Transit Feasibility Study
City of Golden
Transit Feasibility Study
Draft Document December 2009

with Special Thanks to
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Executive Summary

With future West Corridor light rail service just three years away, the City of Golden and its partners have embarked on a process to examine the feasibility of a local circulator system to provide transit mobility between the station and Golden destinations for residents and visitors.

The Golden Transit Feasibility Study effort included members of the Golden City Council, the City Planning Commission, and the Community Sustainability Advisory Board in its examination of circulator service linking future light rail at Jefferson County Administration Building with residential areas, Colorado School of Mines, downtown Golden and other local destinations. The transit feasibility analysis and discussions of ridership, routing and service options were centered on the ability to meet the project goals:

- Improve the community sense of place;
- Reduce vehicle miles traveled or number of vehicle trips around town;
- Improve local circulation and enhance local connectivity;
- Provide convenient, safe travel for those who cannot or do not drive;
- Provide greater access to community facilities;
- Enhance local sustainability and;
- Affect local behavior and break the “transit barrier”

A Project Advisory Team was assembled to work with the consultant team throughout the process, and included community transit partners Jefferson County Transportation Planning, Colorado School of Mines, and RTD. Their input to the study was supplemented by that of larger local Focus Groups designed to bring a broader community perspective to the team’s understanding of local service needs. Focus Groups included:

- Downtown Merchants Association;
- Golden Urban Renewal Authority;
- Colorado School of Mines Faculty and Staff;
- Colorado School of Mines Student Association; and
- Jefferson County Highways Transportation Department

A web-based survey was made available to the public and over 800 local respondents commented on their interest in circulator service, their priority destinations, and the preferred price and frequency of service within town. These survey results, along with key input from stakeholders and Focus Groups, were the basis for establishing preferred operating parameters for service:

- Connect local circulator with regional light rail at Jefferson County Administration Building
- Provide 15 – minute headways
- Provide free service to passengers (no fee)
- Operate early morning to early evening hours with the option to expand service later
- Maintain a simple, convenient and easy to understand local service

The study examined various routing options within town including options to link North Golden and Canyon Point with downtown and LRT; service to the Library and Recreation Center; service to School of Mines housing and service to local retail and commercial destinations. However, as destinations along the route increased, so did the overall route and travel time. In order to maintain a reasonable travel time around town, the idea for a transit link between the County Administration Complex and Illinois Street was developed. This link, along existing City right-of-way, would act as a transit-only travel lane adjacent to the existing bike and pedestrian trail, and would open up a more direct route between the Jefferson County campus LRT station and the central...
The range of alternatives was narrowed through a criteria evaluation process and input from stakeholders. Two final alternatives emerged: Route G-1 and Route G-2, each utilizing the Illinois link. Both routes were assumed to operate under the proposed 15-minute headways and provide service between the LRT station, Illinois Street, CSM campus and downtown Golden. The G-1 Route would act as an extension of light rail into downtown Golden and would operate in a single direction loop between the station and downtown and back. The G-2 Route would provide service beyond downtown Golden and the station to destinations along South Golden Road and Ulysses and 10th Avenue. Because of the longer distance and time associated with the G-2 Route, the service would operate in a bi-directional loop, requiring three buses in each direction in order to achieve 15-minute headways. The routes and estimated performance of each are shown on the next page:
Because of the higher cost associated with the G-2 operation, consideration was given to longer headways for the route. The 15-minute headway provides the best service in line with the 15-minute LRT arrivals and departures at the station. However, a 30-minute headway would provide the same link with LRT service, but a reduced schedule with only 4 buses for the bi-directional loop. Annual operating costs for the G-2 with 30-minute headway would be $963,600/year compared to $1,445,400.

The City also considered a 20-minute headway for G-2 service resulting in the same reduction in vehicles and operating costs, but an off-set arrival time at the LRT station. While this service may serve the community well, it does not create the same synergy with regional LRT service, which is hoped to be a key driver in future transit use in Golden. Therefore, this study recommends that 15-minute headways be maintained for circulator service, and that 30-minute headways in sync with LRT service be considered as an option if service cost reductions are required.

This study also recommends that various service expansions be considered for phased implementation after results of the initial service operation are known. The G-1 could be expanded over time to operate as the G-2. The Canyon Point segment could be integrated into G-1 or G-2 routing to provide afternoon trips between downtown and North Golden primarily for student activity. Service along 10th Street to the Recreation Center could be considered for key times or special events. The integration of these additional destinations would expand mobility options for local residents over time and support the long-term goal of reducing vehicle trips in town.

Several key steps were identified for implementation over the next several years.

**Step 1 – Establish Local Transit Partners**

In 2010, it will be critical for the City of Golden to establish transit partners in the effort to fund and operate future circulator service. Jefferson County, the Colorado School of Mines and the Downtown Merchants Association, Coors and other major employers should all be key players in shared local funding support.

**Step 2 – Determine Transit Operator**

Between 2010 and 2011, the City will need to decide if circulator operations will be managed through RTD or a private transit operator. The City should continue discussions with RTD regarding an agreement for full or partial funding of the service based on the re-configuration of existing RTD services with the opening of light rail, and the options for a local funding match in support of RTD operation.

**Step 3 – Select a Vehicle Type**

By 2012 the City will want to evaluate vehicle type, technology, costs and procurement methods.

**Step 4 – Finalize Physical Improvements**

In 2012, The City will want to finalize routing based on operator and technology decisions, determine final stop locations and improvements and construct the Illinois Street link.

**Step 5 – Kick-off Marketing and Education Program**

In 2012-2013, The City will want to implement marketing and education campaigns within the community to introduce the circulator, increase visibility of service and make the service an appealing part of the Golden experience.

<table>
<thead>
<tr>
<th>Route</th>
<th>Estimated Ridership</th>
<th>Number Buses Required for operation</th>
<th>Estimated Annual Operating Cost ($55/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route G-1</td>
<td>470-750 riders /day</td>
<td>2</td>
<td>$481,000/year</td>
</tr>
<tr>
<td>Route G-2</td>
<td>770-1,200 riders/day</td>
<td>6</td>
<td>$1,445,400/year</td>
</tr>
</tbody>
</table>
I. Purpose of the Study

In 2007 the City of Golden City Council adopted Resolution No. 1793, which set city-wide Sustainability Goals for the next ten years. Among these, was the goal to increase the ability of Golden residents and visitors to travel to and through Golden using alternative transportation and to reduce vehicle miles traveled in the city. These goals, as well as the 2013 opening of West Corridor Light Rail, prompted the City to examine the viability of a transit circulator within town. The city applied for and received a Congestion Mitigation and Air Quality (CMAQ) Improvement Program grant to examine the feasibility of developing and operating a circulator system in Golden.

This feasibility study answers questions about routing alternatives, ridership potential, intra-community mobility for residents and visitors, connections to the end-of-line LRT Station at Jefferson County Administration Building, and bike and pedestrian integration. This study measures community interest in circulator service, support by local institutions, and potential for partnering with RTD and local agencies in the implementation and operation of service.

The initial goals of the study were derived from the work of the Community Sustainability Advisory Board, the City's Comprehensive Plan and input from project team members. It was decided that future circulator service within the community should:

- Improve community sense of place
- Reduce vehicle miles traveled or the number of vehicle trips around town
- Improve local circulation and enhance local connectivity
- Provide convenient, safe travel for those who cannot or do not want to drive (teens, elderly)
- Maximize community benefits by providing greater access to community facilities
- Enhance local sustainability
- Affect local behavior and break the “transit barrier”
Study Area

The Study Area for the project was identified as the City of Golden, with specific emphasis on the core of town from Iowa Street on the north, State Highway 93 to the west, South Table Mountain on the east and Ulysses Street to the east, and Highway 6 to the south. Areas beyond these boundaries were strongly considered in the assessment of ridership markets and possible routing, but were not considered to be the core study area.

The Study Process included four primary phases:

Phase 1: Gather Input, Collect Data, Assess Conditions

Phase 2: Establish Ridership markets and Routing Alternatives

Phase 3: Gather Input on Alternatives and Operational Characteristics

Phase 4: Refine Alternatives and recommend future actions

This report follows each of these phases and highlights key decision points in the process to determine whether a transit circulator is feasible for Golden.

The Transit Feasibility Study kicked off with the City’s development of the Project Advisory Committee, consisting of representatives from Jefferson County Transportation Planning, RTD Transit Service Planning, Colorado
School of Mines Administration and City of Golden Planning and Development. This Advisory Committee was instrumental in directing the scope of the project, providing input at each phase and garnering support or comment from each representative agency throughout the process. This Committee met five times during the project to review and advise the consultant team on the study’s progress and to make recommendations.

Focus Groups were also instrumental in gathering specific input from local representatives or agencies on their level of interest and support for the service, as well as their review of potential routing concepts later in the process. Focus Groups included:

**Focus Group 1 – City of Golden:**
- Sustainability Committee
- Planning Commission
- Council members

**Focus Group 2 – Jefferson County:**
- Division of Highways and Transportation

**Focus Group 3 – Colorado School of Mines:**
- Administration and Facilities Management
- Colorado School of Mines Faculty and Staff
- Colorado School of Mines Student Council

**Focus Group 4 – Golden Downtown Merchants Association / Golden Urban Renewal Authority**

These Focus Groups met first in the Spring of 2009 to inform the project team as to their thoughts on transit in Golden, the potential user groups for the service and their concerns about operations. Input from this first round of Focus Groups included the following key messages:

- There is a potential for Golden to be isolated. The town needs regional LRT connections and local community links. (City of Golden)
- Viability isn’t black and white; what is the roadmap for a viable transit circulator, where are the gaps and what will it take to make it viable? (City of Golden)
- How will the circulator work with LRT station parking demand and multi-modal connections at the station? (Jefferson County)
- Trips among buildings on Jefferson County campus occur primarily by private vehicle – not sure if demand warrants internal campus circulator? (Jefferson County)
- Majority of employees stay on campus for lunch so not anticipate strong lunch hour circulator demand from campus (Jefferson County)
- Existing RTD services are underutilized by visitors and locals (Downtown Merchants)
- Denver visitor market should be more accessible with LRT implementation, so circulator should serve visitor-oriented destinations. (Downtown Merchants)
- Consider working with Coors on visitor shuttle/parking options (Downtown Merchants)
- Get the community’s opinion!
- Students tend to stay on campus throughout day but service to Canyon Point apartments, Mines Park and King Soopers of great interest. (CSM Student/Faculty)
- Desire for 15 min headways, longer hours of service (CSM Student/Faculty)
- 75% of the Faculty and Staff are from outside Golden (CSM Student/Faculty)
- 47% of students picked up the bus pass this year but don’t use RTD existing services (CSM Student/Faculty)
- Best place for a stop on campus would be at Student Center (CSM Student/Faculty)
II. Gathering Input

Determining the level of community support for a circulator service was critical to the process. A community web-based survey was developed and made available at www.goldentransitproject.com. The online survey was shared with Focus Group members for distribution to Golden businesses and Chamber of Commerce and GURA, published in the local Golden Informer and Golden Transcript, advertised on websites for Colorado School of Mines student and faculty, Golden High School students and parents, Bell Middle School students and parents, Coors employees and Bike Jeffco. Information and hard copies of the survey were also distributed to the Golden Library, the Recreation Center and local senior homes and communities. This distribution network was supplemented by Mayor Smith’s blog and Counselor Fisher’s blog, resulting in over 800 community member responses.

The city rewarded participation in the survey by selecting at random a recipient of $100 in Golden Chamber Bucks for use in downtown Golden.

The survey results indicated a high level of support for circulator service among respondents and a desire to serve a number of community destinations. The results of the survey were used in shaping the assumptions about potential service operation later in the study. A full report of survey results can be found in Appendix A.

The next page contains highlights of those results.
Currently 76% use their private vehicle as their primary means of transport. Majority said they would ride 1-2 times per day. 39% said they would pay $0.50, 37% said they would pay $1.00, and 10% would prefer to ride free. Downtown Golden was noted as the #1 destination among respondents. Majority (nearly 70%) would ride in the AM, followed by 61% in the Afternoon. Noontime was the lowest at 35%. 45% of respondents said they would wait 5-10 extra minutes to take transit. Currently 76% use their private vehicle as their primary means of transport.
Conditions Assessment

The existing conditions assessment focused on key factors in addressing circulator feasibility; population growth and density, current transit use patterns, traffic or travel demand within town, and the opportunity to integrate bike and pedestrian improvements with future transit.

Golden and Jefferson County Population

The State Demographer’s Office records Golden’s 2007 population as 17,701. According to DRCOG, the community’s population in 1990 was 13,116 growing to 17,159 by 2000 for an average annual growth rate of 2.7% during those years. DRCOG growth projections for Golden forecast an average annual population growth rate of 0.5% and a household growth rate of 0.8% through 2035, based in part on the 1% growth ordinance in the City of Golden instituted in 1996. This growth ordinance effectively limits the construction of new residences to no more than 1% of the residences existing on January 1st of any year. At that rate, population in Golden by 2035 would approach 22,000. DRCOG population and employment forecasts for Golden are shown below.

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2030</th>
<th>2035</th>
<th>Average Annual Growth Rate 2005-2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>19,115</td>
<td>19,685</td>
<td>20,884</td>
<td>21,785</td>
<td>0.5%</td>
</tr>
<tr>
<td>Employment</td>
<td>22,492</td>
<td>22,941</td>
<td>23,670</td>
<td>24,135</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

Source: DRCOG

Current DRCOG forecasts for annual population and household growth in Jefferson County are 0.9 and 1.0% respectively. Jefferson County (including Golden) is forecast to be among the slower growing counties in the DRCOG region, forecast to grow by 1.5% per year through 2035. Employment in the County is similar at an estimated 1.2% per year through 2035.

<table>
<thead>
<tr>
<th>Jefferson County</th>
<th>2015</th>
<th>2020</th>
<th>2030</th>
<th>2035</th>
<th>Average Annual Growth Rate 2005-2035</th>
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</thead>
<tbody>
<tr>
<td>Population</td>
<td>577,303</td>
<td>607,208</td>
<td>664,361</td>
<td>696,350</td>
<td>0.9%</td>
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<tr>
<td>Employment</td>
<td>297,444</td>
<td>314,824</td>
<td>342,633</td>
<td>360,481</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Source: DRCOG

Population and Employment Density Assessment

The existing conditions assessment provided a more specific understanding of population and density location within town. Golden’s core study area is comprised of approximately 11,900 employees and nearly 16,000 residents based on census information, DRCOG Traffic Analysis Zone (TAZ) data, field visits, commercial square footages, and an examination of aerial photos. The City was divided into sub-areas as shown on Map 1, and areas that meet the threshold of 11.5 residents or employees per acre are highlighted. Three of the subareas meet the residential threshold, three meet the employment threshold, one meets both thresholds and nine do not meet either threshold.

North Golden

Canyon Point is a highway-oriented commercial center along Highway 93 consisting of a number of retail establishments including fitness, restaurants, in-line retail, and office tenants. Its employment is estimated at 15.4 employees per acre. It is bounded on the south by an older residential neighborhood consisting of primarily smaller single family residences with some multi-family units. Densities in this area are estimated at 12.1 residents per acre.

In the northern and western part of town there are newer single family residential neighborhoods with relatively low densities of approximately 4.8 residents per acre. To the west of Highway 93, there are the Mountain Ridge and Canyon Point single family residential neighborhoods with densities averaging 5.9 residential units per acre.
Golden Recreation Center Area

The single and multi-family residential densities in the area west of Washington Avenue and adjoining the recreation center average approximately 11.5 residents per acre. There is some commercial and office employment in the area particularly along Washington Avenue, at the recreation center and City offices. Overall employment densities are approximately 6.1 employees per acre.

Coors Facilities

Coors is located south of Highway 58 with approximately 3,000 employees on-site. RTD has not fared well serving the Coors Brewery employment population as work schedules are too varied for consistent ridership. Employment densities are approximately 7.4 per acre in this sub-area. There are a few single family residences in this general area interspersed among the various Coors facilities.

Colorado School of Mines (CSM)

CSM is a major destination with 4,500 to 5,000 students and approximately 800 faculty and staff. The majority of campus students and staff commute to the campus. Approximately 75% of faculty and staff live outside of Golden and an estimated 70% of students reside off campus. Between the on-campus residence halls, Mines Park Apartments across Highway 6 and the campus fraternity and sorority houses, there are an estimated 1,450 students living in campus-related housing. Residential densities on campus are about 9.4 residents per acre. According to CSM Administration, additional on-campus housing will be constructed by 2011, and approximately 1,300 students will reside directly on the main campus. Residential densities are expected to increase to 10.8. Overall enrollment is not expected to grow measurably in this time period.

A more detailed review of off-campus student residences was conducted to determine if a significant number of off-campus students were, in fact, residing in Golden and could be considered potential riders of a future circulator. Over 54% of the 1,700 Golden addresses found are located within central Golden, between Hwy 58 and Ulysses. This factor is important to understanding the potential demand for student ridership within the core of the community.

CSM students pay an annual transit fee which currently goes toward the payment of ECO passes for all students. However, it is reported by CSM that only 35% of students actually collect that pass each year, despite the fact that CSM is a commuter campus with students, faculty and staff on campus often following a “typical” 8-5 workday.

CSM has been working over the past year on a campus parking study and plans to build a new parking garage of 400 spaces, at 14th and Elm Streets. This structure is intended to serve day use student parking, as well as overnight parking demand associated with on-campus housing. The CSM

<table>
<thead>
<tr>
<th>Area</th>
<th>Emp</th>
<th>Pop</th>
<th>HHs</th>
<th>Population/Acre</th>
<th>Employee/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canyon Point and North Golden</td>
<td>0</td>
<td>910</td>
<td>297</td>
<td>4.8</td>
<td>0.0</td>
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<tr>
<td>Canyon Point West</td>
<td>243</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
<td>15.4</td>
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<tr>
<td>Canyon Point Commercial</td>
<td>0</td>
<td>1,207</td>
<td>501</td>
<td>12.1</td>
<td>0.0</td>
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<tr>
<td>North Golden</td>
<td>0</td>
<td>1,573</td>
<td>874</td>
<td>7.5</td>
<td>0.0</td>
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<tr>
<td>Golden Edge (e. of HW 93)</td>
<td>874</td>
<td>357</td>
<td>4.2</td>
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<td>0.0</td>
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<tr>
<td>Mesa Meadows (e. of HW 93)</td>
<td>453</td>
<td>857</td>
<td>363</td>
<td>11.8</td>
<td>6.2</td>
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<tr>
<td>Rec Center/NW Downtown</td>
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<td>0</td>
<td>0</td>
<td>0.0</td>
<td>7.4</td>
</tr>
<tr>
<td>NE Downtown</td>
<td>268</td>
<td>117</td>
<td>7.4</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>CSM Campus</td>
<td>750</td>
<td>785</td>
<td>785</td>
<td>5.1</td>
<td>4.9</td>
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<tr>
<td>Downtown</td>
<td>1,720</td>
<td>747</td>
<td>500</td>
<td>8.1</td>
<td>18.7</td>
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<tr>
<td>East of Downtown</td>
<td>169</td>
<td>994</td>
<td>458</td>
<td>5.5</td>
<td>0.9</td>
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<tr>
<td>South of Downtown</td>
<td>235</td>
<td>978</td>
<td>437</td>
<td>11.7</td>
<td>2.8</td>
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<tr>
<td>North of King Soopers</td>
<td>575</td>
<td>1,482</td>
<td>676</td>
<td>5.8</td>
<td>2.3</td>
</tr>
<tr>
<td>South of King Soopers</td>
<td>504</td>
<td>565</td>
<td>264</td>
<td>17.4</td>
<td>15.5</td>
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<tr>
<td>East of Ulysses</td>
<td>205</td>
<td>1,371</td>
<td>549</td>
<td>8.0</td>
<td>1.2</td>
</tr>
<tr>
<td>S. of A Street</td>
<td>710</td>
<td>307</td>
<td>8.3</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>Jefferson County Center (+state employees)</td>
<td>3,200</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
<td>24.4</td>
</tr>
<tr>
<td>South of Highway 6</td>
<td>0</td>
<td>1,224</td>
<td>576</td>
<td>18.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Golden Ridge</td>
<td>0</td>
<td>1,404</td>
<td>490</td>
<td>6.0</td>
<td>0.0</td>
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<tr>
<td>Golden Ridge Commercial</td>
<td>847</td>
<td>44</td>
<td>15</td>
<td>0.8</td>
<td>16.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11,901</td>
<td>15,993</td>
<td>7,566</td>
<td>5.1</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Source: Co-Star, DRC O.G., Census Bureau, Arland
parking study ultimately calls for the construction of four parking garages, but it is the hope of the City of Golden that the potential operation of the circulator could reduce student vehicle trips in town and minimize the demand for student parking facilities on campus.

**Downtown**

Most of the significant downtown construction in Golden took place in the late 1800s and early 1900s laying the foundation for downtown as the City’s cultural, civic, and retail/service center. The past decade has seen residential development occurring in the downtown area and its role transitioning to more of a residential, entertainment and restaurant destination.

The closing of Foss Drug in 2007, after being in operation for nearly 100 years, is a sign of how downtown Golden is changing. Downtown retail has been transitioning from more utilitarian uses like Foss Drug to coffee shops, restaurants, and boutiques. Although the demographics are attractive, densities are reportedly not sufficient to justify larger retail uses downtown.

Over the last 20 years, downtown has seen an increase in commercial square footage, particularly office, as well as the addition of residential units at Gateway Station, Millstone condominiums, and Clear Creek Commons. This changing mix of uses in downtown will contribute significantly to the demand for transit, bike and pedestrian options within the community over time. The successful introduction of higher density residential units downtown can be a key component of developing a transit ridership base for downtown.

In addition to the current redevelopment, there has been property owner interest in redevelopment at the Wells Fargo site at 13th and Jackson, a restaurant site at Washington and Highway 58, and several other sites along Water Street.

The Golden Patron Intercept Survey, conducted in May/June 2008, tabulated by the Golden Urban Renewal Authority (GURA), indicated that dining and drinking were one of the primary reasons for people’s visits to downtown Golden, followed by personal errands. Of those surveyed, approximately 40% were local residents. GURA estimates that approximately 1,500-2,000 people come to downtown Golden on an average non-event weekend. Of those patrons, approximately 30% are considered local Golden residents, and the remainder out-of-town visitors. GURA reports that on an event weekend, such as during Buffalo Bill days, total visitors can reach numbers as high as 15,000 on a given weekend.

The Denver Convention and Visitors Bureau conducts an annual survey of visitors to the Denver metro region. In 2007, the region saw an estimated 12.2 million overnight visitors and approximately 6.1 million day-trip visitors. Downtown Golden primarily benefits from day-trip visitors and those who visit Denver and then stay a few extra days for sightseeing. Recent trends indicate that visitors are staying longer (average number of nights spent is 3.5 up from 3.3 in 2006 and 2.9 in 2005.) More people are coming to Denver for conventions and business travel. Nearly half of the business travelers (2007) add at least two extra nights for leisure compared to 2005. Favorite destinations among travelers include: Red Rocks Amphitheater and Buffalo Bills’ Grave and Museum, both of which are outside of Denver and in close proximity to Golden.

**East of Downtown**
The area east of Ford Street and downtown Golden is comprised of primarily single family residential land uses and some commercial uses fronting Ford Street. Densities are relatively low at 5.4 residents per acre and approximately 0.9 employees per acre.

**South of Downtown**

This area is comprised primarily of older, smaller lot residential neighborhoods with some commercial along Ford and Jackson Streets. Residential densities are higher in this area at approximately 11.7 residents per acre while employment densities are estimated at 2.8 per acre.

**King Soopers Area**

King Soopers and surrounding commercial along South Golden Road are a primary shopping and errand destinations in town. Immediately adjacent and to the south of this shopping center, are several larger multifamily housing units and additional clustered commercial uses. Employment and residential densities in this area are higher than much of town.

The area north of King Soopers is also comprised of a number of strip commercial centers and predominately single family residential uses with some multi-family. The population density is estimated at 5.8 and the employment density is estimated at 2.2.

**Post Office / Golden Cemetery**

There is a post office and miscellaneous County services along Johnson Road heading toward the Jefferson County government center. At the corner of Johnson Road and West 10th Avenue, there is an office development currently under construction. Bell Middle school is located on the corner of 10th and Ulysses in Golden. There are 534 students enrolled in the 2009 school year. Saint Josephs Church, a planned 56 DU housing development adjacent to the church and the Golden cemetery are also located in this area.

**East of Ulysses**

The area east of Ulysses is located in Jefferson County and is primarily a low density residential area with some commercial services. The area bordering Colfax is primarily comprised of mobile home units with densities of 8.2 persons per acre.

**Jefferson County Center**

County and State employees are located in the County building and adjoining facilities. The County employs approximately 3,000 persons on the Jefferson County campus site. In addition, there are state employees and patrol associated with the Detention Center. A breakdown of the employees within the buildings on the County campus includes:

- **Main Building - 800**
- **Courts side – 200**
- **DA’s office – 190**
- **Human Services – 620**
- **Open Space/Facilities – 157**
- **Detention Center - 875 not including patrol**
- **Dakota Building – 50**
- **Laramie Building - 205**

**County Campus Total - 3097 employees**

Currently, movement between buildings is by private automobile.
Golden High School

There are a total of 1343 students enrolled in Golden High School for the 2009 school year. Of these, approximately 990 are freshman through junior year students.

South of Highway 6

Golden Ridge commercial center is located at Heritage Road near Hwy 6 and is comprised of strip retail such as restaurants, dry cleaners, a gas station and office space. Employment densities are approximately 14.7 per acre although parts of the center are located on top of a hill. There are a number of condos and multifamily units located behind the commercial center. There are also a number of mobile home units located at approximately 4th and Zeta. The single-family residential community west of Heritage Road is relatively low density at 4.6 residents per acre.

Transit-Dependent Population

There is a segment of the population that has historically been more dependent on transit service. The transit-dependent population is typically comprised of students, seniors, persons with disabilities, and individuals with incomes at or below the U.S. poverty level (in 2000, $17,603 for a family of four). Individuals in these groups have a general propensity to use public transit in large part due to the absence of other mobility options.

The age breakdown depicted below is from the 2000 Census which is relatively old but provides a general indication of trends in study area compared to the City as a whole and the Denver metropolitan area. The percentage of the population in the younger (<20) and older (65+) categories is a relatively smaller portion of the population compared to the City and the metropolitan area. The large percentage of the population in the 20-34 age group indicates the presence of CSM students.

Incomes in the study area indicate that this area is relatively less affluent than the City as a whole and the Denver metro region. Approximately 14% of households (approximately 1,060 households) in the core study area had incomes below $15,000 (1999 dollars).

Existing Bike and Pedestrian System

The City Council of Golden established both the Bike Task Force and the Walkability Task Force in the spring of 2008 to review Golden’s cycling and pedestrian systems and recommend improvements. The goal of these citizen task forces was to increase safety for these modes of travel, encourage more people to bike and walk on a regular basis for a variety of health and environmental reasons, and to further the City’s sustainability goals. After working throughout the summer months, each task force issued a report in the fall of 2008 detailing their recommendations, and created priority lists for these projects and initiatives. Since the task force reports were issued, a number of the requested improvements to the bicycle and pedestrian systems in Golden have been made and more are budgeted in the coming years. Though the task forces were disbanded following the issuance of their reports to Council, the City will continue to use the task force reports as a roadmap for improving the biking and walking experience in Golden, as well as look for new opportunities to address cycling and pedestrian needs through future initiatives.
close to 20 daily average weekday boardings at Washington Ave and 10th Street, and about 6 daily average boardings at Ulysses and South Golden Road.

The Route 16 Limited is a much higher performing route through Golden. In the westbound direction, at Ulysses and South Golden Road, daily average weekday alightings are about 80, indicating that a significant number of riders from the Denver/Lakewood area arrive into Golden at this location via the 16 Limited. On and off counts vary through Golden with average daily weekday alightings peaking again at nearly 80 at Washington Avenue and 10th Street. In the eastbound direction on the 16 Limited boardings mirror the westbound alightings. Average daily weekday boardings at Ulysses and South Golden Road are roughly 60, while boardings at Washington Avenue and 10th Street approach 100. The 16 Limited is the best performing RTD service through Golden.

Route #17 provides a rather circuitous service from Lakewood into the Jefferson County Administration campus and into Golden. The highest concentration of ridership on the 17 in Golden occurs at the Jefferson County Social Services building and the Jefferson County Administration Building. Average daily weekday counts northbound are 12 boardings and 28 alightings at the Social Services building and 19 boardings and 35 alightings at the Administration Building. Numbers dwindle as service leaves the County campus and travels into Golden, with on/off counts of 3-7 passengers throughout town, until the route reaches Washington Avenue and 10th Street where boardings and alightings northbound average 20 per day. In the southbound direction, Route 17 carries more riders with 12 average daily weekday riders at Washington Avenue and 10th, about 16 at Ford Street and 13th and about 22 at Jackson St and 24th. The highest concentration of riders southbound remains on the County campus with an average daily weekday number of 42 boardings and 15 alightings at the County Administration building and 24 boardings and 9 alightings at the Social Services building. Route 17 provides service to key Jefferson County campus destinations for RTD.
The Route 44 Limited runs on half hour headways and operates during the peak hours in the peak direction only. It no longer serves the Ward Road park-n-ride. This route serves downtown Golden, 44th Avenue and areas east of Ward Road into downtown Denver. In Golden, average daily weekday ridership is fairly low. Stops at Ford Street and 13th in downtown Golden carry roughly 5 boardings and 4 alightings on an average weekday. At Washington Avenue and 10th Street, this number is 11 boardings and 1 alighting.

The GS Route runs between the Boulder Transit Center and the Federal Center during the peak hours. This regional route provides service to north Golden off Highway 93 at Canyon Point, to downtown Golden at Ford and 13th Street and to other stops along Jackson and South Golden Road while heading to Denver West. The highest concentration of ridership activity occurs in the Canyon Point area at the Iowa and Washington stop. In the southbound direction, average daily weekday boardings are 2 and alightings 16. At Ford and 13th, the pattern is similar with just 2 boardings and 13 average daily weekday alightings, indicating that a number of riders come into Golden via the GS from Boulder. Ridership on/off counts along the remainder of the route through Golden are very low. In the northbound direction, on/off activity in Golden is very low along South Golden Road and Jackson until service reaches Washington Ave/10th Street. Average daily weekday boardings at this location are 31, followed by 9 at Washington Avenue and Iowa Street. The GS bus serves a unique ridership pool for RTD, connecting Boulder, Golden and Lakewood and, overall, carries a typical ridership for regional service.

**Traffic and Transportation Characteristics**

Golden is situated in a relatively long and narrow valley between the foothills and North and South Table Mountain. I-70, US 6, US 40, and SH 58 fill the geographic east/west gaps. The generally north/south valley’s main transportation infrastructure is US 6/SR 93. All of these facilities are designed to move vehicles regionally more than locally. For most local mobility, Golden depends heavily on the one-way couplet of Ford/Jackson Streets, Washington Avenue, and South Golden Road to travel along the valley. Cross-valley streets that carry significant local trips are Iowa St, 19th St, and Johnson Road. Each of the cross-valley streets main purpose is to bring trips from the more regionally oriented facilities to destinations in Golden.

Geographically, Golden is separated into a few distinct areas that are defined by breaks in transportation infrastructure. North Golden is separated from the rest of town by SH 58, an access-controlled facility with a crossing at Washington Avenue. The area near the recreation center north of Clear Creek is separated from other parts of Golden by Clear Creek and SH 58. Downtown Golden and surrounding areas like the Colorado School of Mines and residential neighborhoods are contained by Clear Creek and the golf course area. North/south mobility in this area is limited to Ford/Jackson and South Golden Road. The area near Ulysses St and west is separated by the golf course area and South Table Mountain. Finally, US 6, the Jefferson County Complex, and the Golf Course separate the southern area from the rest of Golden.

This geographic and transportation infrastructure separation leads Golden travelers to rely on only a few roadways for local trips. The regional facilities (US 6, SH 93, SH 58, and US 40) carry the most traffic in the area. More heavily traveled local roads are Ford/Jackson Street, South Golden Road, 19th St, Johnson Road and Washington Avenue.

The length of Golden also means that many people are reliant on automobiles to travel through Golden. In practice, most walking trips that are made are ½ mile or less in length. Bicycle trips are able to traverse much greater distances and Golden has significant infrastructure to facilitate these trips. However, a factor limiting the use of bicycles for trips in Golden is the relatively steep terrain on all sides of Downtown Golden and at the edges of the City.

**Parking**

City staff recently performed a downtown parking study and, based on the results, recommended near term changes to the zoning code to reduce some of the parking requirements in the downtown area. As staff continues to research downtown parking systems and issues, they are finding that parking in successful downtown areas is typically handled as an on-going management effort, as much as through a regulatory approach. Staff will monitor the effect of the reduced parking requirements in the downtown area, as well as research parking plans and strategies adopted in other communities.
III.

Transit Analysis

Understanding Ridership Potential

Ridership potential was estimated through a review of potential market segments within the Golden area population. If existing population within Central Golden is 15,993 and approximately 2% of that population utilized a circulator on a daily basis, then roughly 320 daily riders might be expected. Where might these riders come from? The following tables illustrate potential ridership markets and assumed capture rates by transit circulator. Students and commuters to the station are thought to provide the most consistent weekday ridership, with estimations of over 350 riders.

<table>
<thead>
<tr>
<th>School</th>
<th>Current Students</th>
<th>Assumed Capture Rate</th>
<th>Potential Weekday Riders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado School Mines</td>
<td>4,950 total / 1300 on campus</td>
<td>3% / 10%</td>
<td>149 riders / 130 riders</td>
</tr>
<tr>
<td>Bell Middle School</td>
<td>660</td>
<td>3%</td>
<td>20 riders</td>
</tr>
<tr>
<td>Golden High School</td>
<td>997 (grade 9-11)</td>
<td>3%</td>
<td>30 riders</td>
</tr>
</tbody>
</table>

RTD 2015/2030 estimates for westbound alightings at the Jeffco Station are low. This station is an end-of-line station for eastbound travel and eastbound boardings are projected to be roughly the same as westbound alightings. This pattern is currently experienced at other suburban end-of-line stations, such as Nine Mile (2,591 / 2,428), Lincoln (1,790 / 1,912), and Mineral (2,777 / 2,579).

<table>
<thead>
<tr>
<th>Estimated daily Boardings &amp; Alightings at Jefferson County LRT Station</th>
<th>Assumed Capture Rate</th>
<th>Potential Weekday Riders</th>
</tr>
</thead>
<tbody>
<tr>
<td>720 alightings (westbound)</td>
<td>9%</td>
<td>65 riders</td>
</tr>
<tr>
<td>720 boardings (eastbound)</td>
<td>9% (arriving at station by circulator rather than auto)</td>
<td>65 riders</td>
</tr>
</tbody>
</table>

Although there are a significant number of employees at the Jefferson County Campus, it was assumed by County staff that very few would leave the campus during the day.

<table>
<thead>
<tr>
<th>Jefferson County Employees</th>
<th>Assumed Capture Rate</th>
<th>Potential Weekday Riders</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,097</td>
<td>1%</td>
<td>31 riders</td>
</tr>
</tbody>
</table>

Weekend riders are assumed to fluctuate as visitation fluctuates Based on average daily weekend visitation numbers, approximately 60 riders might be expected to take a circulator. This number would increase during special event weekends.

<table>
<thead>
<tr>
<th>Average Daily Weekend Downtown Visitation</th>
<th>Visitors</th>
<th>Assumed Capture Rate</th>
<th>Potential Daily Weekend Riders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>450</td>
<td>4%</td>
<td>18 riders</td>
</tr>
<tr>
<td>Out-of-town</td>
<td>1,050</td>
<td>4%</td>
<td>42 riders</td>
</tr>
</tbody>
</table>
RTD Coordination

Coordination with RTD was essential to the development of circulator options and the evaluation process. The first of a series of meetings with RTD was held on December 3rd, 2008 and the project team and RTD staff discussed potential changes to bus transit service related to West Corridor LRT implementation in 2013. The group also discussed the possibility of supplementing fixed-route service changes with a localized Golden circulator between town and the LRT station.

RTD will begin its transit service planning process approximately two years prior to the start of LRT service in 2013. It is assumed that existing routes will be modified to work in conjunction with LRT and potential local service in Golden. RTD indicated a desire to implement the following service changes in 2013:

- **Route 44 Limited** would be replaced by a new Route 117 which would provide a link between the Gold Line Ward Road Station, Applewood and Golden as a Local service. This Local service may be supplemented by a peak-hour Express route between Golden and the Gold Line Ward Road Station via Hwy 58, given available budget.

- **Terminating Route 17 service** would terminate west of the Jefferson County LRT station. It is assumed that the circulator service would link the station to multiple destinations on the Jefferson County campus, including Health Services. It is also assumed that Route 17 through Golden would be restructured or replaced by the circulator service.

- **Route 16** would replace Route 16 Limited service in Golden. The Route 16 would provide consistent service from Golden to downtown Denver along Colfax.

- **Maintaining the GS service** from Boulder to the Federal Center with stops in Golden.

RTD staff also provided the RTD Service Standards for local and circulator services and explained that the standards must be met in order for RTD to consider support of a Golden circulator. The RTD Service Standards were incorporated into the overall study criteria by the project team.

- **Passengers/hour (productivity measure)**
- **Passengers/trip (productivity measure)**
- **Population and employment densities approaching 12 persons per acre**
- **Subsidy/passenger (cost effectiveness measure)**
- **Minimum Service Frequency – 30-60 minutes**
- **Ridership Performance** – measured by passengers per hour based on bottom 10-25% of routes in respective class.
- **Specific Trip Performance** (boardings per mile multiplied by the length (number of miles) of the trip
- **Time of day - 5-6 am: Percentage of Ridership Standard, 75%**
- **Stop Spacing:** Residential areas – every 600’, Commercial areas – every 500’

RTD staff also provided the projected boardings and alightings for the West Corridor light rail station at the Jefferson County Administration Building. These numbers were used in understanding potential ridership associated with local service.

### 2030 AM Peak Hour Jeffco Station Boardings and Alightings
- Inbound (Eastbound) Boardings: 126
- Outbound (Westbound) Alightings: 32
- Total Station Activity: 158

### 2030 Daily Jeffco Station Boardings and Alightings
- Inbound (Eastbound) Boardings: 720
- Outbound (Westbound) Alightings: 720
- Total Station Activity: 1,440

### 2030 AM Peak Hour Ward Road Station Boardings and Alightings
- Inbound (Eastbound) Boardings: 325
- Outbound (Westbound) Alightings: 85
- Total Station Activity: 410

### 2030 Daily Ward Road Station Boardings and Alightings
- Inbound (Eastbound) Boardings: 1,496
- Outbound (Westbound) Alightings: 1,496
- Total Station Activity: 2,992
Criteria

Criteria were developed through input from the Project Team and Stakeholders at the beginning of the planning process. These criteria were designed to help guide decision-making about service options in the analysis phase.

All alternatives were weighed against local sustainability goals to:

- Increase the ability of Golden residents and visitors to travel using alternative transportation.
- Reduce the community’s total vehicle miles traveled by creating connections to LRT, enhancing the bike and pedestrian network and improving transit connectivity.

Technical criteria included the following:

<table>
<thead>
<tr>
<th>Key Criteria</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Transit Trips per day</td>
<td>Total estimated riders</td>
</tr>
<tr>
<td>Transit Travel Time</td>
<td>Minutes to travel entire route</td>
</tr>
<tr>
<td>Availability of Multi-modal Connections</td>
<td>Transit-to-transit, Transit-to-bike</td>
</tr>
<tr>
<td>Land Use Compatibility</td>
<td>Existing and planned</td>
</tr>
<tr>
<td>Transit Vehicle Miles Traveled</td>
<td>Route comparison</td>
</tr>
<tr>
<td>Estimated operating cost and cost per rider</td>
<td>Annual operating cost/cost per rider</td>
</tr>
</tbody>
</table>

Operating Assumptions

Operating assumptions for the potential circulator service were developed based on input from the Focus Groups, the public and stakeholders to determine the service characteristics desired by the community. In addition, a review of other operating characteristics of other services was used for comparison.

Golden circulator operating assumptions include the following:

- **15 minute headways to allow a timed transfer with LRT at Jefferson County Building**
- **No passenger fee – free service**
- **Early morning to early evening operating hours, with room to consider longer service hours in later phases of development**
- **Simple, convenient and easy to understand service**

The Englewood Art Shuttle began operation in 2004 and has exceeded expectations with an average of 750 riders per day. The shuttle connects local destination and public art exhibits and operates on 15 minute headways, Monday through Friday from 6:30 am to 6:30 pm.

The Englewood Art shuttle was imposed over Routes 12 and 35, and several Route 27 trips, in order to create distinct routing between the LRT station, commercial uses and mid-rise apartments in the area.
IV. Developing Conceptual Routing

Initial conceptual routing was developed based on input from the public web survey results, focus groups and stakeholders. The project team examined a wide range of service segments built into two versions of a base route through town. This methodology allowed the City’s Council/Commission/Sustainability Committee to review the mileage and travel time associated with serving various destinations within the community, and make informed decisions about feasible operation. The Committee reviewed two base route scenarios, Base Route A and B, and preferred Option B.

Base Option A travelled from the light rail station along Johnson Road, South Golden Road, and into downtown and back. Base Option B provided a similar service but served 10th Street and Ulysses Street to the King Soopers and South Golden Road. Base Option B was preferred by the committee because it provided service to several multi-family residential developments, Bell Middle School and provided a connection to Route 16. Base Option B carried a round-trip travel time of 28-30 minutes depending on stops and dwell time.

Optional service segments were developed to expand the base routing to other destinations. One of the key considerations was a link between downtown Golden and neighborhoods across Highway 58. The Canyon Point segment ensured this connection and added an additional 9 minutes to the overall route travel time. It was decided that this segment may best serve after school activity between residential areas, Mitchell Elementary and downtown locations such as the recreation center and library. The Canyon Point segment was retained as a part-time service option.
A circulator link along the highway between Canyon Point residential and the Jeffco light rail station was debated as an AM/PM commuter trip. This segment was estimated at roughly 10 minutes one way. However, this segment was later dropped from consideration because of the travel time and required transfer. The ample supply of parking at the station also makes the circulator a less viable option. Additionally, the replacement of Route 44 with Route 117 may make it simpler to travel from North Golden to Gold Line Ward Road Station once Gold Line service begins. Gold Line travel time into downtown Denver is projected to be less than West Corridor travel time from Jeffco to downtown Denver.
Service to the Golden Recreation Center, library and park facilities is important to the public and stakeholders. Upon review, this segment added 5-6 minutes to the overall routing because of the slow travel speed on 10th and the number of stops anticipated to serve local destinations. This segment remained an option until later in the analysis.

In an attempt to shorten the overall travel time, a circulator segment from 19th to the highway and back to the LRT station was examined. This option was designed to provide more direct service between the station and CSM campus. Travel time for this segment was 4-5 minutes depending on the ability to integrate a stop at CSM Student Housing. The Committee liked the direct link between Campus and the station but preferred service along local streets.

Lastly, consideration was given to serving the Eagle Ridge apartment and commercial area.

This segment added approximately 4-5 minutes to the overall routing depending on stop and dwell times. It was decided that Eagle Ridge should remain an option for future implementation but not be included in a base route for the feasibility study.

The Council / Commission / Sustainability Committee discussed all these routing segments and expressed interest in serving the community and yet maintaining a reasonable travel time for service around Golden. While connecting downtown Golden to the LRT station is critical, the distance from town to the station results in fairly long travel times for bus service. Committee members noted that circulator routing should be direct and travel time as short as possible to be effective.
The project team introduced a bus-only link concept that could shorten the travel time between the LRT station and downtown Golden, and still create the option of providing service to a number of local destinations.

The Illinois Street bus link would utilize the existing City right-of-way located adjacent to the pedestrian trail behind Fossil Trace golf course, continuing around to Illinois Street, as shown on the images to the left. This facility would act as a lane extension for the local circulator, but would not be open to private vehicular movement. Pedestrian and bike movement along the trail would continue adjacent to the gated transit-way.

The City engineering cost estimate for this 14-foot bus lane extension of Illinois Street, including earthwork, asphalt pavement, curb and gutter and construction, is estimated at roughly $239,000. (Details illustrated in Appendix B)
V.

Final Alternatives Assessment

The two final route alternatives include the Illinois link and represent the stakeholders interest in tying future LRT with key destinations and user groups in town, while minimizing capital and operating costs associated with the new service. The first route alternative (G-1) is designed to link several of the key destinations and user groups, and yet maintain the shortest route distance and timing possible to minimize the number of buses needed. The G-1 route links the LRT station with Jefferson County Human Services building, travels past the Splash pool and Fossil Trace Golf Course before linking in with Illinois Street up to 19th. After crossing 19th, service runs through the CSM Campus to 11th Street in downtown Golden where it provides a connection with the pedestrian bridge across Clear Creek to the library, ball fields and community center on 10th Street. The service turns right on Washington to run through downtown Golden and then left on 14th to Jackson Street up to the High School. The service then follows 24th back to Illinois and returns via Illinois to the Jefferson County campus and LRT station.

The total route length is approximately 6 miles and travel time approximately 23 minutes, with about 10 stops. This route can be served adequately with single direction circulator service, two buses and 15-minute headways.

The second alternative (G-2) follows the first identically until the High School where it continues along South Golden Road, rather than turning onto 24th. The route continues along South Golden Road to King Soopers, right on Ulysses, and then right on 10th, back through Jefferson County campus to the LRT station. This route is roughly 7 miles in length with a total travel time of 26-28 minutes with 13 stops. Because of the longer distance, the G-2 route is recommended to operate in a bi-directional loop so that passengers are not required to travel the full loop to access any particular destination. However, with an assumed dwell time at the station of 4-5 minutes, the route is just on the cusp of needing three buses to operate in one direction. With three buses in a bi-directional loop, six total buses would be required to operate the G-2 route.

Canyon Point Extension

Connecting the core of Golden with neighborhoods on the north side of Highway 58 is important to the community. An afternoon circulator extension to Canyon Point would link students with downtown, the library, and the recreation center.
Ridership Projections

The project team worked with RTD in the development of ridership projections for these two alternatives, utilizing the RTD regional travel model. Several assumptions were made with regard to model inputs. It was assumed that Route 16 service would stay in place along Colfax into Golden via South Golden Road. It was assumed that Route 17 would terminate at the Jefferson County Administration Building. All model runs assumed a free circulator shuttle. The model utilized DRCOG projections for growth in the Golden area. Because the regional model can over predict for small, localized routing, the potential ridership for each route is illustrated in a range of possible boardings.

<table>
<thead>
<tr>
<th>Route</th>
<th>Forecast Range of Average Weekday Boardings</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1</td>
<td>470 – 750 riders</td>
</tr>
<tr>
<td>G-2 (clockwise/counter clockwise)</td>
<td>770 – 1,200 riders</td>
</tr>
</tbody>
</table>

The direct routing of the G-1 Route creates a viable link between the LRT station, CSM campus and downtown Golden and pulls a strong projected ridership base, especially as a free service to passengers. Even if actual numbers were less, potential ridership appears strong enough to warrant service.

The G-2 Route ridership is higher than the G-1 Route because it serves a broader area of the Golden community by linking the CSM campus and downtown neighborhoods with commercial uses along South Golden Road. The G-2 routing creates access between the High School and Middle School, serves community uses such as the recreation center and library and would stop at multi-family housing along South Golden Road and Ulysses.

Estimated Cost of Service

Operating costs associated with bus transit vary across the country. The project team conducted a survey of transit operating agencies, including RTD, to examine a range of costs per vehicle revenue hour, inclusive of operational costs, maintenance and driver costs. The following results were averaged for an assumed operating cost per vehicle revenue hour for a Golden circulator, for the purposes of estimating total system costs. A cost of $55/revenue hour was assumed for Golden in cost estimations.

- RTD 2008 local routes - $59.57/hour
- RTD 16th Street Mall Shuttle - $61.95/hour
- Phoenix Public Transit Department local routes - $50.15/hour
- Charlotte Area Transit Systems - $50.98/hour
- City of Santa Fe Transit - $54.93/hour
- Bozeman, MT Stremliner Circulator Service - $50.00/hour

Criteria Evaluation

These two alternatives were then evaluated qualitatively and quantitatively against the criteria developed early in the project process, based on the following operating assumptions.

<table>
<thead>
<tr>
<th>Key Criteria</th>
<th>Route G-1 (Route G-1 was assumed to operate on 15-minute headways with 2 vehicles in a one-way loop configuration.)</th>
<th>Route G-2 (Route G-2 was assumed to operate on 15-minute headways with three vehicles in one direction, and three vehicles in the opposite direction.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Transit Trips per day (ridership)</td>
<td>470 – 750 riders</td>
<td>770 – 1,200 riders</td>
</tr>
<tr>
<td>Transit Travel Time (entire route)</td>
<td>One way loop; 23 minutes with stops (2 buses one direction)</td>
<td>Two-way loop; 28 minutes with stops (3 buses bi-directional/6 buses total)</td>
</tr>
<tr>
<td>Availability of Multi-modal Connections (transit)</td>
<td>LRT, Route 16 downtown Golden, GS Route downtown Golden</td>
<td>LRT, Route 16 at King Soopers, Route 16 downtown Golden, GS Route</td>
</tr>
<tr>
<td>Land Use Compatibility</td>
<td>Service to higher density neighborhood near HS, downtown/CSM neighborhoods, downtown shopping, Coors</td>
<td>Same as G-1, plus service to multi-family housing and retail/commercial use along S. Golden Road and Jeffco Work Release building.</td>
</tr>
<tr>
<td>Transit Vehicle Miles Traveled</td>
<td>288 per day; 105,120 per year</td>
<td>672 per day; 245,280 per year</td>
</tr>
<tr>
<td>Estimated operating cost ($55/hour)</td>
<td>$481,800 per year</td>
<td>$722,700 clockwise $722,700 counter clockwise $1,445,400 per year</td>
</tr>
</tbody>
</table>
Summary Assessment

The G-2 Route is forecast to carry about 60% more riders in a day than the G-1 Route. Ridership capture is much higher because the bi-directional routing of the G-2 links a significant number of higher density land uses with a free, convenient local service. Travel times between the station, CSM campus and downtown Golden mirror those of the G-1 routing at roughly 13 minutes. However, the G-2 then links downtown Golden with retail, commercial and multi-family development, and regional Route 16 bus service along South Golden Road. The G-2 Route extends service coverage to a greater number of local uses and thereby pulls a greater number of local riders.

But while ridership performance and community coverage is higher with the G-2 routing, so are capital costs, vehicle miles and operating costs. The 28-minute loop time with the G-2 Route is on the cusp of requiring 3 buses to operate the preferred 15-minute headways. If vehicle purchase costs are assumed to be $100,000 per vehicle, the G-2 would run $600,000 in vehicle expenditures, three times the cost of the 2 buses required for the G-1 Route. Similarly, daily transit vehicle miles would be 120% higher for the G-2 routing and daily revenue hours of service are 100% higher. These operating characteristics translate to an estimated operating cost, at $55/hour, of $481,000 per year for the G-1 operation, and three times that for the G-2 operation, approaching $1.5 million per year.

A cost per rider comparison was developed for each route based on an estimated daily operating cost and projected conservative daily route ridership. This comparison assumes a 12-hour operating day and 365 days of service year round. These numbers will fluctuate when final operating service is determined. This comparison of routes indicates that the G-1 Route is a more cost-effective and efficient operation at $2.80/rider/day than the G-2 at $5.14/rider/day. For the G-2 Route to perform as cost-effectively as the G-1 routing, the G-2 Route would need to carry upwards of 1,450 riders per day.

<table>
<thead>
<tr>
<th>Route</th>
<th>Number of Riders</th>
<th>Estimated Daily Operating Cost (12 hr/day operation)</th>
<th>Estimated Cost per Rider per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1</td>
<td>470/day</td>
<td>$1,320/day</td>
<td>$2.80</td>
</tr>
<tr>
<td>G-2</td>
<td>770/day</td>
<td>$3,960/day</td>
<td>$5.14</td>
</tr>
</tbody>
</table>

The cost per rider performance measure is best employed after a year of operation as a way of measuring how costly the service was to operate, compared to how effective it was as carrying riders. Today’s number is a measure of comparative effectiveness based on operational assumptions and ridership performance.

After the initial assessment, alternative headways for the G-2 routing were assessed in order to reduce operating costs and maintain a wider service area for service. A 30-minute headway would reduce the number of vehicles in operation to one vehicle on the G-1 Route and two vehicles in each direction on the G-2 Route, making a significant difference in both capital and operating outlay for the G-2 routing. Although ridership numbers would decline with the lower frequency of service, overall estimations would likely remain viable.

<table>
<thead>
<tr>
<th>Route</th>
<th>Projected ridership with 15-minute headways</th>
<th>Estimated ridership with 30-minute headways</th>
<th># buses in operation for 30-minute headways</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1</td>
<td>470+ riders</td>
<td>200+ riders</td>
<td>1</td>
</tr>
<tr>
<td>G-2</td>
<td>770+ riders</td>
<td>350+ riders</td>
<td>4</td>
</tr>
</tbody>
</table>

The City also reviewed a possible 20-minute headway for the G-2 Route. This service improves capital and operating costs much like the 30-minute headway option. The 20-minute headway would reduce the total number of buses required for bi-directional service to four, rather than six. Daily operating costs would drop from an estimated $3,690/day to $2640/day, for an annual operating cost of $963,600, over $500,000 less per year than the G-2 with 15-minute headways. However, the 20-minute headway service does not sync with 15-minute LRT arrivals/departures and may in fact, result in frustration on the part of the passengers who have to wait for either service at the station. The City should strongly consider passenger convenience and ridership potential, in addition to financial considerations, when making these headway decisions.
Focus Group and Stakeholder Feedback

The final alternatives, cost estimates and evaluation were shared with the project Focus Groups and the following key interests were identified by each group:

Merchants Group –

Shorter routing of Route G-1 with direct service between LRT station and downtown Golden would be favorable. The longer routing of Route G-2 would better serve the community and should be considered for later implementation.

Emphasis should be placed on gaining new market penetration into downtown with easy visitor connections between LRT and downtown.

Jefferson County Focus Group –

Service to the Human Service building and Workforce Development are a must for the County.

The County is investing in new transit shelters at the Human Services Building (900 Jefferson County Parkway) and Laramie Bldg (3500 Illinois) so the circulator should replace the current Route 17 service to these locations.

The County will be adding additional work release housing to the jail site within 3 years. A transit connection between the jail site and King Soopers area would link work release members to Route 16 service into Denver. The connection to the 16 is important.

The longer routing of Route G-2 better serves Jefferson County interests.

Colorado School of Mines –

Administration and staff like the direct access to central campus from the LRT station that the Route G-1 route provides.

However, they believe the student population would be better served by the longer Route G-2 that connects a greater number of community uses.

A future link between the CSM campus and NREL off South Golden Road at Moss may become important as the campus expands its relationship with NREL.

RTD Feedback

The project team conferred with RTD on the performance characteristics of the proposed routing. RTD staff agreed with the steps in the process, the evaluation, and cost estimates and final routing alternatives. RTD staff felt that the circulator routing utilizing the Illinois Street link would make a significant difference in travel time and therefore, ridership. They preferred the tighter, shorter routing of the G-1 loop, and liked that the G-1 routing did not resemble the previous GUS BUS service. RTD staff felt that the historic GUS BUS had several failures: Golden did not, at the time, have the density to support the critical mass of riders needed to maintain the service; the routing was stretched too thin from Canyon Point to Heritage Square; the GUS BUS diverted riders off existing routes but was not able
to replace existing routing for the entire trip; the GUS BUS service actually resulted in double transfers for some riders trying to travel through the Golden area. The G-1 routing was found to be direct, to serve density pockets in town including residential and downtown employment, was not stretched too thin across town, and would likely replace Route 17 service north into Golden from the Jefferson County Administration Building.

For shorter, more localized routing RTD typically recommends a single vehicle operation on 30 minute headways which runs about $200,000 per year. Golden should consider headways operating on 15 or 30 minute multiples to provide the best coordination with future LRT operations.

**Near-term and Long-term Recommendations**

The project team provides the following transit recommendations:

**Recommendation # 1**

The project team recommends that the future Golden circulator open for service in conjunction with the opening West Corridor LRT service. Golden should capitalize on the new transit paradigm associated with LRT service. The initial circulator success will depend to a degree on this new and broader transit market in Golden. Integrating local service with regional LRT service will open the door for transit use into and around Golden by visitors, students and local residents in a way different than previously experienced.

**Recommendation # 2**

The project team recommends that the Golden service be free to passengers. Today’s most successful circulator services have eliminated the barrier to entry associated with a passenger fee. The ability to hop on and off along a route and to use the service frequently is what transforms a local circulator from a “transit trip” to a preferred method of getting around town. The easier it is for passengers, the more likely they are to utilize the service.

**Recommendation # 3**

The project team recommends that Golden consider Route G-1 for 2013 implementation. Route G-1 is a cost-effective option of implementing a visible, recognizable circulator service for Golden that synchronizes with LRT and connects key destinations within town. The simple, direct routing of the G-1 Route utilizing the Illinois Street link to CSM campus and downtown visitor destinations is a viable extension of the LRT into Golden.

That being said, however, it is important to note that the public and many Focus Group members felt that providing service to a greater number of community users and destinations would be more broadly supported and in keeping with community sustainability goals. The G-2 routing expands the base service of the G-1 Route to a greater number of local uses such as the commercial, retail and residential uses along South Golden Road. Ridership forecasts support the longer routing with a higher number of potential riders. However, the higher cost associated with the longer routing most likely means three times as many buses as the G-1.

**Recommendation # 4**

The project team recommends a 15-minute headway service for both the G-1 and G-2 Routes. The G-1 Route emphasizes direct convenient extension of LRT service, via bus, into Golden and should sync directly with LRT arrival/departure times. While this same 15-minute headway for the G-2 is preferable, a 30-minute headway may prove to be more feasible from a cost perspective. Should this be the case, the project team recommends retaining a 15-minute headway in line with LRT service, rather than the 20-minute headway that is off-line with LRT arrivals/departures.

**Recommendation # 5**

The project team recommends that various service expansions be considered for phased implementation after results of the initial service operation are known. The G-1 could be expanded over time to operate as the G-2. Or the Canyon Point segment could be integrated into the G-1 or G-2 routing to provide afternoon trips only to the northern end of town. Segments of service such as Canyon Point, Mines Park or even the Recreation Center/10th segment could be added as ridership grows and local demand becomes more predictable and service extensions more viable. The integration of these additional destinations would expand mobility options for local residents and support the long-term goal of reducing vehicle trips in town.
Bus and Bus-Related Programs under Section 5309

Funds granted under this part of the Section 5309 program can be used to purchase and maintain buses, maintenance and administrative facilities, transfer facilities, park-n-rides, bus stops and shelters, and other bus-related items. These funds are typically awarded on a discretionary basis. The Colorado Association of Transit Agencies (CASTA) coordinates provider requests for Section 5309 funds and submits a single statewide request to Congress annually. Seven agencies in the DRCOG region have received 5309 funds since 2003 and all are requesting funds for 2008: Adams County, Black Hawk Transportation Authority, Flatiron Improvement District, RTD, South I-25 Urban Corridor Transportation (requested funds on the behalf of RTD), Seniors’ Resource Center and Special Transit.

Section 5316 – Job Access and Reverse Commute Program

The Job Access and Reverse Commute (JARC) program was instituted to help develop new transportation options for welfare recipients and other low-income individuals to get to jobs and to better develop transportation links between urban areas and suburban job sites. Funds can be used for capital purchases, for operating costs and for promoting use of transit vouchers and passes. Under SAFETEA-LU the program changed from a discretionary to a formula-based program. In the Denver-Aurora Urbanized Area, RTD acts as the designated recipient for the funds. In the rural and small urbanized areas, CDOT acts as the designated recipient.

RTD has used JARC funds for several bus routes that provide access to training centers or suburban employers from low-income areas. Route 73 – Serves northeast Denver providing service to Stapleton, Lowry, and the Denver Tech Center Route 105 (Havava Crosstown) and Route 121 (Peoria Crosstown) serve northeast Denver and Aurora. Employment centers served by the routes include the Denver Technology Center, Fitzsimmons Medical Complex, Stapleton, and Aurora’s Havana Street redevelopment area.

Next Steps

After the conclusion of this study, the City of Golden will embark on some key decision-making steps each year as they move forward in the implementation process.

Step # 1 – Establish Local Transit Partners

In 2010-2011, the most critical item will be to establish “transit partners” who will work with Golden in the funding and operation of future service. The City of Golden will want to continue discussions with its key stakeholders; Jefferson County, Colorado School of Mines, Downtown Merchants Association, GURA and other local organizations. Establishing funding partners within the community will be necessary to support ongoing circulator operational costs. Arrangements should be discussed with the administration and students at CSM to utilize current student transit fees, or increase student transit fees, to support the operational costs of local service and passes for regional LRT. The CSM student body would have to vote to increase transit funding or apply current ECO pass funding toward circulator service in the future. This would have to be explored with the student body. The downtown Merchants Association should consider a self-imposed fee contribution to support operational costs of a circulator that is projected to increase out-of-town visitation to downtown businesses. Jefferson County should consider a transportation contribution to circulator operations due to the improved mobility between buildings on the County’s campus. The city should maintain conversations with NREL regarding future potential bus service operations. Lastly, the City should continue coordination with Coors regarding potential shared storage and maintenance facilities.

Step # 2 – Determine Transit Operator

In 2011, the City will need to decide if future circulator operations will be managed through RTD or a private transit operator. The project team recommends that the City continue regular discussions with RTD transit services staff and program management to explore an agreement for the full or partial funding of circulator service in 2013. Golden may want to set a base RTD funding level for the service, to be supplemented by a local Golden match provided by Golden and its transit partners. The City of Boulder, The University of Colorado and RTD have such an arrangement for the Boulder HOP. In 2009, The HOP operated 27,932 hours and operating cost was divided as follows:

- Boulder HOP 2009 annual operating cost: $2,022,544
- Estimated net cost after fares is $1,957,544
- $1,176,746 – RTD
- $780,797 – Boulder and CU

RTD will best be able to enter into these types of agreements as they review their own service planning efforts for Golden bus transit. This feasibility study will provide direct input into RTD’s planning efforts for services within Golden.

If agreements cannot be made with RTD, Golden will want to investigate the cost of operating service through a private transit operator. This can be an effective way of providing service, however overhead costs associated with staff, offices and maintenance can sometimes be higher. Rocky Mountain National Park and the town of Estes Park carry over 3,000 passengers daily during the visitor season through a contracted private operator.
Step # 3 – Select Vehicle Type

In 2012, the City will want to review vehicle type, technology, costs and procurement methods. Vehicle technology and purchase or lease decisions will depend on potential operating arrangements with RTD or a private operator. All vehicles should be accessible to passengers with disabilities. Vehicle type and capacity will depend on Golden’s transit partners and their influence on final routing decisions and potential ridership. The vehicle grant application and award process, coupled with the procurement process, can take a year or more depending on dollars and vehicle type. The Federal Transit Administration (FTA) operates several grant programs that help fund operating and administrative costs of transit providers and that provide assistance in making capital purchases such as vehicles, facilities, software and other transit-related equipment. All of these grant programs require a local funding match ranging from 10 to 50 percent of the total project cost, depending on how the monies are used.

Step # 4 – Finalize Physical Improvements

In 2012, the City will want to reexamine the proposed routing and make refinements where needed, based on operator and technology decisions. Final operational timing, stop locations and improvements, street striping and signal timings will all need to be considered for final operation. Additionally, the city will want to finalize the design and construction of the Illinois Street link.

Step # 5 – Kick-off Marketing and Education Program

In 2012 - 2013 the City will want to consider ways to make the Golden Circulator highly visible to local residents as a convenient way to access LRT and other destinations. It will also be important that visitors identify with the service and find it an appealing part of the Golden experience. Golden may want to embark on a local naming campaign to give residents ownership of the local service. The identification, common markings, name and vehicle image of the circulator will all be part of this recognizable service. Golden may want to embark on a local naming campaign to give residents ownership of the service. Golden may also want to begin an advertising and education campaign with area chambers of commerce and tourism boards. These marketing and education efforts will be critical to the kick-off of service.
There are several key items for Golden to consider when it comes time to select an appropriate circulator vehicle:

1 – vehicle size and passenger capacity fitting with projected ridership,
2 – a technology type,
3 – the style or image appropriate to Golden service.

Passenger Capacity

Circulator bus types vary by transit agency and depend on the weather, terrain, cost and ridership associated with the particular service. Vehicle seating and capacity should accommodate daily ridership conveniently. If Golden anticipates between 300-400 passengers per day and that ridership is spread fairly evenly over a 12 hour operating day, then roughly 25-35 passengers per hour might be expected. More likely, ridership will peak in the morning and afternoon hours, resulting in as many as 40 passengers on and off in a given service hour, and far fewer through other operating hours during the day. The smaller buses or shuttles, such as the 12-passenger shuttle used Glacier National Park, will likely not work in Golden. The larger 27-passenger vehicles with low-floor boarding will seat and stand a greater number of riders and accommodate the fluctuations in ridership levels experienced throughout the day. Somewhere between a 23 and 28-passenger vehicle is likely an appropriate size for Golden services. These vehicles average 30’ in length.

The City of Boulder HOP operates a 27-passenger bus to accommodate fluctuating ridership during day and evening hours.

Glacier National Park shuttle – 12 passenger

With higher ridership, a heavier duty transit vehicle, 28-passengers, low-floor boarding with ADA ramp capability works best.
Circulator services in much larger cities or even National Parks tend to rely on heavier 40’ plus vehicles to manage daily travel demand. The DCCirculator operates a standard 40’ bus in Washington DC’s center city that links cultural, entertainment and business destinations through specific loops in the downtown area. The service runs on 10-minute headways and is funded through a public/private partnership between the District’s Department of Transportation, the Washington Metropolitan Area Transit Authority and DC Surface Transit Inc. representing local business associations. Rocky Mountain National Park has implemented a successful system that operates a combination of 40’ low-floor entry buses to the most popular visitor areas, and 14-passenger buses to less-frequented areas. Rocky Mountain National Park and the City of Estes Park, both operate a diesel fuel bus fleet.

**Vehicle Technology**

After selecting the appropriate vehicle size, Golden will want to consider the technology type that satisfies fuel and environmental concerns, as well as budget needs.

According to FTA, the most common vehicle for shuttle, demand-response or circulator services is the cutaway vehicle that utilizes either a medium-duty or light-duty chassis with a second stage manufacturer’s body. Cutaway buses generally are less than thirty feet long (although some may be as long as thirty-five feet long) and typically weigh less than 30,000 pounds (Gross Vehicle Weight – GVW). Most cutaway buses have walk-in, front entry doors and a center aisle with an interior height that allows passengers to stand. Cutaway buses are manufactured with various wheelbases, and can be designed to accommodate 16, 20, 24 or 28 passengers, and typically provide lift operated wheelchair accessibility.

While these vehicles are not typically as sophisticated as some agencies would prefer for circulator services, they can be far less costly than standard size buses. FTA reports that cutaway vehicles average between $40,000 and $79,999, with costs slightly higher when equipped with a CNG fuel system. Most medium-to-small-sized cutaway buses operating in the U.S. today still use gasoline or standard diesel fuel. Some of these vehicles, such as those in Castle Rock, have been fitted with CNG fuel systems for a total vehicle cost of $112,000.
If the cutaway vehicle doesn’t meet the technology interests of Golden, then there are many new emerging technologies to choose from, all of which can be assumed to be more expensive than a standard gas or diesel vehicle.

**Biodiesel (B20)** - Biodiesel is a naturally grown, alternative fuel source that is cleaner burning and substantially reduces emissions of pollutants, air toxics and hydrocarbons. This fuel technology is being incorporated into current diesel operating fleets to improve emissions.

**Compressed Natural Gas (CNG)** - vehicles can demonstrate a reduction in ozone-forming emissions compared to conventional fuels. CNG vehicles may be similar in size to conventional diesel buses, but usually have less passenger carrying capacity due to the heavy weight of the CNG storage tanks.

CNG vehicles are less energy efficient than diesels, require more frequent maintenance than diesels; and can be less reliable than diesels. The noise pollution is estimated to be similar to that produced by diesel buses.

**Electric buses** are typically used in more residential neighborhoods where noise and exhaust are a concern among residents. Electric vehicles have zero tailpipe emissions; however, some amount of emissions can be attributed to power generation. A diesel-electric hybrid bus is also available. A diesel engine charges a battery pack that drives an electric motor. These are newer to the market and extensive service data is not yet available. It is thought that the hybrid bus has better emission profile than the straight diesel or CNG buses and has less noise on acceleration than diesel or CNG.

**Hydrogen fuel cell** buses use a hydrogen and chemical reaction to generate electricity that powers an electric motor. Hydrogen is not a naturally occurring resource and must be manufactured, making equipment costs considerable. These buses are currently very expensive to operate – about three times the cost of a diesel unit per km.

Proterra is a Golden, Colorado based firm that has designed and built a prototype vehicle utilizing an all-electric technology and a carbon fiber design. The Proterra BE35 is fully electric, unlike other hybrid-electric passenger buses. It uses a first-of-its-kind 10-minute fast charge system enabled by nanotechnology-based lithium batteries. These charging systems are envisioned working with end of route dwell times. Company representatives say that although the current vehicle is 40’, future versions may be 30’-35’ in length, more suitable to operation in Golden.
Local Image

The transit circulator in Golden should be a visible and recognizable service in town. It should be clearly marked as a town circulator and have an identity or logo that visibly ties the bus markings with bus stops around town. The circulator service should look different than today’s RTD buses that operate in Golden, in order to establish it as a new and different kind of transit service. It should have a style, image or logo that represents Golden, encourages residents or visitors to “hop on” and is an understood piece of the local fabric. The bus should be comfortable, light with plenty of windows and easily accommodate boardings and alightings or on-off activity. The easier and more comfortable the service is, the more likely it is to capture riders.

Many agencies have developed themes or logos for their local transit service. Some have sought to capture a sense of history, duplicate a recognized school bus service, or establish something new and different within the community. Golden will want to determine a direction for their local transit identity and may want to hold a local contest to design the circulator logo or theme. Colors or specific vehicle customization can be decided later in the vehicle procurement process. Bus benches, signs, or informational kiosks should also carry the same identifiable markings throughout town.
VII.

Other Planning Considerations

Bike and Pedestrian Integration with Transit

In terms of transportation planning, it is essential that the City’s multi-modal efforts work together. The city has made tremendous investments in its bike and pedestrian facilities, including the new pedestrian bridge across Hwy 58 linking North Golden neighborhoods with Downtown. The integration of these bridges with the host of bike path connections in town create a multi-modal system that works well with a local circulator.

The following highlighted improvements are part of the City’s current bike planning effort and are either located on the proposed circulator routing or are adjacent to it. All facilities provide a bike or pedestrian connection to a location along the route and enable residents to take a multi-modal approach to trip planning for recreational purposes, commuting or shopping.
Specific improvements worth noting include:

- Bike and Pedestrian improvements along 13th Street between Washington Avenue and East Street. This section of 13th will improve mobility from residential areas to downtown Golden circulator service;
- Bike and pedestrian improvements along 24th Street between Ford Street and Illinois Street. This connection will enable high school students access to circulator service in either direction;
- Improvements along South Golden Road and Ulysses Street allow for easy, safe and convenient on- and off-activity on circulator service.

The combination of critical bike and pedestrian links, coupled with a local circulator service, can create the kind of possibilities that enable a change in behavior, encouraging residents to reduce auto trips around town, and allow visitors to access Golden without their private automobile.

**Parking Management Strategies and Transit**

The current supply of free and available parking in downtown Golden and on the CSM campus will have a distinct impact on the success of transit in Golden.

According to TRB’s publication TCRP Report 128, the factors that most influence transit ridership are a supportive land use development pattern, transit quality and parking policies. Just as fast, frequent, direct and comfortable transit will increase transit ridership, parking pricing and/or constrained parking supply at destinations will influence the number of transit users to that destination. Reductions in parking supply in downtown areas can be a key strategy in ensuring transit ridership. In fact, often a successful transit system is really about getting the parking right.

An ample and easily accessible supply of parking such as that found in many suburban office parks encourages auto use and reduces the viability of attracting transit riders. Conversely, the concentrated uses and limited and costly parking supply found in most major downtowns, leads to a more viable transit ridership pattern. In order to get parking “right”, these principles have been followed in many downtown areas.

- Locate parking in conjunction with a mix of development in downtowns and minimize the acreage dedicated to parking use in downtown
- Wrap parking with retail, or integrate parking with land uses to open up ground floor active uses
- Improve “walkability” within downtowns with better sidewalks and streetscapes
- Locate public parking in the areas most conducive to the desired community character and land use pattern
- Manage the optimum use for short and long term users through time limits and when appropriate through pricing policies
- Assure the long term viability of the parking supply through maintenance, repair, and replacement programs
- Monitor the current and future needs of the downtown area on an on-going basis

While ample parking remains available in downtown Golden, it is less likely that visitors and locals will arrive downtown via transit rather than their private vehicle. By the same token, because the CSM campus is located so near to downtown, the supply of parking on campus contributes to the downtown supply of parking, especially during special event weekends. Coordination between the City and CSM on a joint parking assessment and use pattern would be beneficial to the City’s overall parking management strategy. If it is the intent of the city to encourage transit, bike and pedestrian movement, then a general philosophy toward limited parking availability will make that more likely in the long-run.
Conclusion

The planning process, analysis of ridership potential, and routing assessment all indicate that a transit circulator operation linking the Jefferson County Administration Building light rail station with Colorado School of Mines, downtown Golden and other community destinations is feasible. The input of the public, Focus Groups and stakeholders throughout the process also indicated a high level of support in establishing a local circulator for residents and visitors to Golden and participating in the ongoing effort toward implementation of the service. The transit assessment in this study will provide direct input to RTD in their service planning efforts for bus transit to the Jefferson County Administration Building light rail station for 2013. The routing and service parameters associated with this Feasibility Study and the consequent decisions about service by Golden City Council will directly influence the transit service in Golden in place with the opening of light rail.