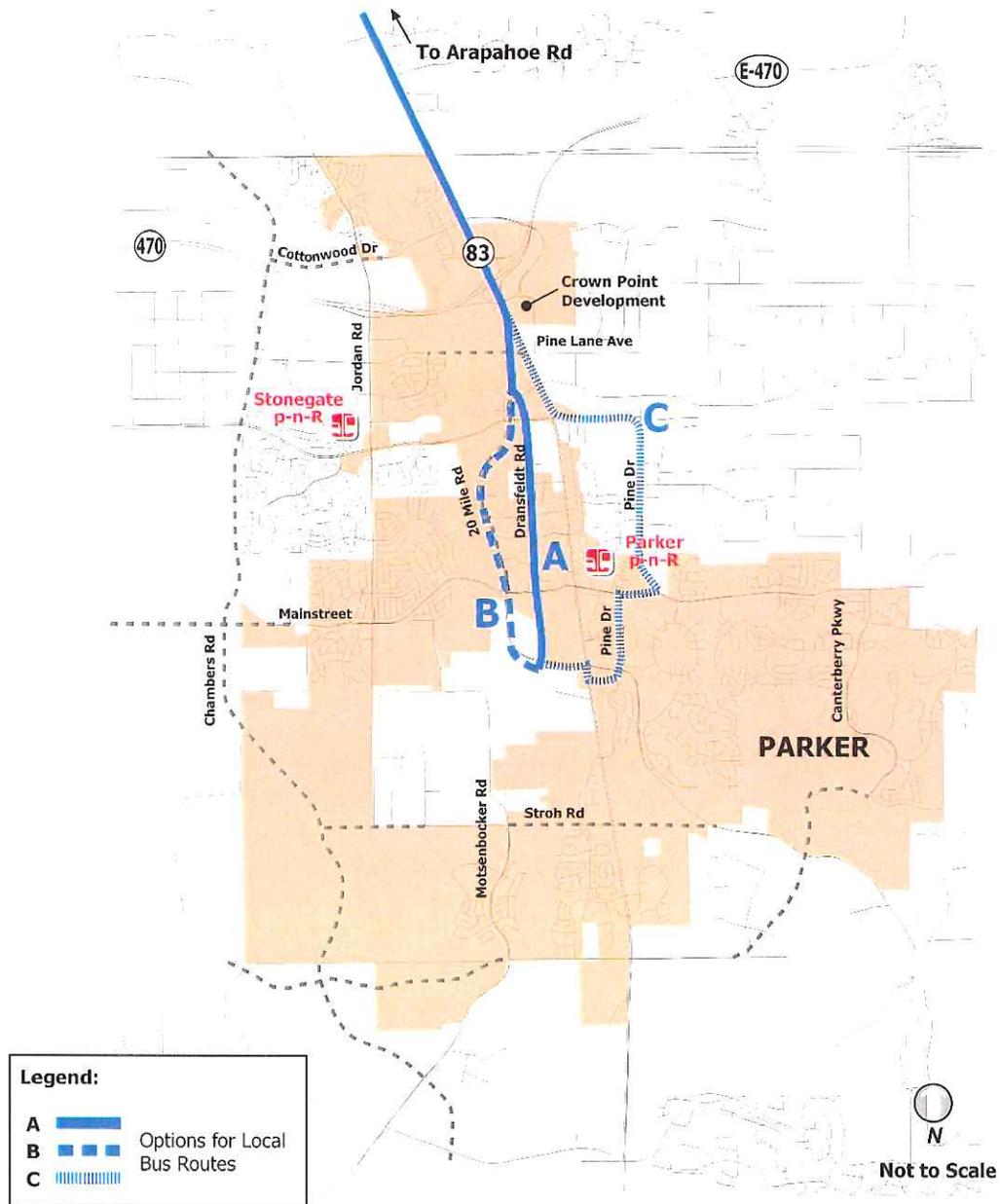
Improved local service can be accomplished by rerouting the Local 66. The current Parker Road segment of the Local Route 66 has poor ridership, and RTD is open to the possibility of redirecting the resources of this service. Parker Road is not conducive to local transit service, but there are new developments along Dransfeldt

Road and the Crown Point area that would be more likely to support transit service. In the future, it may be preferable to place the Local routes on Twenty Mile Road instead of Dransfeldt Road, since Twenty Mile Road is planned to be more favorable to transit service with detached sidewalks and mixed retail and residential developments. In the future, another corridor that may warrant future transit service is Pine Drive. **Figure 17** shows the options for Local bus routes in Parker. The Town should coordinate with RTD to initially use Dransfeldt Road through the center of town instead of Parker Road for Local bus routes.

A call-n-Ride service could potentially meet the needs of local circulation within the Town of Parker. Call-n-Ride transit services typically function well in relatively stand-alone communities of about ten square miles. RTD currently operates five call-n-Rides, with more pilot programs planned. During the peak periods, call-n-Rides typically serve as feeder services to park-n-Rides. During the off-peak, call-n-Ride trips are typically made by students to schools as well as elderly persons to various attraction centers within the community. RTD is currently conducting a detailed origin and destination travel survey in the Parker area. The results of the

survey will indicate if the demand for transit travel within the Parker community is at a level that would merit a call-n-Ride service. A profile of the potential call-n-Ride service would need to be assembled using additional information regarding densities and attraction centers within the community.

Figure 17: Limited/Local Service Options

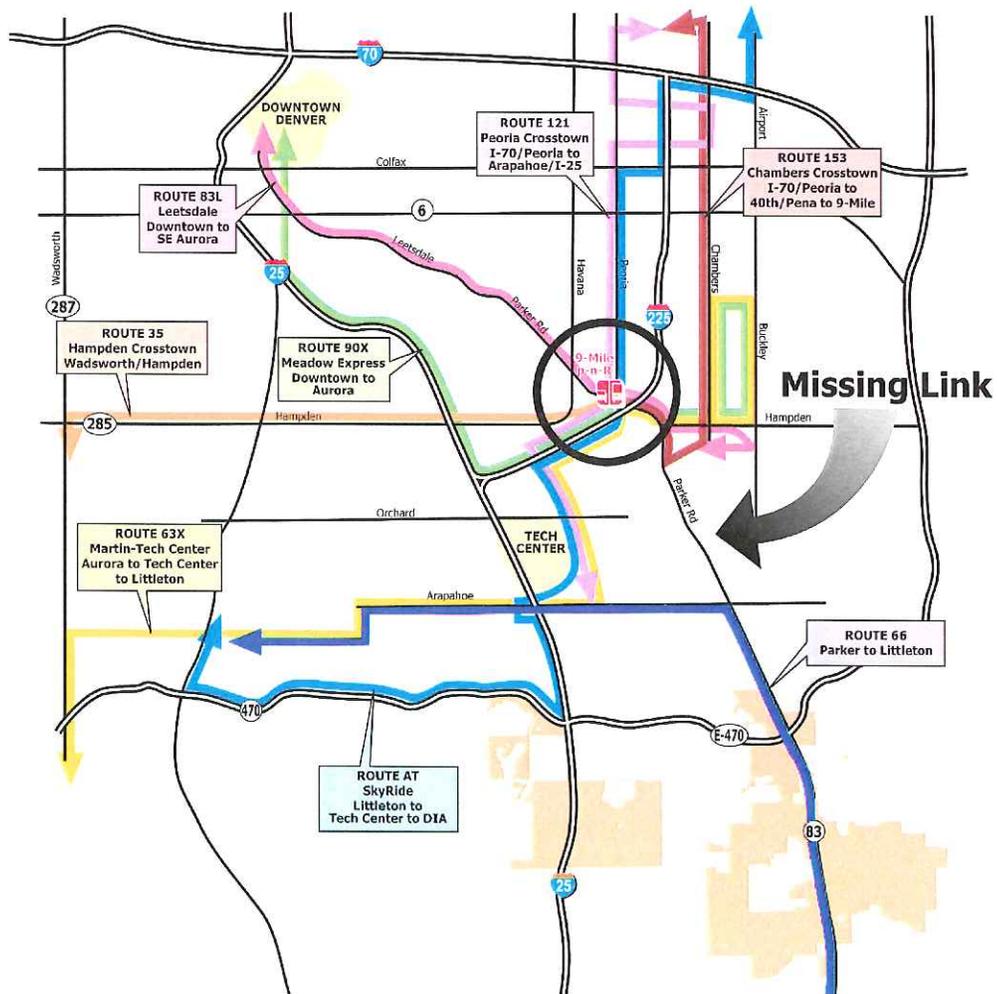


Connection to Other Communities

Given the data that suggests a sizable portion of employees in Parker live in Aurora, an examination of the current transit connections to this area revealed a “missing link” in the RTD route system. **Figure 18** shows that a key transit hub in the Aurora area is the Nine-mile park-n-Ride at I-225 and Parker Road, but no connections to the Parker area are currently provided.

To improve the connection between Aurora and Parker, RTD has recently approved rerouting the Local 153. This Chambers Road route will now travel further south to Arapahoe Road and Parker Road, with select trips ending at the Parker park-n-Ride during the peak periods. During the course of this study, the RTD Board approved

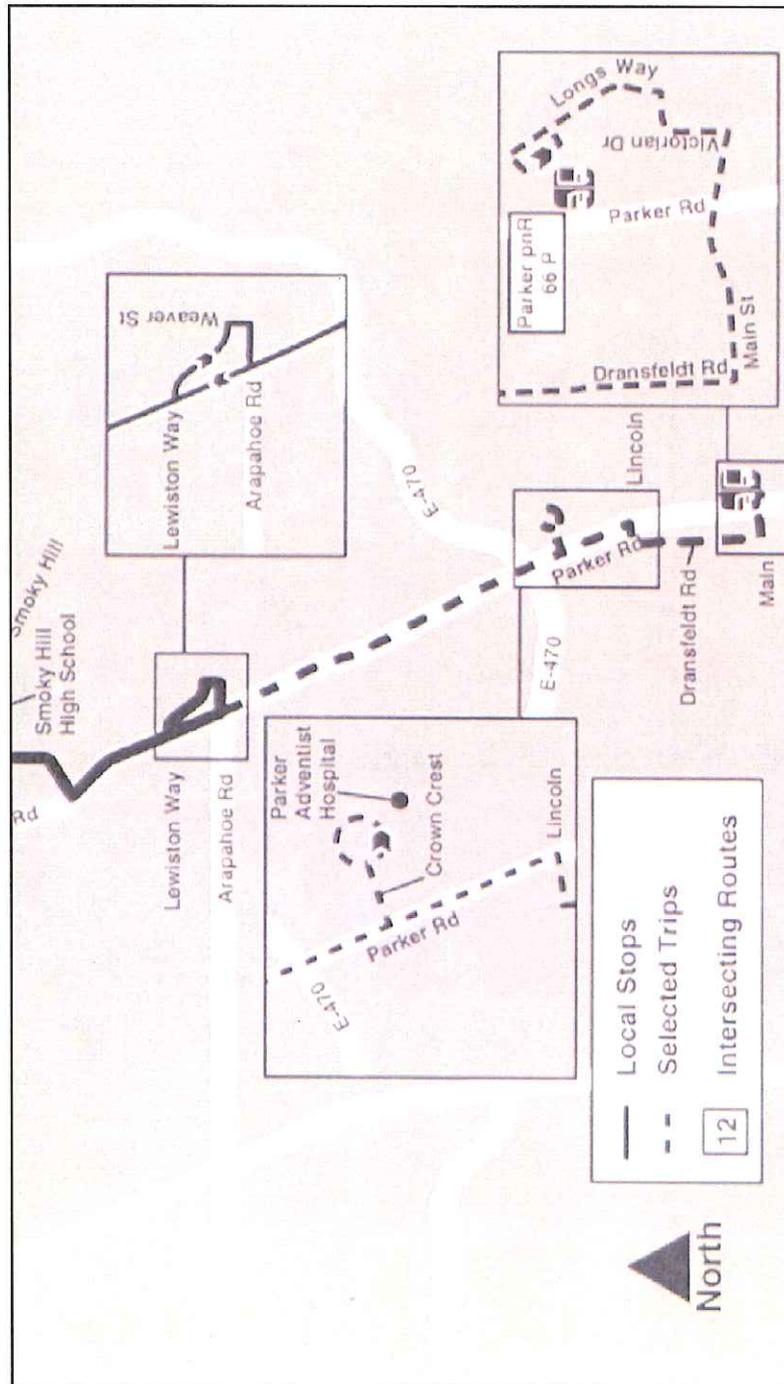
Figure 18: Local Bus Connections to North



route changes to the 153 in late 2003. **Figure 19** shows the new route 153 which began service in January 2004.

The Local 153 introduced a transit connection to and from the Aurora area, which serves some employees in Parker. A direct route to the Nine-Mile park-n-Ride would improve the connection to Aurora even more. RTD requires an origin and destination survey be completed before it can justify re-aligning routes. As a result of this study and coordination with the Town of Parker, RTD initiated the origins and destination study in December 2003. As of January 2004, approximately 400 responses had been received out of 7,500 households that received the survey. Upon the analysis of the survey results, a re-assignment of the resources of the Local 66 bus trips routed to Parker will be considered. This may allow service from Parker Road to the Nine-Mile park-n-Ride.

Figure 19: RTD New Route 153



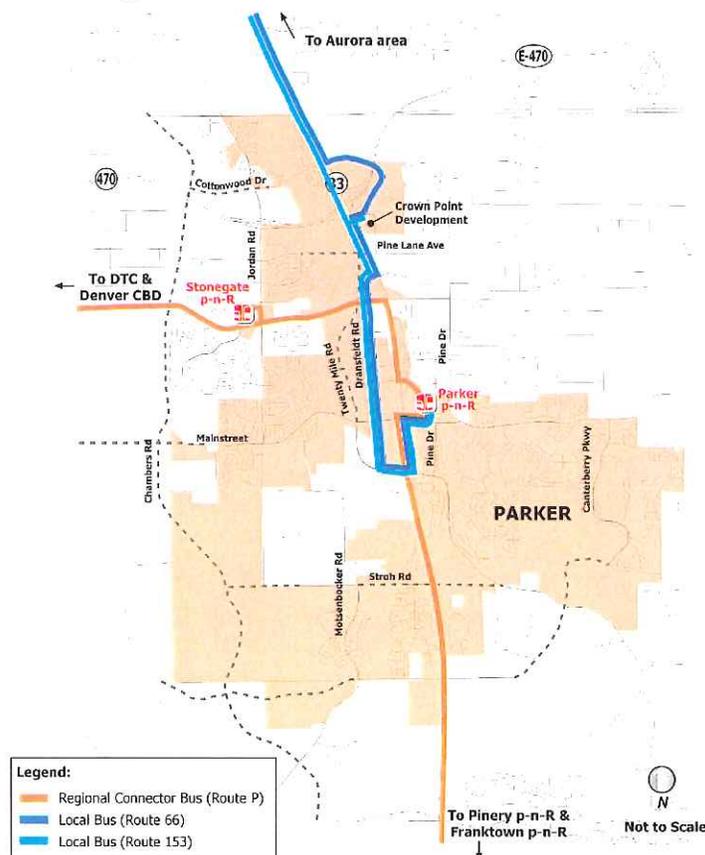
3 RECOMMENDED PLAN

The elements which were advanced were brought together into a comprehensive plan. Upon consideration, a recommendation plan in three stages was developed. A major milestone will be the completion of the T-REX project, so the first two stages are defined by before and after T-REX completion in 2006. A long-term planning horizon formed the third stage.

3.1 Prior to T-REX (2004-2006)

Figure 20 displays the near-term proposed transit system in the Parker area. Connection to the regional system will remain via the Regional 'P' route to and from downtown Denver during the peak periods. Local service can be enhanced by re-routing the Local 66 and 153 service to Dransfeldt Road instead of Parker Road. A connection to Aurora will be possible via the Route 153. The 153 will be routed along Parker Road beginning in January 2004, with select trips terminating in Parker.

Figure 20: Pre-T-REX 2004 – 2006

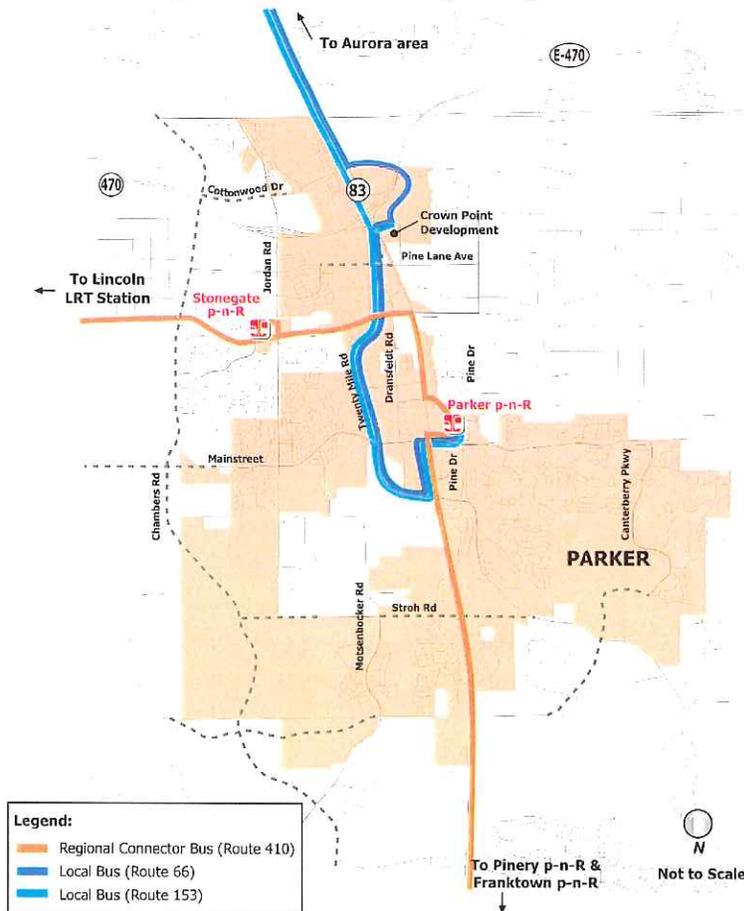


3.2 T-REX Opening (2006)

Upon completion of the T-REX project in 2006, a local feeder route, temporarily labeled by RTD as the 410, will provide a transit connection between the Lincoln LRT station and the Parker area. The service frequency of the 410 route will be 10 to 15 minutes during the peak periods, and 30 minutes in the off-peak. The service will operate all day, including the evenings. At least some select trips will terminate in Franktown. The details of the preliminary service-operating plan for the 410 route in the Parker area will be finalized by RTD before light rail opens in 2006.

Figure 21 depicts the conceptual alignment of the 410 route along Lincoln Avenue and Parker Road. By the year 2006, Twenty Mile Road should be considered for the routing of Local bus service (Route 66 and Route 153) instead of Dransfeldt Road. The initiation of a call-n-Ride should be considered.

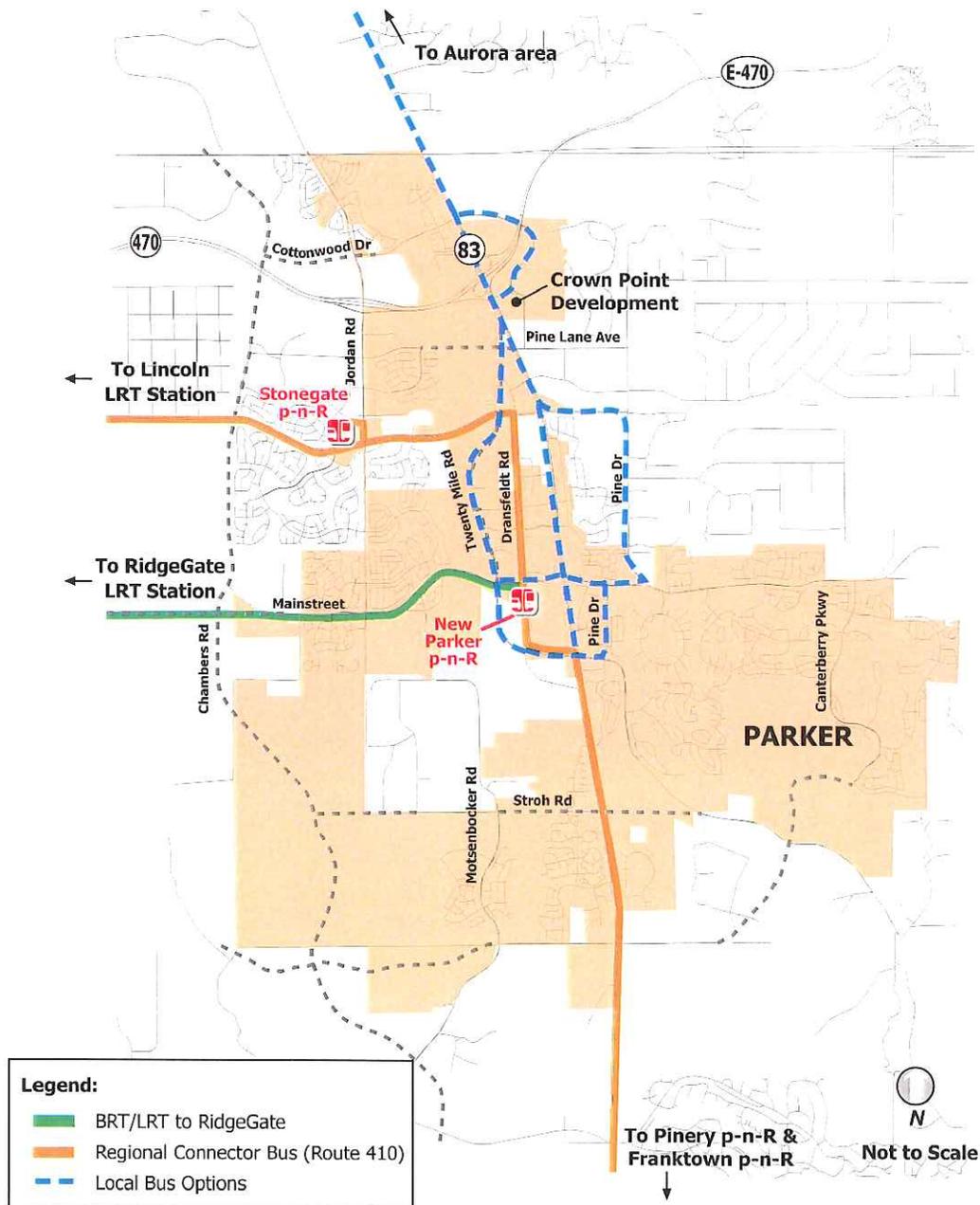
Figure 21: T-REX Opening 2006



3.3 Long-Term (20+ years)

The long-term rapid transit options for the Town of Parker are shown on **Figure 22**. Mainstreet would be developed as a transit corridor with either Bus Rapid Transit (BRT) or Light Rail Transit (LRT). The rapid transit service would connect Parker's downtown commercial core with Lone Tree's proposed RidgeGate City Center.

Figure 22: Long-Term (20+ years)



Some of the features of this corridor could include:

- The cross section of Mainstreet between Parker Road and RidgeGate would be developed to include a dedicated bus lane or light rail tracks in each direction. For BRT, this lane would be restricted to buses only or shared with right turning vehicles and/or High Occupant Vehicles (HOV). For LRT, the lane would be restricted to LRT vehicles.
- Along the corridor, stations with platforms, shelters, lighting and other passenger amenities would be provided.
- The traffic signals would be enhanced to improve BRT or LRT operations, and the intersections would be configured to improve transit flows.
- A structured garage park-n-Ride would be added in the downtown commercial core of Town. A potential site might be at Dransfeldt and Mainstreet on the property currently that has a public mini-storage facility.

For a premium BRT system, the initial estimated capital cost of this option is \$69 million, or about \$10 million per mile.¹² A functioning BRT system with dedicated lanes could be initially built at initial lower costs, where premium enhancements such as signal improvements, bus station amenities, a structured park-n-Ride, and other features are phased in later time periods. For a LRT system, the initial estimated capital cost is \$191.3 million, or about \$29 million per mile. In case the RidgeGate end-of-line LRT station is not built in this timeframe, bus service could be routed to the Lincoln end-of-line station via Chambers Road and Lincoln Avenue.

Bus service on Lincoln Avenue would continue to serve as another connection to light rail service from the Parker area. Improvements to Local service will need to be evaluated as population and employment continues to grow. Local service may need to be added or re-routed to Twenty Mile Road, Pine Drive, and other arterials as development warrants.

If not already implemented, a call-n-Ride service should be considered.

3.4 Evaluation of Recommended Plan

A review of the recommended plan was conducted in light of the three objectives of the study. This evaluation is presented in **Table 3**. At each stage, the objectives are achieved with greater effectiveness. In the immediate future,

¹² Costs were estimated using unit costs from the RTD Guidance Manual. Appendix 3 contains a breakdown of the cost estimate.

improved local circulation and a transit connection to Aurora is introduced. The introduction of T-REX light rail service and improved Local service further advances the transit system to meet the objectives. In the twenty-year horizon timeframe, the recommended plan fully achieves the objectives by providing a premium connection to the regional system, has transit services for bringing employees and visitors to Parker, and furnishes Local bus service within the Town of Parker.

Table 3: Evaluation of Recommended Plan

	Objective #1 Connect to Regional Transit System	Objective #2 Bring Retail and Service Employees to Parker	Objective #3 Consider Feasibility of Local Bus Service
Pre T-REX (2004-2006)	Route P	Connect to Aurora/southeast area via Route 153	Introduce Circulation by Route 66 and 153 reconfiguration/call-n- Ride
T-REX Opening (2006)	Route 410 – All Day Frequent Service	Reconfigure Local/Limited Route to Nine-Mile park-n-Ride	Improved Circulation of Local Routes to Twenty Mile Road/call- n-Ride
Long Term (20+ years)	BRT/LRT to LRT end- of-line – All day frequent service	Improved access to Parker via BRT/LRT and Nine-Mile park-n-Ride	Improved circulation of Local route to Twenty Mile and Pine Drive

4 IMPLEMENTATION PLAN

4.1 Immediate

- Set up a process to continue transit-planning activities. Suggest that an advisory group be formed to guide the development of transit services in the Parker area. This will ensure that transit needs are known and considered as the Town continues to build its transportation infrastructure. The group can continue coordination activities with RTD. In addition, the Town may wish to consider designating a Town staff member as a transit liaison. (Town of Parker staff and Parker Economic Development Council personnel have indicated that they will join together to form a transit advisory group.)

Subsequent implementation steps can be considered as action items for the transit advisory group's agenda.

- Market RTD's services including the new routing of the Local Route 153. An effective public awareness campaign can be conducted by combining the joint resources of RTD, the Town, and the PEDC.

4.2 2004 to 2006

- Continue marketing RTD services, including Regional and Local routes.
- Upon analysis of RTD's local origin and destination survey, the feasibility of re-routing the Local 66 and initiating call-n-ride service can be considered. Coordination with RTD to pursue these options for improving local transit service will be needed.
- Coordinate with RTD as it prepares the bus operating plans upon the introduction of light rail service in the Southeast Corridor. Discussions between RTD and the Town can ensure the routing, frequency, and stop locations of the shuttle service to and from the Lincoln light rail station are sensible and effective. Similarly, the plans for the Local 66 and the Local 153 can be discussed.
- Incorporate the long-term transit plan into the Town's Master Plan update. The adoption of the transit component into the Town's long term growth plan will allow future development plans to accommodate and plan for the future transit corridor along Mainstreet.

- Identify potential sites for a new Parker park-n-Ride along Mainstreet. It is important to consider and evaluate possible locations so that a site can be obtained before the corridor fully develops. This activity needs to be coordinated with RTD so that fatal flaws of potential sites can be identified.
- Preserve necessary right-of-way for future BRT or LRT system on Mainstreet.
- Research funding opportunities for purchase of the Mainstreet right-of-way and the new park-n-Ride site.
- Follow the appropriate process so that the entire Town of Parker is included within the service district of RTD. Consider a ballot measure in an upcoming election for those residents of Parker that are technically out of the RTD district.

4.3 2006 to 2025

- Obtain site identified for new Parker park-n-Ride.
- Continue to preserve necessary right-of-way for future BRT or LRT system on Mainstreet.
- Coordinate with the City of Lone Tree, Douglas County, and RTD so that the Mainstreet corridor is identified and designed by each as a transit corridor in their adopted plans. Furthermore, the coordination will ensure the corridor has a consistent design in Douglas County and within the City of Lone Tree.
- Continue coordination with RTD.

4.4 Endorsement

Results of this study were presented at a joint study session of the Town Council and the Planning Commission on January 22, 2004. The study recommendations will be formally brought to the Planning Commission and Town Council for formal endorsement at public meetings following finalization of this plan.

APPENDIX 1
RTD FasTracks Rapid Transit Plan and Southeast Corridor
Extension

Southeast Corridor Enhancements



Project Description

The Southeast Corridor project (also known as T-REX), currently under construction, is a 19.1-mile light rail extension from I-25/Broadway to Lincoln Avenue in Douglas County with an additional connection from I-25 to Parker Road along I-225. The project is expected to open in Fall 2006.

Enhancements include a 2.3 mile light rail extension to Lone Tree, increasing total corridor parking by 2,520 spaces, and improving existing stations so that they can accommodate four-car trains.

	2025
Service Frequency (peak / offpeak)	4 min/6 min (rail)
Capital Costs	\$ 183M*
Daily Transit Ridership	51,100 - 59,800

* inflated dollars, includes vehicles

Project Benefits

- 2,520 new parking spaces
- Three new light rail stations on the light rail extension to Lone Tree
- Improved/expanded stations to be able to accommodate four-car light rail trains
- Pedestrian amenities at Belleview and Arapahoe at Village Center stations
- Peak hour travel time savings (transit vs auto) in 2025
 - RidgeGate to Downtown Denver = 33 minutes
- Economic Development Opportunities:
 - Colorado Station – the City of Denver recently adopted the Colorado Station Area Framework Plan for the area surrounding the Colorado Station that emphasizes creating a dense mixed-use development that emphasizes residential uses.
 - Belleview Station – approximately 50-acres on the Mountain View golf course site have been rezoned to accommodate a compact, mixed-use development with 2,000 residential units, 2.2 million square feet of office, 250,000 square feet of retail and 150,000 square feet of hotel.
 - Arapahoe at Village Center Station – The City of Greenwood Village has developed plans for the creation of a town center on the east side of I-25. The plan calls for the development of medium density residential and retail land uses on the 5-acre site directly adjacent to I-25, across from the light rail station.

Southeast Corridor Parking

Station	Existing Spaces	Spaces Under Construction	New Spaces	Total Spaces
University	0	540	0	540
Colorado	0	363	0	363
Yale	0	129	0	129
Southmoor	496	292	0	788
Belleview	0	59	0	59
Dayton	0	250	0	250
Nine Mile	1225	0	0	1,225
Orchard	0	48	0	48
Arapahoe at Village Center	358	1,459	0	1,817
Dry Creek	0	235	0	235
County Line	0	388	0	388
Lincoln	0	1,120	520	1,640
RidgeGate	0	0	2,000	2,000
Total Spaces	2,079	4,883	2,520	9,482



Figure 1-7

February 2, 2004

Southeast Corridor Enhancements

APPENDIX 2
park-n-Ride User Survey, 2003



Parker Transit Feasibility Study

park-n-Ride Survey

September 5, 2003

A survey of park-n-Ride users in the Parker area was conducted as part of the Parker Transit Feasibility Study. The purpose of the survey was to gather usage data and obtain input regarding transit services from current Parker area transit users. Users at the Parker, Stonegate, and Pinery park-n-Rides were surveyed. The survey took place on Tuesday, August 5, 2003.

The survey was conducted by placing pre-stamped mailback postcards on the windshields of parked cars at the three park-n-Rides. **Figure 1** depicts the survey postcard. A total of 240 survey postcards were distributed: 111 at the Parker park-n-Ride, 98 at the Stonegate park-n-Ride, and 31 at the Pinery park-n-Ride.



TRANSIT FEASIBILITY STUDY
We welcome your participation in this survey!
Just drop this prestamped postcard in the mail!

1) How many days a week do you typically ride the bus from this park-n-Ride?
 0 1 2 3 4 5

2) How many days a week do you typically use this park-n-Ride to carpool?
 0 1 2 3 4 5

3) Is this park-n-Ride at a convenient location for your travel needs?
 Yes No; it should be moved to _____

4) Do you plan to regularly use light rail when T-REX opens in 2006?
 Yes No Don't know

If yes, 4a) How would you access light rail?
 I would drive to a new T-REX park-n-Ride
 I would use bus service provided every 10 minutes from this park-n-Ride
 Other _____
 Don't know

5) Do you have any suggestions for transit services in the Parker area?

For further information or to send more comments, contact Bryce Matthews at the Town of Parker (303) 841-2332/ bmatthews@ci.parker.co.us, or Chris Primus at Carter & Burgess, Inc. (303) 820-4875 / primuscj@c-b.com

Figure 1: Survey

Results

A very respectable response rate was achieved. Overall, 57% of the postcards were returned. Figure 2 depicts the response rate categorized by park-n-Ride.

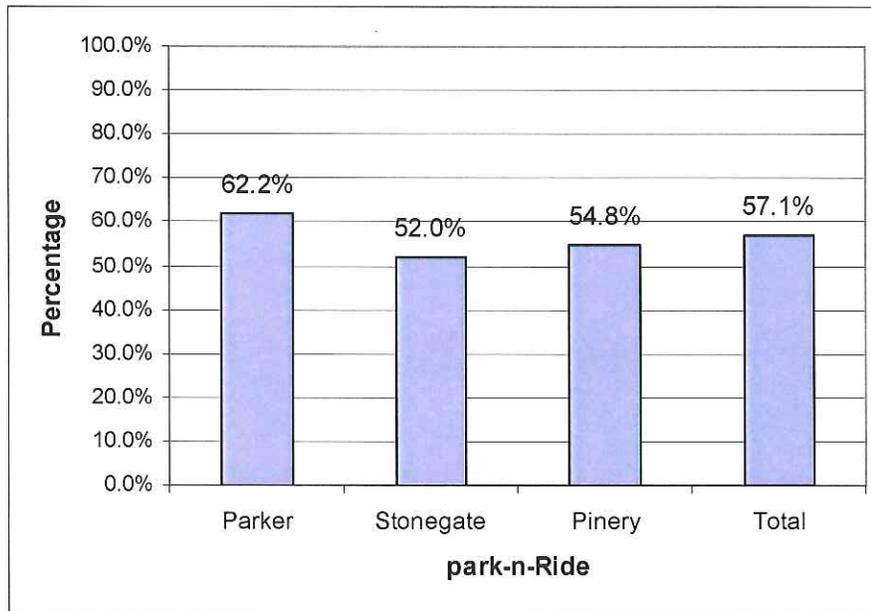


Figure 2: Survey Response Rate

Survey Question #1: How many days a week do you typically ride the bus from this park-n-Ride?

The majority of users ride the bus 4 days or more, and over 67% ride the bus five days a week, as shown in **Figure 3**.

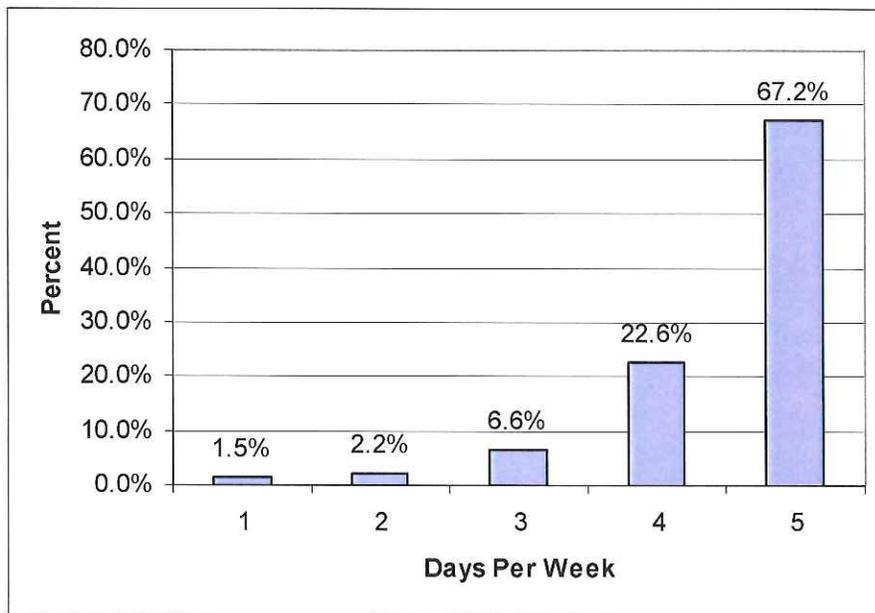


Figure 3: Days Per Week Typically Ride the Bus

Survey Question #2: How many days a week do you typically use this park-n-Ride to carpool?

Overall, about 10% reported that they use the park-n-Ride to carpool. However, it is important to note that all of these respondents also reported riding the bus in Question #1. It is likely that some of these respondents carpool to the park-n-Ride and ride the bus together, but some may have misunderstood the question. **Figure 4** depicts the results by park-n-Ride.

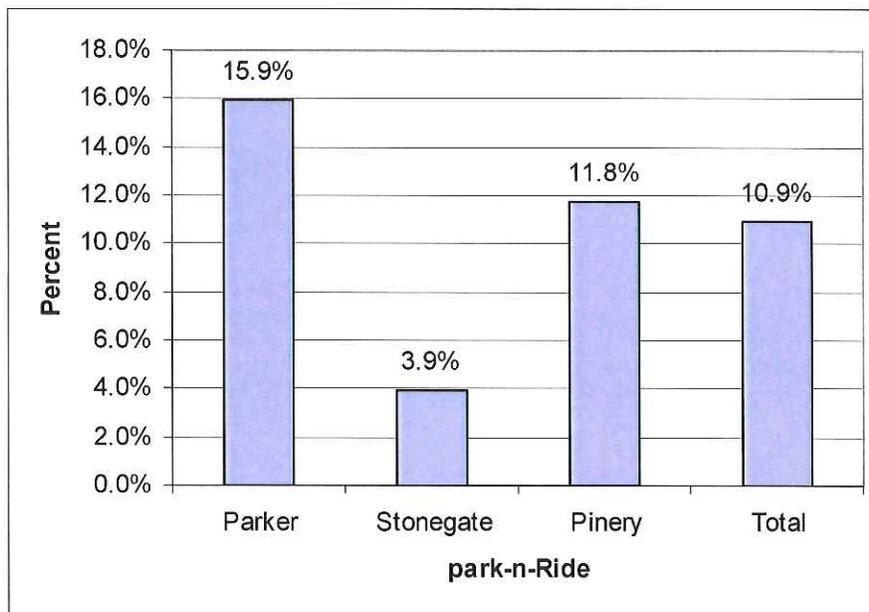


Figure 4: Carpool Use

Survey Question #3: Is this park-n-Ride at a convenient location for your travel needs?

Almost all respondents (96%) report satisfaction with the location of their park-n-Ride. Among the few who responded that it was not at a convenient location, one respondent had the suggestion to move it closer to Elizabeth, and another respondent suggested moving it to the northwest corner of Lincoln and Dransfeldt. **Figure 5** shows the percent of respondents that are satisfied with the location of the park-n-Ride.

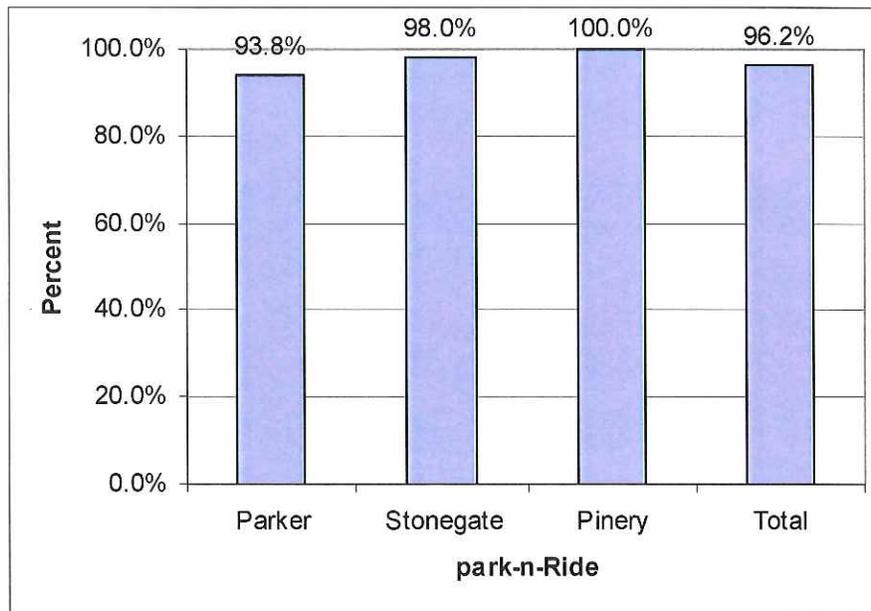


Figure 5: Satisfaction with Location of park-n-Ride

Survey Question #4: Do you plan to regularly use light rail when T-REX opens in 2006?

Over 63% plan to use light rail after it opens in 2006. Understandably, since the light rail opening date is almost three years away, about 24% responded "Don't Know" if they will use light rail or not. **Figure 6** depicts the results.

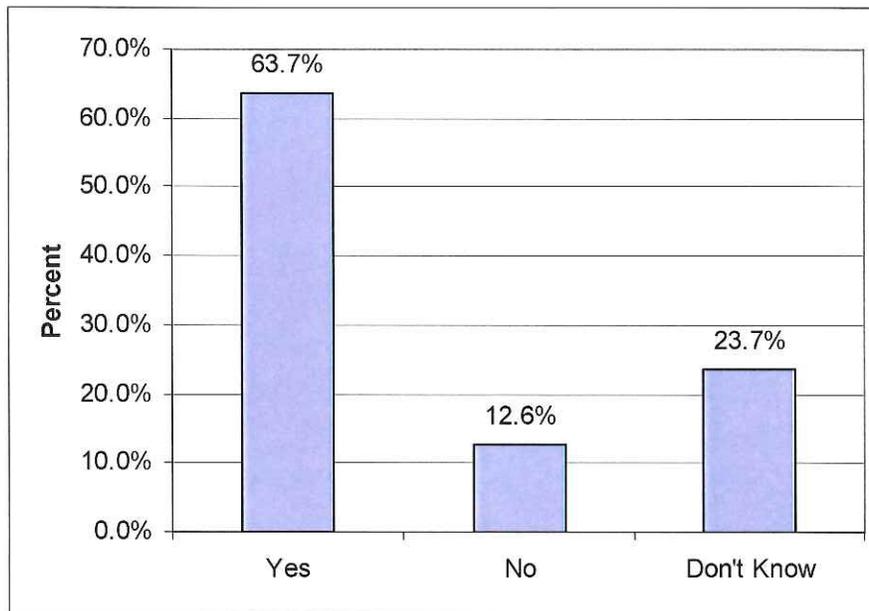


Figure 6: Plan to Use LRT

Survey Question #4a: If you plan to use light rail, how would you access light rail?

Of those who said they planned to use light rail, two-thirds of the respondents reported they would use frequent bus service from the park-n-Ride to access light rail. About 25% reported they would drive to a T-REX park-n-Ride. **Figure 7** shows these results.

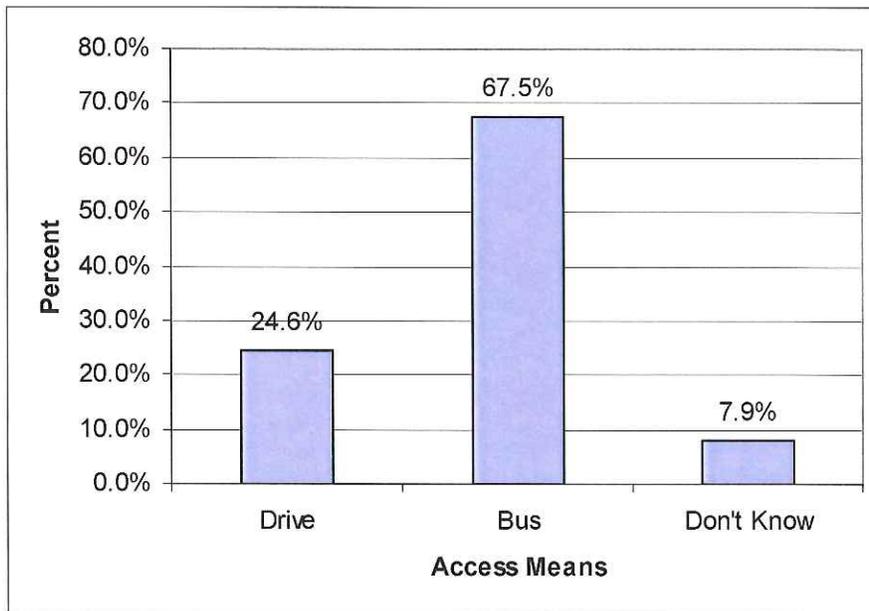


Figure 7: Planned Means of Access to LRT

Survey Question #5: Do you have any suggestions for transit services in the Parker area?

About half of the respondents included comments or suggestions on their survey. A summary of the more frequent comments is provided in **Table 1** below. A listing of all the comments is provided in **Table 2**.

Table 1
Summary of Comments

<i>General Comment/Suggestions</i>	<i>Number of Respondents</i>
▶ Increase 'P' service in the midday and evening hours	15
▶ Continue 'P' service after Light Rail opens	10
▶ Increase size of Parker area park-n-Rides	7
▶ Provide an ample number of spaces at new T-REX park-n-Rides	6
▶ The current service is convenient and useful	5
▶ Reduce the number of 'P' stops / Route the 'P' on E-470	5
▶ Improve the safety at park-n-Rides: improve the lighting and add security cameras	2
▶ Add 'P' service on weekends	2
▶ Provide shuttle bus to LRT from locations throughout Parker	2
▶ Provide circulator service in Parker	2
▶ Control growth in Parker	2

Table 2
List of All Comments

<i>Comments Concerning 'P' Service</i>
▶ Needs lights & pavement. Just pickup and drop off @ PNRs! Not all the other stops.
▶ Keep up the good work - very convenient and useful
▶ Utilize E-470
▶ Last bus from Parker should be later
▶ The current setup is really good for me. Keep the Eco-pass.
▶ Need to have a way to get from downtown Denver to Parker during the day
▶ A late bus from downtown to Parker
▶ Yes! Run a 2nd "P" route that bypasses Lincoln Ave (Use E-470 - split current "P" route schedule)
▶ 1 or 2 buses to DIA, mid-day bus to/from Civic Center?
▶ Add later route from Denver
▶ Would like service (at least one bus) around noon
▶ Earlier bus in AM and early return PM
▶ More buses/times going to downtown and back
▶ It would be great if you could extend service on "P" bus till 9 pm leaving Civic Ctr every hour
▶ More regular routes during daytime business hrs. Many people do not utilize RTD because in emergency they can't get back home.
▶ I love the bus/convenient, pleasant, clean - only more often.
▶ Many people live east of Parker use the "P" bus lines. The later AM bus does not go to Franktown - should. Express from Franktown to LtRail - too many stops!
▶ Keep Eco-pass affordable. Adjust schedule so we don't have to wait 5 minutes at the Parker PNR
▶ Wonderful, perfect. Think its great!
▶ Bus service during the day hours to downtown!
▶ It would be nice if there were a "P" (express) during the day especially on Fridays.
▶ On the return trip from downtown, don't require the drivers to wait so long at Broadway station & Stonegate PNR.

▶ Bus service downtown on weekends
▶ Keep the 'P' bus to downtown!
▶ There are too many stops – eliminate all but park-n-Rides
▶ Too many bus stops
▶ Need mid-day buses and access into Parker in AM and out in PM
<i>Comments Concerning Light Rail</i>
▶ Not offering a shuttle service will make Lincoln worse than it is already
▶ Will use light rail only if no bus service is available to downtown (Route "P"). Shuttle service to light rail should continue on Sat/Sun
▶ Provide sufficient space for parking
▶ If bus provided at park-n-Ride I would use Light Rail
▶ Keep the P route the same as it is when light rail opens otherwise I can't use either.
▶ Do not ever reduce the bus service
▶ If the bus went away it's possible I'd start driving downtown. The light rail would work well for incimate weather, otherwise there're too many stops. We should continue to keep the bus. It's an express route to Broadway
▶ Please still have RTD services from Parker or Franktown after light rail goes in.
▶ An all day shuttle service to the light rail/less frequent in off peak.
▶ Where is T-REX PNR? Light rail station at a current PRN location
▶ Continue bus service from this Park & Ride to Civic Center also.
▶ The traffic light on Jordan is too long. If light rail is my only options, i.e., no buses, I would drive. If I can continue to ride bus downtown, I would do so. Stop allowing so much growth in Parker. It has become a cesspool!
▶ Need more parking. Need services to light rail
▶ What are the bus plans after light rail?
▶ I hope bus service in HOV lane continues as a regional bus service after TREX. I want to continue to be able to take the regional bus from here to downtown and not have to drive-bus-lightrail. More convenient to just drive-bus.
▶ Hope there's enough parking at Lincoln & I-25
▶ Please continue with bus service to the coming light rail, and continue this PNR
▶ Bus - super idea! I park and ride from Pinery.
▶ As long as the "P" route still exists as is.

<ul style="list-style-type: none"> ▶ Appreciate convenience of PNR. Keep PNR & shuttle from Parker to T-REX PNR. Shuttle stop at Jordan/Mainstreet. HOV lane down Lincoln.
<i>Comments Concerning Local Service</i>
<ul style="list-style-type: none"> ▶ Suggest 66 stop at Ulster-Tufts rather than depend on Tech Center link (unreliable) ▶ Local service to hospitals and 9 mile PNR, Saturday Service ▶ Need a bus from Parker along Parker Rd to Aurora ▶ If there are senior or assisted living homes in Parker, there should be bus service to grocery stores, banks, Target, churches, Hobby Lobby from the facilities. Also doctors/dentists and hospital. ▶ Shuttle service in rough circle from Cottenwood to Jordan to Main to Parker Road. ▶ HOV lane on Lincoln Ave. Frequent shuttle buses throughout Parker ▶ More frequent buses to Tech Center
<i>Comments Concerning park-n-Rides</i>
<ul style="list-style-type: none"> ▶ There has to be more parking ▶ Big parking lots!! ▶ Lincoln Jordan PNR fills up with non-RTD users. Another PNR feasible or more spaces? ▶ It would be nice to have a garage structure like Smoky Hills ▶ There is insufficient parking @ light rail lots & you have to stand during the rail commutes. ▶ Stonegate PNR is too small ▶ Cameras in parking lots
<i>Other Comments</i>
<ul style="list-style-type: none"> ▶ Work on customer service for light rail train operators - they are detached ▶ I will retire in 2005 and don't plan to travel often to Denver ▶ Limit Parker's growth - it is out of control! ▶ I am just grateful RTD is here in Parker! ▶ More "quality" buses with more leg room ▶ Employer may move to Aurora & then probably not feasible to take it. ▶ More bike lockers



APPENDIX 3
Cost Estimates



Option 1 - BRT on Lincoln Ave, 6.6 miles		Unit Cost	Units	Cost
A. Roadway				
	Additional two lanes	\$4,224,000	6.6	\$27,878,400
	Modify existing 4 lanes	\$1,200,000	6.6	\$7,920,000
	Intersection Improvements	\$287,500	4	\$1,150,000
B. Signals				
	Signal Improvements	\$115,000	9	\$1,035,000
C. park-n-Rides				
	200 Surface Spaces	\$6,000	200	\$1,200,000
	Subtotal A-C			\$39,183,400
D. Drainage	5% of A-C			\$1,959,170
E. ROW	4% of A-C			\$1,567,336
F. Utility Relocation	3% of A-C			\$1,175,502
G. Noise/Environmental Abatement	3% of A-C			\$1,175,502
H. Signing & Striping	1% of A-C			\$391,834
I. Construction & Traffic Control	7.5% of A-C			\$2,938,755
J Urban Design/Landscaping	4% of A-C			\$1,567,336
	Subtotal D-J			\$10,775,435
K. Contingencies & Mobilization	52% of A-J			\$25,978,594
L. ROW				\$1,000,000
	Total Cost			\$76,937,429
	Cost per Mile of BRT			\$11,657,186

Cost Based on RTD Guidance Manual, adjusted to 2003 dollars

Option 2 - LRT on Mainstreet, 6.7 miles		Unit Cost	Units	Cost
A. LRT Elements				
	Trackwork (two-way) embedded	\$2,112,000	6.7	\$14,150,400
	Grading	\$1,754,133	6.7	\$11,752,693
	Catenary/power	\$1,821,600	6.7	\$12,204,720
	Signal System	\$1,150,000	6.7	\$7,705,000
	Retaining walls	\$316,800	6.7	\$2,122,560
	At-Grade Crossings	\$287,500	8	\$2,300,000
	Structures	\$7,500,000	1	\$7,500,000
	Maintenance Facility Contribution (assumes 3 vehicles)	\$300,000	1	\$300,000
C. Parking	500 Garage Spaces	\$12,000	500	\$6,000,000
D Stations	2 LRT Stations	\$1,115,000	2	\$2,230,000
E. Roadway Reconstruction	Existing Roadway	\$12,091,200	2.6	\$31,437,120
	Subtotal A-E			\$97,702,493
F. Drainage	5% of A-E			\$4,885,125
G. ROW	4% of A-E			\$3,908,100
H. Utility Relocation	3% of A-E			\$2,931,075
I. Noise/Environmental Abatement	3% of A-E			\$2,931,075
J. Signing & Striping	1% of A-E			\$977,025
K. Construction & Traffic Control	7.5% of A-E			\$7,327,687
L. Urban Design/Landscaping	4% of A-E			\$3,908,100
	Subtotal F-L			\$26,868,186
J. Contingencies & Mobilization	52% of A-I			\$64,776,753
K. ROW				\$2,000,000
	Total Cost			\$191,347,432
	Cost per Mile of LRT			\$28,559,318

Cost Based on RTD Guidance Manual, adjusted to 2003 dollars



Option 3 - BRT on Mainstreet, 6.7 miles						
			Unit Cost	Units	Cost	
A. Roadway						
	Additional two lanes		\$4,224,000	6.7	\$28,300,800	
	Rebuild existing 4 lanes		\$9,060,480	0	\$0	
	Intersection Improvements		\$287,500	0	\$0	
B. Signals						
	Signal Improvements		\$115,000	2	\$230,000	
C. park-n-Rides						
	500 Garage Spaces		\$12,000	500	\$6,000,000	
	Subtotal A-C				\$34,530,800	
D. Drainage						
	5% of A-C				\$1,726,540	
E. ROW						
	4% of A-C				\$1,381,232	
F. Utility Relocation						
	3% of A-C				\$1,035,924	
G. Noise/Environmental Abatement						
	3% of A-C				\$1,035,924	
H. Signing & Striping						
	1% of A-C				\$345,308	
I. Construction & Traffic Control						
	7.5% of A-C				\$2,589,810	
J. Urban Design/Landscaping						
	4% of A-C				\$1,381,232	
	Subtotal D-J				\$9,495,970	
K. Contingencies & Mobilization						
	52% of A-J				\$22,893,920	
L. ROW						
	Total Cost				\$2,000,000	
	Cost per Mile of BRT				\$68,920,690	
					\$10,286,670	

Cost Based on RTD Guidance Manual, adjusted to 2003 dollars

APPENDIX 4
PowerPoint Summary Presentation



TRANSIT FEASIBILITY STUDY



March 2004

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Purpose of Study

TRANSIT FEASIBILITY STUDY

Determine:

- 1) Options for connections to regional transit system**
- 2) Options for bringing employees and visitors to Parker**
- 3) Feasibility of local bus service**

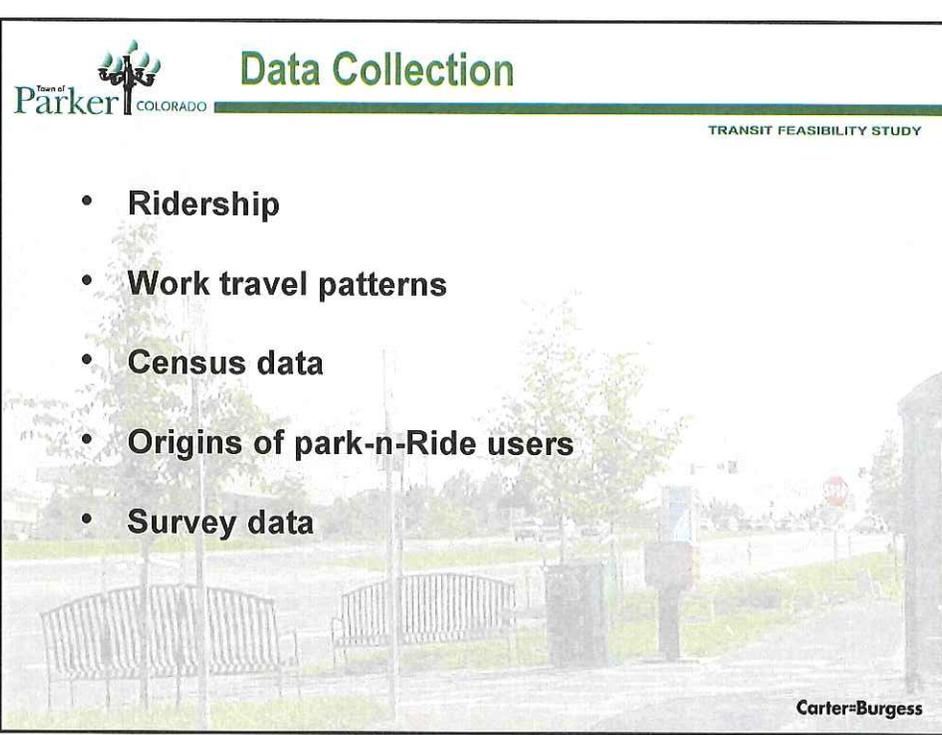
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- **Regional stakeholders**
- **Coordination with Parker Economic Development Council**
- **Coordination with RTD**
- **Coordination with Town staff**



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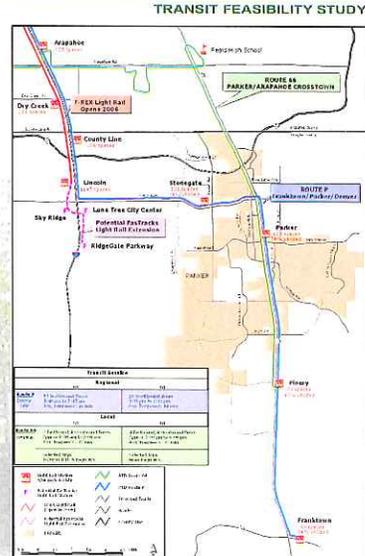
- **Ridership**
- **Work travel patterns**
- **Census data**
- **Origins of park-n-Ride users**
- **Survey data**



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Transit Facilities and Services

- Regional 'P' Service
- Local 66 Service
- park-n-Rides
- Southeast Corridor Light Rail (T-REX)



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Surveys Conducted

Parker park-n-Ride survey (Sept. 2003)

- Polled local residents commuting out of Town

PEDC Public Transportation Needs Assessment (Feb. 2002)

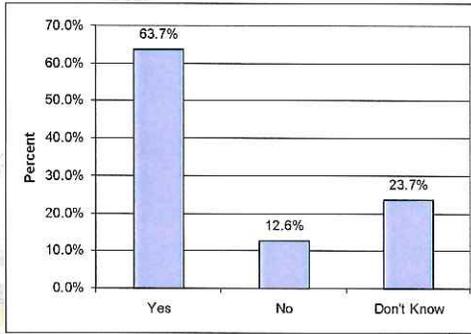
- Polled employers/employees commuting into Town

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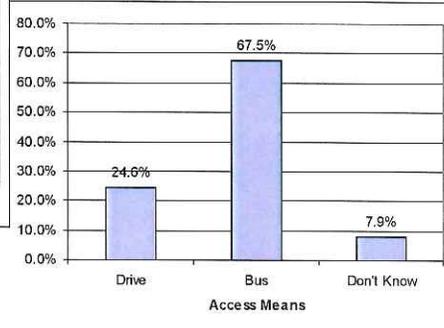
park-n-Ride User Survey

TRANSIT FEASIBILITY STUDY

- *Very high willingness to use light rail*



- *Very high willingness to access light rail by bus*

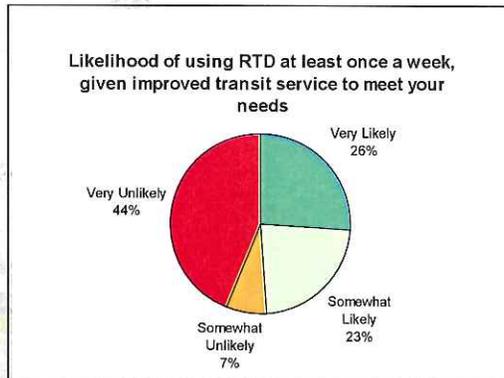


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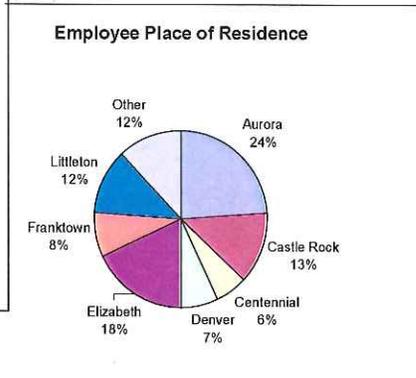
PEDC Survey

TRANSIT FEASIBILITY STUDY

- *About 25% report 'very likely' would use bus if service improved*



- *About 25% of employees are residents of Aurora*



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Additional Survey Data

TRANSIT FEASIBILITY STUDY

RTD – Parker Public Transportation Survey

- Currently underway - December 2003
- Approximately 7,500 households received survey; 400 responses to date



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Potential Transit Options

TRANSIT FEASIBILITY STUDY

Options Considered:

- Light Rail and Bus Rapid Transit
- Local bus service within Parker
- Local bus service to adjacent communities
- New and expanded park-n-Rides
- Non-fixed route services – call-n-Ride, employer shuttles, etc.



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Potential Transit Options

TRANSIT FEASIBILITY STUDY

Potential Options	Objective #1 <i>Connect to Regional Transit System</i>	Objective #2 <i>Bring Employees and Visitors to Parker</i>	Objective #3 <i>Consider Feasibility of Local Bus Service</i>
	<ul style="list-style-type: none"> • Additional spaces at existing park-n-Rides • New park-n-Rides • Increased feeder service to/from LRT stations • Expanded hours of feeder service • Fixed guideway (LRT/BRT) connection to LRT • Improved bus operations • Special event service • Connect to Front Range bus service, north and south 	<ul style="list-style-type: none"> • Local service from Parker park-n-Rides to employment • Increased feeder service to/from LRT stations • Expanded hours of feeder service • Employer-based shuttles from LRT stations/park-n-Rides • Local service from adjacent communities to Parker 	<ul style="list-style-type: none"> • Local service from Parker park-n-Rides to employment • Employer-based shuttles • New local/circulator service • Jitney • call-n-Ride
<ul style="list-style-type: none"> • Form TMO to coordinate alternative mode strategies • Marketing/Education 			

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Recommendations

TRANSIT FEASIBILITY STUDY

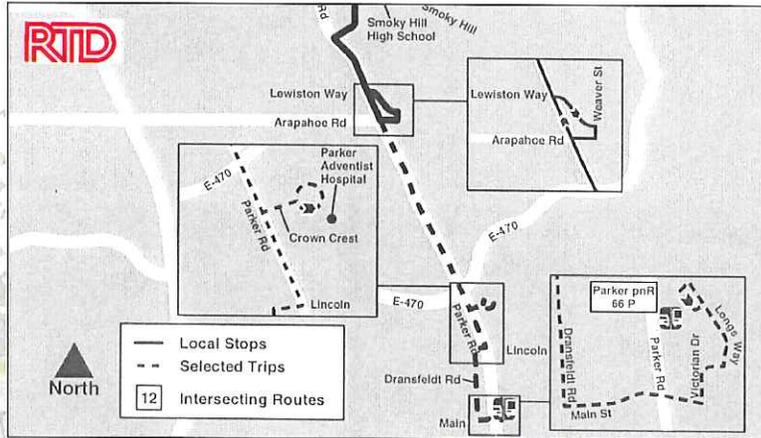
Phased Implementation of New Transit Services and Facilities:

- Pre- T-REX (2004 –2006)
- T-REX Opening (2006)
- Long-term (20+ years)

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RTD New Route 153

TRANSIT FEASIBILITY STUDY



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T-REX Opening (2006)

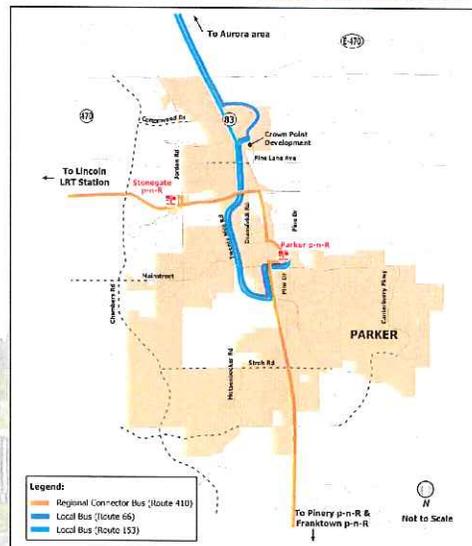
TRANSIT FEASIBILITY STUDY

Regional Connector

- Route 410; to Lincoln Station
 - 15 minute peak/30 minute off peak
 - All day service (including evenings)

Local Service

- Route 66 and Route 153
 - Move service to Twenty Mile Rd



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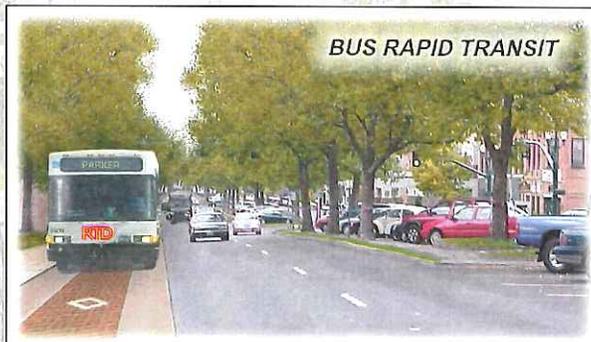
Long-Term (20+ years)

- **Bus Rapid Transit on Lincoln to Light Rail station**
- **Light Rail on Mainstreet to RidgeGate Light Rail station**
- **Bus Rapid Transit on Mainstreet to RidgeGate Light Rail station**



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- **Frequent/reliable bus service**
- **Dedicated Bus-only/HOV Lanes**
- **Stations, not stops**
- **Travel time advantage due to dedicated lanes and/or traffic signal improvements**



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Long-Term (20+ Years)

TRANSIT FEASIBILITY STUDY

Regional Connector

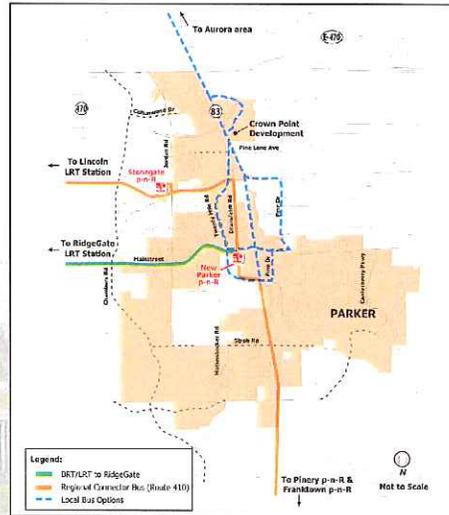
- Maintain bus service on Lincoln Ave. to light rail station
- BRT or LRT on Mainstreet to RidgeGate

Local Service

- Consider route options for local service to Parker employment areas
- Consider call-n-Ride

park-n-Rides

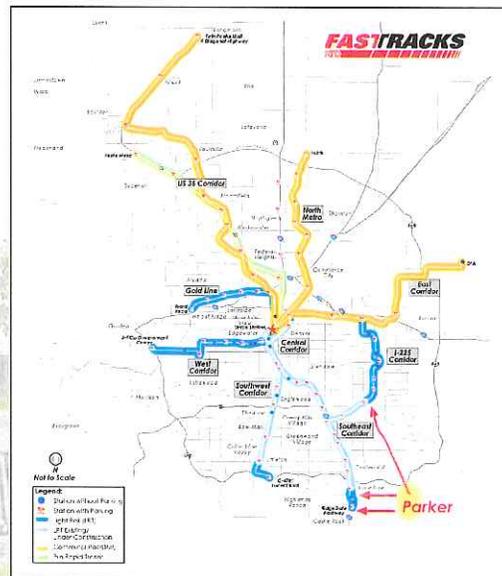
- Move Parker park-n-Ride to West Mainstreet



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Connections to FasTracks System

TRANSIT FEASIBILITY STUDY



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Immediate:

- Set up Transit Advisory Group with Town, PEDC and RTD representatives
- Market RTD's services, including new Route 153



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2004 to 2006:

- Continue marketing RTD services, including Regional and Local Routes
- Coordinate with RTD for T-REX service changes
- Incorporate long-term transit plan into Comprehensive Development Plan
- Identify sites for new Parker park-n-Ride
- Preserve necessary right-of-way for future BRT/LRT system on Mainstreet



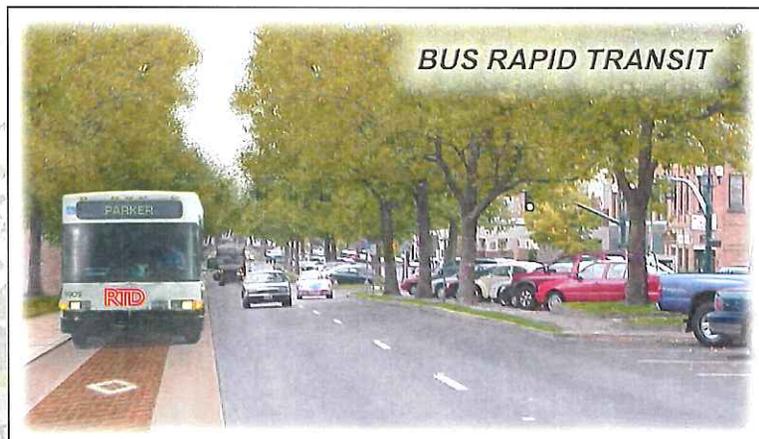
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2006 to 2025:

- Obtain site for new Parker park-n-Ride
- Coordinate with the City of Lone Tree, Douglas County and RTD for Mainstreet BRT/LRT Corridor
- Continue coordination with RTD



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